GT GreenbergTraurig

Jamie A Rose
Tel 512.320.7281
Fax 512.320.7210
Jamie.Rose@gtlaw.com

February 20, 2025

Laura Mueller, City Attorney
City of Dripping Springs, Texas
511 Mercer Street
Dripping Springs, TX 78620
Via email: lmueller@cityofdrippingsprings.com

Dripping Springs City Council Members
c/o Laura Mueller
511 Mercer Street
Dripping Springs, TX 78620
Via email: lmueller@cityofdrippingsprings.com

Re: Hardy T Land, LLC's Appeal of the May 2, 2024 Takings/Rough Proportionality Assessment (the "Appeal") – Hardy Driveway (SD2022-0025) and Hardy Subdivision (SUB2023-0042)

Dear Ms. Mueller and Council,

On February 18, 2025, the above referenced Appeal was heard by the City Council. We appreciate being given the opportunity to submit additional materials today. Accordingly, on behalf of Hardy T Land, LLC, I submit this letter and enclosures (the "Supplemental Materials") as additional evidence in support of the Appeal, which we understand will be provided to and considered by City Council, and made part of the record, in reference to same.

A. Relevant Case Law

At the request of members of the City Council, we are providing copies of several important cases, which have been highlighted for the convenience of the members of City Council. The cases include: *Knight, et al v. v. Metro. Gov't of Nashville & Davison Cnty, Tennessee*, 67 F. 4th 816 (6th Cir. 2023); *Town of Flower Mound v. Stafford Estates Ltd. P'ship*, 135 S.W.3d 620, 634 (Tex. 2004); *Nollan v. California Coastal Comm'n,* 483 U.S. 825 (1987); *Dolan v. City of Tigard*, 512 U.S. 374, 384–85 (1994); and *Mira Mar Dev. Corp. v. City of Coppell*, 421 S.W.3d 74, 82 (Tex. App.—Dallas 2013, pet. denied). *See* **Exhibit 1.**

B. Clarification of Documents/Information Relied Upon by City Staff

First, I must draw your attention to the fact that shortly before the City Council meeting on February 18, 2025, at approximately 2:42 p.m., Ms. Mueller provided me with a timeline and CEC cost estimate relating to "Prelim Water, Drainage and Street Improvement" dated September 12, 2023. *See* **Exhibit 2**. These materials were not mentioned as part of Ms. Mueller's or my presentation to Council (due to the tardiness of their delivery to me), but I must point out that the CEC cost estimate is misleading and requires clarification. The CEC cost estimate is for the roads ***within the Hardy Subdivision*** and is **not** an estimate for the Hardy Driveway.

Second, Ms. Mueller referred to the City having granted a sidewalk waiver for one side of the streets within the Hardy Subdivision. That is not entirely accurate. Instead, in response to Hardy T Land's request to waive sidewalks within the Subdivision, the City offered the following options: (1) construct a 5' sidewalk on each side of the road, (2) construct an 8' sidewalk on one side of each road and pay a fee in lieu for the remaining 2' not constructed, or (3) construct a 10' sidewalk on one side of each road. *See* **Exhibit 3**. Options 2 and 3 are so untenable (no resident would want an 8' or 10' sidewalk in front of their home) that it was essentially a denial of the payment of fees in lieu of sidewalks within the Hardy Subdivision.

C. Hardy Subdivision is an Extension (Phase 6) of Bunker Ranch

At the February 18, 2025 hearing, the City staff seemed to deny (or at least would not affirm) that the Hardy Subdivision was contemplated from inception as an extension of Bunker Ranch. Practically speaking, any reasonable developer would not consider granting primary access to the Hardy Tract through a gated community (which Bunker Ranch is) and along a private road that is maintained entirely by the owners of the Bunker Ranch Subdivision, unless the Hardy Subdivision was added to the Bunker Ranch Subdivision as an additional phase and contributed to the costs of maintaining such road. There is and always has been an expectation that the Hardy Tract would be an extension (or additional phase) of Bunker Ranch Subdivision.

Additionally, some members of Council had questions about the timeline relating to the Hardy Tract and the Hardy Subdivision.

As to the timeline, please see the dates below:

- **12-24-2020:** Recorded Final Plat for Phase 3 of Bunker Ranch provides for Bunker Ranch Boulevard to continue to the perimeter boundary of the future Hardy Tract, as it was contemplated and understood by all that the Hardy Tract, once acquired, would have primary access through and be an extension of Bunker Ranch.. *See* **Exhibit 4**.
- **06-09-2021:** A Site Plan for the Hardy Subdivision was submitted to the City along with a Traffic Impact Assessment, both of which were required before annexation of the Hardy Tract would be approved. *See* **Exhibit 5**, Figure 2 (p. 31). The annexation

application specifically refers to the Hardy Tract and confirms the general understanding of both the City and the developer that the Hardy Subdivision would be "Bunker Ranch Phase 6."

- **6-22-2021:** Planning Department Staff Report for P&Z re: Hardy Tract (*see* J. Boushka Declaration, Ex. J) discusses that Hardy T Land had filed a petition for voluntary annexation of the Hardy Tract to be considered by Council on July 20, 2021. It further states the "applicant's intention for development of the 78.021 acre tract is similar build to the property east of the tract, Bunker Ranch Phase 3."
- **09-16-2021:** Hardy T. Land closed on the purchase of the Hardy Tract and Hardy Driveway. *See* J. Boushka Declaration, Ex. B.
- **09-2021:** the preliminary plat for the Hardy Subdivision was submitted which again, confirmed that primary access for the Hardy Subdivision would be through Bunker Ranch, as an extension of Bunker Ranch Boulevard and an extension of Bunker Ranch Subdivision.

This is important for City Council to consider because these Supplemental Materials as well as those previously provided for City Council Review clearly indicate that the Hardy Tract had a reasonable expectation that it would be treated as an extension of Bunker Ranch, including specifically, having any requirement for sidewalks waived. Numerous documents and correspondence submitted to/from the City regarding the Hardy Subdivision confirm the understanding that the Hardy Tract was to be Bunker Ranch Phase 6.

Additionally, at the Planning & Zoning Commission Meeting on August 27, 2024, at which the sidewalk variances submitted by Hardy T Land were heard, Tory Carpenter stated as follows in response to a question from a commissioner:

> **Question**: Bunker Ranch is a gated community so why for this other property—other development—are they going through Bunker Ranch in the first place?
>
> **Answer** (Mr. Carpenter): so it's an extension essentially of Bunker Ranch. It's the same developer, same builders…does that make sense? It's the same developer…for all intents and purposes it is an extension it just has a different name. Similar to the Overlook at Bunker Ranch.

See **Exhibit 6**, Video Recording of P&Z Meeting on August 27, 2024. The excerpt above can be heard starting at 51:10 of the video recording. While the quality of the recording is initially poor, Mr. Carpenter gets a new microphone right before making the statement above. Please note that the recording is clearer if you listen on a phone with headphones. Of course, it is not the "same" developer, as Bunker Ranch LLC was the developer of Phases 1-5. But there is no question the Hardy Subdivision was considered to be an extension (Phase 6) of Bunker Ranch. Consistent with

that reasonable expectation, the Hardy Tract has since been annexed into the Bunker Ranch Subdivision by recorded document.

We appreciate Council's consideration of these additional materials.

Best regards,

/s/ Jamie Rose

Jamie A. Rose
Shareholder

Cc: Jim Boushka, Hardy T Land
Court Reporter

Exhibit 1

67 F.4th 816
United States Court of Appeals, Sixth Circuit.

James KNIGHT; Jason Mayes, Plaintiffs-Appellants,
v.
METROPOLITAN GOVERNMENT OF NASHVILLE & DAVIDSON COUNTY, TENNESSEE, Defendant-Appellee.

No. 21-6179
|
Argued: July 21, 2022
|
Decided and Filed: May 10, 2023

Synopsis

Background: Property owners brought action alleging that municipality's sidewalk ordinance effected unlawful taking. The United States District Court for the Middle District of Tennessee, Aleta A. Trauger, J., 572 F.Supp.3d 428, entered summary judgment in government's favor, and owners appealed.

Holdings: The Court of Appeals, Murphy, Circuit Judge, held that:

[1] *Nollan*'s unconstitutional-conditions test applied in evaluating owners' takings claim, and

[2] as matter of first impression, *Nollan*'s unconstitutional-conditions test applies just as much to legislatively compelled permit conditions as it does to administratively imposed ones.

Reversed and remanded.

White, Circuit Judge, concurred and filed opinion.

Procedural Posture(s): On Appeal; Motion for Summary Judgment.

West Headnotes (9)

[1] **Eminent Domain** What Constitutes a Taking; Police and Other Powers Distinguished

Government takes property, for Fifth Amendment purposes, if it grants easement that allows strangers to enter it—whether by land, air, or sea. U.S. Const. Amend. 5.

[2] **Eminent Domain** What Constitutes a Taking; Police and Other Powers Distinguished

Restriction on right to use property effects taking only if use restriction bars landowner from engaging in all economically beneficial or productive use of land. U.S. Const. Amend. 5.

1 Case that cites this headnote

[3] **Constitutional Law** Doctrine of unconstitutional conditions

Under unconstitutional conditions doctrine, if Constitution allows government to directly compel private party to undertake conduct on threat of criminal punishment, government may indirectly compel that conduct as condition on benefit.

2 Cases that cite this headnote

[4] **Eminent Domain** Necessity of making compensation in general

Takings Clause bars government from forcing a few people to bear full cost of public programs that public as a whole should pay for. U.S. Const. Amend. 5.

4 Cases that cite this headnote

[5] **Eminent Domain** Exactions and conditions

To determine whether permit condition effects taking, court must first ask whether condition would qualify as taking if government had directly required it; if not, no takings problem

exists, but if so, government must show nexus between condition and project's social costs —that is, government must impose condition because of those costs and not for other reasons —and then show rough proportionality between condition and project—that is, condition's burdens on owner must approximate project's burdens on society. U.S. Const. Amend. 5.

4 Cases that cite this headnote

[6] **Eminent Domain** Exactions and conditions

Nollan's unconstitutional-conditions test governing conditions on building permits, rather than *Penn Central*'s balancing test governing direct restrictions on use of property, applied in evaluating property owners' claim that municipality's sidewalk ordinance effected unlawful taking; ordinance did not compel all owners to build sidewalk or pay fee, but reached only those who sought permits, and ordinance required all permit applicants to grant easement. U.S. Const. Amend. 5.

1 Case that cites this headnote
More cases on this issue

[7] **Eminent Domain** Exactions and conditions

In determining whether permit conditions effect taking, *Nollan*'s unconstitutional-conditions test applies just as much to legislatively compelled permit conditions as it does to administratively imposed ones. U.S. Const. Amend. 5.

2 Cases that cite this headnote

[8] **Courts** Supreme Court decisions

As middle management court, Court of Appeals must follow Supreme Court's precedent whether or not it thinks it in disarray.

1 Case that cites this headnote

[9] **Eminent Domain** What Constitutes a Taking; Police and Other Powers Distinguished

In evaluating Fifth Amendment takings claim, *Nollan*'s automatic-taking rule applies when government has physically taken property for itself or someone else, by whatever means, while *Penn Central* applies when it has instead restricted property owner's ability to use his own property. U.S. Const. Amend. 5.

1 Case that cites this headnote

***817** Appeal from the United States District Court for the Middle District of Tennessee at Nashville. No. 3:20-cv-00922 —Aleta Arthur Trauger, District Judge.

Attorneys and Law Firms

ARGUED: Braden H. Boucek, SOUTHEASTERN LEGAL FOUNDATION, Roswell, Georgia, for Appellants. John W. Ayers, METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY, Nashville, Tennessee, for Appellee. ON BRIEF: Braden H. Boucek, Kimberly S. Hermann, Celia Howard O'Leary, SOUTHEASTERN LEGAL FOUNDATION, Roswell, Georgia, Meggan S. DeWitt, BEACON CENTER OF TENNESSEE, Nashville, Tennessee, for Appellants. John W. Ayers, Allison L. Bussell, METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY, Nashville, Tennessee, for Appellee. Chance Weldon, TEXAS PUBLIC POLICY FOUNDATION, Austin, Texas, George A. Dean, TUNE ENTREKIN & WHITE, PC, Nashville, Tennessee, Jay R. Carson, WEGMAN HESSLER, Cleveland, Ohio, Daniel T. Woislaw, PACIFIC LEGAL FOUNDATION, Arlington, Virginia, Richard N. Coglianese, CITY OF COLUMBUS, Columbus, Ohio, for Amici Curiae.

Before: BATCHELDER, WHITE, and MURPHY, Circuit Judges.

MURPHY, J., delivered the opinion of the court in which BATCHELDER, J., joined in full. WHITE, J. (pg. 837), concurred in the majority's application of the Nollan/Dolan test and in its remand for the reasons stated.

OPINION

MURPHY, Circuit Judge.

***818** The Metropolitan Government of Nashville and Davidson County ("Nashville") passed a "sidewalk ordinance" that imposes sidewalk-related conditions on landowners who seek building permits. To obtain a permit, owners must grant an easement across their land and agree to build a sidewalk on the easement or pay an "in-lieu" fee that Nashville will use to build sidewalks elsewhere. This ordinance implicates a question about the Fifth Amendment's Takings Clause that has divided state courts. *See Cal. Bldg. Indus. Ass'n v. City of San Jose*, 577 U.S. 1179, 136 S. Ct. 928, 928, 194 L.Ed.2d 239 (2016) (Thomas, J., concurring in the denial of certiorari).

In particular, the parties here disagree over the "test" that we should use to judge whether the sidewalk ordinance commits a taking. The landowner plaintiffs ask us to apply the "unconstitutional-conditions" test that the Supreme Court adopted to assess conditions on building permits in *Nollan v. California Coastal Commission*, 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987). Nashville responds that the Court has applied *Nollan*'s test only to ad hoc administrative conditions that zoning officials impose on specific permit applicants—not generally applicable legislative conditions that city councils impose on all permit applicants. For legislative conditions, Nashville says, we should turn to the deferential "balancing" test that the Court adopted to assess zoning restrictions in *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978).

We side with the landowner plaintiffs. Nothing in the relevant constitutional text, history, or precedent supports Nashville's distinction between administrative and legislative conditions. *Nollan*'s test thus should apply to both types, including those imposed by the sidewalk ordinance. Because the district court reached a contrary conclusion, we reverse its grant of summary judgment to Nashville and remand for proceedings consistent with this opinion.

I

A

As every parent can attest, sidewalks serve many beneficial purposes. The legislative council in Nashville, Tennessee, identified some of these purposes when passing its sidewalk ordinance. Children and adults alike can use sidewalks as a safe transportation option for many things, ranging from the daily stroll to school or work to a strenuous exercise on a sunny day. Ordinance, R.1-2, PageID 28. By reducing the number of people who must drive on the streets, sidewalks also relieve traffic congestion. *Id.*, PageID 29. And a network of sidewalks generally increases ***819** the value of the surrounding properties, which allows homeowners to resell their homes at higher prices. *Id.*, PageID 28.

For years, however, Nashville has not invested enough in public sidewalks, especially when considering the city's large population growth. Forced to walk next to fast-moving cars on the city streets, Nashville's pedestrians have felt the effects of these missing walkways. In 2018, 23 pedestrians died in the Nashville area. *Id.* The next year, the area's "pedestrian death index" reached 99.2—almost double the national average of 55.3. *Id.* To alleviate these dangers, Nashville calculated that it would need to build some 1,900 miles of new sidewalks. *Id.*

Recognizing the need for more sidewalks is one thing. Figuring out how to pay for them is another. Nashville has increased its annual capital spending on sidewalks to $30 million. *Id.* Even with this large budget, though, the city estimates that it would take 20 years to increase its sidewalk infrastructure by just 71 miles in critical areas. *Id.*

In 2019, Nashville's council sought to speed up this sidewalk construction by adding the sidewalk ordinance to its zoning code. *Id.*, PageID 28–35; *see* Code of Metro. Gov't of Nashville & Davidson Cnty. ("Nashville Code") § 17.20.120 (2019). The ordinance applies to landowners who seek to build a single- or two-family home in designated areas of the city and its surrounding county. *See* Nashville Code § 17.20.120(A)(2). It also applies to landowners who seek to develop or redevelop multi-family homes and nonresidential buildings in the designated areas. *See id.* § 17.20.120(A)(1); FAQs, R.20-4, PageID 138–39. The owners of covered properties must comply with the sidewalk ordinance as a condition of obtaining a building permit for their proposed development. *See* Nashville Code §§ 16.28.010, 16.28.190.

The sidewalk ordinance sets different rules for different types of covered properties. It gives the owners of certain properties just one option to obtain a permit: build a sidewalk on their lots that meets the city's design standards. *Id.* § 17.20.120(C). For example, an owner has no choice but to build a sidewalk when a lot sits on the side of a street with existing sidewalks. *Id.* § 17.20.120(C)(1)(c). Likewise, an owner must build a sidewalk on a lot when it would expand the sidewalk network from an "abutting development" and the city's development

plan calls for the expansion. *Id.* § 17.20.120(C)(1)(b); *see also* FAQs, R.20-4, PageID 140.

If, however, a property falls outside one of the specified categories, the ordinance gives a landowner who seeks a permit an alternative to building a sidewalk. The owner may "make a financial contribution" to a fund that Nashville will use to build sidewalks in the property's "pedestrian benefit zone[.]" *Id.* § 17.20.120(D)(1), (3). To help determine the amount of this "in lieu" fee, Nashville's public-works department must announce each July its "average" "cost" to construct a "linear foot" of sidewalk. *Id.* § 17.20.120(D)(1). For the period from July 2020 to June 2021, the department calculated this cost as $186 per linear foot. Hammond Decl., R.28, PageID 428. Nashville will then rely on this cost-per-linear-foot amount to calculate a landowner's total fee based on the size of what would have been the owner's sidewalk. But the ordinance caps the total fee at three percent of the "total construction value" of the planned development. Nashville Code § 17.20.120(D)(1).

Whether a landowner builds a sidewalk or pays an in-lieu fee, the ordinance imposes another requirement. All landowners must dedicate a "right-of-way and/or public pedestrian easement" across their property. *Id.* § 17.20.120(E). This dedication ***820** will allow the public to use the sidewalk whether it gets built immediately or at some future point. *Id.*

Nashville's zoning administrator may grant a full or partial waiver of the ordinance's requirements in various circumstances. *Id.* § 17.20.120(A)(3). Most notably, the administrator may grant a waiver if some "hardship" (such as utilities or a drainage ditch) will make it difficult for a property owner to build the sidewalk. *Id.* § 17.20.120(A)(3)(a). Separately, if a property does not qualify for the in-lieu fee, the administrator in "unique" circumstances may grant a waiver that would allow the owner to pay this fee rather than build a sidewalk. *Id.* § 17.20.120(A)(3)(b).

If the zoning administrator denies a requested waiver, a property owner may lastly seek a variance from the Board of Zoning Appeals. *Id.* § 17.20.125. The board may grant this variance outright or require the property owner to pay the in-lieu fee or make other design changes as a condition of the board's granting the variance. *Id.*

B

In 2019, James Knight and Jason Mayes both wanted to build homes on properties covered by Nashville's sidewalk ordinance. Knight sought to construct a single-family home on a vacant lot on Acklen Park Drive:

Knight Decl., R.20-1, PageID 125–26. Because Acklen Park Drive lacks sidewalks, Knight could either build a sidewalk on his lot (which would connect to nothing) or pay the in-lieu fee. *Id.*, PageID 125. But Nashville's public-works department allegedly told Knight's construction manager that a sidewalk would cause stormwater problems and that Knight should not build one. *Id.*, PageID 127; Stevenhagan Aff., R.20-4, PageID 170–71.

Knight thus asked the zoning administrator for a waiver that would exempt him from any requirement to build a sidewalk or pay a fee. Knight Decl., R.20-1, PageID 127. The administrator denied his request. *Id.* Knight appealed this denial to the Board of Zoning Appeals. *Id.* It rejected his request for a variance and required him to pay the fee or construct a sidewalk under an alternative design that Nashville proposed. *Id.* Nashville officials later calculated Knight's total in-lieu fee for this ***821** property as $7,600. *Id.*, PageID 128. Because Knight refused to pay this amount or build the redesigned sidewalk, his permit expired. *Id.* If Nashville would exempt him from the sidewalk ordinance, he would seek another permit for the property. *Id.*

Mayes, by comparison, sought to construct a single-family home on his lot on McCall Street. Mayes Decl., R.20-2, PageID 129. The side of McCall Street on which Mayes's property sits also lacks sidewalks (but the other side has them):

Id., PageID 130.

Mayes sought a waiver from the zoning administrator. *Id.*, PageID 130–31. He suggested that Nashville should not make him build "a sidewalk to nowhere." *Id.*, PageID 131. The administrator denied Mayes's request because he could pay the in-lieu fee. *Id.* The administrator calculated this fee as $8,883.21. *Id.* Not wanting to delay construction, Mayes opted to pay the fee while he sought a variance from the Board of Zoning Appeals and a refund of the fee. *Id.* The board rejected the variance. *Id.*, PageID 132. Individual members reasoned that the Nashville council had made a policy choice to require the fee and that the board lacked discretion to waive it unless the owner identified a concrete hardship other than the cost. *Id.* Nashville ultimately used Mayes's funds to improve sidewalks located some 2.5 miles away from his property. *Id.*

The record leaves unclear whether Nashville sought an easement across Knight's lot and whether it took an easement across Mayes's lot—as the sidewalk ordinance's language requires. *See Knight v. Metro. Gov't of Nashville & Davidson Cnty.*, 572 F. Supp. 3d 428, 432 n.3 (M.D. Tenn. 2021). In the district court, Nashville suggested that the ordinance might not require an easement for landowners like Mayes who choose to pay the in-lieu fee. *See id.* Yet the district court rejected this ***822** atextual reading of the ordinance, *id.*, and Nashville disavowed reliance on the interpretation at oral argument in our court, *see* Arg. 23:50–25:44. For purposes of this case, then, we will generally assume that the ordinance requires the easement in all circumstances.

Knight and Mayes sued Nashville in federal court alleging that the sidewalk ordinance violated the Fifth Amendment's Takings Clause. They sought an injunction against Nashville's enforcement of the ordinance and the return of the in-lieu fee as restitution for the constitutional violation.

The district court granted summary judgment to Nashville. *Knight*, 572 F. Supp. 3d at 431. The parties spent much of their briefing debating the test to apply to Knight's and Mayes's takings claims. According to Nashville, the court should apply, at most, *Penn Central*'s balancing test governing land-use restrictions. According to Knight and Mayes, it should apply *Nollan*'s unconstitutional-conditions test governing conditions on building permits. The court picked *Penn Central*'s test. *See id.* at 439–43. It reasoned that the unconstitutional-conditions test applies only to "adjudicative" decisions in which zoning officials, acting on an ad hoc basis, choose the specific conditions to impose on a specific landowner's project. *See id.* at 439–42. The court viewed the sidewalk ordinance as a broadly applicable "legislative" mandate to require all permit applicants to pay a fee or construct a sidewalk. *See id.* at 442–43. It next held that the ordinance "easily" met *Penn Central*'s test—a conclusion that Knight and Mayes did not even dispute. *See id.* at 444–45. We review the district court's decision de novo. *See F.P. Dev., LLC v. Charter Twp. of Canton*, 16 F.4th 198, 203 (6th Cir. 2021).

II

On appeal, the parties renew their debate about the governing test for Knight's and Mayes's takings claims. To frame this debate, we begin with two basic takings questions: When does direct government interference with private property qualify as a "taking" of the property? And when may the government nevertheless require an uncompensated taking of an owner's property as a condition of granting the owner a discretionary "benefit" like a building permit?

A. Direct Interference with Property

The Fifth Amendment's Takings Clause, as incorporated against the states by the Fourteenth Amendment, provides: "nor shall private property be taken for public use, without just compensation." U.S. Const. amend. V; *see Chicago, Burlington & Quincy R.R. Co. v. City of Chicago*, 166 U.S. 226, 241, 17 S.Ct. 581, 41 L.Ed. 979 (1897). There are a variety of "sticks" in the "bundle" of legal rights that traditionally come with property ownership, including the right to possess the property, to use it, to exclude others from it, and to dispose of it. *See Cedar Point Nursery v. Hassid*, —— U.S. ——, 141 S. Ct. 2063, 2072, 210 L.Ed.2d 369 (2021); *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 433, 435, 102 S.Ct. 3164, 73 L.Ed.2d 868 (1982). Given these diverse rights, the government interferences that qualify as the "taking" of "property" can come in different forms.

Some interferences qualify as "*per se*" or automatic takings that require proper compensation whenever the government engages in them. *See Horne v. Dep't of Agr.*, 576 U.S. 350, 358, 360, 135 S.Ct. 2419, 192 L.Ed.2d 388 (2015). This automatic-taking rule most obviously covers the classic appropriation in which a government seizes every stick in the bundle of rights using its eminent-domain powers. If, for instance, a government confiscates a ***823** party's real or personal property to build a park or supply an army, it always must provide fair value for the land or goods. *See Cedar Point*, 141 S. Ct. at 2071; *Horne*, 576 U.S. at 357–59, 135 S.Ct. 2419.

[1] Yet this automatic-taking rule extends beyond classic takings. The rule also applies when the government appropriates only some of the sticks in the bundle of property rights—most notably, the right to exclude others. *See Cedar Point*, 141 S. Ct. at 2072–73. In a long line of cases, the Supreme Court has held that the government "takes" property if it grants an "easement" that allows strangers to enter it—whether by land, air, or sea. *Nollan*, 483 U.S. at 831, 107 S.Ct. 3141; *see Cedar Point*, 141 S. Ct. at 2073–74. The government thus committed a taking when it allowed union organizers to enter an employer's property for unionizing activities. *See Cedar Point*, 141 S. Ct. at 2074. It committed a taking when it allowed airplanes to fly at low altitudes over the property near its airport. *See United States v. Causby*, 328 U.S. 256, 261–65, 66 S.Ct. 1062, 90 L.Ed. 1206 (1946). And it committed a taking when it gave the public access to a private marina. *See Kaiser Aetna v. United States*, 444 U.S. 164, 179–80, 100 S.Ct. 383, 62 L.Ed.2d 332 (1979). This principle has deep roots. As Blackstone opined, the government should pay a landowner if it builds a "road" through the owner's "grounds" and allows the public to travel across it. 1 William Blackstone, *Commentaries on the Laws of England* 135 (1765).

[2] But the automatic-taking rule has its limits. The Supreme Court has treated government interference with other "sticks" in the bundle of property rights (most notably, the right to *use* property) differently from interference with the right to *exclude* others. *See Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Plan. Agency*, 535 U.S. 302, 323–24, 122 S.Ct. 1465, 152 L.Ed.2d 517 (2002). A restriction on the right to use property rarely triggers the automatic-taking rule. The rule applies only if a use restriction bars a landowner from engaging in "all economically beneficial or productive use of land." *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1015, 112 S.Ct. 2886, 120 L.Ed.2d 798 (1992). The Court has found this criterion met only once, when a government's land-use regulations rendered beachfront properties "valueless" by barring their owner from building anything on them. *Id.* at 1020, 112 S.Ct. 2886.

Most land-use regulations, by contrast, leave open some uses. Even if a use restriction bars an owner from building a factory, it might allow the owner to build an apartment complex. *Cf. Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 384, 47 S.Ct. 114, 71 L.Ed. 303 (1926). The Court subjects these less severe restrictions to a case-by-case test that asks whether they go "too far" (with the courts subjectively judging how far is "too far"). *Cedar Point*, 141 S. Ct. at 2072 (quoting *Pa. Coal Co. v. Mahon*, 260 U.S. 393, 415, 43 S.Ct. 158, 67 L.Ed. 322 (1922)). Since *Penn Central*, the Court has balanced several recurring factors to decide whether a use restriction goes too far. *See id.*; *Tahoe-Sierra*, 535 U.S. at 326, 122 S.Ct. 1465. *Penn Central*'s balancing test requires courts to ask questions like: What economic impact does the regulation have on the property owner? *See* 438 U.S. at 124, 98 S.Ct. 2646. Did the regulation come as a surprise and so interfere with the owner's "investment-backed expectations"? *Id.* And does the government have an adequate justification for the use restriction? *Id.* at 124–25, 98 S.Ct. 2646.

B. Unconstitutional Conditions

The government does not always directly interfere with constitutional rights. It ***824** sometimes indirectly interferes with them by offering a benefit that it has no duty to provide on the condition that a party waive a right. The government, for example, might not try to bar disfavored speech through a criminal law; it might instead dole out public

funds to people only if they agree not to say the disfavored words. *See Agency for Int'l Dev. v. All. for Open Soc'y Int'l, Inc.*, 570 U.S. 205, 214, 133 S.Ct. 2321, 186 L.Ed.2d 398 (2013). Under its "unconstitutional-conditions doctrine," the Supreme Court has placed limits on the government's power to extract waivers of constitutional rights in this way. *See Koontz v. St. Johns River Water Mgmt. Dist.*, 570 U.S. 595, 604, 133 S.Ct. 2586, 186 L.Ed.2d 697 (2013).

[3] But what rules divide constitutional from unconstitutional conditions on these otherwise discretionary benefits? One generic rule is clear: If the Constitution allows the government to directly compel a private party to undertake conduct on threat of criminal punishment, the government may indirectly compel that conduct as a condition on a benefit. *See Rumsfeld v. Forum for Acad. & Institutional Rts., Inc.*, 547 U.S. 47, 59–60, 126 S.Ct. 1297, 164 L.Ed.2d 156 (2006); *Planned Parenthood of Greater Ohio v. Hodges*, 917 F.3d 908, 914–15 (6th Cir. 2019) (en banc). The Free Speech Clause thus allowed Congress to require law schools to grant military recruiters access to their campuses as a condition of public funding because Congress could have directly compelled this access without any constitutional problem. *See Rumsfeld*, 547 U.S. at 59–60, 126 S.Ct. 1297.

For the most part, however, no general principles regulate these conditions because the Constitution contains no all-encompassing "Unconstitutional Conditions Clause." *Hodges*, 917 F.3d at 911. Courts instead must look to a specific constitutional right to identify the specific rules. *Id.* at 913. This fact brings *Nollan* to the fore. It created a "special" unconstitutional-conditions framework for an "exaction" in the takings context. *Koontz*, 570 U.S. at 604–05, 133 S.Ct. 2586 (citation omitted).

In this context, the typical "benefit" consists of a permit that allows an owner to develop a property for a specific use (such as a residence or store). *See id.* at 601–02, 133 S.Ct. 2586; *Dolan v. City of Tigard*, 512 U.S. 374, 379–80, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994); *Nollan*, 483 U.S. at 828, 107 S.Ct. 3141. Suppose that the government could directly bar the owner's requested use and deny a permit without violating the Takings Clause under *Penn Central*'s balancing test for use restrictions. *See Nollan*, 483 U.S. at 836, 107 S.Ct. 3141. Suppose further that the government offers to grant this permit but only on the "condition" that the owner deed over a part of the land. *See Dolan*, 512 U.S. at 380 & n.2, 114 S.Ct. 2309. If the government had directly ordered this conveyance, it would have committed a classic taking. *See id.* at 384, 114 S.Ct. 2309. When may the government nevertheless require what would be an uncompensated "taking" as a condition of a permit?

The Court's answer has tried to reconcile two dueling "realities" of permitting decisions. *Koontz*, 570 U.S. at 604, 133 S.Ct. 2586. On the one hand, a condition on a permit can serve important purposes by forcing an owner to internalize the costs (the "negative externalities") that a development will impose on others. *Id.* at 605, 133 S.Ct. 2586; *see Cedar Point*, 141 S. Ct. at 2079. Say that a proposed retail store will increase "traffic congestion" in the area. *Koontz*, 570 U.S. at 605, 133 S.Ct. 2586. The government might require the owner to give it the strip of land required "to widen a public road." *Id.*

***825** **[4]** On the other hand, the government might try to leverage its monopoly permit power to pay for unrelated public programs on the cheap. *Id.* at 604–05, 133 S.Ct. 2586. If the expected value of an owner's proposed project exceeds the condition's expected costs, the owner has an incentive to give in to this "demand" even when the demand has no connection to the project's harmful social effects. *Id.* at 605, 133 S.Ct. 2586. Yet this type of coercion falls near the core of the Takings Clause, which bars the government from forcing a few people to bear the full cost of public programs that "the public as a whole" should pay for. *Armstrong v. United States*, 364 U.S. 40, 49, 80 S.Ct. 1563, 4 L.Ed.2d 1554 (1960).

[5] In response to the push and pull of these concerns, the Court has developed a three-step unconstitutional-conditions test for permit conditions. At the "first step," a court asks whether the condition would qualify as a taking if the government had directly required it. *Koontz*, 570 U.S. at 612, 133 S.Ct. 2586. If not, no takings problem exists. *Id.* If so, the government must show a "nexus" between the condition and the project's social costs; that is, the government must impose the condition because of those costs and not for other reasons. *Nollan*, 483 U.S. at 837, 107 S.Ct. 3141. The government next must show a "rough proportionality" between the condition and the project; that is, the condition's burdens on the owner must approximate the project's burdens on society. *Dolan*, 512 U.S. at 391, 114 S.Ct. 2309. (While this test comes from several cases, we will refer to it as *Nollan*'s test for simplicity.)

The Court's three cases on this topic demonstrate these elements. The Court created the "nexus" element in *Nollan*. There, the Nollans applied for a permit with the California Coastal Commission to replace the bungalow on their beachfront property with a larger home. 483 U.S. at 827–

28, 107 S.Ct. 3141. The Commission approved the permit on the condition that the Nollans grant the public an easement to travel across their beach, which sat between two nearby public beaches. *Id.* at 827–29, 107 S.Ct. 3141. To justify this easement, the Commission reasoned that the larger home would harm the public by limiting its view of the ocean. *See id.* at 828, 107 S.Ct. 3141. The Court held that this demand qualified as an unconstitutional condition. It noted that the Commission would have committed an automatic taking if it had compelled the Nollans to grant the easement. *Id.* at 831–32, 107 S.Ct. 3141. It next assumed that the Commission could have barred the Nollans from building the home under *Penn Central*'s balancing test for use restrictions given the home's social costs, including a reduction in "the public's ability to see the beach[.]" *Id.* at 835, 107 S.Ct. 3141. The Court also assumed that the Commission could have imposed hypothetical conditions (such as a height limit) to alleviate this harm. *Id.* at 836, 107 S.Ct. 3141. But it held that the Commission's actual condition—an easement to walk across the beach—lacked any "nexus" to the concern with viewing the beach from afar. *Id.* at 837–39, 107 S.Ct. 3141. In truth, the Commission sought to give the public a benefit unrelated to the home's costs. *Id.* at 841, 107 S.Ct. 3141. But the Takings Clause required it to pay for the easement that it took to serve this purpose. *Id.* at 841–42, 107 S.Ct. 3141.

The Court added the "rough proportionality" element in *Dolan*. In that case, Florence Dolan sought to double the size of her store in Tigard, Oregon. 512 U.S. at 379, 114 S.Ct. 2309. As permit conditions, the city required Dolan to dedicate 10% of her land for public green space and a bike and walking path. *Id.* at 380, 114 S.Ct. 2309. The city justified these conditions on the ***826** ground that the larger store would increase traffic and stormwater runoff. *Id.* at 381–82, 114 S.Ct. 2309. As in *Nollan*, the Court recognized that the city would have committed a taking if it had confiscated Dolan's property, but that the city could have barred the store expansion under *Penn Central*'s balancing test. *Id.* at 384–85 & n.6, 114 S.Ct. 2309. Unlike in *Nollan*, it found a "nexus" between the development and the conditions because the latter would alleviate the traffic and stormwater problems that the former would exacerbate. *Id.* at 387–88, 114 S.Ct. 2309. Yet the Court still held that the conditions were unconstitutional. *Id.* at 388–96, 114 S.Ct. 2309. Apart from *Nollan*'s nexus requirement, the Court concluded, a "rough proportionality" must exist between the size of a condition and a development's social costs. *Id.* at 391, 114 S.Ct. 2309. The city's conditions flunked this test. Although the city could require Dolan to keep *private* green space to protect against stormwater runoff, the Court reasoned, the city failed to explain why she had to make that space *public*. *Id.* at 392–93, 114 S.Ct. 2309. And although the city could require Dolan to give some land for "public ways" to reduce traffic, the city failed to explain how the requirement for a bike and walking path matched the increased congestion that Dolan's store would cause. *Id.* at 395–96, 114 S.Ct. 2309.

In *Koontz*, the Court clarified two more things. Coy Koontz owned 14.9 acres near Orlando, Florida. 570 U.S. at 599, 133 S.Ct. 2586. He proposed to build on 3.7 acres of his land and to dedicate the rest to a conservation easement. *Id.* at 601, 133 S.Ct. 2586. Finding his proposal inadequate, a state agency gave Koontz a choice between two alternatives: reduce the project's size to 1 acre and grant 2.7 more acres to the easement *or* proceed with the proposal and pay for improvements on the agency's land miles away. *Id.* at 601–02, 133 S.Ct. 2586. The Court agreed with the Florida Supreme Court that only one of these alternatives needed to survive *Nollan*'s unconstitutional-conditions test. *Id.* at 612, 133 S.Ct. 2586. But it held that the state court committed two errors when rejecting Koontz's claim. *Id.* at 604–19, 133 S.Ct. 2586.

The Court first reversed the Florida Supreme Court's holding that an unconstitutional condition arises only if the state *approves* a permit with the condition that the owner give property, not if the state *denies* a permit until the owner consents to the grant. *Id.* at 606–07, 133 S.Ct. 2586. Just as a speech condition on public funds could violate the Free Speech Clause even if speakers choose to speak and forgo the funds, so too a property condition on a permit could violate the Takings Clause even if owners choose to keep their property and forgo the project. *Id.* At the same time, the denial of a permit (which rests on an attempted taking) triggers a different remedy than the grant of a permit (which commits an actual taking). An actual taking's remedy is "just compensation" but an attempted taking's remedy turns on the cause of action that an owner invokes. *Id.* at 609, 133 S.Ct. 2586.

The Court next reversed the Florida Supreme Court's holding that the state agency's second alternative (that Koontz pay money) could not qualify as an unconstitutional condition. *Id.* at 611–19, 133 S.Ct. 2586. The Court recognized that no unconstitutional-conditions problem arises if the government may directly compel what it makes a condition on a permit. *Id.* at 612, 133 S.Ct. 2586. It also recognized that the government could directly compel ordinary taxes without a takings concern. *Id.* at 615, 133 S.Ct. 2586. But the Court

held that the agency's conditional demand for Koontz's money would qualify as a taking if the agency had directly imposed ***827** it outside the permitting process. *Id.* at 613–15, 133 S.Ct. 2586. The Court reasoned that it would nullify the Takings Clause if it allowed a government to compel a landowner to either dedicate an easement or pay an amount "equal to the easement's value." *Id.* at 612, 133 S.Ct. 2586.

III

This summary clarifies the nature of the parties' debate: Nashville asserts that we should evaluate its sidewalk ordinance under *Penn Central*'s balancing test that governs direct restrictions on the use of property. Knight and Mayes respond that we should evaluate it under *Nollan*'s unconstitutional-conditions test that governs conditions on building permits.

A

[6] At first blush, Nashville's enforcement of its sidewalk ordinance looks like a clear case for *Nollan*'s unconstitutional-conditions test. As its name suggests, this test gets triggered when the government imposes "a *condition* for the grant of a building permit[.]" *Dolan*, 512 U.S. at 386, 114 S.Ct. 2309 (emphasis added). And this case is about conditions on building permits. Unlike a land-use law that regulates all property owners (including those who do not seek permits), the sidewalk ordinance does not compel all owners to build a sidewalk or pay a fee. It reaches only those who seek permits. Nashville Code § 17.20.120(A)(1)–(2); *see id.* § 16.28.010. It thus applied to Knight and Mayes not because they owned lots in Nashville; it applied to them because they sought to build family homes on those lots. As a condition for Knight to build on Acklen Park Drive, Nashville required him to construct a sidewalk or pay $7,600. Knight Decl., R.20-1, PageID 125–28. And as a condition for Mayes to build on McCall Street, Nashville required him to construct a sidewalk or pay $8,883.21 for one some 2.5 miles away. Mayes Decl., R.20-2, PageID 129–32.

Indeed, one of the ordinance's specific conditions leaves no doubt that *Nollan* applies. As Nashville conceded on appeal, *see* Arg. 23:50–25:44, the ordinance requires all permit applicants (whether they build a sidewalk or pay a fee) to grant an easement: "Dedication of right-of-way and/or public pedestrian easement is required to permit present or future installation of a public sidewalk built to the current standards of the metropolitan government." Nashville Code § 17.20.120(E). Suppose Nashville required a "conveyance of [this] easement outright" rather than as a condition on a permit. *Nollan*, 483 U.S. at 834, 107 S.Ct. 3141. That direct interference with the property owner's right to exclude would fall under the Court's automatic-taking rule, not *Penn Central*'s balancing test. *See Cedar Point*, 141 S. Ct. at 2072. Perhaps Nashville could require this taking as a condition on a permit (even if it could not directly compel it), but *Nollan*'s nexus and rough-proportionality elements supply the tools for deciding whether it may do so. *See id.* at 2079.

Language in *Dolan* confirms this point. That case noted that governments often validly impose conditions on permits that require owners to dedicate a portion of their land for public ways: "Dedications for streets, *sidewalks*, and other public ways are generally reasonable *exactions* to avoid excessive congestion from a proposed property use." 512 U.S. at 395, 114 S.Ct. 2309 (emphases added). In other words, *Dolan* suggested that these dedications would commonly *satisfy* *Nollan*'s test; it did not suggest, as Nashville does here, that they would *fall outside* that test. After *Dolan*, therefore, several courts have applied *Nollan*'s test to conditions on permits ***828** requiring easements for sidewalks or other rights-of-way. *See, e.g.*, *Skoro v. City of Portland*, 544 F. Supp. 2d 1128, 1133–38 (D. Or. 2008); *Dudek v. Umatilla County*, 187 Or.App. 504, 69 P.3d 751, 753–59 (2003); *Kottschade v. City of Rochester*, 537 N.W.2d 301, 307–08 (Minn. Ct. App. 1995); *see also William J. (Jack) Jones Ins. Tr. v. City of Fort Smith*, 731 F. Supp. 912, 913–14 (W.D. Ark. 1990).

Koontz next shows that Nashville cannot avoid *Nollan*'s unconstitutional-conditions test for various procedural reasons. Does it matter that Knight refused to yield to the city's conditions and chose not to develop his property? No. *Koontz* holds that *Nollan* applies whenever the government gives a landowner the choice between the owner's right to just compensation and a building permit. 570 U.S. at 606–08, 133 S.Ct. 2586. Nashville thus cannot evade *Nollan* simply because Knight did not succumb to the city's "coercive pressure" to waive his constitutional right. *Id.* at 607, 133 S.Ct. 2586.

Does it matter that the sidewalk ordinance allowed Knight and Mayes to pay fees rather than build sidewalks? No again. Because these "commonplace" in-lieu fees resemble "other types of land use exactions," *Koontz* held that they trigger

Nollan's test all the same. *Id.* at 612, 133 S.Ct. 2586. There was nothing special about the requested fee in *Koontz* that drove the Court to apply that test.

Does it matter that the record leaves unclear whether Nashville required Knight and Mayes to grant an easement across their properties if they chose the option to pay the in-lieu fees? *See Knight*, 572 F. Supp. 3d at 432 n.3. No, for a third time. Coy Koontz likewise did not have to grant the agency-demanded easement on the extra 2.7 acres of his land if he instead chose to pay the money. *Koontz*, 570 U.S. at 602, 133 S.Ct. 2586. In other words, the Court still applied *Nollan* even though one of the options did not require an easement (beyond what Koontz voluntarily proposed). *See id.* at 611–19, 133 S.Ct. 2586. *Koontz*'s logic covers this case: Even assuming that Nashville did not require an easement if Knight and Mayes chose to pay the in-lieu fees, *Nollan* applies because the city undoubtedly would have required this easement if these landowners had built sidewalks.

One final point. Assume that Nashville *already* held an easement on Knight's and Mayes's properties and had required them only to build sidewalks across its existing easement as a permit condition. Under *Nollan*'s first step, we would have to consider whether Nashville could directly compel all landowners to pay to build sidewalks on their properties. *See Koontz*, 570 U.S. at 612, 133 S.Ct. 2586; *cf.* Tenn. Code. Ann. § 6-19-101(16)–(17); Henry E. Mills & Augustus L. Abbott, *Mills on the Law of Eminent Domain* § 216, at 416–17 & n.8 (2d ed. 1888) (citing *Lewis v. City of New Britain*, 52 Conn. 568 (1885)). Would this command to pay for improvements fall under *Penn Central*'s balancing test? Or something else? If the former, *Nollan*'s test may well collapse into *Penn Central*'s whenever a permit condition is *itself* a use restriction. Yet we can leave these questions unanswered in this case. It involves the kind of permit condition (the dedication of an easement) that triggers the automatic-taking rule (not *Penn Central*'s rule) when directly imposed.

B

As its main response, Nashville says that *Nollan*'s unconstitutional-conditions test does not apply to the sidewalk ordinance because of who imposed its conditions. The city agrees that *Nollan* might have applied if *zoning administrators*, acting on a discretionary basis, had required ***829** Knight and Mayes to build sidewalks or pay fees as an "administrative" condition for their specific permits. But *Nashville's council* passed the ordinance as a "legislative" condition for all permits. This legislative source, according to Nashville, should lead us to apply *Penn Central*'s test.

Nashville's claim requires us to wade into a broad judicial debate. *See Cal. Bldg. Indus. Ass'n*, 136 S. Ct. at 928 (Thomas, J., concurring in the denial of certiorari). Adopting Nashville's legislative-vs.-administrative divide, many state courts have refused to apply *Nollan* to legislatively compelled permit conditions. *See St. Clair Cnty. Home Builders Ass'n v. City of Pell City*, 61 So. 3d 992, 1007–08 (Ala. 2010) (per curiam); *City of Olympia v. Drebick*, 156 Wash.2d 289, 126 P.3d 802, 807–09 (2006); *San Remo Hotel L.P. v. City & Cnty. of San Francisco*, 27 Cal.4th 643, 117 Cal.Rptr.2d 269, 41 P.3d 87, 101–06 (2002); *Am. Furniture Warehouse Co. v. Town of Gilbert*, 245 Ariz. 156, 425 P.3d 1099, 1103–06 (Ariz. Ct. App. 2018). Yet many other state courts have rejected this distinction and applied *Nollan* to all permit conditions. *See Anderson Creek Partners, L.P. v. County of Harnett*, 382 N.C. 1, 876 S.E.2d 476, 496–503 (2022); *Town of Flower Mound v. Stafford Ests. Ltd. P'ship*, 135 S.W.3d 620, 640–42 (Tex. 2004); *Home Builders Ass'n of Dayton & the Miami Valley v. Beavercreek*, 89 Ohio St.3d 121, 729 N.E.2d 349, 356 (2000); *Curtis v. Town of S. Thomaston*, 708 A.2d 657, 658–60 (Me. 1998); *N. Ill. Home Builders Ass'n, Inc. v. County of Du Page*, 165 Ill.2d 25, 208 Ill.Dec. 328, 649 N.E.2d 384, 388–90 (1995).

Few federal circuit courts have entered this debate, perhaps because the Supreme Court only recently overruled its precedent requiring takings claimants to exhaust their claims in state court. *See Knick v. Township of Scott*, —— U.S. ——, 139 S. Ct. 2162, 2167–68, 204 L.Ed.2d 558 (2019); *compare Heritage at Pompano Hous. Partners, L.P. v. City of Pompano Beach*, 2021 WL 8875658, at *6 (S.D. Fla. Dec. 15, 2021), *with Better Hous. for Long Beach v. Newsom*, 452 F. Supp. 3d 921, 932–33 (C.D. Cal. 2020). The Ninth Circuit at one time adopted Nashville's legislative-vs.administrative divide, but it has since suggested that the Supreme Court's recent cases repudiate it. *See Ballinger v. City of Oakland*, 24 F. 4th 1287, 1298–99 (9th Cir. 2022); *cf. Pietsch v. Ward County*, 991 F.3d 907, 909–10 (8th Cir. 2021). For our part, we have once applied *Nollan* to an ordinance imposing conditions on landowners who sought permits to cut down trees. *See F.P. Dev.*, 16 F.4th at 205–06. Yet the parties there agreed that *Nollan* supplied the governing rules, so we did not need to address the "interesting question" whether it should cover legislative permit conditions. *Id.* at 206.

[7] This case requires us to answer that question. We now hold that *Nollan*'s unconstitutional-conditions test applies just as much to legislatively compelled permit conditions as it does to administratively imposed ones. Nothing in the text or original understanding of the Takings Clause justifies Nashville's requested distinction. Its requested distinction also conflicts both with the Supreme Court's unconstitutional-conditions precedent and with its takings precedent.

1. *Text and History*. The Takings Clause, as noted, provides: "nor shall private property be taken for public use, without just compensation." U.S. Const. amend. V. This clause focuses on (and prohibits) a certain "act": the taking of private property without just compensation. *Stop the Beach Renourishment, Inc. v. Fla. Dep't of Env't Prot.*, 560 U.S. 702, 713–14, 130 S.Ct. 2592, 177 L.Ed.2d 184 (2010) (plurality opinion). The clause's passive-voice ***830** construction does not make significant *who* commits the "act"; it makes significant *what* type of act is committed. *Id.* Just as the text bars the executive branch from appropriating someone's land without compensation, so too it bars the legislative branch from passing a law ordering that appropriation. And because the text treats these branches the same for a "classic" taking, why should it treat them differently for a permit condition?

That said, the Supreme Court originally read the Takings Clause not to cover the states (like Tennessee) or their municipalities (like Nashville). *See Barron v. City of Baltimore*, 32 U.S. 243, 247–51, 7 Pet. 243, 8 L.Ed. 672 (1833). *Barron* held that the clause did not apply "to the legislation of the states" and that it restricted only the federal government (without distinguishing among its branches). *Id.* at 250–51. In this case, then, perhaps we should look to the Fourteenth Amendment, which incorporated the Takings Clause against the states. *See Chicago, B. & Q. R.R.*, 166 U.S. at 241, 17 S.Ct. 581. It provides: "No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law[.]" U.S. Const. amend. XIV, § 1. This text likewise contains a subject ("State") that covers all of a sovereign's branches without distinguishing among them. *See Brinkerhoff-Faris Tr. & Sav. Co. v. Hill*, 281 U.S. 673, 680, 50 S.Ct. 451, 74 L.Ed. 1107 (1930). In short, the relevant constitutional provisions on their face offer no plausible path for Nashville's request that we adopt different takings rules for conditions imposed by different branches of government.

Without obvious textual support, Nashville perhaps could justify its proposed distinction if it grounded the distinction in some background takings principle. But Nashville identifies nothing in the "historical record" that would allow us to establish one set of more demanding takings rules for conditions imposed at the discretion of administrators and another set of less demanding rules for identical conditions compelled by legislators. *N.Y. State Rifle & Pistol Ass'n, Inc. v. Bruen*, —— U.S. ——, 142 S. Ct. 2111, 2130 n.6, 213 L.Ed.2d 387 (2022). If anything, the framers designed the Takings Clause precisely to protect against legislative action —a historical fact that undercuts Nashville's claim that we should review legislative conditions with a more deferential eye. *See Stop the Beach*, 560 U.S. at 739, 130 S.Ct. 2592 (Kennedy, J., concurring in the judgment).

Before the Fifth Amendment's enactment in the United States, for example, only legislatively backed takings could take place in England because only Parliament could authorize them. *See* William Baude, *Rethinking the Federal Eminent Domain Power*, 122 Yale L.J. 1738, 1756 (2013); Matthew P. Harrington, *"Public Use" and the Original Understanding of the So-Called "Takings" Clause*, 53 Hastings L.J. 1245, 1263 (2002). As Blackstone opined, the taking of property was too "dangerous" an activity to be left to just "any public tribunal," and so "nothing but the legislature [could] perform" this activity. 1 Blackstone, *supra*, at 135. On this side of the Atlantic, it was likewise the colonial legislatures (not the other branches) that typically passed provisions authorizing the taking of property for projects like public buildings or public roads. *See* James W. Ely, Jr., *"That Due Satisfaction May Be Made:" the Fifth Amendment and the Origins of the Compensation Principle*, 36 Am. J. Legal Hist. 1, 5–11 (1992) (listing examples).

Given this history, many sources identified the Takings Clause as a limit on legislative ***831** power in between the passage of the Fifth and Fourteenth Amendments. As Joseph Story noted when discussing the clause, "how vain it would be to speak of such an administration, when all property is subject to the will or caprice of the legislature, and the rulers." 3 Joseph Story, *Commentaries on the Constitution of the United States* § 1784, at 661 (1833). Or, as James Kent explained, the takings clauses in the federal and state constitutions "imposed a great and valuable check upon the exercise of legislative power[.]" 2 James Kent, *Commentaries on American Law* 276 (1827). Many others expressed similar views. *See, e.g.*, E. Fitch Smith, *Commentaries on Statute and Constitutional Law and Statutory and Constitutional*

Construction §§ 311–13, at 466–67 (1848); William Rawle, *A View of the Constitution of the United States of America* 133 (1829); *VanHorne's Lessee v. Dorrance*, 2 U.S. 304, 310–16, 2 Dall. 304, 1 L.Ed. 391 (C.C.D. Pa. 1795). Near the enactment of the Fourteenth Amendment, then, treatises listing the actions that counted as "takings" gave no hint that the discretionary act of an executive officer might amount to a taking even if the identical act would not qualify as one when legislatively compelled. *See, e.g.*, Mills & Abbott, *supra*, §§ 30–36a, at 119–28; Thomas M. Cooley, *A Treatise on the Constitutional Limitations Which Rest upon the Legislative Power of the States of the American Union* 525–30, 541–57 (1868).

In response, Nashville cites many sources noting that the Fifth Amendment, as originally understood, reached only "physical" takings invading an owner's land, not "regulatory" takings barring the owner from using the land in desired ways. Appellee's Br. 11–17; *see Lucas*, 505 U.S. at 1014, 1028 n.15, 112 S.Ct. 2886; *Murr v. Wisconsin*, 582 U.S. 383, 137 S. Ct. 1933, 1957, 198 L.Ed.2d 497 (2017) (Thomas, J., dissenting); *see generally* Michael B. Rappaport, *Originalism and Regulatory Takings: Why the Fifth Amendment May Not Protect Against Regulatory Takings, But the Fourteenth Amendment May*, 45 San Diego L. Rev. 729 (2008); John F. Hart, *Colonial Land Use Law and Its Significance for Modern Takings Doctrine*, 109 Harv. L. Rev. 1252 (1996); William Michael Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 Colum. L. Rev. 782 (1995).

We see two problems with Nashville's reliance on this originalist argument. As an initial matter, Nashville does not explain how its sources support its distinct claim that the Fifth Amendment's protections should change depending on the government actor that engages in the challenged act. These authorities do not assert that a restriction on an owner's use of property historically might have qualified as a taking if imposed as a matter of executive discretion but not if imposed through a legislative command. They assert that, no matter the source, a use restriction did not qualify as a taking under the Fifth Amendment, thereby reinforcing the importance of the "government action" rather than the government actor. Rappaport, *supra*, at 732, 735–36; *see Lucas*, 505 U.S. at 1014, 112 S.Ct. 2886. The authorities thus cannot justify Nashville's request that we adopt a seemingly non-originalist distinction between legislatively compelled actions and discretionary executive actions.

Besides, unlike a typical "regulatory" taking, Nashville's sidewalk ordinance does not just restrict the use of property. It also compels landowners to grant an easement across their properties that limits their ability to exclude others. *See* Nashville Code § 17.20.120(E). The Supreme Court has consistently treated this type of compelled conveyance as falling on the physical—not the regulatory—side of the takings line. *See* ***832** *Cedar Point*, 141 S. Ct. at 2072–74; *Nollan*, 483 U.S. at 831–32, 107 S.Ct. 3141. And Nashville makes no claim that this caselaw treating an easement as an automatic "taking" conflicts with the original understanding. Indeed, as a historical matter, the government commonly took only a "perpetual easement" on (not actual title to) the lands that it allowed the public to use for "common highways[.]" Cooley, *supra*, at 558; Mills & Abbott, *supra*, §§ 49, 276–77, at 154, 468; *cf. Woodruff v. Neal*, 28 Conn. 165, 167–68 (1859).

[8] To be fair, the sidewalk ordinance does not take this easement outright and instead makes it a condition on a permit. So the correct originalist question here is not, as Nashville says, whether the Takings Clause allowed the government to impose a use restriction. It is whether the clause allowed the government to commit what would otherwise be a taking by compelling a landowner to consent to it as a condition on a permit. Nashville offers little input on the originalist answer to this separate question, merely citing scholars who have described the Supreme Court's unconstitutional-conditions caselaw as a " 'doctrinal swamp' that is in 'disarray.' " Appellee's Br. 30–31 (citations omitted). If Nashville seeks to jettison the unconstitutional-conditions doctrine exclusively in the takings context (and nowhere else), its argument resembles the "halfway originalism" that the Supreme Court has refused to endorse. *Janus v. Am. Fed'n of State, Cnty., & Mun. Emps., Council 31*, —— U.S. ——, 138 S. Ct. 2448, 2470, 201 L.Ed.2d 924 (2018). In any event, Nashville raises this complaint to the wrong body. As a "middle management" court, we must follow the Supreme Court's precedent whether or not we think it in disarray. *F.P. Dev.*, 16 F.4th at 205. And once we accept *Nollan* and the cases applying it (as we must), there is no basis in the Constitution's text or history to distinguish legislatively compelled conditions from discretionary executive ones.

2. *Supreme Court Precedent*. Apart from text and history, Nashville's argument that the Takings Clause distinguishes these two types of conditions does not fit with the Supreme Court's precedent. As a general matter, the Court's unconstitutional-conditions caselaw has never drawn this

divide. Over some 160 years, the Court has accepted many unconstitutional-condition claims for many constitutional provisions. *See* Richard A. Epstein, *Unconstitutional Conditions, State Power, and the Limits of Consent*, 102 Harv. L. Rev. 4, 26–102 (1988); Robert L. Hale, *Unconstitutional Conditions and Constitutional Rights*, 35 Colum. L. Rev. 321, 325–57 (1935). During that time, the Court has regularly found generally applicable legislative conditions (not just ad hoc administrative ones) unconstitutional when a legislature provided a benefit only if the recipients agreed to waive a constitutional right. *See, e.g.*, *All. for Open Soc'y Int'l*, 570 U.S. at 208, 221, 133 S.Ct. 2321; *Sherbert v. Verner*, 374 U.S. 398, 403–06, 83 S.Ct. 1790, 10 L.Ed.2d 965 (1963); *Frost & Frost Trucking Co. v. R.R. Comm'n of State of Cal.*, 271 U.S. 583, 598–99, 46 S.Ct. 605, 70 L.Ed. 1101 (1926). Indeed, the doctrine grew out of these types of generally applicable legislative conditions. The Court held that state legislatures could not condition the ability of out-of-state corporations to do business in the state on their waiver of the right to remove lawsuits to federal court or to avoid extraterritorial taxation. *See Terral v. Burke Const. Co.*, 257 U.S. 529, 530–33, 42 S.Ct. 188, 66 L.Ed. 352 (1922); *W. Union Tel. Co. v. Kansas ex rel. Coleman*, 216 U.S. 1, 30–37, 30 S.Ct. 190, 54 L.Ed. 355 (1910); *Home Ins. Co. of N.Y. v. Morse*, 87 U.S. 445, 458, 20 Wall. 445, 22 L.Ed. 365 (1874).

***833** Despite the Court's large body of precedent in this area, Nashville identifies no case in which it has treated legislative conditions differently from administrative ones. As far as we can tell, the Court typically applies the same test no matter the condition's source. Take the free-speech context. There, the Court has relied on caselaw evaluating regulatory conditions when finding legislative conditions unconstitutional. *See All. for Open Soc'y Int'l*, 570 U.S. at 216–17, 133 S.Ct. 2321 (drawing on *Rust v. Sullivan*, 500 U.S. 173, 111 S.Ct. 1759, 114 L.Ed.2d 233 (1991)). And it has relied on caselaw concerning generally applicable legislative conditions when finding ad hoc executive personnel actions unconstitutional. *See Elrod v. Burns*, 427 U.S. 347, 357–58, 96 S.Ct. 2673, 49 L.Ed.2d 547 (1976) (plurality opinion) (drawing on *Wieman v. Updegraff*, 344 U.S. 183, 73 S.Ct. 215, 97 L.Ed. 216 (1952)). So if we accepted Nashville's proposed distinction solely for the Takings Clause, we would risk relegating the clause "to the status of a poor relation" to other constitutional guarantees. *Dolan*, 512 U.S. at 392, 114 S.Ct. 2309.

[9] To be sure, the specific unconstitutional-conditions test depends on the specific right at issue. *See Hodges*, 917 F.3d at 911. But the Court's takings caselaw has also not created legal rules that distinguish between different branches of government. The Court recently made this precise point when choosing between the automatic-taking rule (which applies to restrictions on an owner's right to exclude) and *Penn Central*'s balancing test (which applies to restrictions on an owner's right to use). *Cedar Point*, 141 S. Ct. at 2072. *Cedar Point* explained that the choice between these two rules does not depend on "whether the government action at issue comes garbed as a regulation" imposed by an administrator or a "statute" or "ordinance" imposed by a legislator. *Id.* Rather, the choice depends on the nature of the action. The automatic-taking rule applies when "the government has physically taken property for itself or someone else—by whatever means," while *Penn Central* applies when it "has instead restricted a property owner's ability to use his own property." *Id.* Our logic travels *Cedar Point*'s path.

Nashville responds with three precedent-rooted counterarguments. *First*, Nashville objects that *Cedar Point* distinguished regulatory takings from physical takings, while the city seeks to distinguish *Penn Central*'s regulatory-takings test from *Nollan*'s unconstitutional-conditions test. Appellee's Br. 31–37. It argues that the Supreme Court has drawn its proposed legislative-vs.-administrative divide when separating *Penn Central*'s domain from *Nollan*'s. For the most part, though, Nashville merely cites stray statements in the Court's decisions. In one case, for example, the Court described *Nollan* and *Dolan* as involving "challenges to *adjudicative* land-use exactions" compelled by a specific administrator against a specific landowner. *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 546, 125 S.Ct. 2074, 161 L.Ed.2d 876 (2005) (emphasis added).

Yet other cases describe *Nollan* and *Dolan* more broadly. They drop the "adjudicative" label by describing *Nollan* as applying to "the special context of exactions," not just ad hoc administrative exactions. *City of Monterey v. Del Monte Dunes at Monterey, Ltd.*, 526 U.S. 687, 702, 119 S.Ct. 1624, 143 L.Ed.2d 882 (1999). And they describe *Nollan*'s protections as extending against "the government" without distinguishing administrators from legislators. *Koontz*, 570 U.S. at 604, 133 S.Ct. 2586. Still, we do not think it worthwhile to base our decision on how best to parse the Court's competing descriptions of *Nollan* ***834** and *Dolan*. These descriptions merely reinforce its general admonition that we should not "dissect the sentences of the United States Reports as though they were the United States Code." *St. Mary's Honor Ctr. v. Hicks*, 509 U.S. 502, 515, 113 S.Ct. 2742, 125 L.Ed.2d 407 (1993).

Second, Nashville points to one way in which *Dolan* distinguished *Euclid* and *Agins v. City of Tiburon*, 447 U.S. 255, 100 S.Ct. 2138, 65 L.Ed.2d 106 (1980), cases that upheld zoning ordinances against takings challenges. *Dolan* described these cases as evaluating "essentially legislative determinations classifying entire areas" of a city, and it contrasted those determinations with the City of Tigard's "adjudicative decision to condition [Dolan's] application for a building permit on an individual parcel." 512 U.S. at 385, 114 S.Ct. 2309. According to Nashville, this statement supports its argument that only parcel-specific conditions trigger *Nollan* whereas generally applicable conditions trigger *Penn Central*.

This view treats one sentence in *Dolan* as trumping everything else in the opinion. To start, Nashville ignores the second way in which *Dolan* distinguished *Euclid* and *Agins*: Tigard had imposed "conditions" that did not just limit the "use" that Dolan could "make of her own parcel" but forced her to "deed portions of the property to the city." *Id.* In contrast, neither *Euclid* nor *Agins* involved permit conditions. The landowners in both cases had not sought permits to develop their land; they had challenged zoning restrictions on the uses to which they and everyone else in the area could put their land. *See Agins*, 447 U.S. at 257–58, 100 S.Ct. 2138; *Euclid*, 272 U.S. at 379–86, 47 S.Ct. 114; *see also Monterey*, 526 U.S. at 702–03, 119 S.Ct. 1624. Because the cities had not imposed any conditions on permits, the cases did not implicate the "well-settled doctrine of 'unconstitutional conditions' " on which *Dolan* relied. 512 U.S. at 385, 114 S.Ct. 2309. The landowners in *Euclid* and *Agins* instead challenged only use restrictions, so their claims fit within *Penn Central*'s balancing test for those restrictions.

The same cannot be said for this case or for *Dolan*. Unlike in *Euclid* and *Agins*, Knight and Mayes did not challenge a use restriction that applied equally to landowners who desired to build and those who did not. As in *Dolan*, they challenged a condition on a permit. And unlike in *Euclid* and *Agins*, the sidewalk ordinance did not impose a condition that limited just the uses that they could make of their land. As in *Dolan*, it required permit applicants to grant an easement. This case thus matches *Dolan*—not *Euclid* and *Agins*—in every way that matters.

Although the sidewalk ordinance's conditions extend to all permit applicants whose property falls within covered areas (not just a specific applicant), we do not read *Dolan* as making the parcel-specific nature of a condition important. *See Anderson Creek*, 876 S.E.2d at 499 n.14; *Flower Mound*, 135 S.W.3d at 640–42. Indeed, Nashville's proposed distinction between "legislative" conditions (those mandated across the board by a legislature) and "adjudicative" conditions (those imposed on an ad hoc basis by an administrator) would force courts to draw indiscernible lines. *Flower Mound*, 135 S.W.3d at 641. Most zoning schemes involve a mix of legislative and administrative choices. *See id.* So how should courts decide which conditions are "adjudicative" and which are "legislative"?

A comparison of the zoning scheme in *Dolan* with Nashville's sidewalk ordinance proves the difficulty of this task. The two schemes bear striking similarities to each other. The conditions that the City of Tigard required in *Dolan* did not spring from pure administrative fiat. They sprang ***835** from the city's general development plan that had been "codified" in its "Community Development Code." 512 U.S. at 377, 114 S.Ct. 2309. As a condition on a permit, this general code required owners in designated areas (like Dolan) to dedicate "sufficient open land" for green space and a pedestrian and bicycle path. *Id.* at 379–80, 114 S.Ct. 2309. Dolan thus sought a variance from the *code's* "standards," not from the *administrator's* standards. *Id.* at 380, 114 S.Ct. 2309. And the administrator's primary "adjudication" concerned Dolan's "requested variance from the permit conditions otherwise required to be imposed by the Code." *Id.* at 413, 114 S.Ct. 2309 n.* (Souter, J., dissenting).

This case included the same type of "adjudication." As in *Dolan*, the conditions on Knight and Mayes arose from a general ordinance. And as in *Dolan*, the zoning administrator and Board of Zoning Appeals "adjudicated" Knight's and Mayes's requests for a waiver or variance from the conditions. Perhaps Tigard's scheme introduced more discretion on the front end by allowing administrators to choose the specific amount of dedicated green space that was "sufficient." *Id.* at 379, 114 S.Ct. 2309. But Nashville's scheme introduces plenty of discretion on the back end. It allows the zoning administrator to waive the ordinance's conditions for any "hardship" and the Board of Zoning Appeals to broadly grant variances. *See* Nashville Code §§ 17.20.120(A)(3)(a), 17.20.125. Because *Dolan* applied *Nollan*'s test to Tigard's half-legislative and half-adjudicative administrative scheme, that test necessarily covers Nashville's similar scheme.

Third, Nashville highlights *Nollan*'s statement (reiterated in *Koontz* and *Dolan*) that its unconstitutional-conditions test seeks to prevent "an out-and-out plan of extortion" in which

the government offers a permit only if an applicant hands over property for unrelated purposes. *Nollan*, 483 U.S. at 837, 107 S.Ct. 3141 (citation omitted); *see Koontz*, 570 U.S. at 605–08, 133 S.Ct. 2586; *Dolan*, 512 U.S. at 387, 114 S.Ct. 2309. According to Nashville, this extortion risk (*Nollan*'s alleged "central concern") exists more for one-off administrative conditions imposed by unelected administrators than it does for uniform legislative conditions imposed by democratically accountable actors. Appellee's Br. 18.

This claim suffers from both legal and practical problems. Legally, Nashville places the purpose of the Takings Clause above its language. Even assuming that *Nollan*'s "ultimate goal" is to prevent this kind of extortion, we must implement that goal in a way that respects the enacted text. *Crawford v. Washington*, 541 U.S. 36, 61, 124 S.Ct. 1354, 158 L.Ed.2d 177 (2004). And again, the text does not distinguish between legislative and administrative acts. *See Stop the Beach*, 560 U.S. at 713–14, 130 S.Ct. 2592 (plurality opinion). Nobody would argue that we should allow a city council to commit an uncompensated appropriation of a majority of its residents' homes because the injured residents could "still petition their councilmembers, elect new councilmembers, or even run for office to" change the law. Appellee's Br. 22. The text bars that classic taking whether or not one would describe it as "extorting" a minority of residents. And once *Nollan* interpreted the clause's list of prohibited "act[s]" to include certain permit conditions, there is likewise no textually sound way to treat identical conditions differently based on their source. *Stop the Beach*, 560 U.S. at 713–14, 130 S.Ct. 2592.

Practically, an "extortion" risk exists no matter the branch of government responsible for the condition. *See Flower Mound*, 135 S.W.3d at 641. Nashville cites no empirical support for its claim that administrators ***836** are more likely than legislators to single out a subset of individuals (those seeking permits) and make them pay for valid programs that society "as a whole" should finance. *Armstrong*, 364 U.S. at 49, 80 S.Ct. 1563. A majority of local taxpayers may well "applaud" the lower taxes that their politically sensitive legislators can achieve through this type of cost shifting. *Flower Mound*, 135 S.W.3d at 641. James Madison, after all, warned that the dangers of one "faction" gaining a majority increased as the size of the government shrank. *See The Federalist* No. 10, at 78 (James Madison) (Clinton Rossiter ed., 1961). In this case, for example, Nashville could have financed its sidewalk expansion through a generally applicable special assessment imposed on all property owners. It instead opted to rely on in-lieu fees charged only to those who sought to develop their property. Nashville thus required Mayes to pay for a sidewalk that he may well never use some 2.5 miles away from his home. Mayes Decl., R.20-2, PageID 132. But the Takings Clause (like the rest of the Bill of Rights) seeks to protect a minority from the popular will as much as from the bureaucratic one. *See W. Va. State Bd. of Educ. v. Barnette*, 319 U.S. 624, 639, 63 S.Ct. 1178, 87 L.Ed. 1628 (1943). *Nollan*'s concerns with extortion thus offer no grounds to jettison its test here.

IV

Our conclusion that *Nollan*'s unconstitutional-conditions test applies leaves two questions. *Question One*: Does Nashville's application of its sidewalk ordinance to Knight and Mayes satisfy this test? In other words, has Nashville shown a "nexus" and "rough proportionality" between the conditions that it imposed on Knight and Mayes and the social costs of their homes? *Nollan*, 483 U.S. at 837, 107 S.Ct. 3141; *Dolan*, 512 U.S. at 391, 114 S.Ct. 2309. The answer is not obvious. *Dolan* opined in dicta that "dedications" for "sidewalks" are often "reasonable" conditions on permits. 512 U.S. at 395, 114 S.Ct. 2309. Yet *Dolan* likely had in mind conditions requiring the dedication of a sidewalk on the owner's own property as part of an existing sidewalk network in the area. Here, by contrast, Nashville required Knight and Mayes to either build useless "sidewalks to nowhere" or pay for sidewalks miles away. These conditions do not look all that proportional to any specific harms from their homes, so the district court concluded that Nashville likely could not meet *Dolan*'s rough-proportionality element. *See Knight*, 572 F. Supp. 3d at 443–44.

In the end, though, we need not decide this question because Nashville has waived any argument that it can satisfy this unconstitutional-conditions test. Knight and Mayes spent pages of their brief arguing that the city could not meet *Nollan*'s and *Dolan*'s elements. *See* Appellants' Br. 27–35. But Nashville did not even try to respond, opting to rely exclusively on its claim that *Penn Central*'s test applied. *See* Appellees' Br. 10–43. In prior cases, we have treated this type of omission as a waiver, not just a forfeiture. *See United States v. Noble*, 762 F.3d 509, 528 (6th Cir. 2014). And when questioned at oral argument about this noticeable omission, Nashville's counsel conceded that the city abandoned any defense under *Nollan*'s test. He reasoned that the test is "an extremely difficult standard to meet, and the sidewalk ordinance likely doesn't meet that standard." Arg.

31:22–30. We thus may save this issue for a case in which Nashville seeks to satisfy *Nollan*'s test as against other permit applicants.

Question Two: What is the proper remedy for the violation of Knight's and ***837** Mayes's rights under the Fifth Amendment? Is Mayes entitled to the reimbursement of his in-lieu fee as "just compensation" for the condition that Nashville imposed on him? Would this relief fall under § 1983 or the state-law restitution claim that Mayes also brought? *Cf. Koontz*, 570 U.S. at 608–09, 133 S.Ct. 2586. Is Knight entitled to an injunction (or at least a declaratory judgment) against the ordinance's application to him? Or is "injunctive relief" "foreclosed" because he has "available" "just compensation remedies" if he reapplies for a permit? *Knick*, 139 S. Ct. at 2179; *cf. D.M. Osborne & Co. v. Mo. Pac. Ry. Co.*, 147 U.S. 248, 258–59, 13 S.Ct. 299, 37 L.Ed. 155 (1893). Given the parties' limited briefing on the proper remedy, we will leave that issue to the district court. *See Am. Freedom Def. Initiative v. Suburban Mobility Auth. for Reg'l Transp.*, 978 F.3d 481, 501–02 (6th Cir. 2020).

We reverse and remand for the district court to determine the appropriate remedy.

WHITE, Circuit Judge, concurring.

CONCURRENCE

I join in the majority's conclusion that the Supreme Court would apply the *Nollan*/*Dolan* test to the provisions of Nashville's sidewalk ordinance challenged here and in its remand for the reasons stated.

All Citations

67 F.4th 816

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135 S.W.3d 620
Supreme Court of Texas.

TOWN OF FLOWER MOUND, Texas, Petitioner,
v.
STAFFORD ESTATES LIMITED PARTNERSHIP, Respondent.

No. 02–0369
|
Argued March 5, 2003.
|
Decided May 7, 2004.

Synopsis

Background: Developer brought action against town, alleging that a condition attached to plat approval, which required developer to construct and pay for improvements to adjacent public street, was a taking without just compensation. The 16th District Court, Denton County, John Narsutis, J., found in favor of developer. Town appealed. The Fort Worth Court of Appeals affirmed the damages award, but reversed the award for attorney fees, 71 S.W.3d 18. Both parties petitioned for review.

Holdings: Upon grant of petition, the Supreme Court, Hecht, J., held that:

developer was not required to challenge conditions as an illegal taking prior to performing conditions;

condition imposed by town constituted a taking; and

developer was not entitled to attorney fees.

Affirmed.

Procedural Posture(s): On Appeal.

Attorneys and Law Firms

***622** April M. Virnig, Taylor Olson Adkins Sralla, Fort Worth, for Amicus Curiae City of Aledo et al.

Sarah J. Fullenwider, Asst. City Atty., Fort Worth, for Amicus Curiae City of Fort Worth.

Debbie Lopez–Carr, Office of City Atty., Irving, for Amicus Curiae City of Irving, Texas.

L. Stanton Lowry, Boyle & Lowry, LLP, Irving, for Amicus Curiae City of Keller, Texas.

Christopher G. Senior, for Amicus Curiae National Association of Home Builders.

J. David Breemer, James S. Burling, Sacramento, CA, for Amicus Curiae Pacific Legal Foundation.

Kimberly R. Lafferty, Plano Asst. Atty., Plano, for Amicus Curiae Plano Assistant Attorney.

Arthur J. Anderson, Winstead Sechrest & Minick, P.C., Dallas, for Amicus Curiae Texas Association of Builders.

Scott Houston, Austin, for Amicus Curiae Texas Municipal League et al.

Gary S. Spencer, Sunnyvale, for Amicus Curiae Town of Sunnyvale, Texas.

Robert F. Brown, Terrence S. Welch, Brown & Hofmeister, Dallas, for Petitioner.

Bruce W. Bringardner, Thompson Coe Cousins & Irons, LLP, John L. Freeman, Moseley Martens, LLP, Dallas, Gregory P. Standerfer, Standerfer Law Firm, Southlake, for Respondent.

Opinion

Justice HECHT delivered the opinion of the Court.

The Town of Flower Mound's Land Development Code requires that a subdivision developer improve abutting streets that do not meet specified standards, even if the improvements are not necessary to accommodate the impact of the subdivision. Accordingly, the Town conditioned its approval of Stafford Estates Limited Partnership's development of a residential subdivision on Stafford's rebuilding an abutting road. Stafford rebuilt the road and then sued the Town to recover the cost. The district court held that the condition imposed on Stafford's development was a taking without compensation in violation of article I, section 17 of the Texas Constitution,[1] the Fifth Amendment to the ***623** United States Constitution,[2] and the federal Civil Rights Act of 1871,[3] and awarded Stafford the cost of improvements not necessitated by increased traffic from the subdivision. The district court also awarded Stafford expert witness fees and

attorney fees under the federal Civil Rights Attorney's Fees Awards Act of 1976.[4] The court of appeals reversed the award of expert witness fees and attorney fees and otherwise affirmed.[5]

1 TEX. CONST. art. I, § 17 ("No person's property shall be taken, damaged or destroyed for or applied to public use without adequate compensation being made, unless by the consent of such person....").

2 U.S. CONST. amend. V ("[N]or shall private property be taken for public use, without just compensation.").

3 42 U.S.C. § 1983 ("Every person who, under color of any statute, ordinance, regulation, custom, or usage, of any State or Territory or the District of Columbia, subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunities secured by the Constitution and laws, shall be liable to the party injured in an action at law, suit in equity, or other proper proceeding for redress....").

4 *Id.* § 1988(b) (Attorney's fees) ("In any action or proceeding to enforce a provision of ... [42 U.S.C. § 1983] ..., the court, in its discretion, may allow the prevailing party ... a reasonable attorney's fee as part of the costs....") and (c) (Expert fees) ("In awarding an attorney's fee under subsection (b) of this section in any action or proceeding to enforce a provision of [42 U.S.C. §§ 1981 or 1981a], the court, in its discretion, may include expert fees as part of the attorney's fee.").

5 71 S.W.3d 18 (Tex.App.-Fort Worth 2002).

The three principal questions now before us are whether Stafford could wait until after making the improvements to sue, whether the Town's condition on Stafford's development amounted to a compensable taking, and whether Stafford is entitled to recover fees under federal civil rights laws. We agree with the court of appeals that Stafford is entitled under the Texas Constitution to adequate compensation for the taking of its property but is not entitled to recover under federal civil rights laws. We thus affirm the judgment of the court of appeals.

I

The Town of Flower Mound is a fast-growing suburban municipality (1990 pop. 15,527; 2000 pop. 50,702) in between Dallas, Fort Worth, and Denton. The Town's Stafford Estates subdivision consists of some 247 homes on 90 acres bounded on the north by McKamy Creek Road and on the west by Simmons Road. Both roads are in the Town's right-of-way and are not part of the subdivision.

Over a period from 1994 to 1997, the Town approved the development of Stafford Estates in three roughly equal phases. Phases II and III abutted Simmons Road, which was at the time a two-lane asphalt road designated by the Town as a "rural collector roadway". Section 4.04(*o*) of the Town's Land Development Code provided that for all subdivisions and industrial areas, "[a]butting substandard local and collector streets shall be constructed or reconstructed as necessary by the developer to bring them up to minimum standards, and all right-of-way ... dedicated to the Town, with no cost participation from the Town."[6] One such minimum standard, prescribed by section 4.04(b) of the Code, was that "all builders/developers shall be required to construct concrete streets according to the Engineering Standards Manual."[7] Based on these provisions, the Town conditioned its approval of the plats for Phases II and III on Stafford's rebuilding Simmons Road with concrete instead of asphalt.

6 FLOWER MOUND, TEX., CODE ch. 12, § 4.04(*o*) (1994) (now codified as CODE § 90–316(1) (2002)).

7 *Id.* § 4.04(b) (now codified as CODE § 90–302 (2002)).

***624** Stafford objected to this condition and requested an exception under section 4.04(a) of the Code, which stated:

> The Town Council may grant an exception to the street design standards as contained in this section, provided that the Council finds and determines that such standards work a hardship on the basis of utility relocation costs,

right-of-way acquisition costs, and other related factors. [8]

8 *Id.* § 4.04(a) (now codified as CODE § 90–301 (2002)).

Stafford argued that it should not be required to pay more than half the cost of rebuilding Simmons Road with concrete. The asphalt surface was not in disrepair, and the Town had made no attempt to determine whether the required improvements were roughly proportional to the impact of the subdivision on Simmons Road in particular or on the Town's roadway system as a whole. Although the Town had exercised its discretion to grant exceptions to other developers on a project-by-project basis, Stafford's request was denied.

After objecting to the condition on its development at every administrative level in the Town, all to no avail, Stafford rebuilt Simmons Road with concrete as the Town had required at a cost of $484,303.79, transferred the improvements to the Town, and then demanded reimbursement for what it asserted was the Town's proportionate share of the expense. When the Town still refused to pay any part of the cost, Stafford sued, alleging that by conditioning development of Stafford Estates on improving Simmons Road, the Town had taken Stafford's property without compensation in violation of the state and federal constitutions and federal law.

By agreement, the takings issue was submitted to the district court on stipulated facts, although after the court announced its ruling, it allowed the Town to submit some testimony by way of a bill of exception, [9] which the court appears to have considered in overruling the Town's request for reconsideration of its ruling. Stafford argued that the applicable standard under state and federal law for determining whether there was a taking in these circumstances was that announced by the United States Supreme Court in *Nollan v. California Coastal Commission* [10] and *Dolan v. City of Tigard.* [11] The Town argued that *Nollan* and *Dolan* were inapplicable and that even by their standard the condition on Stafford's development was not a taking. The court agreed with Stafford and determined that the condition—

9 *See* TEX.R.APP. P. 33.2.

10 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987).

11 512 U.S. 374, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994).

- "did not substantially advance a legitimate state interest attributable to the impact of the development of Stafford Estates";
- "was not roughly proportional to any services provided by the Town to Stafford Estates or a burden placed on the Town by Stafford Estates";
- was "in substantial excess of the special benefits accruing" to Stafford by the improvement of Simmons Road; and
- "constituted a taking of property for public use without just or adequate compensation in violation of Article I, § 17 of the Texas Constitution, the Fifth Amendment to the U.S. Constitution and 42 U.S.C. § 1983."

The court then heard evidence on damages, as well as on costs recoverable by federal statute. The Town stipulated that Stafford's expenses incurred in rebuilding ***625** Simmons Road with concrete were reasonable and necessary. The court awarded Stafford damages of only $425,426 without explaining the reduction of $58,877.79, or about 12.2%, from the actual cost. The court also awarded Stafford $20,000 expert witness fees, $175,000 attorney fees through judgment, $42,500 attorney fees post-judgment contingent on various appeals, and pre- and post-judgment interest.

Both parties appealed, Stafford complaining only that it was entitled to recover all of its construction costs. [12] At the outset, the court of appeals rejected the Town's argument that Stafford's action was barred because it did not sue before rebuilding Simmons Road and obtaining approval of its development plan, concluding that no statute or rule required Stafford to sue earlier than it did. [13] Turning to the takings issue, the court read *Nollan* and *Dolan* to set forth a two-part test (set out below) for determining whether a compensable taking has occurred whenever "the government conditions the granting of permit approval, plat approval, or some other type of governmental approval on an exaction from the approval-seeking landowner." [14] "Generally," the court said, "any requirement that a developer provide or do something as a condition to receiving municipal approval is an exaction." [15] The court rejected the Town's argument that the *Nollan*/*Dolan* test applies only when the government exaction is

the dedication of an interest in property, not when permit approval is conditioned on an expenditure of money.[16] The court determined that the Supreme Court had not so limited the test and reasoned that non-dedicatory exactions pose no less danger that the government may threaten withholding of approval in order to extract from an applicant some benefit or concession it could not otherwise require.[17] The court did not reach the Town's argument that the *Nollan/Dolan* test applies only when the government acts on an ad hoc, adjudicative basis, as when making individual permitting decisions, as opposed to a general, legislative, policy basis, as when adopting ordinances and codes.[18] Even if the Town were correct, the court concluded, the Town's denial of Stafford's request for an exception when it had granted exceptions to other developers showed that its decision was a discretionary one based on individual circumstances rather than a ministerial enforcement of its code based on general policy considerations.[19]

12 71 S.W.3d 18, 44 n. 21.

13 *Id.* at 28.

14 *Id.* at 30 (footnote omitted).

15 *Id.* n. 7.

16 *Id.* at 31–34.

17 *Id.*

18 *Id.* at 34–36.

19 *Id.*

The court of appeals thus concluded that the *Nollan/Dolan* test applied to Stafford's federal takings claim and should also apply to its state takings claim since the parties did not argue that federal and state law are or should be different in this regard.[20] That "two-pronged" test for determining that an exaction is not a taking, the court said, is "that an essential nexus exist between the exaction and a legitimate state interest and that the exaction be roughly proportional to the public consequences of the requested land use."[21] The burden of proof, the court added, was on the Town to prove that the condition imposed on Stafford met the test.[22]

20 *Id.* at 37–38.

21 *Id.* at 31.

22 *Id.* at 38.

***626** As to the "essential nexus" prong, the court concluded that the existence of an essential nexus between the exaction —the condition that Simmons Road be rebuilt—and the interests claimed by the Town—traffic safety and road durability—was demonstrated as long as the exaction did not "utterly fail" to advance those interests.[23] The court held that the Town had easily met this lax burden.[24]

23 *Id.* at 39–40.

24 *Id.*

As to the "roughly proportional" prong, the court determined that the relevant comparison was between the cost of the Simmons Road improvements and the impact of the subdivision on that roadway rather than on the Town's entire roadway system.[25] The court noted that "Stafford's traffic study evidence showed that the Subdivision would produce about 750 vehicle trips per day, or about 18% of the total average traffic on the improved portion of Simmons Road",[26] and that "[t]he Town did not put on any evidence to show how much additional roadway traffic the Subdivision would create."[27] The Town argued that the development's true impact was far broader and was reflected in the road impact fees the Town was allowed by statute and ordinance to assess and collect to pay for capital improvements to its roadway system.[28] The amount of those fees was determined by apportioning the total cost of such improvements among all new developments, whatever their nature, but by ordinance the Town discounted the fee for residential developments from $3,560 to $1,140 per dwelling. The Town argued that the amount of the discount—for Stafford, from $879,234 to $281,580, or nearly $600,000—reflected the impact on traffic that was not compensated by impact fees and was "roughly proportional to the amount of money Stafford had paid to construct the Simmons Road improvements."[29] The court rejected this argument for two reasons. First, Simmons Road was not included in the Town's capital improvements plan and thus could not be improved using impact fees.[30] The court "fail[ed] to grasp how requiring a developer to improve an existing road that is *not* on a city's capital improvements plan is in any way related to the impact a development will have on roads that *are* on the city's capital improvements plan."[31] More importantly, the court concluded, the Town simply

could not explain how a subdivision's impact on adjacent roadways could be measured by what the Town could have charged for citywide road improvements but chose not to. [32] Thus, the court held:

> On this record, the Town has not met its burden of demonstrating that the additional traffic generated by the Subdivision bears a sufficient relationship to the requirement that Stafford demolish a nearly new, two-lane asphalt road that was not in disrepair and replace it with a two-lane concrete road. Undoubtedly, the additional traffic (750 trips per day) generated by the Subdivision ***627** will increase wear and tear and create additional safety concerns on the Town's roads and Simmons and McKamy Creek Roads in particular. But the Town has not explained why demolishing the asphalt road and replacing it with a cement road, as opposed to improving the asphalt road, was required because of the Subdivision's impact. To the contrary, the Town's experts admitted that all of the Town's safety objectives could have been accomplished just as effectively by simply improving the asphalt road. The Town likewise has not explained how the Subdivision's impact created a specific need for a more durable surfacing of Simmons Road. Consequently, the Simmons Road improvement condition requiring Stafford to demolish a portion of Simmons Road, to repave it with concrete, and to bear 100% of the costs, fails the second, rough proportionality prong of the *Dolan* test.
>
> * * *
>
> In summary, the Town's requirement that Stafford tear up a nearly new two-lane asphalt road—that could be improved with asphalt to address the Town's legitimate safety concerns—and replace it with a two-lane concrete road bears little or no relationship to the proposed impact of the Subdivision on the Town's roadway system, specifically Simmons Road. While the Town's interest in the durability of its roads is a legitimate interest, the demolish-and-replace-with-concrete aspect of the Simmons Road improvements condition simply bears no relationship to the public consequences generated by the Subdivision and is not roughly proportional to the traffic impact of the Subdivision on Simmons Road. Accordingly, this condition to plat approval does not meet the *Dolan* test's rough-proportionality requirement and instead effected a taking without adequate compensation under article I, section 17 of the Texas Constitution. [33]

25 *Id.* at 40–41.

26 *Id.* at 41.

27 *Id.*

28 *See* TEX. LOC. GOV'T CODE §§ 395.001–.082; FLOWER MOUND, TEX., CODE §§ 42–71 to 42–80 (2002).

29 71 S.W.3d at 42.

30 *See* TEX. LOC. GOV'T CODE §§ 395.012–.013.

31 71 S.W.3d at 42–43.

32 *Id.* at 42–43.

33 *Id.* at 43–44.

On the issue of damages, the court concluded that the proper measure under the circumstances was the cost of the exaction—Stafford's expense in rebuilding Simmons Road—less the cost of roadway improvements necessitated by the subdivision that the Town could properly have required Stafford to make, less the value of any special benefits [34] of the improvements to the subdivision. [35] The court assigned the burden of proof to Stafford on the first two elements of this equation and to the Town on the value of any special benefits. [36] The parties stipulated the reasonable and necessary expense of rebuilding Simmons Road. In determining the cost of improvements due to the subdivision's impact, the court stated that "[n]o precise mathematical formula is necessary", and concluded that by awarding Stafford only about 87.8% of its actual expenses the district court properly took into account the cost of improvements Stafford was properly required to make. [37] The Town, the court concluded, had failed to prove any special benefits to the subdivision from improvements beyond those required to accommodate the increased ***628** traffic. [38] Accordingly, the court upheld the damages awarded by the district court. [39]

34 *See Haynes v. City of Abilene,* 659 S.W.2d 638, 641–642 (Tex.1983) ("[T]he term 'special benefit' connotes an enhancement more localized than a general improvement in community welfare, but not necessarily unique to a given piece of property. A special benefit is one going beyond the general benefit supposed to diffuse itself from the improvement through the municipality.").

35 71 S.W.3d at 44–46.

36 *Id.* at 45 n. 22, 46.

37 *Id.* at 46.

38 *Id.* at 46–47.

39 *Id.* at 47.

Finally, the court reversed the award of expert witness fees and attorney fees to Stafford. The court reasoned that "[b]ecause Stafford is afforded just compensation based on its state-law takings claim, its federal claims under the Fifth Amendment and section 1983 will never mature." [40] Thus, the court concluded, "Stafford has not suffered a federal constitutional injury. Consequently, Stafford cannot prosecute its section 1983 takings claim or be a prevailing party under section 1988." [41]

40 *Id.* at 49.

41 *Id.* at 51.

We granted both parties' petitions for review. [42]

42 46 Tex. Sup.Ct. J. 230 (Dec. 12, 2002). We have received a number of amicus briefs. Amici curiae in support of the Town: Texas Municipal League; Texas City Attorneys Association; International Municipal Lawyers Association; Cities of Aledo, Azle, Bridgeport, Corinth, Everman, Fort Worth, Granbury, Haltom City, Irving, Keller, Kennedale, Ovilla, Plano, Red Oak, River Oaks; Town of Sunnyvale. Amici curiae in support of Stafford: Pacific Legal Foundation; National Association of Home Builders; Texas Association of Builders, Inc.

II

We first consider the Town's argument that this action is barred because Stafford did not sue until after it had rebuilt Simmons Road and obtained final approval of its development plan. It is in the public interest, the Town contends, for the government to have the opportunity to withdraw a condition of approval that is found to constitute a taking and thereby avoid the expense to taxpayers of money damages. That opportunity is lost if suit may be brought after the condition has been satisfied and the landowner's only remedy is a damage award. Moreover, the Town adds, it is simply unfair for an applicant to accept the benefits of an approved plan of development and later challenge the conditions of that approval. The Town urges that we "adopt a standard that requires developers to first seek to strike down conditions that they believe are unconstitutional before accepting the conditions and irreparably changing the status quo". The Town does not address the obvious concern that such a standard would pressure landowners to accept the government's conditions rather than suffer the delay in a development plan that litigation would necessitate. The Town concedes that no statute, rule, or Texas case supports its argument but nonetheless insists that post-approval actions like Stafford's must be barred as a matter of public policy as courts in other states have done.

Generally, "the State's public policy is reflected in its statutes." [43] On the subject of whether an action like this one must be brought before the challenged condition is satisfied, Texas statutes are silent, although they speak at length and in detail to other matters regarding local regulation of property development. [44] There is nothing in this statutory framework to suggest ***629** that the time for bringing an action like this one is constrained by anything other than the applicable statute of limitations, which the Town does not argue would bar the present action.

43 *Texas Commerce Bank, N.A. v. Grizzle,* 96 S.W.3d 240, 250 (Tex.2002); *accord Churchill Forge, Inc. v. Brown,* 61 S.W.3d 368, 373 (Tex.2001); *Lawrence v. CDB Servs., Inc.,* 44 S.W.3d 544, 553 (Tex.2001) (" 'Public policy, some courts have said, is a term of vague and uncertain meaning, which it pertains to the law-making power to define, and courts are apt to encroach upon the domain of that branch of the government if they characterize a transaction as invalid because it is contrary to public policy, unless the transaction contravenes some positive statute or some well-established rule of law.' ") (citation omitted).

44 *See e.g.* TEX. LOC. GOV'T CODE §§ 211.001–.021 (relating to municipal zoning authority); *id.* §§ 212.001–.903 (relating to municipal regulation of subdivisions and property development); *id.* §§ 231.001–.231 (relating to county zoning authority); *id.* §§ 232.001–.107 (relating to county regulation of subdivisions).

The Town argues instead that courts in other jurisdictions have required as a matter of good policy that a suit challenging a condition of land development be brought before the condition is satisfied. This appears to have been the case in California,[45] but the California Legislature has since codified procedures for challenging development exactions, dedications, and other conditions imposed on a development project.[46] The statute allows a landowner to tender the cost of compliance with the condition, give notice of protest, continue with development, and then sue.[47] If successful, the landowner is entitled to a refund.[48] Thus, the California statute, unlike caselaw which preceded it, attempts to accommodate not only the government's interest in avoiding damages but also developers' interest in avoiding delay.

45 *See County of Imperial v. McDougal,* 19 Cal.3d 505, 138 Cal.Rptr. 472, 564 P.2d 14, 18 (1977) ("A number of cases have held that a landowner or his successor in title is barred from challenging a condition imposed upon the granting of a special permit if he has acquiesced therein by either specifically agreeing to the condition or failing to challenge its validity, and accepted the benefits afforded by the permit."), appeal dismissed for lack of a substantial federal question by 434 U.S. 944, 98 S.Ct. 469, 54 L.Ed.2d 306 (1977); *Salton Bay Marina, Inc. v. Imperial Irrigation Dist.,* 172 Cal.App.3d 914, 218 Cal.Rptr. 839, 854 (1985) ("Generally, a landowner who accepts and complies with the conditions of a building permit cannot later sue the issuing public entity for inverse condemnation for the cost of compliance. Instead, the property owner is generally limited to having the condition invalidated by a proceeding for writ of mandate.") (citations omitted); *Pfeiffer v. City of La Mesa,* 69 Cal.App.3d 74, 137 Cal.Rptr. 804, 806 (1977) ("It is fundamental that a landowner who accepts a building permit and complies with its conditions waives the right to assert the invalidity of the conditions and sue the issuing public entity for the costs of complying with them.").

46 CAL. GOV'T CODE § 66020 (1997); *see Hensler v. City of Glendale,* 8 Cal.4th 1, 32 Cal.Rptr.2d 244, 876 P.2d 1043, 1055 n. 9 (1994) (§ 66020 created a "limited exception" under which a residential housing developer may challenge a permit condition while proceeding with development).

47 CAL. GOV'T CODE § 66020 (1997).

48 *Id.*

The Town cites two other cases that are somewhat supportive of its argument, one decided by the Minnesota Court of Appeals,[49] and the other by the Washington Court of Appeals,[50] although, as the court of appeals noted in this case, both cases pointed to statutes in their respective states.[51] The Town also cited a case from the Connecticut Appellate Court, but that case involved an appeal from a zoning commission's denial of subdivision and special ***630** use permits on facts too different to be instructive here.[52] Stafford argues that an Eighth Circuit case is to the contrary.[53] We do not find any of these cases compelling. None contains a discussion of the problems that delay presents to the government and landowners alike, which the California statute attempts to balance. We are not convinced that we should attempt to craft such procedures by decision.

49 *Crystal Green v. City of Crystal,* 421 N.W.2d 393 (Minn.App.1988) (citing MINN.STAT. § 462.361, providing that a "person aggrieved by an ordinance, rule, regulation, decision or order of a governing body" may seek review by "appropriate remedy" in court).

50 *Trimen Dev. Co. v. King County,* 65 Wash.App. 692, 829 P.2d 226 (1992) (holding that claims for refund of park development fees were barred by the 30–day limitation period for challenging a plat), *aff'd on other grounds,* 124 Wash.2d 261, 877 P.2d 187 (1994) (holding that the three-year statute of limitations for money unlawfully received applied, and that the fees were lawfully imposed and voluntarily paid).

51 71 S.W.3d at 27.

52 *Weatherly v. Town Plan & Zoning Comm'n,* 23 Conn.App. 115, 579 A.2d 94, 97 (1990) ("One who seeks to avail himself of the benefits of a zoning regulation is precluded from raising the question of that regulation's constitutionality, or of that regulation's validity, in the same proceeding.").

53 *Christopher Lake Dev. Co. v. St. Louis County,* 35 F.3d 1269 (8th Cir.1994).

The Town does not attempt to characterize its argument as waiver or estoppel. Certainly, as the parties stipulated, Stafford objected to the condition at every opportunity, and the Town was well aware of Stafford's position. As for the Town's argument that allowing Stafford to sue is unfair, if the Town had been truly concerned about the prospect of paying Stafford damages, it could have offered to allow Stafford to defer rebuilding Simmons Road and escrow the cost pending a judicial determination of the validity of the condition, thereby assuring a fund for payment if the Town won that would be returned to Stafford if it won.[54] In sum, we find the Town's arguments unconvincing. No limitation barring Stafford's suit exists, and we decline the invitation to create one.

54 *See City of College Station v. Turtle Rock Corp.,* 680 S.W.2d 802, 804 (Tex.1984) (stating that parties agreed to escrow charge imposed in lieu of parkland dedication pending completion of court challenge to exaction).

III

We come now to the parties' takings arguments. Earlier this Term in *Sheffield Development Co. v. City of Glenn Heights,* we observed that "[p]hysical possession is, categorically, a taking for which compensation is constitutionally mandated, but a restriction in the permissible uses of property or a diminution in its value, resulting from regulatory action within the government's police power, may or may not be a compensable taking."[55] We acknowledged, as has the United States Supreme Court, that "[c]ases attempting to decide when a regulation becomes a taking are among the most litigated and perplexing in current law."[56]

55 140 S.W.3d 660, ——, 2004 WL 422594, *6 (2004) (citations omitted).

56 *Id.* at ——, 2004 WL 422594, at *7 (quoting *Eastern Enters. v. Apfel,* 524 U.S. 498, 541, 118 S.Ct. 2131, 141 L.Ed.2d 451 (1998)).

To determine whether government regulation of property, in the words of Justice Oliver Wendell Holmes, "goes too far [so as to] be recognized as a taking,"[57] the Supreme Court has employed different analytical structures depending on the nature and effect of the regulation involved.[58] *Nollan* and *Dolan* involved exactions imposed by the government as a condition of its approval of land development. Stafford's takings claims are based solely on these two decisions and not, for example, on the "unreasonable regulatory interference" analysis employed by the Supreme Court in *Penn Central Transportation Co. v. City of New York*[59] and by this Court in *Sheffield.* Stafford and the Town agree that if by the standard of *Nollan* and *Dolan* the Town's actions constituted a ***631** compensable taking under the Fifth Amendment, they likewise constituted a compensable taking under the Texas Constitution. Although, as we observed in *Sheffield,* "it could be argued that the differences in the wording of the two [constitutional] provisions are significant,"[60] since neither party makes that argument here, we assume that the application of both provisions is identical in these circumstances.[61] We therefore consider only whether the *Nollan/ Dolan* standard applies in the circumstances of this case, and if so, whether by that standard a compensable taking occurred.

57 *Pennsylvania Coal Co. v. Mahon,* 260 U.S. 393, 415, 43 S.Ct. 158, 67 L.Ed. 322 (1922).

58 *Sheffield,* 140 S.W.3d at —— – ——, 2004 WL 422594, at *6–7.

59 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978).

60 *Sheffield,* 140 S.W.3d at ——, 2004 WL 422594, at *6.

61 *See also id.* at ——, 2004 WL 422594, at *6; *City of Austin v. Travis County Landfill Co.,* 73 S.W.3d 234, 238–239 (Tex.), *cert. denied,* 537 U.S. 950, 123 S.Ct. 392, 154 L.Ed.2d 295 (2002); *Mayhew v. Town of Sunnyvale,* 964 S.W.2d 922, 932 (Tex.1998), *cert. denied* 526 U.S. 1144, 119 S.Ct. 2018, 143 L.Ed.2d 1030 (1999).

The Town argues that the *Nollan/Dolan* standard does not apply unless the government exacts a dedication of a property interest or imposes conditions on development on an ad hoc basis. We begin by summarizing *Nollan* and *Dolan,* as we understand them, and then consider the Town's arguments.

A

The Nollans owned a beachfront lot bordering on the Pacific Ocean. [62] There were a number of other such lots along the coast, and a little over a quarter mile away in both directions was a public beach. A seawall separated the beach portion of the property from the rest of the lot. The Nollans applied to the California Coastal Commission for a permit that would allow them to demolish a small bungalow on their lot and replace it with a three-bedroom home characteristic of the neighborhood. The Commission granted the permit subject to the Nollans' creation of an easement allowing public access to the area between the ocean and the seawall. The Commission reasoned that—

> the new house would increase blockage of the view of the ocean, thus contributing to the development of "a 'wall' of residential structures" that would prevent the public "psychologically ... from realizing a stretch of coastline exists nearby that they have every right to visit." The new house would also increase private use of the shorefront. These effects of construction of the house, along with other area development, would cumulatively "burden the public's ability to traverse to and along the shorefront." [63]

The Commission had imposed the same requirement on every other similarly situated lot in the area—43 of them—since obtaining the authority to do so. [64]

The Supreme Court held that the requirement imposed by the Commission constituted a taking, reasoning as follows. "[L]and-use regulation does not effect a taking if it 'substantially advance[s] legitimate state interests' ". [65] Assuming, as the Commission argued, that it had legitimate interests in "protecting the public's ability to see the beach, assisting the public in overcoming the 'psychological barrier' to using the beach created by a developed ***632** shorefront, and preventing congestion on the public beaches", [66] regulation that substantially advanced those interests would not be a taking unless it "drastically" interfered with the Nollans' use of their property. [67] This would be true whether the regulatory action was the refusal to issue a permit or the issuance of a conditional permit. "[A] permit condition that serves the same legitimate police-power purpose as a refusal to issue the permit should not be found to be a taking if the refusal to issue the permit would not constitute a taking." [68] But in either instance, "substantial advancement" requires an "essential nexus" between the restriction and the interests to be served. [69] "[U]nless the permit condition serves the same governmental purpose as the development ban, the building restriction is not a valid regulation of land use but 'an out-and-out plan of extortion.' " [70] The Commission could not explain how requiring the Nollans to allow the public access to the *back* of their property would help people in *front* to see past the Nollans' bigger home to the beach beyond, or how allowing more access to the beach would reduce congestion. [71] The public, who according to the Commission could not be expected to see the beach from the street in front of the Nollans' property, would not even know there was something there to have access *to*. Perhaps in view of this logical problem with its position, or perhaps in the spirit of candor, the Commission also stated that it believed "that the public interest will be served by a continuous strip of publicly accessible beach along the coast." [72] "The Commission may well be right that it is a good idea," the Supreme Court concluded, "but if it wants an easement across the Nollans' property, it must pay for it." [73]

62 *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 827–829, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987).

63 *Id.* at 828–829, 107 S.Ct. 3141 (citations omitted) (alteration in original).

64 *Id.* at 829, 107 S.Ct. 3141.

65 *Id.* at 834, 107 S.Ct. 3141 (alteration in original) (quoting *Agins v. City of Tiburon,* 447 U.S. 255, 260, 100 S.Ct. 2138, 65 L.Ed.2d 106 (1980)).

66 *Id.* at 835, 107 S.Ct. 3141.

67 *Id.* at 835–836, 107 S.Ct. 3141 (citing *Penn Cent. Transp. Co. v. City of New York,* 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978)).

68 *Id.* at 836, 107 S.Ct. 3141.

69 *Id.* at 837, 107 S.Ct. 3141.

70 *Id.* (citation omitted).

71 *Id.* at 838–840, 107 S.Ct. 3141.

72 *Id.* at 841, 107 S.Ct. 3141.

73 *Id.* at 841–842, 107 S.Ct. 3141.

Having found that the exaction imposed by the Commission was simply unrelated to the public interests it claimed to be advancing, the Supreme Court in *Nollan* did not consider the degree of connection required between an exaction that *did* advance public interests and the projected impact of the development for there not to be a taking. This half of the analysis the Supreme Court supplied in *Dolan v. City of Tigard.* [74]

74 512 U.S. 374, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994).

Dolan applied to the City of Tigard for a permit allowing her to expand her plumbing and electric supply store and pave the parking lot. [75] In accordance with its Community Development Code, adopted as required by state statute, [76] the City conditioned its approval of the improvements on Dolan's dedication of a portion of her property in the flood plain for use as a public greenway, and another portion for use as a bicycle and pedestrian path. The City explained that the greenway was necessary to help control the anticipated additional storm water runoff due to the impervious surface of the new parking lot, and the bike path was necessary to help alleviate traffic congestion. Dolan requested a variance from the Code requirements, which the City refused.

75 *Id.* at 379, 114 S.Ct. 2309.

76 *Id.* at 377, 114 S.Ct. 2309.

***633** Dolan did not "quarrel with the city's authority to exact some forms of dedication as a condition for the grant of a building permit, but challenge [d] the showing made by the city to justify [the] exactions" it imposed. [77] To determine whether the exactions constituted a taking, the Supreme Court first looked to see "whether the 'essential nexus' exists between the 'legitimate state interest' and the permit condition exacted by the city" as required by *Nollan.* [78] The Court explained that in *Nollan,*

77 *Id.* at 386, 114 S.Ct. 2309.

78 *Id.*

> [t]he absence of a nexus left the Coastal Commission in the position of simply trying to obtain an easement through gimmickry, which converted a valid regulation of land use into " 'an out-and-out plan of extortion.' "
>
> No such gimmicks are associated with the permit conditions imposed by the city in this case. [79]

79 *Id.* at 387, 114 S.Ct. 2309 (citation omitted).

The connections between a greenway dedication and flood control, and between a bicycle path and traffic control, were "obvious". [80]

80 *Id.* at 387–338, 114 S.Ct. 2309.

The harder part of the takings analysis in *Dolan* was "whether the degree of the exactions demanded by the city's permit conditions [bore] the required relationship to the projected impact of petitioner's proposed development." [81] To determine what relationship the Fifth Amendment requires, the Court looked to "representative" state court takings decisions, "[s]ince state courts have been dealing with this question a good deal longer than we have". [82]

81 *Id.* at 388, 114 S.Ct. 2309.

82 *Id.* at 389, 114 S.Ct. 2309.

> In some States, very generalized statements as to the necessary connection between the required dedication and the proposed development seem to suffice. We think this standard is too lax to adequately protect petitioner's right to just compensation if her property is taken for a public purpose.
>
> Other state courts require a very exacting correspondence, described as the "specifi[c] and uniquely attributable" test.... We do not think the Federal Constitution requires such exacting scrutiny, given the nature of the interests involved.
>
> A number of state courts have taken an intermediate position, requiring the municipality to show a "reasonable relationship" between the required dedication and the impact of the proposed development.

* * *

> We think the "reasonable relationship" test adopted by a majority of the state courts is closer to the federal constitutional norm than either of those previously discussed. But we do not adopt it as such, partly because the

> term "reasonable relationship" seems confusingly similar to the term "rational basis" which describes the minimal level of scrutiny under the Equal Protection Clause of the Fourteenth Amendment. We think a term such as "rough proportionality" best encapsulates what we hold to be the requirement of the Fifth Amendment. No precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development. [83]

83 *Id.* at 389–391, 114 S.Ct. 2309 (alteration in original) (footnotes and citations omitted).

***634** The Supreme Court counted Texas among the majority of states in the intermediate position, [84] citing our 1984 decision in *City of College Station v. Turtle Rock Corp.* [85]

84 *Id.* at 391, 114 S.Ct. 2309.

85 680 S.W.2d 802, 807 (Tex.1984).

The conditions imposed on Dolan's development of her property did not meet this "rough proportionality" test. The City had required Dolan to dedicate a *public* greenway, thereby requiring her to surrender the right to exclude others from part of her property, " 'one of the most essential sticks in the bundle of rights that are commonly characterized as property' ", [86] but had "never said why a public greenway, as opposed to a private one, was required in the interest of flood control." [87] The Supreme Court concluded:

86 *Dolan,* 512 U.S. at 393, 114 S.Ct. 2309 (citation omitted).

87 *Id.*

> It is difficult to see why recreational visitors trampling along petitioner's floodplain easement are sufficiently related to the city's legitimate interest in reducing flooding problems ... and the city has not attempted to make any individualized determination to support this part of its request. [88]

88 *Id.*

With respect to the bike path, the Supreme Court concluded that the City's justifications for the requirement were "conclusory": [89]

89 *Id.* at 395–396, 114 S.Ct. 2309.

> on the record before us, the city has not met its burden of demonstrating that the additional number of vehicle and bicycle trips generated by petitioner's development reasonably relate to the city's requirement for a dedication of the pedestrian/bicycle pathway easement. The city simply found that the creation of the pathway "could offset some of the traffic demand ... and lessen the increase in traffic congestion." [90]

90 *Id.* at 395, 114 S.Ct. 2309 (footnote omitted) (ellipses in original).

Each of the City's exactions was too severe, given the projected impact of Dolan's development on the City's legitimate interests. In sum:

> The city's goals of reducing flooding hazards and traffic congestion, and providing for public greenways, are laudable, but there are outer limits to how this may be done. "A strong public desire to improve the public condition [will not] warrant achieving the desire by a shorter cut than the constitutional way of paying for the change." [91]

91 *Id.* at 396, 114 S.Ct. 2309 (quoting *Pennsylvania Coal Co. v. Mahon,* 260 U.S. 393, 416, 43 S.Ct. 158, 67 L.Ed. 322 (1922)).

We restate the rule of *Nollan* and *Dolan* generally as follows: conditioning government approval of a development of property on some exaction is a compensable taking unless the condition (1) bears an essential nexus to the substantial advancement of some legitimate government interest and (2) is roughly proportional to the projected impact of the proposed development.

B

The Town argues that for several reasons the *Nollan*/*Dolan* rule should not apply unless the exaction imposed is the dedication of a property interest, as happened in both those cases. The Nollans were required to dedicate a public

easement across their property, and Dolan was required to dedicate a public greenway and bicycle path.

***635** First, the Town argues that the Supreme Court would not itself apply the rule of *Nollan* and *Dolan* outside the context of possessory dedications. The Town points to language in *Dolan* where, in distinguishing between "land use planning [that] has been sustained against constitutional challenge"[92] and the City of Tigard's actions, the Court observed that "the conditions imposed [on Dolan] were not simply a limitation on the use [she] might make of her own parcel, but a requirement that she deed portions of the property to the city."[93] In drawing this distinction between *Dolan* and use-restriction cases, the Supreme Court did not, we think, intend to suggest that all regulatory takings cases must fall into one category or the other. The requirement that a developer improve an abutting street at its own expense is in no sense a use restriction; it is much closer to a required dedication of property—that being the money to pay for the required improvement. We do not read *Dolan* even to hint that exactions should be analyzed differently than dedications in determining whether there has been a taking.

92 *Id.* at 384, 114 S.Ct. 2309.

93 *Id.* at 385, 114 S.Ct. 2309.

The Town also cites the Supreme Court's discussion of the applicability of *Dolan* in *City of Monterey v. Del Monte Dunes at Monterey, Ltd.*[94] In that case, Del Monte Dunes applied to the City of Monterey for permission to develop 37.6 acres of oceanfront property for residential purposes. "After five years, five formal decisions [by the City], and 19 different site plans, Del Monte Dunes decided the city would not permit development of the property under any circumstances."[95] Del Monte Dunes sued, alleging in part that the City's actions constituted a regulatory taking.[96] Although the City had required that parts of the property be dedicated to public use,[97] Del Monte Dunes did not complain of these requirements but challenged the City's denial of any development at all. The court of appeals had stated that the City's denial of development was required to be "roughly proportional" to its legitimate interests, borrowing from the second prong of the *Dolan* test,[98] and while the statement was immaterial to the court of appeals' decision,[99] the Supreme Court took pains to disavow it:

94 526 U.S. 687, 119 S.Ct. 1624, 143 L.Ed.2d 882 (1999).

95 *Id.* at 698, 119 S.Ct. 1624 (citations omitted).

96 *Id.*

97 *Id.* at 696–697, 119 S.Ct. 1624.

98 *Id.* at 702, 119 S.Ct. 1624.

99 *Id.* at 703, 119 S.Ct. 1624.

> Although in a general sense concerns for proportionality animate the Takings Clause, see *Armstrong v. United States,* 364 U.S. 40, 49 [80 S.Ct. 1563, 4 L.Ed.2d 1554] (1960) ("The Fifth Amendment's guarantee ... was designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole"), we have not extended the rough-proportionality test of *Dolan* beyond the special context of exactions—land-use decisions conditioning approval of development on the dedication of property to public use. See *Dolan, supra,* at 385, 512 U.S. 374, 114 S.Ct. 2309; *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 841 [107 S.Ct. 3141, 97 L.Ed.2d 677] (1987). The rule applied in *Dolan* considers whether dedications demanded as conditions of development are proportional to the development's anticipated impacts. It was ***636** not designed to address, and is not readily applicable to, the much different questions arising where, as here, the landowner's challenge is based not on excessive exactions but on denial of development. We believe, accordingly, that the rough-proportionality test of *Dolan* is inapposite to a case such as this one.[100]

100 *Id.* at 702–703, 119 S.Ct. 1624.

The Town argues that this passage clearly shows the Supreme Court's intent to limit the *Nollan/Dolan* rule to dedication cases, but we do not read it that way. The passage does no more than elaborate on the same distinction drawn in *Dolan* between conditions limiting the use of property and those requiring a dedication of property. In neither *Dolan* nor *Del Monte Dunes* did the Supreme Court have reason to differentiate between dedicatory and non-dedicatory exactions. Nor does either case suggest that conditioning development of property on improvements to abutting roadways is somehow more like a restriction on the use of the property rather than a dedication of property.[101]

101 *See also Lambert v. City and County of San Francisco,* 529 U.S. 1045, 1047–1049, 120 S.Ct. 1549, 146 L.Ed.2d 360 (2000) (Scalia, J., joined by Kennedy and Thomas, JJ., dissenting from the denial of certiorari) (involving the denial of a permit to convert residential hotel rooms to tourist rooms because of the owner's failure to pay $600,000 to replace the residential rooms, and stating that "[w]hen there is uncontested evidence of a demand for *money or other property*—and still assuming that denial of a permit because of failure to meet such a demand constitutes a taking—it should be up to the permitting authority to establish *either* (1) that the demand met the requirements of *Nollan* and *Dolan,* or (2) that denial would have ensued even if the demand had been met") (emphasis added), *opinion below reported at* 67 Cal.Rptr.2d 562, 568–569 (Cal.Ct.App.1997).

The Town argues that *Dolan* expressly claims for its basis—

> the well-settled doctrine of "unconstitutional conditions," [by which] the government may not require a person to give up a constitutional right—here the right to receive just compensation when property is taken for a public use—in exchange for a discretionary benefit conferred by the government where the benefit sought has little or no relationship to the property. [102]

102 *Dolan v. City of Tigard,* 512 U.S. 374, 385, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994).

This doctrine, the Town contends, cannot be used to find a taking when the thing given up in exchange for a discretionary benefit is simply money, for which the owner has no constitutional right of recompense. Assuming that the doctrine of unconstitutional conditions is limited as the Town argues, a position on which we express no opinion, the Town's argument does not limit the application of *Dolan* because the doctrine was not the only foundation on which it rested and was not even mentioned in *Nollan*. *Nollan* was grounded entirely in the Supreme Court's takings jurisprudence. Thus, even if the doctrine would not apply to a non-dedicatory exaction, as the Town argues, the rule of *Dolan* is not thereby made inapplicable.

The Town asserts that most courts have refused to apply the *Dolan* rule to non-dedicatory takings. Whether the Town is correct with respect to all courts of record we cannot tell for sure, but the Town does not appear to be correct about courts of last resort. The Supreme Court of Arizona did not apply *Dolan* in determining the validity of water resource fees charged to all new developments to help defray the city's expense of acquiring new sources of water, [103] and the Supreme Court of Colorado ***637** likewise refused to apply *Dolan* in a similar context involving plant impact fees charged to improve water quality in the community. [104] The Supreme Court of South Carolina did not apply *Dolan* in analyzing whether the application of zoning ordinances to the rebuilding of a private pier constituted a taking, [105] and stated in dicta that *Dolan* applied only to physical exactions. [106] But the Supreme Court of Illinois [107] and the Supreme Court of Ohio [108] have applied *Dolan* in assessing the validity of fees charged for the impact of new developments on traffic, and the Supreme Court of Washington cited *Dolan* in upholding the validity, under a state statute, of fees paid under an ordinance conditioning development approval on payment of a fee in lieu of providing open space. [109] Most importantly, the Supreme Court of California in *Ehrlich v. City of Culver City,* a case very similar to the one before us, expressly rejected limiting the *Dolan* rule to property dedications. [110] Ehrlich, having found it impossible to operate his private sports facility at a profit, applied for a zoning change from recreational use to allow the facility to be replaced by condominiums. [111] The city conditioned approval on payment of $280,000 in lieu of construction of four public tennis courts. [112] The court concluded that this was the context in which *Dolan* "quintessentially" applied [113] and held that imposition of the charge was a taking. [114] Although the court splintered on various issues, it was unanimous on the application of *Dolan.* [115]

103 *Home Builders Ass'n v. City of Scottsdale,* 187 Ariz. 479, 930 P.2d 993, 1000, *cert. denied,* 521 U.S. 1120, 117 S.Ct. 2512, 138 L.Ed.2d 1015 (1997).

104 *Krupp v. Breckenridge Sanitation Dist.,* 19 P.3d 687, 696–698 (Colo.2001).

105 *Sea Cabins on the Ocean IV Homeowners Ass'n, Inc. v. City of North Myrtle Beach,* 345 S.C. 418, 548 S.E.2d 595, 603–604 (2001).

106 *Id.* at 603 n. 5.

107 *Northern Ill. Home Builders Ass'n v. County of DuPage,* 165 Ill.2d 25, 208 Ill.Dec. 328, 649 N.E.2d 384, 388–389 (1995).

108 *Home Builders Ass'n v. City of Beavercreek,* 89 Ohio St.3d 121, 729 N.E.2d 349, 354–356 (2000).

109 *Trimen Dev. Co. v. King County,* 124 Wash.2d 261, 877 P.2d 187, 189–190 (1994) (county's park development fees were lawful under statute if the fees were imposed pursuant to a voluntary agreement, and were reasonably necessary as a direct result of the proposed development or required to mitigate the direct impact of the development").

110 *Ehrlich v. City of Culver City,* 12 Cal.4th 854, 50 Cal.Rptr.2d 242, 911 P.2d 429, 438–439, *cert. denied,* 519 U.S. 929, 117 S.Ct. 299, 136 L.Ed.2d 218 (1996).

111 *Id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 433–434.

112 *Id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 434–435.

113 *Id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 438.

114 *Id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 433; *accord San Remo Hotel v. City and County of San Francisco,* 27 Cal.4th 643, 117 Cal.Rptr.2d 269, 41 P.3d 87, 102–103 (2002).

115 *Ehrlich,* 50 Cal.Rptr.2d 242, 911 P.2d at 432 (plurality op. by Arabian, J., joined by Lucas, C.J., and George, J.); *id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 451 (Mosk, J., concurring) (*Dolan* "is generally *not* applicable to development fees; the present case is thus more the exception than the rule"); *id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 462 (Kennard, J., concurring and dissenting, joined by Baxter, J., in concurring), ("I agree with the majority that *Nollan–Dolan*'s 'essential nexus' and 'rough proportionality' requirements apply to monetary exactions that, like the mitigation fee involved here, are imposed on a specific parcel of property as a condition of obtaining a development permit"); *id.,* 50 Cal.Rptr.2d 242, 911 P.2d at 468 (Werdegar, J., concurring and dissenting); *see San Remo Hotel,* 117 Cal.Rptr.2d 269, 41 P.3d at 102 ("Though the members of this court disagreed on various parts of the analysis [in *Ehrlich*], we unanimously held that this ad hoc monetary exaction *was* subject to *Nollan/Dolan* scrutiny.").

***638** The procedural history of *Ehrlich* is worth noting. The California Court of Appeal originally held, before *Dolan* was decided, that there had been no taking, and on petition for certiorari, after *Dolan* issued, the United States Supreme Court vacated the court of appeal's judgment and remanded the case to that court for reconsideration in light of *Dolan.* [116] On remand, the court of appeal reached the same conclusion it had before, but the Supreme Court of California reversed, holding on the basis of *Dolan* that there had been a taking. [117] This time the United States Supreme Court denied certiorari. [118]

116 512 U.S. 1231, 114 S.Ct. 2731, 129 L.Ed.2d 854 (1994) (vacating and remanding *Ehrlich v. City of Culver City,* 15 Cal.App.4th 1737, 19 Cal.Rptr.2d 468 (1993)).

117 50 Cal.Rptr.2d 242, 911 P.2d at 433.

118 519 U.S. 929, 117 S.Ct. 299, 136 L.Ed.2d 218 (1996).

The Town argues that a non-dedicatory exaction like a fee or charge is not the kind of possessory intrusion that has historically been specially protected by constitutional takings provisions, and that if such an exaction is a taking at all, it can only be because it is unreasonable as determined by the kinds of factors identified by the Supreme Court in *Penn Central Transportation Co. v. City of New York* [119] and by this Court in *Sheffield.* [120] But *Nollan* and *Dolan* themselves depart somewhat from the historic focus of takings protections on possessory intrusions. The issue is not, as the Town puts it, whether such departures should exist, but given that dedicatory exactions are to be examined more strictly than other kinds of land use regulations, whether non-dedicatory exactions must likewise be scrutinized.

119 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978).

120 140 S.W.3d 660, 2004 WL 422594 (2004).

The Town argues that no practical difference exists between approval on condition and denial for want of the condition, and if the former is going to be judged by the *Dolan* standard and the latter by the more lenient *Penn Central* factors, the government will choose simply to deny permission to develop at all, thereby hampering development even further than Stafford complains of here. One premise of the argument is undoubtedly true—there is no practical difference between the two government actions. But the other is not. When the practical effect is exaction, conditional approval and denial are both measured by the *Dolan* taking standard. As the Supreme Court explained in *Nollan:*

> The Commission argues that a permit condition that serves the same legitimate police-power purpose as a refusal to issue the permit should not be found to be a taking if the refusal to issue the permit would not constitute a taking. We agree. Thus, if the Commission attached to the permit some condition that would have protected the public's ability to see the beach notwithstanding construction of the new house—for example, a height limitation, a width restriction, or a ban on fences—so long as the Commission could have exercised its police power (as we have assumed it could) to forbid construction of the house altogether, imposition of the condition would also be constitutional. Moreover (and here we come closer to the facts of the present case), the condition would be constitutional even if it consisted of the requirement that the Nollans provide a viewing spot on their property for passersby with whose sighting of the ocean their new house would interfere. Although such a requirement, constituting a permanent grant of continuous access to the property, would have to be considered ***639** a taking if it were not attached to a development permit, the Commission's assumed power to forbid construction of the house in order to protect the public's view of the beach must surely include the power to condition construction upon some concession by the owner, even a concession of property rights, that serves the same end. If a prohibition designed to accomplish that purpose would be a legitimate exercise of the police power rather than a taking, it would be strange to conclude that providing the owner an alternative to that prohibition which accomplishes the same purpose is not. [121]

121 *Nollan v. Cal. Coastal Comm'n,* 483 U.S. 825, 836–837, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987).

The government cannot sidestep constitutional protections merely by rephrasing its decision from "only if" to "not unless". The constitutional guaranty against uncompensated takings is "more than a pleading requirement, and compliance with it [is] more than an exercise in cleverness and imagination." [122]

122 *Id.* at 841, 107 S.Ct. 3141.

The Town argues that if non-dedicatory exactions are subject to the *Dolan* standard, "Texas cities will be forced to run a fierce constitutional gauntlet that will significantly erode the practical ability of cities to regulate land development to promote the public interest and protect community rights." But we are unable to see any reason why limiting a government exaction from a developer to something roughly proportional to the impact of the development —in other words, prohibiting " 'an out-and-out plan of extortion' " [123] —will bring down the government. Pressed to defend this assertion at oral argument, counsel for the Town argued that the real problem with the "rough proportionality" standard is not the standard itself; after all, the government can hardly argue that it is entitled to exact more from developers than is reasonably due to the impact of development. The real problem, the Town argues, is that the validity of an exaction in an individual case is not presumed but must be shown by the government. We are unable to

see why this burden is unduly onerous. Rather, we think the burden is essential to protect against the government's unfairly leveraging its police power over land-use regulation to extract from landowners concessions and benefits to which it is not entitled. To repeat *Dolan:* "No precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." [124]

123 *Id.* at 837, 107 S.Ct. 3141 (citation omitted).

124 *Dolan v. City of Tigard,* 512 U.S. 374, 391, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994).

Finally, the Town argues that if the *Dolan* standard applies to non-dedicatory exactions, then it must "apply to *all* development requirements, including that houses be built of brick rather than of wood, and of a certain size on a certain sized lot, since these are all conditions placed on the ability to develop land." Clearly, the cited examples of routine regulatory requirements do not come close to the exaction imposed by the Town in this case. There may be other requirements that do. Determining when a regulation becomes a taking has not lent itself to bright line-drawing. But we are satisfied that the distinction between exactions and other types of regulatory requirements is meaningful and necessary.

We agree with the Supreme Court of California's decision in *Ehrlich.* For ***640** purposes of determining whether an exaction as a condition of government approval of development is a compensable taking, we see no important distinction between a dedication of property to the public and a requirement that property already owned by the public be improved. The *Dolan* standard should apply to both.

C

The Town also argues that the *Nollan/Dolan* rule should not apply unless an exaction is imposed on an ad hoc, individualized basis. Like its argument that the rule should not apply to non-dedicatory exactions, this argument, too, is based on a distinction drawn in *Dolan* itself between "land use planning [that] has been sustained against constitutional challenge" [125] and the City of Tigard's actions. The former, the Supreme Court explained, "involved essentially legislative determinations classifying entire areas of the city, whereas here the city made an adjudicative decision to condition petitioner's application for a building permit on an individual parcel." [126] In *Nollan* the Court had stated:

125 *Id.* at 384, 114 S.Ct. 2309.

126 *Id.* at 385, 114 S.Ct. 2309.

> our cases describe the condition for abridgement of property rights through the police power as a "*substantial* advanc[ing]" of a legitimate state interest. We are inclined to be particularly careful about the adjective where the actual conveyance of property is made a condition to the lifting of a land-use restriction, since in that context there is heightened risk that the purpose is avoidance of the compensation requirement, rather than the stated police-power objective. [127]

127 *Nollan,* 483 U.S. at 841, 107 S.Ct. 3141.

The Town argues that most courts have limited the *Dolan* standard to such "adjudicative" decisions, and as far as we can tell, all courts of last resort to address the issue have done so. [128] The Supreme Court of California in *San Remo Hotel v. City and County of San Francisco* has provided the only justification for the limitation—political reality:

128 *See Home Builders Ass'n v. City of Scottsdale,* 187 Ariz. 479, 930 P.2d 993, 1000, *cert. denied,* 521 U.S. 1120, 117 S.Ct. 2512, 138 L.Ed.2d 1015 (1997); *Ehrlich v. City of Culver City,* 12 Cal.4th 854, 50 Cal.Rptr.2d 242, 911 P.2d 429, 439 (1996), *cert. denied* 519 U.S. 929, 117 S.Ct. 299, 136 L.Ed.2d 218 (1996); *San Remo Hotel v. City and County of San Francisco,* 27 Cal.4th 643, 117 Cal.Rptr.2d 269, 41 P.3d 87, 105 (2002); *Krupp v. Breckenridge Sanitation Dist.,* 19 P.3d 687, 695 (Colo.2001) ("Application of the *Nollan/Dolan* test has been limited to the narrow set of cases where a permitting authority, through a specific, discretionary adjudicative determination, conditions continued development on the exaction

of private property for public use."); *Parking Ass'n of Ga., Inc. v. City of Atlanta,* 264 Ga. 764, 450 S.E.2d 200, 203 n. 3 (1994) (*Dolan* test did not apply to city's legislative determination), *cert. denied,* 515 U.S. 1116, 1117–1118, 115 S.Ct. 2268, 132 L.Ed.2d 273 (1995) (Thomas, J., joined by O'Connor, J., dissenting from the denial of certiorari, noting conflict in lower courts on whether test from *Dolan* or *Agins* applied when a taking is alleged based on a legislative act); *Southeast Cass Water Res. Dist. v. Burlington Northern R. Co.,* 527 N.W.2d 884, 896 (N.D.1995) (stating that *Nollan* and *Dolan* do not "change the constitutional analysis for legislated police-power regulation").

> While legislatively mandated fees do present some danger of improper leveraging, such generally applicable legislation is subject to the ordinary restraints of the democratic political process. A city council that charged extortionate fees for all property development, unjustifiable by mitigation needs, would likely face widespread and well-financed opposition at the next election. Ad hoc individual monetary exactions deserve ***641** special judicial scrutiny mainly because, affecting fewer citizens and evading systematic assessment, they are more likely to escape such political controls. [129]

129 *San Remo Hotel,* 117 Cal.Rptr.2d 269, 41 P.3d at 105.

We are not convinced. While we recognize that an ad hoc decision is more likely to constitute a taking than general legislation, we think it entirely possible that the government could "gang up" on particular groups to force extractions that a majority of constituents would not only tolerate but applaud, so long as burdens they would otherwise bear were shifted to others.

Nor are we convinced that a workable distinction can always be drawn between actions denominated adjudicative and legislative. Of course, when the government singles out a landowner by imposing essentially unprecedented conditions on its application to develop property, the distinction is clear. But that is not what happened in either *Dolan* or *Nollan.* The conditions on Dolan's enlargement of her store were all imposed pursuant to specific provisions of the City of Tigard's Community Development Code that was itself adopted pursuant to state law. [130] The condition on the Nollans' development had been imposed on every other similarly situated lot in the neighborhood after the California Coastal Commission acquired the authority to do so. [131] The Supreme Court observed in *Nollan:*

130 *Dolan,* 512 U.S. at 377–379, 114 S.Ct. 2309.

131 *Nollan,* 483 U.S. at 829, 107 S.Ct. 3141.

> If the Nollans were being singled out to bear the burden of California's attempt to remedy these problems [claimed by the Commission to warrant the exaction imposed], although they had not contributed to it more than other coastal landowners, the State's action, even if otherwise valid, might violate either the incorporated Takings Clause or the Equal Protection Clause. One of the principal purposes of the Takings Clause is "to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." But that is not the basis of the Nollans' challenge here. [132]

132 *Id.* at 835 n. 4, 107 S.Ct. 3141 (citations omitted).

Although the exactions in *Nollan* and *Dolan* were imposed taking into account individual circumstances, they were by no means unique or exceptional in the community.

We think that the Town's argument, and the few courts that have accepted it, make too much of the Supreme Court's distinction in *Dolan.* By the same token, we need not risk error in the opposite direction by undertaking to decide here in the abstract whether the *Dolan* standard should apply to all "legislative" exactions—whatever that really means—imposed as a condition of development. It is enough to say that we can find no meaningful distinction between the condition imposed on Stafford and the conditions imposed on Dolan and the Nollans. All were based on general authority taking into account individual circumstances. Dolan's request for a variance was denied. [133] The Town was authorized to grant, and did grant, exceptions to the general requirement

that roads abutting subdivisions be improved to specified standards. Stafford applied for an exception and was refused, but the Town nevertheless considered whether an exception was appropriate.

133 *Dolan,* 512 U.S. at 380–381, 114 S.Ct. 2309.

The Town argues that if the government is to be held to the stricter *Dolan* standard ***642** because it tries to tailor general requirements to individual circumstances—that is, because it sometimes grants variances—it will be less inclined to do so, thereby inflicting one-size-fits-all shoes onto very different feet. But it is precisely for this reason that we decline to adopt a bright-line adjudicative/legislative distinction. The touchstone of the constitutional takings protections is that a few not be forced, in the words just quoted, " 'to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.' " Thus, while we need not and do not decide what "legislative" decisions are to be judged by the *Dolan* standard, we conclude that the condition that the Town imposed on Stafford must be.

D

Application of the *Nollan/Dolan* standard in the circumstances of the present case is certainly consistent with, if not required by, well-established Texas law. More than a century ago, in *Hutcheson v. Storrie,* [134] we considered the extent to which the government could require landowners to pay the cost of paving adjacent streets. Quoting the United States Supreme Court's decision in *Village of Norwood v. Baker,* [135] we said:

134 92 Tex. 685, 51 S.W. 848 (Tex.1899).

135 172 U.S. 269, 19 S.Ct. 187, 43 L.Ed. 443 (1898).

> "In our judgment, the exaction from the owner of private property of the cost of a public improvement in substantial excess of the special benefits accruing to him is, *to the extent of such excess,* a taking under the guise of taxation of private property for public use without compensation." [136]

136 51 S.W. at 850 (quoting *Norwood,* 172 U.S. at 279, 19 S.Ct. 187) (emphasis in *Norwood*).

More recently, we reiterated:

> An assessment against property and its owner for paving improvements on any basis other than for benefits conferred and in an amount materially greater than the benefits conferred violates Section 17 of Article 1 of the Constitution of Texas, which prohibits the taking of private property for public use without just compensation. [137]

137 *Haynes v. City of Abilene,* 659 S.W.2d 638, 641 (Tex.1983) (citations omitted).

Thus, in the context of paving assessments, we have considered non-dedicatory exactions—that is, the payment of costs of street improvements—that are "materially greater" than the special benefits of such improvements to landowners to be a compensable taking under the Texas Constitution.

Further, as noted by the United States Supreme Court in *Dolan,* this Court adopted something like the *Nollan/Dolan* standard in *City of College Station v. Turtle Rock Corp.* [138] and applied it to a non-dedicatory exaction based on a general ordinance, a situation not unlike the present case. College Station's ordinance required developers either to dedicate land for park purposes or contribute to a special fund to be used for neighborhood parks. [139] Turtle Rock paid the fund $34,200 to obtain approval of its development plan. To determine whether this exaction constituted a taking:

138 680 S.W.2d 802 (Tex.1984).

139 *Id.* at 803–804.

> Both need and benefit must be considered. Without a determination of need, a city could exact land or money to provide a park that was needed long ***643** before the developer subdivided his land. Similarly, unless the court considers the benefit, a city could, with monetary exactions, place a park so far from the particular subdivision that the residents received no benefit....
>
> This type of "reasonable connection" analysis will ensure that the subdivision receives relief from a perceived

need, and it will effectively constrain the reach of the municipality. It is consistent with the kind of "reasonableness" analysis required by [*DuPuy v. City of Waco,* 396 S.W.2d 103, 107 (Tex.1965), and *City of Austin v. Teague,* 570 S.W.2d 389, 391 (Tex.1978)] and the presumption of validity is consistent with the approach that Texas courts have traditionally taken when considering the constitutionality of municipal land use ordinances. We also note that this type of analysis has been commonly used in other jurisdictions examining the validity of park land dedication ordinances. [140]

140 *Id.* at 807.

We agree with the United States Supreme Court's refinement of this "reasonable connection" analysis to *Dolan's* two-part "essential nexus"/ "rough proportionality" test. Local government is constantly aware of the exactions imposed on various landowners for various kinds of developments. It is also aware of the impact of such developments on the community over time. For these reasons, we agree with the Supreme Court that the burden should be on the government to "make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." [141]

141 *Dolan v. City of Tigard,* 512 U.S. 374, 391, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994).

IV

Having concluded that the *Nollan/Dolan* standard applies to the exaction imposed on Stafford, we now consider whether, under that standard, the exaction was a compensable taking.

By the first part of the standard, the condition the Town imposed on the development of Stafford Estates must have had an essential nexus to the substantial advancement of some legitimate government interest. We agree with the court of appeals that the "safety on, and durability of, Simmons Road" [142] are legitimate interests, as the Town asserted, and that those interests were substantially advanced by many of the improvements to Simmons Road that the Town required Stafford to make—in the court of appeals' words, "shoulders on roads, better sight distances, safer driver access points, and the capacity for better traffic flow". [143] "Indeed," the court of appeals noted, "Stafford does not contend these improvements would not increase public safety, but only complains that they should have been asphalt rather than concrete." [144] The Town argues that the first part of the *Dolan* standard should not be applied to the concrete requirement separate and apart from the road reconstruction as a whole, and we agree.

142 71 S.W.3d 18, 39.

143 *Id.* at 40.

144 *Id.*

The court of appeals went on to conclude that an essential nexus also existed between the Town's interests and its specific requirement that Simmons Road be demolished and repaved with concrete because that requirement did not "utterly fail" to advance the Town's interests. The court appears to have reasoned that because a requirement that utterly fails to advance legitimate government interests is ***644** a taking, as was the case in *Nollan,* a requirement that does not utterly fail to advance such interests is not a taking. Apart from the obvious logical flaw in this reasoning, it has the perverse effect of equating "substantially advance" with "does not utterly fail to advance". We do not agree that the "essential nexus" part of the *Dolan* standard can be met merely by showing that a condition does not utterly fail to advance legitimate government interests.

By the second part of the standard, the Town was required to make an individualized determination that the required improvements to Simmons Road were roughly proportional to the projected impact of the Stafford Estates development. Stafford argues that the Town was required to make this determination before imposing the condition on development, but we agree with the court of appeals that while the determination usually *should* be made before a condition is imposed, *Dolan* does not preclude the government from making the determination after the fact. [145]

145 *Id.* at 40–41.

The Town does not contend that the improvements it required Stafford to make in Simmons Road are roughly proportional to the impact of the development on that road. The road was in good shape at the time, and Stafford showed that the development would increase traffic only about 18%. Stafford concedes that some improvements were necessary, but not rebuilding the road. But the Town argues that the impact of the development on all of the Town's roadways must be taken into account. We agree that the Town can take the development's full impact into account and is not limited to considering

the impact on Simmons Road. But in so doing, the Town is nonetheless required to measure that impact in a meaningful, though not precisely mathematical, way, and must show how the impact, thus measured, is roughly proportional in nature and extent to the required improvements.

The Town has attempted to measure the impact of the Stafford Estates development on the Town's roadways by reference to the traffic impact fees it charges developers to be used in making capital improvements to its roadway system. The Town argues that the fees actually paid do not reflect the impact of development on traffic, as one might think. Rather, the Town asserts, the discount in the fees required by ordinance based on the nature of the development shows the real impact of a development on the roadway system. The Town has offered no evidence to support this assertion. In the abstract—and the abstract is all the Town has provided—it is just as likely that the discounts are not giveaways to developers but are themselves an admission by the Town that a particular development's impact on the roadways included in the Town's capital improvements plan is actually less than the total cost of those improvements apportioned to all new developments. In other words, the Town's discount of impact fees just as likely reflects the reality that some improvements ought, "in all fairness and justice, [to] be borne by the public as a whole." [146] As the court of appeals concluded, the Town has failed to relate discounted traffic impact fees to the impact of developments on traffic.

146 *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 835 n. 4, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987).

The Town argues that requiring each developer to improve abutting roadways is roughly proportional to the impact of all developments on all roadways, and that "this system of reciprocal subdivision exactions meets the requirement of rough proportionality." Once again, the argument is ***645** too abstract. It cannot be determined from the Town's mere assertion whether the requirement imposes a burden on developers that is more than, less than, or about the same as the impact of development. The argument that it is fair for everyone to "kick in a little something" cannot be assessed in the abstract.

Finally, the Town complains, the court of appeals improperly focused on the requirement that Simmons Road be rebuilt with concrete as being wholly unrelated to the impact of the Stafford Estates development. We do not agree. The court of appeals simply expressed concern that the requirement was well beyond any justification offered by the Town.

In sum, the Town has failed to show that the required improvements to Simmons Road bear any relationship to the impact of the Stafford Estates development on the road itself or on the Town's roadway system as a whole. On this record, conditioning development on rebuilding Simmons Road with concrete and making other changes was simply a way for the Town to extract from Stafford a benefit to which the Town was not entitled. The exaction the Town imposed was a taking for which Stafford is entitled to be compensated. Inasmuch as the Town does not challenge the court of appeals' damages analysis, its judgment must be affirmed.

V

Finally, we must consider Stafford's argument that it is entitled to attorney fees and expert witness fees under the federal Civil Rights Attorney's Fees Awards Act of 1976, 42 U.S.C. § 1988 (2003). Stafford sued under the Civil Rights Act of 1867 as amended, 42 U.S.C. § 1983 (2003), alleging a violation of his rights under the Takings Clause of the Fifth Amendment to the United States Constitution. Section 1988(c) authorizes recovery of expert witness fees in some federal civil rights actions but not in an action under section 1983. [147] Thus, Stafford is not entitled to recover expert witness fees. Section 1988(b) authorizes an award of attorney fees to the prevailing party in an action under 42 U.S.C. § 1983. [148] The court of appeals held in part that Stafford cannot recover attorney fees because it has not prevailed on its 1983 claim. [149] We agree.

147 42 U.S.C. § 1988(c) ("In awarding an attorney's fee under subsection (b) of this section in any action or proceeding to enforce a provision of [§§ 1981 or 1981a], the court, in its discretion, may include expert fees as part of the attorney's fee.").

148 *Id.* § 1988(b) (2003) ("In any action or proceeding to enforce a provision of ... [42 U.S.C. § 1983] ..., the court, in its discretion, may allow the prevailing party ... a reasonable attorney's fee as part of the costs....").

149 71 S.W.3d at 49.

The Fifth Amendment prohibits the taking of property without just compensation but does not require payment before the taking occurs. [150] As the United States Supreme Court has held:

150 *Williamson County Reg'l Planning Comm'n v. Hamilton Bank,* 473 U.S. 172, 195, 105 S.Ct. 3108, 87 L.Ed.2d 126 (1985).

> all that is required is that a " 'reasonable, certain and adequate provision for obtaining compensation' " exist at the time of the taking. If the government has provided an adequate process for obtaining compensation, and if resort to that process "[yields] just compensation," then the property owner "has no claim against the Government" for a taking.... Similarly, if a State provides an adequate procedure for seeking just compensation, the property owner cannot claim a violation of the Just Compensation Clause until it has used the ***646** procedure and been denied just compensation. [151]

151 *Id.* at 194–95, 105 S.Ct. 3108 (alteration in original) (citations omitted).

For a regulatory taking like Stafford claims, Texas provides an inverse condemnation action for violation of article I, section 17 of the Texas Constitution. [152] This is "an adequate procedure for seeking just compensation". Stafford has made use of the procedure and now obtained compensation. Consequently, Stafford "cannot claim a violation of the Just Compensation Clause" and therefore cannot prevail on its section 1983 action.

152 *Steele v. City of Houston,* 603 S.W.2d 786, 791 (Tex.1980); *City of Waco v. Roberts,* 121 Tex. 217, 48 S.W.2d 577, 579 (1932) (stating that a cause of action for violation of article I, section 17 of the Texas Constitution arises "under the Constitution itself"), *overruled on other grounds by City of Houston v. Renault, Inc.,* 431 S.W.2d 322 (Tex.1968).

Amicus curiae, Pacific Legal Foundation, argues that this is tantamount to saying that state and federal takings claims cannot be brought in the same lawsuit, but it is not. The fact that the federal constitutional guaranty is not violated if state law affords just compensation does not preclude both claims from being asserted in the same action. [153] Recovery denied on the state takings claim may yet be granted on the federal claim, in the same action.

153 *See Guetersloh v. State,* 930 S.W.2d 284 (Tex.App.-Austin 1996, writ denied), *cert. denied,* 522 U.S. 1110, 118 S.Ct. 1040, 140 L.Ed.2d 106 (1998).

Stafford argues that it is entitled to attorney fees under section 1988 even if its federal claims are not reached because of the relief awarded on his state claim, as long as the claims arise out of a common nucleus of operative facts. Stafford would have a strong argument if its federal claims were simply "not reached". [154] But because Stafford has obtained adequate compensation through state procedures, it has no federal claims to be reached. Stafford's rights under the United States Constitution simply were never violated.

154 *See Southwestern Bell Tel. Co. v. City of El Paso,* 346 F.3d 541, 551 (5th Cir.2003) (" 'In *Maher v. Gagne,* 448 U.S. 122, 100 S.Ct. 2570, 65 L.Ed.2d 653 (1980), the Supreme Court intimated that a party prevailing on a substantial claim that is pendent to a civil rights claim is entitled to a recovery of attorney's fees when the civil rights claim and the pendent claim arise out of a common nucleus of operative facts. This Circuit, along with other circuits, has followed the Supreme Court's direction.' ") (quoting *Williams v. Thomas,* 692 F.2d 1032, 1036 (5th Cir.1982), *cert. denied,* 462 U.S. 1133, 103 S.Ct. 3115, 77 L.Ed.2d 1369 (1983)).

* * *

For these reasons, the judgment of the court of appeals is

Affirmed.

All Citations

135 S.W.3d 620, 47 Tex. Sup. Ct. J. 497

107 S.Ct. 3141
Supreme Court of the United States

James Patrick NOLLAN, et ux., Appellant
v.
CALIFORNIA COASTAL COMMISSION.

No. 86–133
|
Argued March 30, 1987.
|
Decided June 26, 1987.

Synopsis

Property owners brought action against California Coastal Commission seeking writ of mandate. The Commission had imposed as a condition to approval of rebuilding permit requirement that owners provide lateral access to public to pass and repass across property. The Superior Court, Ventura County, William L. Peck, J., granted peremptory writ of mandate, and the Commission appealed. The California Court of Appeal, Abbe, J., 177 Cal.App.3d 719, 223 Cal.Rptr. 28, reversed and remanded with directions. Appeal was taken. The Supreme Court, Justice Scalia, held that Commission could not, without paying compensation, condition grant of permission to rebuild house on property owners' transfer to public of easement across beachfront property.

Reversed.

Justice Brennan filed a dissenting opinion in which Marshall joined.

Justice Blackmun filed a dissenting opinion.

Justice Stevens filed a dissenting opinion in which Justice Blackmun joined.

Procedural Posture(s): On Appeal.

****3142 *825** *Syllabus* [*]

[*] The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Lumber Co.,* 200 U.S. 321, 337, 26 S.Ct. 282, 287, 50 L.Ed. 499.

The California Coastal Commission granted a permit to appellants to replace a small bungalow on their beachfront lot with a larger house upon the condition that they allow the public an easement to pass across their beach, which was located between two public beaches. The County Superior Court granted appellants a writ of administrative mandamus and directed that the permit condition be struck. However, the State Court of Appeal reversed, ruling that imposition of the condition did not violate the Takings Clause of the Fifth Amendment, as incorporated against the States by the Fourteenth Amendment.

Held:

1. Although the outright taking of an uncompensated, permanent, public-access easement would violate the Takings Clause, conditioning appellants' rebuilding permit on their granting such an easement would be lawful land-use regulation if it substantially furthered governmental purposes that would justify denial of the permit. The government's power to forbid particular land uses in order to advance some legitimate police-power purpose includes the power to condition such use upon some concession by the owner, even a concession of property rights, so long as the condition furthers the same governmental ****3143** purpose advanced as justification for prohibiting the use. Pp. 3145–3148.

2. Here the Commission's imposition of the access-easement condition cannot be treated as an exercise of land-use regulation power since the condition does not serve public purposes related to the permit requirement. Of those put forth to justify it—protecting the public's ability to see the beach, assisting the public in overcoming a perceived "psychological" barrier to using the beach, and preventing beach congestion—none is plausible. Moreover, the Commission's justification for the access requirement unrelated to land-use regulation—that it is part of a comprehensive program to provide beach access arising from prior coastal permit decisions—is simply an expression of the belief that the public interest will be served by a continuous strip of publicly accessible beach. Although the State is free to advance its "comprehensive program" by exercising its eminent domain power and paying for access easements, it ***826** cannot compel coastal residents alone to contribute to the realization of that goal. Pp. 3148–3150.

177 Cal.App.3d 719, 223 Cal.Rptr. 28 (1986), reversed.

SCALIA, J., delivered the opinion of the Court, in which REHNQUIST, C.J., and WHITE, POWELL, and O'CONNOR, JJ., joined. BRENNAN, J., filed a dissenting opinion, in which MARSHALL, J., joined, *post,* p. ——. BLACKMUN, J., filed a dissenting opinion, *post,* p. ——. STEVENS, J., filed a dissenting opinion, in which BLACKMUN, J., joined, *post,* p. ——.

Attorneys and Law Firms

Robert K. Best argued the cause for appellants. With him on the briefs were Ronald A. Zumbrun and Timothy A. Bittle.

Andrea Sheridan Ordin, Chief Assistant Attorney General of California, argued the cause for appellee. With her on the brief were John K. Van de Kamp, Attorney General, N. Gregory Taylor, Assistant Attorney General, Anthony M. Summers, Supervising Deputy Attorney General, and Jamee Jordan Patterson.*

* Briefs of amici curiae urging reversal were filed for the United States by Solicitor General Fried, Assistant Attorney General Habicht, Deputy Solicitor General Ayer, Deputy Assistant Attorneys General Marzulla, Hookano, and Kmiec, Richard J. Lazarus, and Peter R. Steenland, Jr.; and for the Breezy Point Cooperative by Walter Pozen.

Briefs of amici curiae urging affirmance were filed for the Commonwealth of Massachusetts et al. by James M. Shannon, Attorney General of Massachusetts, and Lee P. Breckenridge and Nathaniel S.W. Lawrence, Assistant Attorneys General, and by the Attorneys General for their respective States as follows: Don Siegelman of Alabama, John Steven Clark of Arkansas, Joseph Lieberman of Connecticut, Charles M. Oberly of Delaware, Robert Butterworth of Florida, Warren Price III of Hawaii, Neil F. Hartigan of Illinois, Thomas J. Miller of Iowa, Robert T. Stephan of Kansas, William J. Guste, Jr., of Louisiana, James E. Tierney of Maine, J. Joseph Curran, Jr., of Maryland, Hubert H. Humphrey III of Minnesota, William L. Webster of Missouri, Robert M. Spire of Nebraska, Stephen E. Merrill of New Hampshire, W. Cary Edwards of New Jersey, Robert Abrams of New York, Lacy H. Thornburg of North Carolina, Nicholas Spaeth of North Dakota, Dave Frohnmayer of Oregon, James E. O'Neil of Rhode Island, W.J. Michael Cody of Tennessee, Jim Mattox of Texas, Jeffrey Amestoy of Vermont, Kenneth O. Eikenberry of Washington, Charles G. Brown of West Virginia, and Donald J. Hanaway of Wisconsin; for the Council of State Governments et al. by Benna Ruth Solomon and Joyce Holmes Benjamin; for Designated California Cities and Counties by E. Clement Shute, Jr.; and for the Natural Resources Defense Council et al. by Fredric D. Woocher.

Briefs of amici curiae were filed for the California Association of Realtors by William M. Pfeiffer; and for the National Association of Home Builders et al. by Jerrold A. Fadem, Michael M. Berger, and Gus Bauman.

Opinion

***827** Justice SCALIA delivered the opinion of the Court.

James and Marilyn Nollan appeal from a decision of the California Court of Appeal ruling that the California Coastal Commission could condition its grant of permission to rebuild their house on their transfer to the public of an easement across their beachfront property. 177 Cal.App.3d 719, 223 Cal.Rptr. 28 (1986). The California court rejected their claim that imposition of that condition violates the Takings Clause of the Fifth Amendment, as incorporated against the States by the Fourteenth Amendment. *Ibid.* We noted probable jurisdiction. 479 U.S. 913, 107 S.Ct. 312, 93 L.Ed.2d 286 (1986).

I

The Nollans own a beachfront lot in Ventura County, California. A quarter-mile north of their property is Faria County Park, an oceanside public park with a public beach and recreation area. Another public beach area, known locally as "the Cove," lies 1,800 feet south of their lot. A concrete seawall approximately eight feet high separates the beach portion of the Nollans' property from the rest of the lot. The historic mean high tide line determines the lot's oceanside boundary.

The Nollans originally leased their property with an option to buy. The building on the lot was a small bungalow, totaling 504 square feet, which for a time they rented to summer vacationers. After years of rental use, however, the building had fallen into disrepair, and could no longer be rented out.

***828** The Nollans' option to purchase was conditioned on their promise to demolish the bungalow and replace it. In order to do so, under Cal.Pub.Res. Code Ann. §§ 30106, 30212, and 30600 (West 1986), they were required to obtain a coastal development ****3144** permit from the California Coastal Commission. On February 25, 1982, they submitted a

permit application to the Commission in which they proposed to demolish the existing structure and replace it with a three-bedroom house in keeping with the rest of the neighborhood.

The Nollans were informed that their application had been placed on the administrative calendar, and that the Commission staff had recommended that the permit be granted subject to the condition that they allow the public an easement to pass across a portion of their property bounded by the mean high tide line on one side, and their seawall on the other side. This would make it easier for the public to get to Faria County Park and the Cove. The Nollans protested imposition of the condition, but the Commission overruled their objections and granted the permit subject to their recordation of a deed restriction granting the easement. App. 31, 34.

On June 3, 1982, the Nollans filed a petition for writ of administrative mandamus asking the Ventura County Superior Court to invalidate the access condition. They argued that the condition could not be imposed absent evidence that their proposed development would have a direct adverse impact on public access to the beach. The court agreed, and remanded the case to the Commission for a full evidentiary hearing on that issue. *Id.,* at 36.

On remand, the Commission held a public hearing, after which it made further factual findings and reaffirmed its imposition of the condition. It found that the new house would increase blockage of the view of the ocean, thus contributing to the development of "a 'wall' of residential structures" that would prevent the public "psychologically ... from realizing a stretch of coastline exists nearby that they have every right ***829** to visit." *Id.,* at 58. The new house would also increase private use of the shorefront. *Id.,* at 59. These effects of construction of the house, along with other area development, would cumulatively "burden the public's ability to traverse to and along the shorefront." *Id.,* at 65–66. Therefore the Commission could properly require the Nollans to offset that burden by providing additional lateral access to the public beaches in the form of an easement across their property. The Commission also noted that it had similarly conditioned 43 out of 60 coastal development permits along the same tract of land, and that of the 17 not so conditioned, 14 had been approved when the Commission did not have administrative regulations in place allowing imposition of the condition, and the remaining 3 had not involved shorefront property. *Id.,* at 47–48.

The Nollans filed a supplemental petition for a writ of administrative mandamus with the Superior Court, in which they argued that imposition of the access condition violated the Takings Clause of the Fifth Amendment, as incorporated against the States by the Fourteenth Amendment. The Superior Court ruled in their favor on statutory grounds, finding, in part to avoid "issues of constitutionality," that the California Coastal Act of 1976, Cal.Pub.Res.Code Ann. § 30000 *et seq.* (West 1986), authorized the Commission to impose public access conditions on coastal development permits for the replacement of an existing single-family home with a new one only where the proposed development would have an adverse impact on public access to the sea. App. 419. In the court's view, the administrative record did not provide an adequate factual basis for concluding that replacement of the bungalow with the house would create a direct or cumulative burden on public access to the sea. *Id.,* at 416–417. Accordingly, the Superior Court granted the writ of mandamus and directed that the permit condition be struck.

The Commission appealed to the California Court of Appeal. While that appeal was pending, the Nollans satisfied ***830** the ****3145** condition on their option to purchase by tearing down the bungalow and building the new house, and bought the property. They did not notify the Commission that they were taking that action.

The Court of Appeal reversed the Superior Court. 177 Cal.App.3d 719, 223 Cal.Rptr. 28 (1986). It disagreed with the Superior Court's interpretation of the Coastal Act, finding that it required that a coastal permit for the construction of a new house whose floor area, height or bulk was more than 10% larger than that of the house it was replacing be conditioned on a grant of access. *Id.,* at 723–724, 223 Cal.Rptr., at 31; see Cal.Pub.Res.Code Ann. § 30212. It also ruled that the requirement did not violate the Constitution under the reasoning of an earlier case of the Court of Appeal, *Grupe v. California Coastal Comm'n,* 166 Cal.App.3d 148, 212 Cal.Rptr. 578 (1985). In that case, the court had found that so long as a project contributed to the need for public access, even if the project standing alone had not created the need for access, and even if there was only an indirect relationship between the access exacted and the need to which the project contributed, imposition of an access condition on a development permit was sufficiently related to burdens created by the project to be constitutional. 177 Cal.App.3d, at 723, 223 Cal.Rptr., at 30–31; see *Grupe, supra,* 166 Cal.App.3d, at 165–168, 212 Cal.Rptr., at 587–590; see also *Remmenga v. California Coastal Comm'n,* 163 Cal.App.3d

623, 628, 209 Cal.Rptr. 628, 631, appeal dism'd, 474 U.S. 915, 106 S.Ct. 241, 88 L.Ed.2d 250 (1985). The Court of Appeal ruled that the record established that that was the situation with respect to the Nollans' house. 177 Cal.App.3d, at 722–723, 223 Cal.Rptr., at 30–31. It ruled that the Nollans' taking claim also failed because, although the condition diminished the value of the Nollans' lot, it did not deprive them of all reasonable use of their property. *Id.,* at 723, 223 Cal.Rptr., at 30; see *Grupe, supra,* 166 Cal.App.3d, at 175–176, 212 Cal.Rptr., at 595–596. Since, in the Court of Appeal's view, there was no statutory or constitutional obstacle to imposition ***831** of the access condition, the Superior Court erred in granting the writ of mandamus. The Nollans appealed to this Court, raising only the constitutional question.

II

Had California simply required the Nollans to make an easement across their beachfront available to the public on a permanent basis in order to increase public access to the beach, rather than conditioning their permit to rebuild their house on their agreeing to do so, we have no doubt there would have been a taking. To say that the appropriation of a public easement across a landowner's premises does not constitute the taking of a property interest but rather (as Justice BRENNAN contends) "a mere restriction on its use," *post,* at 3154, n. 3, is to use words in a manner that deprives them of all their ordinary meaning. Indeed, one of the principal uses of the eminent domain power is to assure that the government be able to require conveyance of just such interests, so long as it pays for them. J. Sackman, 1 Nichols on Eminent Domain § 2.1[1] (Rev. 3d ed. 1985), 2 *id.,* § 5.01[5]; see 1 *id.,* § 1.42 [9], 2 *id.,* § 6.14. Perhaps because the point is so obvious, we have never been confronted with a controversy that required us to rule upon it, but our cases' analysis of the effect of other governmental action leads to the same conclusion. We have repeatedly held that, as to property reserved by its owner for private use, "the right to exclude [others is] 'one of the most essential sticks in the bundle of rights that are commonly characterized as property.' " *Loretto v. Teleprompter Manhattan CATV Corp.,* 458 U.S. 419, 433, 102 S.Ct. 3164, 3175, 73 L.Ed.2d 868 (1982), quoting *Kaiser Aetna v. United States,* 444 U.S. 164, 176, 100 S.Ct. 383, 391, 62 L.Ed.2d 332 (1979). In ****3146** *Loretto* we observed that where governmental action results in "[a] permanent physical occupation" of the property, by the government itself or by others, see 458 U.S., at 432–433, n. 9, 102 S.Ct., at 3174–3175, n. 9, "our cases uniformly have found a taking to the extent of the occupation, without regard to whether the action achieves an important public ***832** benefit or has only minimal economic impact on the owner," *id.,* at 434–435, 102 S.Ct., at 3175–3176. We think a "permanent physical occupation" has occurred, for purposes of that rule, where individuals are given a permanent and continuous right to pass to and fro, so that the real property may continuously be traversed, even though no particular individual is permitted to station himself permanently upon the premises. [1]

[1] The holding of *PruneYard Shopping Center v. Robins,* 447 U.S. 74, 100 S.Ct. 2035, 64 L.Ed.2d 741 (1980), is not inconsistent with this analysis, since there the owner had already opened his property to the general public, and in addition permanent access was not required. The analysis of *Kaiser Aetna v. United States,* 444 U.S. 164, 100 S.Ct. 383, 62 L.Ed.2d 332 (1979), is not inconsistent because it was affected by traditional doctrines regarding navigational servitudes. Of course neither of those cases involved, as this one does, a classic right-of-way easement.

Justice BRENNAN argues that while this might ordinarily be the case, the California Constitution's prohibition on any individual's "exclu[ding] the right of way to [any navigable] water whenever it is required for any public purpose," Art. X, § 4, produces a different result here. *Post,* at 3153–3154; see also *post,* at 3157, 3158–3159. There are a number of difficulties with that argument. Most obviously, the right of way sought here is not naturally described as one *to* navigable water (from the street to the sea) but *along* it; it is at least highly questionable whether the text of the California Constitution has any prima facie application to the situation before us. Even if it does, however, several California cases suggest that Justice BRENNAN's interpretation of the effect of the clause is erroneous, and that to obtain easements of access across private property the State must proceed through its eminent domain power. See *Bolsa Land Co. v. Burdick,* 151 Cal. 254, 260, 90 P. 532, 534–535 (1907); *Oakland v. Oakland Water Front Co.,* 118 Cal. 160, 185, 50 P. 277, 286 (1897); *Heist v. County of Colusa,* 163 Cal.App.3d 841, 851, 213 Cal.Rptr. 278, 285 (1984); *Aptos Seascape Corp. v. Santa Cruz,* 138 Cal.App.3d 484, 505–506, 188 Cal.Rptr. 191, 204–205 (1982). (None of these cases specifically addressed ***833** the argument that Art. X, § 4 allowed the public to cross private property to get to navigable water, but if that provision meant what Justice BRENNAN believes, it is hard to see why it was not invoked.) See also 41 Op.Cal.Atty.Gen.

39, 41 (1963) ("In spite of the sweeping provisions of [Art. X, § 4], and the injunction therein to the Legislature to give its provisions the most liberal interpretation, the few reported cases in California have adopted the general rule that one may not trespass on private land to get to navigable tidewaters for the purpose of commerce, navigation or fishing"). In light of these uncertainties, and given the fact that, as Justice BLACKMUN notes, the Court of Appeal did not rest its decision on Art. X, § 4, *post,* at 3162, we should assuredly not take it upon ourselves to resolve this question of California constitutional law in the first instance. See, *e.g., Jenkins v. Anderson,* 447 U.S. 231, 234, n. 1, 100 S.Ct. 2124, 2127, n. 1, 65 L.Ed.2d 86 (1980). That would be doubly inappropriate since the Commission did not advance this argument in the Court of Appeal, and the Nollans argued in the Superior Court that any claim that there was a pre-existing public right of access had to be asserted through a quiet title action, see Points and Authorities in Support of Motion for Writ of Administrative Mandamus, No. SP50805 (Super.Ct.Cal.), p. 20, which the Commission, possessing no claim to the easement itself, probably would not have had standing under California law to bring. See ****3147** Cal.Code Civ.Proc.Ann. § 738 (West 1980). [2]

2 Justice BRENNAN also suggests that the Commission's public announcement of its intention to condition the rebuilding of houses on the transfer of easements of access caused the Nollans to have "no reasonable claim to any expectation of being able to exclude members of the public" from walking across their beach. *Post,* at 3158–3159. He cites our opinion in *Ruckelshaus v. Monsanto Co.,* 467 U.S. 986, 104 S.Ct. 2862, 81 L.Ed.2d 815 (1984), as support for the peculiar proposition that a unilateral claim of entitlement by the government can alter property rights. In *Monsanto,* however, we found merely that the Takings Clause was not violated by giving effect to the Government's announcement that application for "*the right to [the] valuable Government benefit,*" *id.,* at 1007, 104 S.Ct., at 2875 (emphasis added), of obtaining registration of an insecticide would confer upon the Government a license to use and disclose the trade secrets contained in the application. *Id.,* at 1007–1008, 104 S.Ct., at 2875–2876. See also *Bowen v. Gilliard,* 483 U.S. 587, 605, 107 S.Ct. 3008, 3019, 97 L.Ed.2d 485 (1987). But the right to build on one's own property—even though its exercise can be subjected to legitimate permitting requirements—cannot remotely be described as a "governmental benefit." And thus the announcement that the application for (or granting of) the permit will entail the yielding of a property interest cannot be regarded as establishing the voluntary "exchange," 467 U.S., at 1007, 104 S.Ct., at 2875, that we found to have occurred in *Monsanto.* Nor are the Nollans' rights altered because they acquired the land well after the Commission had begun to implement its policy. So long as the Commission could not have deprived the prior owners of the easement without compensating them, the prior owners must be understood to have transferred their full property rights in conveying the lot.

***834** Given, then, that requiring uncompensated conveyance of the easement outright would violate the Fourteenth Amendment, the question becomes whether requiring it to be conveyed as a condition for issuing a land-use permit alters the outcome. We have long recognized that land-use regulation does not effect a taking if it "substantially advance[s] legitimate state interests" and does not "den[y] an owner economically viable use of his land," *Agins v. Tiburon,* 447 U.S. 255, 260, 100 S.Ct. 2138, 2141, 65 L.Ed.2d 106 (1980). See also *Penn Central Transportation Co. v. New York City,* 438 U.S. 104, 127, 98 S.Ct. 2646, 2660, 57 L.Ed.2d 631 (1978) ("[A] use restriction may constitute a 'taking' if not reasonably necessary to the effectuation of a substantial government purpose"). Our cases have not elaborated on the standards for determining what constitutes a "legitimate state interest" or what type of connection between the regulation and the state interest satisfies the requirement that the former "substantially advance" the latter. [3] They have made clear, however, that a ***835** broad range of governmental purposes and regulations satisfies these requirements. See *Agins v. Tiburon, supra,* 447 U.S., at 260–262, 100 S.Ct., at 2141–2142 (scenic zoning); *Penn Central Transportation Co. v. New York City, supra* (landmark preservation); ****3148** *Euclid v. Ambler Realty Co.,* 272 U.S. 365, 47 S.Ct. 114, 71 L.Ed. 303 (1926) (residential zoning); Laitos & Westfall, Government Interference with Private Interests in Public Resources, 11 Harv.Envtl.L.Rev. 1, 66 (1987). The Commission argues that among these permissible purposes are protecting the public's ability to see the beach, assisting the public in overcoming the "psychological barrier" to using the beach created by a developed shorefront, and preventing congestion on the public beaches. We assume, without deciding, that this is so—in which case the Commission unquestionably would be able to deny the Nollans their permit outright if their new house (alone, or by reason of

the cumulative impact produced in conjunction with other construction)[4] would substantially impede these purposes, ***836** unless the denial would interfere so drastically with the Nollans' use of their property as to constitute a taking. See *Penn Central Transportation Co. v. New York City, supra.*

[3] Contrary to Justice BRENNAN's claim, *post,* at 3150, our opinions do not establish that these standards are the same as those applied to due process or equal protection claims. To the contrary, our verbal formulations in the takings field have generally been quite different. We have required that the regulation "substantially advance" the "legitimate state interest" sought to be achieved, *Agins v. Tiburon,* 447 U.S. 255, 260, 100 S.Ct. 2138, 2141, 65 L.Ed.2d 106 (1980), not that "the State '*could rationally have decided* ' that the measure adopted might achieve the State's objective." *Post,* at ——, quoting *Minnesota v. Clover Leaf Creamery Co.,* 449 U.S. 456, 466, 101 S.Ct. 715, 725, 66 L.Ed.2d 659 (1981). Justice BRENNAN relies principally on an equal protection case, *Minnesota v. Clover Leaf Creamery Co., supra,* and two substantive due process cases, *Williamson v. Lee Optical of Oklahoma, Inc.,* 348 U.S. 483, 487–488, 75 S.Ct. 461, 464–465, 99 L.Ed. 563 (1955), and *Day-Brite Lighting, Inc. v. Missouri,* 342 U.S. 421, 423, 72 S.Ct. 405, 407, 96 L.Ed. 469 (1952), in support of the standards he would adopt. But there is no reason to believe (and the language of our cases gives some reason to disbelieve) that so long as the regulation of property is at issue the standards for takings challenges, due process challenges, and equal protection challenges are identical; any more than there is any reason to believe that so long as the regulation of speech is at issue the standards for due process challenges, equal protection challenges, and First Amendment challenges are identical. *Goldblatt v. Hempstead,* 369 U.S. 590, 82 S.Ct. 987, 8 L.Ed.2d 130 (1962), does appear to assume that the inquiries are the same, but that assumption is inconsistent with the formulations of our later cases.

[4] If the Nollans were being singled out to bear the burden of California's attempt to remedy these problems, although they had not contributed to it more than other coastal landowners, the State's action, even if otherwise valid, might violate either the incorporated Takings Clause or the Equal Protection Clause. One of the principal purposes of the Takings Clause is "to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." *Armstrong v. United States,* 364 U.S. 40, 49, 80 S.Ct. 1563, 1569, 4 L.Ed.2d 1554 (1960); see also *San Diego Gas & Electric Co. v. San Diego,* 450 U.S. 621, 656, 101 S.Ct. 1287, 1306, 67 L.Ed.2d 551 (1981) (BRENNAN, J., dissenting); *Penn Central Transportation Co. v. New York City,* 438 U.S. 104, 123, 98 S.Ct. 2646, 2658, 57 L.Ed.2d 631 (1978). But that is not the basis of the Nollans' challenge here.

The Commission argues that a permit condition that serves the same legitimate police-power purpose as a refusal to issue the permit should not be found to be a taking if the refusal to issue the permit would not constitute a taking. We agree. Thus, if the Commission attached to the permit some condition that would have protected the public's ability to see the beach notwithstanding construction of the new house —for example, a height limitation, a width restriction, or a ban on fences—so long as the Commission could have exercised its police power (as we have assumed it could) to forbid construction of the house altogether, imposition of the condition would also be constitutional. Moreover (and here we come closer to the facts of the present case), the condition would be constitutional even if it consisted of the requirement that the Nollans provide a viewing spot on their property for passersby with whose sighting of the ocean their new house would interfere. Although such a requirement, constituting a permanent grant of continuous access to the property, would have to be considered a taking if it were not attached to a development permit, the Commission's assumed power to forbid construction of the house in order to protect the public's view of the beach must surely include the power to condition construction upon some concession by the owner, even a concession of property rights, that serves the same end. If a prohibition designed to accomplish that purpose would be a legitimate exercise of the police power rather than a taking, it would be strange to conclude that providing the ***837** owner an alternative to that prohibition which accomplishes the same purpose is not.

The evident constitutional propriety disappears, however, if the condition substituted for the prohibition utterly fails to further the end advanced as the justification for the

prohibition. When that essential nexus is eliminated, the situation becomes the same as if California law forbade shouting fire in a crowded theater, but granted dispensations to those willing to contribute $100 to the state treasury. While a ban on shouting fire can be a core exercise of the State's police power to protect the public safety, and can thus meet even our stringent standards for regulation of speech, adding the unrelated condition alters the purpose to one which, while it may be legitimate, is inadequate to sustain the ban. Therefore, even though, in a sense, requiring a $100 tax contribution in **3149 order to shout fire is a lesser restriction on speech than an outright ban, it would not pass constitutional muster. Similarly here, the lack of nexus between the condition and the original purpose of the building restriction converts that purpose to something other than what it was. The purpose then becomes, quite simply, the obtaining of an easement to serve some valid governmental purpose, but without payment of compensation. Whatever may be the outer limits of "legitimate state interests" in the takings and land-use context, this is not one of them. In short, unless the permit condition serves the same governmental purpose as the development ban, the building restriction is not a valid regulation of land use but "an out-and-out plan of extortion." *J.E.D. Associates, Inc. v. Atkinson,* 121 N.H. 581, 584, 432 A.2d 12, 14–15 (1981); see Brief for United States as *Amicus Curiae* 22, and n. 20. See also *Loretto v. Teleprompter Manhattan CATV Corp.,* 458 U.S., at 439, n. 17, 102 S.Ct., at 3178, n. 17. [5]

5 One would expect that a regime in which this kind of leveraging of the police power is allowed would produce stringent land-use regulation which the State then waives to accomplish other purposes, leading to lesser realization of the land-use goals purportedly sought to be served than would result from more lenient (but nontradeable) development restrictions. Thus, the importance of the purpose underlying the prohibition not only does not *justify* the imposition of unrelated conditions for eliminating the prohibition, but positively militates against the practice.

***838** III

The Commission claims that it concedes as much, and that we may sustain the condition at issue here by finding that it is reasonably related to the public need or burden that the Nollans' new house creates or to which it contributes. We can accept, for purposes of discussion, the Commission's proposed test as to how close a "fit" between the condition and the burden is required, because we find that this case does not meet even the most untailored standards. The Commission's principal contention to the contrary essentially turns on a play on the word "access." The Nollans' new house, the Commission found, will interfere with "visual access" to the beach. That in turn (along with other shorefront development) will interfere with the desire of people who drive past the Nollans' house to use the beach, thus creating a "psychological barrier" to "access." The Nollans' new house will also, by a process not altogether clear from the Commission's opinion but presumably potent enough to more than offset the effects of the psychological barrier, increase the use of the public beaches, thus creating the need for more "access." These burdens on "access" would be alleviated by a requirement that the Nollans provide "lateral access" to the beach.

Rewriting the argument to eliminate the play on words makes clear that there is nothing to it. It is quite impossible to understand how a requirement that people already on the public beaches be able to walk across the Nollans' property reduces any obstacles to viewing the beach created by the new house. It is also impossible to understand how it lowers any "psychological barrier" to using the public beaches, or how it helps to remedy any additional congestion on them ***839** caused by construction of the Nollans' new house. We therefore find that the Commission's imposition of the permit condition cannot be treated as an exercise of its land-use power for any of these purposes. [6] Our conclusion on this **3150 point is consistent with the approach taken by every other court that has considered the question, with the exception of the California state courts. See *Parks v. Watson,* 716 F.2d 646, 651–653 (CA9 1983); *Bethlehem Evangelical Lutheran Church v. Lakewood,* 626 P.2d 668, 671–674 (Colo.1981); *Aunt Hack Ridge Estates, Inc. v. Planning Comm'n,* 160 Conn. 109, 117–120, 273 A.2d 880, 885 (1970); *Longboat Key v. Lands End, Ltd.,* 433 So.2d 574 (Fla.App.1983); *Pioneer Trust & Savings Bank v. Mount Prospect,* 22 Ill.2d 375, 380, 176 N.E.2d 799, 802 (1961); *Lampton v. Pinaire,* 610 S.W.2d 915, 918–919 (Ky.App.1980); *Schwing v. Baton Rouge,* 249 So.2d 304 (La.App.), application denied, 259 La. 770, 252 So.2d 667 (1971); *Howard County v. JJM, Inc.,* 301 Md. 256, 280–282, 482 A.2d 908, 920–921 (1984); *Collis v. Bloomington,* 310 Minn. 5, 246 N.W.2d 19 (1976); *State ex rel. Noland v. St. Louis County,* 478 S.W.2d 363 (Mo.1972); ***840** *Billings Properties, Inc. v. Yellowstone County,* 144 Mont. 25, 33–36,

394 P.2d 182, 187–188 (1964); *Simpson v. North Platte,* 206 Neb. 240, 292 N.W.2d 297 (1980); *Briar West, Inc. v. Lincoln,* 206 Neb. 172, 291 N.W.2d 730 (1980); *J.E.D. Associates v. Atkinson,* 121 N.H. 581, 432 A.2d 12 (1981); *Longridge Builders, Inc. v. Planning Bd. of Princeton,* 52 N.J. 348, 350–351, 245 A.2d 336, 337–338 (1968); *Jenad, Inc. v. Scarsdale,* 18 N.Y.2d 78, 271 N.Y.S.2d 955, 218 N.E.2d 673 (1966); *MacKall v. White,* 85 App.Div.2d 696, 445 N.Y.S.2d 486 (1981), appeal denied, 56 N.Y.2d 503, 450 N.Y.S.2d 1025, 435 N.E.2d 1100 (1982); *Frank Ansuini, Inc. v. Cranston,* 107 R.I. 63, 68–69, 71, 264 A.2d 910, 913, 914 (1970); *College Station v. Turtle Rock Corp.,* 680 S.W.2d 802, 807 (Tex.1984); *Call v. West Jordan,* 614 P.2d 1257, 1258–1259 (Utah 1980); *Board of Supervisors of James City County v. Rowe,* 216 Va. 128, 136–139, 216 S.E.2d 199, 207–209 (1975); *Jordan v. Menomonee Falls,* 28 Wis.2d 608, 617–618, 137 N.W.2d 442, 447–449 (1965), appeal dism'd, 385 U.S. 4, 87 S.Ct. 36, 17 L.Ed.2d 3 (1966). See also *Littlefield v. Afton,* 785 F.2d 596, 607 (CA8 1986); Brief for National Association of Home Builders et al. as *Amici Curiae* 9–16.

6 As Justice BRENNAN notes, the Commission also argued that the construction of the new house would " 'increase private use immediately adjacent to public tidelands,' " which in turn might result in more disputes between the Nollans and the public as to the location of the boundary. *Post,* at 3155, quoting App. 62. That risk of boundary disputes, however, is inherent in the right to exclude others from one's property, and the construction here can no more justify mandatory dedication of a sort of "buffer zone" in order to avoid boundary disputes than can the construction of an addition to a single-family house near a public street. Moreover, a buffer zone has a boundary as well, and unless that zone is a "no-man's land" that is off limits for both neighbors (which is of course not the case here) its creation achieves nothing except to shift the location of the boundary dispute further on to the private owner's land. It is true that in the distinctive situation of the Nollans' property the seawall could be established as a clear demarcation of the public easement. But since not all of the lands to which this land-use condition applies have such a convenient reference point, the avoidance of boundary disputes is, even more obviously than the others, a made-up purpose of the regulation.

Justice BRENNAN argues that imposition of the access requirement is not irrational. In his version of the Commission's argument, the reason for the requirement is that in its absence, a person looking toward the beach from the road will see a street of residential structures including the Nollans' new home and conclude that there is no public beach nearby. If, however, that person sees people passing and repassing along the dry sand behind the Nollans' home, he will realize that there is a public beach somewhere in the vicinity. *Post,* at 3154–3155. The Commission's action, however, was based on the opposite factual finding that the wall of houses completely blocked the view of the beach and that a person looking from the road would not be able to see it at all. App. 57–59.

Even if the Commission had made the finding that Justice BRENNAN proposes, however, it is not certain that it would ***841** suffice. We do not share Justice BRENNAN's confidence that the Commission "should have little difficulty in the future in utilizing its expertise to demonstrate a specific connection between provisions for access and burdens on access," *post,* at 3161, that will avoid the effect of today's decision. We view the Fifth Amendment's Property Clause to be more than a pleading requirement, and compliance with it to be more than an exercise in cleverness and imagination. As indicated earlier, our cases describe the condition for abridgement of property rights through the police power as a "*substantial* advanc[ing]" of a ****3151** legitimate state interest. We are inclined to be particularly careful about the adjective where the actual conveyance of property is made a condition to the lifting of a land-use restriction, since in that context there is heightened risk that the purpose is avoidance of the compensation requirement, rather than the stated police-power objective.

We are left, then, with the Commission's justification for the access requirement unrelated to land-use regulation:

> "Finally, the Commission notes that there are several existing provisions of pass and repass lateral access benefits already given by past Faria Beach Tract applicants as a result of prior coastal permit decisions. The access required as a condition of this permit is part of a comprehensive program to provide continuous public access along Faria Beach as the lots undergo development or redevelopment." App. 68.

That is simply an expression of the Commission's belief that the public interest will be served by a continuous strip of publicly accessible beach along the coast. The Commission may well be right that it is a good idea, but that does not establish that the Nollans (and other coastal residents) alone

can be compelled to contribute to its realization. Rather, California is free to advance its "comprehensive program," if it wishes, by using its power of eminent domain for this "public purpose," ***842** see U.S. Const., Amdt. 5; but if it wants an easement across the Nollans' property, it must pay for it.

Reversed.

Justice BRENNAN, with whom Justice MARSHALL joins, dissenting.

Appellants in this case sought to construct a new dwelling on their beach lot that would both diminish visual access to the beach and move private development closer to the public tidelands. The Commission reasonably concluded that such "buildout," both individually and cumulatively, threatens public access to the shore. It sought to offset this encroachment by obtaining assurance that the public may walk along the shoreline in order to gain access to the ocean. The Court finds this an illegitimate exercise of the police power, because it maintains that there is no reasonable relationship between the effect of the development and the condition imposed.

The first problem with this conclusion is that the Court imposes a standard of precision for the exercise of a State's police power that has been discredited for the better part of this century. Furthermore, even under the Court's cramped standard, the permit condition imposed in this case directly responds to the specific type of burden on access created by appellants' development. Finally, a review of those factors deemed most significant in takings analysis makes clear that the Commission's action implicates none of the concerns underlying the Takings Clause. The Court has thus struck down the Commission's reasonable effort to respond to intensified development along the California coast, on behalf of landowners who can make no claim that their reasonable expectations have been disrupted. The Court has, in short, given appellants a windfall at the expense of the public.

I

The Court's conclusion that the permit condition imposed on appellants is unreasonable cannot withstand analysis. First, the Court demands a degree of exactitude that is inconsistent ***843** with our standard for reviewing the rationality of a State's exercise of its police power for the welfare of its citizens. Second, even if the nature of the public-access condition imposed must be identical to the precise burden on access created by appellants, this requirement is plainly satisfied.

A

There can be no dispute that the police power of the States encompasses the authority to impose conditions on private development. ****3152** See, *e.g., Agins v. Tiburon,* 447 U.S. 255, 100 S.Ct. 2138, 65 L.Ed.2d 106 (1980); *Penn Central Transportation Co. v. New York City,* 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978); *Gorieb v. Fox,* 274 U.S. 603, 47 S.Ct. 675, 71 L.Ed. 1228 (1927). It is also by now commonplace that this Court's review of the rationality of a State's exercise of its police power demands only that the State "*could rationally have decided* " that the measure adopted might achieve the State's objective. *Minnesota v. Clover Leaf Creamery Co.,* 449 U.S. 456, 466, 101 S.Ct. 715, 725, 66 L.Ed.2d 659 (1981) (emphasis in original). [1] In this case, California has ***844** employed its police power in order to condition development upon preservation of public access to the ocean and tidelands. The Coastal Commission, if it had so chosen, could have denied ***845** the Nollans' request for a development ****3153** permit, since the property would have remained economically viable without the requested new development. [2] Instead, the State sought to accommodate the Nollans' desire for new development, on the condition that the development not diminish the overall amount of public access to the coastline. Appellants' proposed development would reduce public access by restricting visual access to the beach, by contributing to an increased need for community facilities, and by moving private development closer to public beach property. The Commission sought to offset this diminution in access, and thereby preserve the overall balance of access, by requesting a deed restriction that would ensure "lateral" access: the right of the public to pass and repass along the dry sand parallel to the shoreline in order to reach the tidelands and the ocean. In the expert opinion of the Coastal Commission, development conditioned on such a restriction would fairly attend to both public and private interests.

1 See also *Williamson v. Lee Optical of Oklahoma, Inc.,* 348 U.S. 483, 487–488, 75 S.Ct. 461, 464–465, 99 L.Ed. 563 (1955) ("[T]he law need not be in every respect logically consistent with its aims to be constitutional. It is enough that there is an

evil at hand for correction, and that it might be thought that the particular legislative measure was a rational way to correct it"); *Day-Brite Lighting, Inc. v. Missouri,* 342 U.S. 421, 423, 72 S.Ct. 405, 407, 96 L.Ed. 469 (1952) ("Our recent decisions make it plain that we do not sit as a super-legislature to weigh the wisdom of legislation nor to decide whether the policy which it expresses offends the public welfare.... [S]tate legislatures have constitutional authority to experiment with new techniques; they are entitled to their own standard of the public welfare").

Notwithstanding the suggestion otherwise, *ante,* at ——, n. 3, our standard for reviewing the threshold question whether an exercise of the police power is legitimate is a uniform one. As we stated over 25 years ago in addressing a takings challenge to government regulation:

"The term 'police power' connotes the time-tested conceptional limit of public encroachment upon private interests. Except for the substitution of the familiar standard of 'reasonableness,' this Court has generally refrained from announcing any specific criteria. The classic statement of the rule in *Lawton v. Steele,* 152 U.S. 133, 137 [14 S.Ct. 499, 501, 38 L.Ed. 385] (1894), is still valid today: ... '[I]t must appear, first, that the interests of the public ... require [government] interference; and, second, that the means are reasonably necessary for the accomplishment of the purpose, and not unduly oppressive upon individuals.' Even this rule is not applied with strict precision, for this Court has often said that 'debatable questions as to reasonableness are not for the courts but for the legislature ....' *E.g., Sproles v. Binford,* 286 U.S. 374, 388 [52 S.Ct. 581, 585, 76 L.Ed. 1167] (1932)." *Goldblatt v. Hempstead,* 369 U.S. 590, 594–595, 82 S.Ct. 987, 990–991, 8 L.Ed.2d 130 (1962).

See also *id.,* at 596, 82 S.Ct. at 991 (upholding regulation from takings challenge with citation to, *inter alia, United States v. Carolene Products Co.,* 304 U.S. 144, 154, 58 S.Ct. 778, 784, 82 L.Ed. 1234 (1938), for proposition that exercise of police power will be upheld "if any state of facts either known or which could be reasonably assumed affords support for it"). In *Connolly v. Pension Benefit Guaranty Corporation,* 475 U.S. 211, 106 S.Ct. 1018, 89 L.Ed.2d 166 (1986), for instance, we reviewed a takings challenge to statutory provisions that had been held to be a legitimate exercise of the police power under due process analysis in *Pension Benefit Guaranty Corporation v. R.A. Gray & Co.,* 467 U.S. 717, 104 S.Ct. 2709, 81 L.Ed.2d 601 (1984). *Gray,* in turn, had relied on *Usery v. Turner Elkhorn Mining Co.,* 428 U.S. 1, 96 S.Ct. 2882, 49 L.Ed.2d 752 (1976). In rejecting the takings argument that the provisions were not within Congress' regulatory power, the Court in *Connolly* stated: "Although both *Gray* and *Turner Elkhorn* were due process cases, it would be surprising indeed to discover now that in both cases Congress unconstitutionally had taken the assets of the employers there involved." 475 U.S., at 223, 106 S.Ct., at 1025. Our phraseology may differ slightly from case to case—*e.g.,* regulation must "substantially advance," *Agins v. Tiburon,* 447 U.S. 255, 260, 100 S.Ct. 2138, 2141, 65 L.Ed.2d 106 (1980), or be "reasonably necessary to," *Penn Central Transportation Co. v. New York City,* 438 U.S. 104, 127, 98 S.Ct. 2646, 2660, 57 L.Ed.2d 631 (1978), the government's end. These minor differences cannot, however, obscure the fact that the inquiry in each case is the same.

Of course, government action may be a valid exercise of the police power and still violate specific provisions of the Constitution. Justice SCALIA is certainly correct in observing that challenges founded upon these provisions are reviewed under different standards. *Ante,* at ——. Our consideration of factors such as those identified in *Penn Central, supra,* for instance, provides an analytical framework for protecting the values underlying the Takings Clause, and other distinctive approaches are utilized to give effect to other constitutional provisions. This is far different, however, from the use of different standards of review to address the threshold issue of the rationality of government action.

2 As this Court declared in *United States v. Riverside Bayview Homes, Inc.,* 474 U.S. 121, 127, 106 S.Ct. 455, 459, 88 L.Ed.2d 419 (1985):

> "A requirement that a person obtain a permit before engaging in a certain use of his or her property does not

> itself 'take' the property in any sense: after all, the very existence of a permit system implies that permission may be granted, leaving the landowner free to use the property as desired. Moreover, even if the permit is denied, there may be other viable uses available to the owner. Only when a permit is denied and the effect of the denial is to prevent 'economically viable' use of the land in question can it be said that a taking has occurred."

We also stated in *Kaiser Aetna v. United States,* 444 U.S. 164, 179, 100 S.Ct. 383, 392, 62 L.Ed.2d 332 (1979), with respect to dredging to create a private marina:

> "We have not the slightest doubt that the Government could have refused to allow such dredging on the ground that it would have impaired navigation in the bay, or could have conditioned its approval of the dredging on petitioners' agreement to comply with various measures that it deemed appropriate for the promotion of navigation."

The Court finds fault with this measure because it regards the condition as insufficiently tailored to address the precise ***846** type of reduction in access produced by the new development. The Nollans' development blocks visual access, the Court tells us, while the Commission seeks to preserve lateral access along the coastline. Thus, it concludes, the State acted irrationally. Such a narrow conception of rationality, however, has long since been discredited as a judicial arrogation of legislative authority. "To make scientific precision a criterion of constitutional power would be to subject the State to an intolerable supervision hostile to the basic principles of our Government." *Sproles v. Binford,* 286 U.S. 374, 388, 52 S.Ct. 581, 585, 76 L.Ed. 1167 (1932). Cf. *Keystone Bituminous Coal Assn. v. DeBenedictis,* 480 U.S. 470, 491, n. 21, 107 S.Ct. 1232, 1245, n. 21, 94 L.Ed.2d 472 (1987) ("The Takings Clause has never been read to require the States or the courts to calculate whether a specific individual has suffered burdens ... in excess of the benefits received"). As this Court long ago declared with regard to various forms of restriction on the use of property:

> "Each interferes in the same way, if not to the same extent, with the owner's general right of dominion over his property. All rest for their justification upon the same reasons which have arisen in recent times as a result of the great increase and concentration of population in urban communities and the vast changes in the extent and complexity of the problems of modern city life. State legislatures and city councils, who deal with the situation from a practical standpoint, are better qualified than the courts to determine the necessity, character, and degree of regulation which these new and perplexing conditions require; and their conclusions should not be disturbed by the courts unless clearly arbitrary and unreasonable." *Gorieb,* 274 U.S., at 608, 47 S.Ct., at 677 (citations omitted).

****3154** The Commission is charged by both the State Constitution and legislature to preserve overall public access to the California coastline. Furthermore, by virtue of its participation in the Coastal Zone Management Act (CZMA) program, the ***847** State must "exercise effectively [its] responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone," 16 U.S.C. § 1452(2), so as to provide for, *inter alia,* "public access to the coas[t] for recreation purposes." § 1452(2)(D). The Commission has sought to discharge its responsibilities in a flexible manner. It has sought to balance private and public interests and to accept tradeoffs: to permit development that reduces access in some ways as long as other means of access are enhanced. In this case, it has determined that the Nollans' burden on access would be offset by a deed restriction that formalizes the public's right to pass along the shore. In its informed judgment, such a tradeoff would preserve the net amount of public access to the coastline. The Court's insistence on a precise fit between the forms of burden and condition on each individual parcel along the California coast would penalize the Commission for its flexibility, hampering the ability to fulfill its public trust mandate.

The Court's demand for this precise fit is based on the assumption that private landowners in this case possess a

reasonable expectation regarding the use of their land that the public has attempted to disrupt. In fact, the situation is precisely the reverse: it is private landowners who are the interlopers. The public's expectation of access considerably antedates any private development on the coast. Article X, § 4, of the California Constitution, adopted in 1879, declares:

> "No individual, partnership, or corporation, claiming or possessing the frontage or tidal lands of a harbor, bay, inlet, estuary, or other navigable water in this State, shall be permitted to exclude the right of way to such water whenever it is required for any public purpose, nor to destroy or obstruct the free navigation of such water; and the Legislature shall enact such laws as will give the most liberal construction to this provision, so ***848** that access to the navigable waters of this State shall always be attainable for the people thereof."

It is therefore private landowners who threaten the disruption of settled public expectations. Where a private landowner has had a reasonable expectation that his or her property will be used for exclusively private purposes, the disruption of this expectation dictates that the government pay if it wishes the property to be used for a public purpose. In this case, however, the State has sought to protect *public* expectations of access from disruption by private land use. The State's exercise of its police power for this purpose deserves no less deference than any other measure designed to further the welfare of state citizens.

Congress expressly stated in passing the CZMA that "[i]n light of competing demands and the urgent need to protect and to give high priority to natural systems in the coastal zone, present state and local institutional arrangements for planning and regulating land and water uses in such areas are inadequate." 16 U.S.C. § 1451(h). It is thus puzzling that the Court characterizes as a "non-land-use justification," *ante,* at ——, the exercise of the police power to " 'provide continuous public access along Faria Beach as the lots undergo development or redevelopment.' " *Ibid.* (quoting App. 68). The Commission's determination that certain types of development jeopardize public access to the ocean, and that such development should be conditioned on preservation of access, is the essence of responsible land-use planning. The Court's use of an unreasonably demanding standard for determining the rationality of state regulation in this area thus could hamper innovative efforts to ****3155** preserve an increasingly fragile national resource. [3]

[3] The list of cases cited by the Court as support for its approach, *ante,* at ——, includes no instance in which the State sought to vindicate pre-existing rights of access to navigable water, and consists principally of cases involving a requirement of the dedication of land as a condition of subdivision approval. Dedication, of course, requires the surrender of ownership of property rather than, as in this case, a mere restriction on its use. The only case pertaining to beach access among those cited by the Court is *MacKall v. White,* 85 App.Div.2d 696, 445 N.Y.S.2d 486 (1981). In that case, the court found that a subdivision application could not be conditioned upon a declaration that the landowner would not hinder the public from using a trail that had been used to gain access to a bay. The trail had been used despite posted warnings prohibiting passage, and despite the owner's resistance to such use. In that case, unlike this one, neither the State Constitution, state statute, administrative practice, nor the conduct of the landowner operated to create any reasonable expectation of a right of public access.

***849** B

Even if we accept the Court's unusual demand for a precise match between the condition imposed and the specific type of burden on access created by the appellants, the State's action easily satisfies this requirement. First, the lateral access condition serves to dissipate the impression that the beach that lies behind the wall of homes along the shore is for private use only. It requires no exceptional imaginative powers to find plausible the Commission's point that the average person passing along the road in front of a phalanx of imposing permanent residences, including the appellants' new home, is likely to conclude that this particular portion of the shore is not open to the public. If, however, that person can see that numerous people are passing and repassing along the dry sand, this conveys the message that the beach is in fact open for use by the public. Furthermore, those persons who go down to the public beach a quarter-mile away will be able to look down the coastline and see that persons have continuous access to the tidelands, and will observe signs that proclaim the public's right of access over the dry sand. The burden produced by the diminution in visual access—the impression that the beach is not open to the public—is thus directly alleviated by the provision for public access over the

dry sand. The Court therefore has an ***850** unrealistically limited conception of what measures could reasonably be chosen to mitigate the burden produced by a diminution of visual access.

The second flaw in the Court's analysis of the fit between burden and exaction is more fundamental. The Court assumes that the only burden with which the Coastal Commission was concerned was blockage of visual access to the beach. This is incorrect.[4] The Commission specifically stated in its report in support of the permit condition that "[t]he Commission finds that the applicants' proposed development would present an increase in view blockage, *an increase in private use of the shorefront,* and that this impact would burden the public's ability to traverse to and along the shorefront." App. 65–66 (emphasis added). It declared that the possibility that "the public may get the impression that the beachfront is no longer available for public use" would be "due to *the encroaching nature of private use immediately adjacent to the public use, as well as* the visual 'block' of increased residential build-out impacting the visual quality of the beachfront." *Id.,* at 59 (emphasis added).

4 This may be because the State in its briefs and at argument contended merely that the permit condition would serve to preserve overall public access, by offsetting the diminution in access resulting from the project, such as, *inter alia,* blocking the public's view of the beach. The State's position no doubt reflected the reasonable assumption that the Court would evaluate the rationality of its exercise of the police power in accordance with the traditional standard of review, and that the Court would not attempt to substitute its judgment about the best way to preserve overall public access to the ocean at the Faria Family Beach Tract.

The record prepared by the Commission is replete with references to the threat to ****3156** public access along the coastline resulting from the seaward encroachment of private development along a beach whose mean high-tide line is constantly shifting. As the Commission observed in its report: "The Faria Beach shoreline fluctuates during the year depending on the seasons and accompanying storms, and the public is not always able to traverse the shoreline below the mean ***851** high tide line." *Id.,* at 67. As a result, the boundary between publicly owned tidelands and privately owned beach is not a stable one, and "[t]he existing seawall is located very near to the mean high water line." *Id.,* at 61. When the beach is at its largest, the seawall is about 10 feet from the mean high-tide mark; "[d]uring the period of the year when the beach suffers erosion, the mean high water line appears to be located either on or beyond the existing seawall." *Ibid.* Expansion of private development on appellants' lot toward the seawall would thus "increase private use immediately adjacent to public tidelands, which has the potential of causing adverse impacts on the public's ability to traverse the shoreline." *Id.,* at 62. As the Commission explained:

> "The placement of more private use adjacent to public tidelands has the potential of creating use conflicts between the applicants and the public. The results of new private use encroachment into boundary/buffer areas between private and public property can create situations in which landowners intimidate the public and seek to prevent them from using public tidelands because of disputes between the two parties over where the exact boundary between private and public ownership is located. If the applicants' project would result in further seaward encroachment of private use into an area of clouded title, new private use in the subject encroachment area could result in use conflict between private and public entities on the subject shorefront." *Id.,* at 61–62.

The deed restriction on which permit approval was conditioned would directly address this threat to the public's access to the tidelands. It would provide a formal declaration of the public's right of access, thereby ensuring that the shifting character of the tidelands, and the presence of private development immediately adjacent to it, would not jeopardize ***852** enjoyment of that right.[5] The imposition of the permit condition was therefore directly related to the fact that appellants development would be "located along a unique stretch of coast where lateral public access is inadequate due to the construction of private residential structures and shoreline protective devices along a fluctuating shoreline." *Id.,* at 68. The deed restriction was crafted to deal with the particular character of the beach along which appellants sought to build, and with the specific problems created by expansion of development toward the public tidelands. In imposing the restriction, the State sought to ensure that such development would not disrupt the historical expectation of the public regarding access to the sea.[6]

5 As the Commission's Public Access (Shoreline) Interpretative Guidelines state:

"[T]he provision of lateral access recognizes the potential for conflicts between public and private use and creates a type of access that allows the public to move freely along all the tidelands in an area that can be clearly delineated and distinguished from private use areas.... Thus the 'need' determination set forth in P[ublic] R[esources] C[ode] 30212(a)(2) should be measured in terms of providing access that buffers public access to the tidelands from the burdens generated on access by private development." App. 358–359.

6 The Court suggests that the risk of boundary disputes "is inherent in the right to exclude others from one's property," and thus cannot serve as a purpose to support the permit condition. *Ante,* at 3149, n. 6. The Commission sought the deed restriction, however, not to address a generalized problem inherent in any system of property, but to address the *particular* problem created by the shifting high-tide line along Faria Beach. Unlike the typical area in which a boundary is delineated reasonably clearly, the very problem on Faria Beach is that the boundary is *not* constant. The area open to public use therefore is frequently in question, and, as the discussion, *supra,* demonstrates, the Commission clearly tailored its permit condition precisely to address this specific problem.
The Court acknowledges that the Nollans' seawall could provide "a clear demarcation of the public easement," and thus avoid merely shifting "the location of the boundary dispute further on to the private owner's land." *Ante,* at ——, n. 6. It nonetheless faults the Commission because every property subject to regulation may not have this feature. This case, however, is a challenge to the permit condition *as applied to the Nollans' property,* so the presence or absence of seawalls on other property is irrelevant.

***853** ****3157** The Court is therefore simply wrong that there is no reasonable relationship between the permit condition and the specific type of burden on public access created by the appellants' proposed development. Even were the Court desirous of assuming the added responsibility of closely monitoring the regulation of development along the California coast, this record reveals rational public action by any conceivable standard.

II

The fact that the Commission's action is a legitimate exercise of the police power does not, of course, insulate it from a takings challenge, for when "regulation goes too far it will be recognized as a taking." *Pennsylvania Coal Co. v. Mahon,* 260 U.S. 393, 415, 43 S.Ct. 158, 160, 67 L.Ed. 322 (1922). Conventional takings analysis underscores the implausibility of the Court's holding, for it demonstrates that this exercise of California's police power implicates none of the concerns that underlie our takings jurisprudence.

In reviewing a Takings Clause claim, we have regarded as particularly significant the nature of the governmental action and the economic impact of regulation, especially the extent to which regulation interferes with investment-backed expectations. *Penn Central,* 438 U.S., at 124, 98 S.Ct., at 2659. The character of the government action in this case is the imposition of a condition on permit approval, which allows the public to continue to have access to the coast. The physical intrusion permitted by the deed restriction is minimal. The public is permitted the right to pass and repass along the coast in an area from the seawall to the mean high-tide mark. App. 46. This area is at its *widest* 10 feet, *id.,* at 61, which means that *even without the permit condition,* the public's right of access permits it to pass on average within a few feet of the seawall. Passage closer to the 8-foot-high rocky seawall will make the ***854** appellants even less visible to the public than passage along the high-tide area farther out on the beach. The intrusiveness of such passage is even less than the intrusion resulting from the required dedication of a sidewalk in front of private residences, exactions which are commonplace conditions on approval of development. [7] Furthermore, the high-tide line shifts throughout the year, moving up to and beyond the seawall, so that public passage for a portion of the year would either be impossible or would not occur on appellant's property. Finally, although the Commission had the authority to provide for either passive or active recreational use of the property, it chose the least intrusive alternative: a mere right to pass and repass. *Id.,* at 370. [8] ****3158** As this Court made ***855** clear in *PruneYard Shopping Center v. Robins,* 447 U.S. 74, 83, 100 S.Ct. 2035, 2042, 64 L.Ed.2d 741 (1980), physical access to private property in itself creates no takings problem if it does not "unreasonably impair the value or use of [the] property." Appellants can make no tenable claim that either their enjoyment of their property or its value is

diminished by the public's ability merely to pass and repass a few feet closer to the seawall beyond which appellants' house is located.

7 See, *e.g., Bellefontaine Neighbors v. J.J. Kelley Realty & Bldg. Co.,* 460 S.W.2d 298 (Mo.Ct.App.1970); *Allen v. Stockwell,* 210 Mich. 488, 178 N.W. 27 (1920). See generally Shultz & Kelley, Subdivision Improvement Requirements and Guarantees: A Primer, 28 Wash.U.J.Urban and Contemp.L. 3 (1985).

8 The Commission acted in accordance with its Guidelines both in determining the width of the area of passage, and in prohibiting any recreational use of the property. The Guidelines state that it may be necessary on occasion to provide for less than the normal 25-foot-wide accessway along the dry sand when this may be necessary to "protect the privacy rights of adjacent property owners." App. 363. They also provide this advice in selecting the type of public use that may be permitted:
"*Pass and Repass.* Where topographic constraints of the site make use of the beach dangerous, where habitat values of the shoreline would be adversely impacted by public use of the shoreline or where the accessway may encroach closer than 20 feet to a residential structure, the accessway may be limited to the right of the public to pass and repass along the access area. For the purposes of these guidelines, pass and repass is defined as the right to walk and run along the shoreline. This would provide for public access along the shoreline but would not allow for any additional use of the accessway. Because this severely limits the public's ability to enjoy the adjacent state owned tidelands by restricting the potential use of the access areas, this form of access dedication should be used only where necessary to protect the habitat values of the site, where topographic constraints warrant the restriction, or where it is necessary to protect the privacy of the landowner." *Id.,* at 370.

PruneYard is also relevant in that we acknowledged in that case that public access rested upon a "state constitutional ... provision that had been construed to create rights to the use of private property by strangers." *Id.,* at 81, 100 S.Ct., at 2041. In this case, of course, the State is also acting to protect a state constitutional right. See *supra,* at —— (quoting Art. X, § 4, of California Constitution). The constitutional provision guaranteeing public access to the ocean states that "the Legislature shall enact such laws as will give *the most liberal construction to this provision* so that access to the navigable waters of this State shall be always attainable for the people thereof." Cal. Const., Art. X, § 4 (emphasis added). This provision is the explicit basis for the statutory directive to provide for public access along the coast in new development projects, Cal.Pub.Res.Code Ann. § 30212 (West 1986), and has been construed by the state judiciary to permit passage over private land where necessary to gain access to the tidelands. *Grupe v. California Coastal Comm'n,* 166 Cal.App.3d 148, 171–172, 212 Cal.Rptr. 578, 592–593 (1985). The physical access to the perimeter of appellants' property at issue in this case thus results directly from the State's enforcement of the State Constitution.

Finally, the character of the regulation in this case is not unilateral government action, but a condition on approval of a development request submitted by appellants. The State has not sought to interfere with any pre-existing property interest, but has responded to appellants' proposal to intensify development on the coast. Appellants themselves chose to ***856** submit a new development application, and could claim no property interest in its approval. They were aware that approval of such development would be conditioned on preservation of adequate public access to the ocean. The State has initiated no action against appellants' property; had the Nollans' not proposed more intensive development in the coastal zone, they would never have been subject to the provision that they challenge.

Examination of the economic impact of the Commission's action reinforces the conclusion that no taking has occurred. Allowing appellants to intensify development along the coast in exchange for ensuring public access to the ocean is a classic instance of government action that produces a "reciprocity of advantage." *Pennsylvania Coal,* 260 U.S., at 415, 43 S.Ct., at 160. Appellants have been allowed to replace a one-story, 521–square-foot beach home with a two-story, 1,674–square-foot residence and an attached two-car garage, resulting in development covering 2,464 square feet of the lot. Such development obviously significantly increases the value of appellants' property; appellants make no contention that this increase is offset by any diminution in value resulting from the deed restriction, much less that the restriction made the property less valuable than it would have been without the new construction. Furthermore, appellants gain an additional benefit from the Commission's permit ****3159** condition program. They are able to walk along the beach beyond the

confines of their own property only because the Commission has required deed restrictions as a condition of approving other new beach developments.[9] Thus, appellants benefit both as private landowners and as members of the public from the fact that new development permit requests are conditioned on preservation of public access.

9 At the time of the Nollans' permit application, 43 of the permit requests for development along the Faria Beach had been conditioned on deed restrictions ensuring lateral public access along the shoreline. App. 48.

***857** Ultimately, appellants' claim of economic injury is flawed because it rests on the assumption of entitlement to the full value of their new development. Appellants submitted a proposal for more intensive development of the coast, which the Commission was under no obligation to approve, and now argue that a regulation designed to ameliorate the impact of that development deprives them of the full value of their improvements. Even if this novel claim were somehow cognizable, it is not significant. "[T]he interest in anticipated gains has traditionally been viewed as less compelling than other property-related interests." *Andrus v. Allard,* 444 U.S. 51, 66, 100 S.Ct. 318, 327, 62 L.Ed.2d 210 (1979).

With respect to appellants' investment-backed expectations, appellants can make no reasonable claim to any expectation of being able to exclude members of the public from crossing the edge of their property to gain access to the ocean. It is axiomatic, of course, that state law is the source of those strands that constitute a property owner's bundle of property rights. "[A]s a general proposition[,] the law of real property is, under our Constitution, left to the individual States to develop and administer." *Hughes v. Washington,* 389 U.S. 290, 295, 88 S.Ct. 438, 441, 19 L.Ed.2d 530 (1967) (Stewart, J., concurring). See also *Borax Consolidated, Ltd. v. Los Angeles,* 296 U.S. 10, 22, 56 S.Ct. 23, 29, 80 L.Ed. 9 (1935) ("Rights and interests in the tideland, which is subject to the sovereignty of the State, are matters of local law"). In this case, the State Constitution explicitly states that no one possessing the "frontage" of any "navigable water in this State, shall be permitted to exclude the right of way to such water whenever it is required for any public purpose." Cal. Const., Art. X, § 4. The state Code expressly provides that, save for exceptions not relevant here, "[p]ublic access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects." Cal.Pub.Res.Code Ann. § 30212 (West 1986). The Coastal Commission Interpretative Guidelines make clear that fulfillment of the Commission's constitutional and statutory duty ***858** requires that approval of new coastline development be conditioned upon provisions ensuring lateral public access to the ocean. App. 362. At the time of appellants' permit request, the Commission had conditioned all 43 of the proposals for coastal new development in the Faria Family Beach Tract on the provision of deed restrictions ensuring lateral access along the shore. *Id.,* at 48. Finally, the Faria family had leased the beach property since the early part of this century, and "the Faria family and their lessees [including the Nollans] had not interfered with public use of the beachfront within the Tract, so long as public use was limited to pass and re-pass lateral access along the shore." *Ibid.* California therefore has clearly established that the power of exclusion for which appellants seek compensation simply is not a strand in the bundle of appellants' property rights, and appellants have never acted as if it were. Given this state of affairs, appellants cannot claim that the deed restriction has deprived them of a reasonable expectation to exclude from their property persons desiring to gain access to the sea.

Even were we somehow to concede a pre-existing expectation of a right to exclude, appellants were clearly on notice ****3160** when requesting a new development permit that a condition of approval would be a provision ensuring public lateral access to the shore. Thus, they surely could have had no expectation that they could obtain approval of their new development and exercise any right of exclusion afterward. In this respect, this case is quite similar to *Ruckelshaus v. Monsanto Co.,* 467 U.S. 986, 104 S.Ct. 2862, 81 L.Ed.2d 815 (1984). In *Monsanto,* the respondent had submitted trade data to the Environmental Protection Agency (EPA) for the purpose of obtaining registration of certain pesticides. The company claimed that the agency's disclosure of certain data in accordance with the relevant regulatory statute constituted a taking. The Court conceded that the data in question constituted property under state law. It also found, however, that certain of the data had been submitted to the agency after Congress had ***859** made clear that only limited confidentiality would be given data submitted for registration purposes. The Court observed that the statute served to inform Monsanto of the various conditions under which data might be released, and stated:

> "If, despite the data-consideration and data-disclosure provisions in the statute, Monsanto chose to submit the requisite data in order to receive a registration, it can hardly argue that its reasonable investment-backed expectations

> are disturbed when EPA acts to use or disclose the data in a manner that was authorized by law at the time of the submission." *Id.,* at 1006–1007, 104 S.Ct., at 2874–2875.

The Court rejected respondent's argument that the requirement that it relinquish some confidentiality imposed an unconstitutional condition on receipt of a Government benefit:

> "[A]s long as Monsanto is aware of the conditions under which the data are submitted, and the conditions are rationally related to a legitimate Government interest, a voluntary submission of data by an applicant in exchange for the economic advantages of a registration can hardly be called a taking." *Id.,* at 1007, 104 S.Ct., at 2875.

The similarity of this case to *Monsanto* is obvious. Appellants were aware that stringent regulation of development along the California coast had been in place at least since 1976. The specific deed restriction to which the Commission sought to subject them had been imposed since 1979 on all 43 shoreline new development projects in the Faria Family Beach Tract. App. 48. Such regulation to ensure public access to the ocean had been directly authorized by California citizens in 1972, and reflected their judgment that restrictions on coastal development represented " 'the advantage of living and doing business in a civilized community.' " *Andrus v. Allard, supra,* 444 U.S., at 67, 100 S.Ct., at 328, quoting *Pennsylvania Coal Co. v. Mahon,* 260 U.S., at 422, 43 S.Ct., at 163 (Brandeis, J., dissenting). The deed restriction was "authorized by law at the ***860** time of [appellants' permit] submission," *Monsanto, supra,* 467 U.S., at 1007, 104 S.Ct., at 2875, and, as earlier analysis demonstrates, *supra,* at ——, was reasonably related to the objective of ensuring public access. Appellants thus were on notice that new developments would be approved only if provisions were made for lateral beach access. In requesting a new development permit from the Commission, they could have no reasonable expectation of, and had no entitlement to, approval of their permit application without any deed restriction ensuring public access to the ocean. As a result, analysis of appellants' investment-backed expectations reveals that "the force of this factor is so overwhelming ... that it disposes of the taking question." *Monsanto, supra,* at 1005, 104 S.Ct., at 2874. [10]

10 The Court suggests that *Ruckelshaus v. Monsanto* is distinguishable, because government regulation of property in that case was a condition on receipt of a "government benefit," while here regulation takes the form of a restriction on "the right to build on one's own property," which "cannot remotely be described as a 'government benefit.' " *Ante,* at 3152, n. 2. This proffered distinction is not persuasive. Both Monsanto and the Nollans hold property whose use is subject to regulation; Monsanto may not sell its property without obtaining government approval and the Nollans may not build new development on their property without government approval. Obtaining such approval is as much a "government benefit" for the Nollans as it is for Monsanto. If the Court is somehow suggesting that "the right to build on one's own property" has some privileged natural rights status, the argument is a curious one. By any traditional labor theory of value justification for property rights, for instance, see, *e.g.,* J. Locke, The Second Treatise of Civil Government 15–26 (E. Gough, ed. 1947), Monsanto would have a superior claim, for the chemical formulae which constitute its property only came into being by virtue of Monsanto's efforts.

****3161** Standard Takings Clause analysis thus indicates that the Court employs its unduly restrictive standard of police power rationality to find a taking where neither the character of governmental action nor the nature of the private interest affected raise any takings concern. The result is that the Court invalidates regulation that represents a reasonable adjustment ***861** of the burdens and benefits of development along the California coast.

III

The foregoing analysis makes clear that the State has taken no property from appellants. Imposition of the permit condition in this case represents the State's reasonable exercise of its police power. The Coastal Commission has drawn on its expertise to preserve the balance between private development and public access, by requiring that any project that intensifies development on the increasingly crowded California coast must be offset by gains in public access. Under the normal standard for review of the police power, this provision is eminently reasonable. Even accepting the Court's novel insistence on a precise *quid pro quo* of burdens and benefits, there is a reasonable relationship between the public benefit and the burden created by appellants' development. The movement of development closer to the ocean creates the prospect of encroachment on public tidelands, because of

fluctuation in the mean high-tide line. The deed restriction ensures that disputes about the boundary between private and public property will not deter the public from exercising its right to have access to the sea.

Furthermore, consideration of the Commission's action under traditional takings analysis underscores the absence of any viable takings claim. The deed restriction permits the public only to pass and repass along a narrow strip of beach, a few feet closer to a seawall at the periphery of appellants' property. Appellants almost surely have enjoyed an increase in the value of their property even with the restriction, because they have been allowed to build a significantly larger new home with garage on their lot. Finally, appellants can claim the disruption of no expectation interest, both because they have no right to exclude the public under state law, and because, even if they did, they had full advance notice that new development along the coast is conditioned on provisions for continued public access to the ocean.

***862** Fortunately, the Court's decision regarding this application of the Commission's permit program will probably have little ultimate impact either on this parcel in particular or the Commission program in general. A preliminary study by a Senior Lands Agent in the State Attorney General's Office indicates that the portion of the beach at issue in this case likely belongs to the public. App. 85. [11] Since a full study had not been completed at the time of appellants' permit application, the deed restriction was requested "without regard to the possibility that the applicant is proposing development on public land." *Id.,* at 45. Furthermore, analysis by the same Land Agent also indicated that the public ****3162** had obtained a prescriptive right to the use of Faria Beach from the seawall to the ocean. *Id.,* at 86. [12] The Superior Court explicitly stated in its ruling against the Commission on the permit condition issue that "no part of this opinion is intended to foreclose the public's opportunity to adjudicate the possibility that public rights in [appellants'] beach have been acquired through prescriptive use." *Id.,* at 420.

11 The Senior Land Agent's report to the Commission states that "based on my observations, presently, most, if not all of Faria Beach waterward of the existing seawalls [lies] *below* the Mean High Tide Level, and would fall in public domain or sovereign category of ownership." App. 85 (emphasis added).

12 The Senior Land Agent's report stated:

> "Based on my past experience and my investigation to date of this property it is my opinion that the area seaward of the revetment at 3822 Pacific Coast Highway, Faria Beach, as well as all the area seaward of the revetments built to protect the Faria Beach community, if not public owned, has been impliedly dedicated to the public for passive recreational use." *Id.,* at 86.

With respect to the permit condition program in general, the Commission should have little difficulty in the future in utilizing its expertise to demonstrate a specific connection between provisions for access and burdens on access produced by new development. Neither the Commission in its report nor the State in its briefs and at argument highlighted the particular threat to lateral access created by appellants' ***863** development project. In defending its action, the State emphasized the general point that *overall* access to the beach had been preserved, since the diminution of access created by the project had been offset by the gain in lateral access. This approach is understandable, given that the State relied on the reasonable assumption that its action was justified under the normal standard of review for determining legitimate exercises of a State's police power. In the future, alerted to the Court's apparently more demanding requirement, it need only make clear that a provision for public access directly responds to a particular type of burden on access created by a new development. Even if I did not believe that the record in this case satisfies this requirement, I would have to acknowledge that the record's documentation of the impact of coastal development indicates that the Commission should have little problem presenting its findings in a way that avoids a takings problem.

Nonetheless it is important to point out that the Court's insistence on a precise accounting system in this case is insensitive to the fact that increasing intensity of development in many areas calls for far-sighted, comprehensive planning that takes into account both the interdependence of land uses and the cumulative impact of development. [13] As one scholar has noted:

13 As the California Court of Appeals noted in 1985, "Since 1972, permission has been granted to construct more than 42,000 building units within the land jurisdiction of the Coastal Commission. In addition, pressure for development along the coast is expected to increase since approximately 85% of California's population lives within 30 miles of

the coast." *Grupe v. California Coastal Comm'n,* 166 Cal.App.3d 148, 167, n. 12, 212 Cal.Rptr. 578, 589, n. 12 (1985). See also Coastal Zone Management Act, 16 U.S.C. § 1451(c) (increasing demands on coastal zones "have resulted in the loss of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use, and shoreline erosion").

"Property does not exist in isolation. Particular parcels are tied to one another in complex ways, and property is ***864** more accurately described as being inextricably part of a network of relationships that is neither limited to, nor usefully defined by, the property boundaries with which the legal system is accustomed to dealing. Frequently, use of any given parcel of property is at the same time effectively a use of, or a demand upon, property beyond the border of the user." Sax, Takings, Private Property, and Public Rights, 81 Yale L.J. 149, 152 (1971) (footnote omitted).

As Congress has declared: "The key to more effective protection and use of the land and water resources of the coastal zone [is for the states to] develo [p] land and water use programs for the coastal zone, including unified policies, criteria, standards, methods, and processes for dealing with land and water use decisions of more than local significance." ****3163** 16 U.S.C. § 1451(i). This is clearly a call for a focus on the overall impact of development on coastal areas. State agencies therefore require considerable flexibility in responding to private desires for development in a way that guarantees the preservation of public access to the coast. They should be encouraged to regulate development in the context of the overall balance of competing uses of the shoreline. The Court today does precisely the opposite, overruling an eminently reasonable exercise of an expert state agency's judgment, substituting its own narrow view of how this balance should be struck. Its reasoning is hardly suited to the complex reality of natural resource protection in the 20th century. I can only hope that today's decision is an aberration, and that a broader vision ultimately prevails. [14]

14 I believe that States should be afforded considerable latitude in regulating private development, without fear that their regulatory efforts will often be found to constitute a taking. "*If* ... regulation denies the private property owner the use and enjoyment of his land and is found to effect a 'taking,' " however, I believe that compensation is the appropriate remedy for this constitutional violation. *San Diego Gas & Electric Co. v. San Diego,* 450 U.S. 621, 656, 101 S.Ct. 1287, 1306, 67 L.Ed.2d 551 (1981) (BRENNAN, J., dissenting) (emphasis added). I therefore see my dissent here as completely consistent with my position in *First English Evangelical Lutheran Church of Glendale v. Los Angeles County,* 482 U.S. 304, 107 S.Ct. 2378, 96 L.Ed.2d 250 (1987).

I dissent.

***865** Justice BLACKMUN, dissenting.

I do not understand the Court's opinion in this case to implicate in any way the public-trust doctrine. The Court certainly had no reason to address the issue, for the Court of Appeal of California did not rest its decision on Art. X, § 4, of the California Constitution. Nor did the parties base their arguments before this Court on the doctrine.

I disagree with the Court's rigid interpretation of the necessary correlation between a burden created by development and a condition imposed pursuant to the State's police power to mitigate that burden. The land-use problems this country faces require creative solutions. These are not advanced by an "eye for an eye" mentality. The close nexus between benefits and burdens that the Court now imposes on permit conditions creates an anomaly in the ordinary requirement that a State's exercise of its police power need be no more than rationally based. See, *e.g., Minnesota v. Clover Leaf Creamery Co.,* 449 U.S. 456, 466, 101 S.Ct. 715, 725, 66 L.Ed.2d 659 (1981). In my view, the easement exacted from appellants and the problems their development created are adequately related to the governmental interest in providing public access to the beach. Coastal development by its very nature makes public access to the shore generally more difficult. Appellants' structure is part of that general development and, in particular, it diminishes the public's visual access to the ocean and decreases the public's sense that it may have physical access to the beach. These losses in access can be counteracted, at least in part, by the condition on appellants' construction permitting public passage that ensures access along the beach.

Traditional takings analysis compels the conclusion that there is no taking here. The governmental action is a valid exercise of the police power, and, so far as the record reveals, ***866** has a nonexistent economic effect on the value of appellants' property. No investment-backed expectations were diminished. It is significant that the Nollans had notice

of the easement before they purchased the property and that public use of the beach had been permitted for decades.

For these reasons, I respectfully dissent.

Justice STEVENS, with whom Justice BLACKMUN joins, dissenting.

The debate between the Court and Justice BRENNAN illustrates an extremely important point concerning government regulation of the use of privately owned ****3164** real estate. Intelligent, well-informed public officials may in good faith disagree about the validity of specific types of land-use regulation. Even the wisest lawyers would have to acknowledge great uncertainty about the scope of this Court's takings jurisprudence. Yet, because of the Court's remarkable ruling in *First English Evangelical Lutheran Church of Glendale v. Los Angeles County,* 482 U.S. 304, 107 S.Ct. 2378, 96 L.Ed.2d 250 (1987), local governments and officials must pay the price for the necessarily vague standards in this area of the law.

In his dissent in *San Diego Gas & Electric Co. v. San Diego,* 450 U.S. 621, 101 S.Ct. 1287, 67 L.Ed.2d 551 (1981), Justice BRENNAN proposed a brand new constitutional rule. [*] He argued that a mistake such as the one that a majority of the Court believes that the California Coastal Commission made in this case should automatically give rise to pecuniary liability for a "temporary taking." *Id.,* at 653–661, 101 S.Ct., at 1304–1309. Notwithstanding the unprecedented chilling effect that such a rule will obviously have on public officials charged with the responsibility for drafting and implementing regulations designed to protect the environment ***867** and the public welfare, six Members of the Court recently endorsed Justice BRENNAN's novel proposal. See *First English Evangelical Lutheran Church, supra.*

[*] "The constitutional rule I propose requires that, once a court finds that a police power regulation has effected a 'taking,' the government entity must pay just compensation for the period commencing on the date the regulation first effected the 'taking,' and ending on the date the government entity chooses to rescind or otherwise amend the regulation." 450 U.S., at 658, 101 S.Ct., at 1307.

I write today to identify the severe tension between that dramatic development in the law and the view expressed by Justice BRENNAN's dissent in this case that the public interest is served by encouraging state agencies to exercise considerable flexibility in responding to private desires for development in a way that threatens the preservation of public resources. See *ante,* at 3154–3155. I like the hat that Justice BRENNAN has donned today better than the one he wore in *San Diego,* and I am persuaded that he has the better of the legal arguments here. Even if his position prevailed in this case, however, it would be of little solace to land-use planners who would still be left guessing about how the Court will react to the next case, and the one after that. As this case demonstrates, the rule of liability created by the Court in *First English* is a shortsighted one. Like Justice BRENNAN, I hope that "a broader vision ultimately prevails." *Ante,* at 3161.

I respectfully dissent.

All Citations

483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677, 26 ERC 1073, 55 USLW 5145, 17 Envtl. L. Rep. 20,918

114 S.Ct. 2309
Supreme Court of the United States

Florence DOLAN, Petitioner
v.
CITY OF TIGARD.

No. 93–518
|
Argued March 23, 1994.
|
Decided June 24, 1994.

Synopsis

Landowner petitioned for judicial review of decision of Oregon Land Use Board of Appeals, affirming conditions placed by city on development of commercial property. The Court of Appeals, 113 Or.App. 162, 832 P.2d 853, affirmed, and landowner again appealed. The Oregon Supreme Court affirmed, 317 Or. 110, 854 P.2d 437, and certiorari was granted. The Supreme Court, Chief Justice Rehnquist, held that: (1) city's requirement that landowner dedicate portion of her property lying within flood plain for improvement of storm drainage system and property adjacent to flood plain as bicycle/pedestrian pathway, as condition for building permit allowing expansion of landowner's commercial property, had nexus with legitimate public purposes; (2) findings relied upon by city to require landowner to dedicate portion of her property in flood plain as public greenway, did not show required reasonable relationship necessary to satisfy requirements of Fifth Amendment; and (3) city failed to meet its burden of demonstrating that additional number of vehicle and bicycle trips generated by proposed commercial development reasonably related to city's requirement of dedication of pedestrian/bicycle pathway easement.

Reversed and remanded.

Justice Stevens filed dissenting opinion in which Justices Blackmun and Ginsburg joined.

Justice Souter filed dissenting opinion.

Procedural Posture(s): On Appeal.

****2311** *Syllabus* [*]

[*] The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Lumber Co.*, 200 U.S. 321, 337, 26 S.Ct. 282, 287, 50 L.Ed. 499.

The City Planning Commission of respondent city conditioned approval of petitioner Dolan's application to expand her store and pave her parking lot upon her compliance with dedication of land (1) for a public greenway along Fanno Creek to minimize flooding that would be exacerbated by the increases in impervious surfaces associated with her development and (2) for a pedestrian/bicycle pathway intended to relieve traffic congestion in the city's Central Business District. She appealed the commission's denial of her request for variances from these standards to the Land Use Board of Appeals (LUBA), alleging that the land dedication requirements were not related to the proposed development and therefore constituted an uncompensated taking of her property under the Fifth Amendment. LUBA found a reasonable relationship between (1) the development and the requirement to dedicate land for a greenway, since the larger building and paved lot would increase the impervious surfaces and thus the runoff into the creek, and (2) alleviating the impact of increased traffic from the development and facilitating the provision of a pathway as an alternative means of transportation. Both the Oregon Court of Appeals and the Oregon Supreme Court affirmed.

Held: The city's dedication requirements constitute an uncompensated taking of property. Pp. 2316–2322.

(a) Under the well-settled doctrine of "unconstitutional conditions," the government may not require a person to give up a constitutional right in exchange for a discretionary benefit conferred by the government where the property sought has little or no ****2312** relationship to the benefit. In evaluating Dolan's claim, it must be determined whether an "essential nexus" exists between a legitimate state interest and the permit condition. *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 837, 107 S.Ct. 3141, 3148, 97 L.Ed.2d 677. If one does, then it must be decided whether the degree of the exactions demanded by the permit conditions bears the required relationship to the projected impact of the proposed development. *Id.,* at 834, 107 S.Ct. at 3147. Pp. 2316–2317.

(b) Preventing flooding along Fanno Creek and reducing traffic congestion in the district are legitimate public purposes; and a nexus exists between the first purpose and

limiting development within the creek's ***375** floodplain and between the second purpose and providing for alternative means of transportation. Pp. 2317–2318.

(c) In deciding the second question—whether the city's findings are constitutionally sufficient to justify the conditions imposed on Dolan's permit—the necessary connection required by the Fifth Amendment is "rough proportionality." No precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication is related both in nature and extent to the proposed development's impact. This is essentially the "reasonable relationship" test adopted by the majority of the state courts. Pp. 2318–2320.

(d) The findings upon which the city relies do not show the required reasonable relationship between the floodplain easement and Dolan's proposed building. The Community Development Code already required that Dolan leave 15% of her property as open space, and the undeveloped floodplain would have nearly satisfied that requirement. However, the city has never said why a public, as opposed to a private, greenway is required in the interest of flood control. The difference to Dolan is the loss of her ability to exclude others from her property, yet the city has not attempted to make any individualized determination to support this part of its request. The city has also not met its burden of demonstrating that the additional number of vehicle and bicycle trips generated by Dolan's development reasonably relates to the city's requirement for a dedication of the pathway easement. The city must quantify its finding beyond a conclusory statement that the dedication could offset some of the traffic demand generated by the development. Pp. 2319–2322.

317 Ore. 110, 854 P.2d 437 (1993), reversed and remanded.

REHNQUIST, C.J., delivered the opinion of the Court, in which O'CONNOR, SCALIA, KENNEDY, and THOMAS, JJ., joined. STEVENS, J., filed a dissenting opinion, in which BLACKMUN and GINSBURG, JJ., joined, *post,* p. 2322. SOUTER, J., filed a dissenting opinion, *post,* p. 2330.

Attorneys and Law Firms

David B. Smith, Tigard, OR, for petitioner.

Timothy V. Ramis, Portland, OR, for respondent.

***376** Edwin S. Kneedler, Washington, DC, for U.S., as amicus curiae by special leave of the Court.

Opinion

***377** Chief Justice REHNQUIST delivered the opinion of the Court.

Petitioner challenges the decision of the Oregon Supreme Court which held that the city of Tigard could condition the approval of her building permit on the dedication of a portion of her property for flood control and traffic improvements. 317 Ore. 110, 854 P.2d 437 (1993). We granted certiorari to resolve a question left open by our decision in *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987), of what is the required degree of connection between the exactions imposed by the city and the projected impacts of the proposed development.

****2313** I

The State of Oregon enacted a comprehensive land use management program in 1973. Ore.Rev.Stat. §§ 197.005–197.860 (1991). The program required all Oregon cities and counties to adopt new comprehensive land use plans that were consistent with the statewide planning goals. §§ 197.175(1), 197.250. The plans are implemented by land use regulations which are part of an integrated hierarchy of legally binding goals, plans, and regulations. §§ 197.175, 197.175(2)(b). Pursuant to the State's requirements, the city of Tigard, a community of some 30,000 residents on the southwest edge of Portland, developed a comprehensive plan and codified it in its Community Development Code (CDC). The CDC requires property owners in the area zoned Central Business District to comply with a 15% open space and landscaping requirement, which limits total site coverage, including all structures and paved parking, to 85% of the parcel. CDC, ch. 18.66, App. to Pet. for Cert. G–16 to G–17. After the completion of a transportation study that identified ***378** congestion in the Central Business District as a particular problem, the city adopted a plan for a pedestrian/bicycle pathway intended to encourage alternatives to automobile transportation for short trips. The CDC requires that new development facilitate this plan by dedicating land for pedestrian pathways where provided for in the pedestrian/bicycle pathway plan. [1]

[1] CDC § 18.86.040.A.1.b provides: "The development shall facilitate pedestrian/bicycle

> circulation if the site is located on a street with designated bikepaths or adjacent to a designated greenway/open space/park. Specific items to be addressed [include]: (i) Provision of efficient, convenient and continuous pedestrian and bicycle transit circulation systems, linking developments by requiring dedication and construction of pedestrian and bikepaths identified in the comprehensive plan. If direct connections cannot be made, require that funds in the amount of the construction cost be deposited into an account for the purpose of constructing paths." App. to Brief for Respondent B–33 to B–34.

The city also adopted a Master Drainage Plan (Drainage Plan). The Drainage Plan noted that flooding occurred in several areas along Fanno Creek, including areas near petitioner's property. Record, Doc. No. F, ch. 2, pp. 2–5 to 2–8; 4–2 to 4–6; Figure 4–1. The Drainage Plan also established that the increase in impervious surfaces associated with continued urbanization would exacerbate these flooding problems. To combat these risks, the Drainage Plan suggested a series of improvements to the Fanno Creek Basin, including channel excavation in the area next to petitioner's property. App. to Pet. for Cert. G–13, G–38. Other recommendations included ensuring that the floodplain remains free of structures and that it be preserved as greenways to minimize flood damage to structures. Record, Doc. No. F, ch. 5, pp. 5–16 to 5–21. The Drainage Plan concluded that the cost of these improvements should be shared based on both direct and indirect benefits, with property owners along the waterways paying more due to the direct benefit that they would receive. *Id.,* ch. 8, p. 8–11. CDC Chapters 18.84 and 18.86 ***379** and CDC § 18.164.100 and the Tigard Park Plan carry out these recommendations.

Petitioner Florence Dolan owns a plumbing and electric supply store located on Main Street in the Central Business District of the city. The store covers approximately 9,700 square feet on the eastern side of a 1.67–acre parcel, which includes a gravel parking lot. Fanno Creek flows through the southwestern corner of the lot and along its western boundary. The year-round flow of the creek renders the area within the creek's 100–year floodplain virtually unusable for commercial development. The city's comprehensive plan includes the Fanno Creek floodplain as part of the city's greenway system.

Petitioner applied to the city for a permit to redevelop the site. Her proposed plans called for nearly doubling the size of the store to 17,600 square feet and paving a 39–space parking lot. The existing store, located on the opposite side of the parcel, would be razed in sections as construction progressed on the new building. In the second phase of the project, petitioner proposed to build an additional structure on the northeast side of ****2314** the site for complementary businesses and to provide more parking. The proposed expansion and intensified use are consistent with the city's zoning scheme in the Central Business District. CDC § 18.66.030, App. to Brief for Petitioner C–1 to C–3.

The City Planning Commission (Commission) granted petitioner's permit application subject to conditions imposed by the city's CDC. The CDC establishes the following standard for site development review approval:

> "Where landfill and/or development is allowed within and adjacent to the 100–year floodplain, the City shall require the dedication of sufficient open land area for greenway adjoining and within the floodplain. This area shall include portions at a suitable elevation for the construction of a pedestrian/bicycle pathway within the ***380** floodplain in accordance with the adopted pedestrian/bicycle plan." CDC § 18.120.180.A.8, App. to Brief for Respondent B–45 to B–46.

Thus, the Commission required that petitioner dedicate the portion of her property lying within the 100–year floodplain for improvement of a storm drainage system along Fanno Creek and that she dedicate an additional 15–foot strip of land adjacent to the floodplain as a pedestrian/bicycle pathway.[2] The dedication required by that condition encompasses approximately 7,000 square feet, or roughly 10% of the property. In accordance with city practice, petitioner could rely on the dedicated property to meet the 15% open space and landscaping requirement mandated by the city's zoning scheme. App. to Pet. for Cert. G–28 to G–29. The city would bear the cost of maintaining a landscaped buffer between the dedicated area and the new store. *Id.,* at G–44 to G–45.

[2] The city's decision includes the following relevant conditions: "1. The applicant shall dedicate to the City as Greenway all portions of the site that fall within the existing 100–year floodplain [of Fanno Creek] (*i.e.,* all portions of the property below elevation 150.0) and all property 15 feet above (to the east of) the 150.0 foot floodplain boundary. The building shall be designed so as not to intrude into the greenway area." App. to Pet. for Cert. G–43.

Petitioner requested variances from the CDC standards. Variances are granted only where it can be shown that, owing to special circumstances related to a specific piece of the land, the literal interpretation of the applicable zoning provisions would cause "an undue or unnecessary hardship" unless the variance is granted. CDC § 18.134.010, App. to Brief for Respondent B–47.[3] Rather than posing alternative ***381** mitigating measures to offset the expected impacts of her proposed development, as allowed under the CDC, petitioner simply argued that her proposed development would not conflict with the policies of the comprehensive plan. *Id.,* at E–4. The Commission denied the request.

[3] CDC § 18.134.050 contains the following criteria whereby the decisionmaking authority can approve, approve with modifications, or deny a variance request:
"(1) The proposed variance will not be materially detrimental to the purposes of this title, be in conflict with the policies of the comprehensive plan, to any other applicable policies and standards, and to other properties in the same zoning district or vicinity;
"(2) There are special circumstances that exist which are peculiar to the lot size or shape, topography or other circumstances over which the applicant has no control, and which are not applicable to other properties in the same zoning district;
"(3) The use proposed will be the same as permitted under this title and City standards will be maintained to the greatest extent possible, while permitting some economic use of the land;
"(4) Existing physical and natural systems, such as but not limited to traffic, drainage, dramatic land forms, or parks will not be adversely affected any more than would occur if the development were located as specified in the title; and
"(5) The hardship is not self-imposed and the variance requested is the minimum variance which would alleviate the hardship." App. to Brief for Respondent B–49 to B–50.

The Commission made a series of findings concerning the relationship between the dedicated conditions and the projected impacts of petitioner's project. First, the Commission noted that "[i]t is reasonable to assume that customers and employees of the future uses of this site could utilize a pedestrian/bicycle pathway adjacent to this development for their transportation and recreational needs." ****2315** City of Tigard Planning Commission Final Order No. 91–09 PC, App. to Pet. for Cert. G–24. The Commission noted that the site plan has provided for bicycle parking in a rack in front of the proposed building and "[i]t is reasonable to expect that some of the users of the bicycle parking provided for by the site plan will use the pathway adjacent to Fanno Creek if it is constructed." *Ibid.* In addition, the Commission found that creation of a convenient, safe pedestrian/bicycle pathway system as an alternative means of transportation "could ***382** offset some of the traffic demand on [nearby] streets and lessen the increase in traffic congestion." *Ibid.*

The Commission went on to note that the required floodplain dedication would be reasonably related to petitioner's request to intensify the use of the site given the increase in the impervious surface. The Commission stated that the "anticipated increased storm water flow from the subject property to an already strained creek and drainage basin can only add to the public need to manage the stream channel and floodplain for drainage purposes." *Id.,* at G–37. Based on this anticipated increased storm water flow, the Commission concluded that "the requirement of dedication of the floodplain area on the site is related to the applicant's plan to intensify development on the site." *Ibid.* The Tigard City Council approved the Commission's final order, subject to one minor modification; the city council reassigned the responsibility for surveying and marking the floodplain area from petitioner to the city's engineering department. *Id.,* at G–7.

Petitioner appealed to the Land Use Board of Appeals (LUBA) on the ground that the city's dedication requirements were not related to the proposed development, and, therefore, those requirements constituted an uncompensated taking of her property under the Fifth Amendment. In evaluating the federal taking claim, LUBA assumed that the city's findings about the impacts of the proposed development were supported by substantial evidence. *Dolan v. Tigard,* LUBA 91–161 (Jan. 7, 1992), reprinted at App. to Pet. for Cert. D–15, n. 9. Given the undisputed fact that the proposed larger building and paved parking area would increase the amount of impervious surfaces and the runoff into Fanno Creek, LUBA concluded that "there is a 'reasonable relationship' between the proposed development and the requirement to dedicate land along Fanno Creek for a greenway." *Id.,* at D–16. With respect to the pedestrian/bicycle pathway, LUBA noted the Commission's finding that a significantlylarger ***383** retail sales building and parking lot would attract larger numbers of

customers and employees and their vehicles. It again found a "reasonable relationship" between alleviating the impacts of increased traffic from the development and facilitating the provision of a pedestrian/bicycle pathway as an alternative means of transportation. *Ibid.*

The Oregon Court of Appeals affirmed, rejecting petitioner's contention that in *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987), we had abandoned the "reasonable relationship" test in favor of a stricter "essential nexus" test. 113 Ore.App. 162, 832 P.2d 853 (1992). The Oregon Supreme Court affirmed. 317 Ore. 110, 854 P.2d 437 (1993). The court also disagreed with petitioner's contention that the *Nollan* Court abandoned the "reasonably related" test. 317 Ore., at 118, 854 P.2d, at 442. Instead, the court read *Nollan* to mean that an "exaction is reasonably related to an impact if the exaction serves the same purpose that a denial of the permit would serve." 317 Ore., at 120, 854 P.2d, at 443. The court decided that both the pedestrian/bicycle pathway condition and the storm drainage dedication had an essential nexus to the development of the proposed site. *Id.,* at 121, 854 P.2d, at 443. Therefore, the court found the conditions to be reasonably related to the impact of the expansion of petitioner's business. *Ibid.*[4] ****2316** We granted certiorari, 510 U.S. 989, 114 S.Ct. 544, 126 L.Ed.2d 446 (1993), because of an alleged conflict between the Oregon Supreme Court's decision and our decision in *Nollan, supra.*

4 The Supreme Court of Oregon did not address the consequences of petitioner's failure to provide alternative mitigation measures in her variance application and we take the case as it comes to us. Accordingly, we do not pass on the constitutionality of the city's variance provisions.

II

The Takings Clause of the Fifth Amendment of the United States Constitution, made applicable to the States through the Fourteenth Amendment, *Chicago, B. & Q.R. Co. v. Chicago,* 166 U.S. 226, 239, 17 S.Ct. 581, 585, 41 L.Ed. 979 (1897), ***384** provides: "[N]or shall private property be taken for public use, without just compensation."[5] One of the principal purposes of the Takings Clause is "to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." *Armstrong v. United States,* 364 U.S. 40, 49, 80 S.Ct. 1563, 1569, 4 L.Ed.2d 1554 (1960). Without question, had the city simply required petitioner to dedicate a strip of land along Fanno Creek for public use, rather than conditioning the grant of her permit to redevelop her property on such a dedication, a taking would have occurred. *Nollan, supra,* 483 U.S., at 831, 107 S.Ct., at 3145. Such public access would deprive petitioner of the right to exclude others, "one of the most essential sticks in the bundle of rights that are commonly characterized as property." *Kaiser Aetna v. United States,* 444 U.S. 164, 176, 100 S.Ct. 383, 391, 62 L.Ed.2d 332 (1979).

5 Justice STEVENS' dissent suggests that this case is actually grounded in "substantive" due process, rather than in the view that the Takings Clause of the Fifth Amendment was made applicable to the States by the Fourteenth Amendment. But there is no doubt that later cases have held that the Fourteenth Amendment does make the Takings Clause of the Fifth Amendment applicable to the States, see *Penn Central Transp. Co. v. New York City,* 438 U.S. 104, 122, 98 S.Ct. 2646, 2658, 57 L.Ed.2d 631 (1978); *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 827, 107 S.Ct. 3141, 3143, 97 L.Ed.2d 677 (1987). Nor is there any doubt that these cases have relied upon *Chicago, B. & Q.R. Co. v. Chicago,* 166 U.S. 226, 17 S.Ct. 581, 41 L.Ed. 979 (1897), to reach that result. See, *e.g., Penn Central, supra,* 438 U.S., at 122, 98 S.Ct., at 2658 ("The issu[e] presented ... [is] whether the restrictions imposed by New York City's law upon appellants' exploitation of the Terminal site effect a 'taking' of appellants' property for a public use within the meaning of the Fifth Amendment, which of course is made applicable to the States through the Fourteenth Amendment, see *Chicago, B. & Q.R. Co. v. Chicago,* 166 U.S. 226, 239, 17 S.Ct. 581, 585, 41 L.Ed. 979 (1897)").

On the other side of the ledger, the authority of state and local governments to engage in land use planning has been sustained against constitutional challenge as long ago as our decision in *Village of Euclid v. Ambler Realty Co.,* 272 U.S. 365, 47 S.Ct. 114, 71 L.Ed. 303 (1926). "Government hardly could go on if to some extent values incident to property could not be diminished ***385** without paying for every such change in the general law." *Pennsylvania Coal Co. v. Mahon,* 260 U.S. 393, 413, 43 S.Ct. 158, 159, 67 L.Ed. 322 (1922). A land use regulation does not effect a taking if it "substantially advance[s] legitimate state interests" and does not "den [y] an owner economically viable use of his land." *Agins v. City of*

Tiburon, 447 U.S. 255, 260, 100 S.Ct. 2138, 2141, 65 L.Ed.2d 106 (1980). [6]

6 There can be no argument that the permit conditions would deprive petitioner of "economically beneficial us[e]" of her property as she currently operates a retail store on the lot. Petitioner assuredly is able to derive *some* economic use from her property. See, *e.g., Lucas v. South Carolina Coastal Council,* 505 U.S. 1003, 1019, 112 S.Ct. 2886, 2895, 120 L.Ed.2d 798 (1992); *Kaiser Aetna v. United States,* 444 U.S. 164, 175, 100 S.Ct. 383, 390, 62 L.Ed.2d 332 (1979); *Penn Central Transp. Co. v. New York City, supra,* 438 U.S., at 124, 98 S.Ct., at 2659.

The sort of land use regulations discussed in the cases just cited, however, differ in two relevant particulars from the present case. First, they involved essentially legislative determinations classifying entire areas of the city, whereas here the city made an adjudicative decision to condition petitioner's application for a building permit on an individual parcel. Second, the conditions imposed were not simply a limitation on the use petitioner might make of her own parcel, but a requirement that she deed portions of the property to the city. In *Nollan, supra,* we ****2317** held that governmental authority to exact such a condition was circumscribed by the Fifth and Fourteenth Amendments. Under the well-settled doctrine of "unconstitutional conditions," the government may not require a person to give up a constitutional right—here the right to receive just compensation when property is taken for a public use—in exchange for a discretionary benefit conferred by the government where the benefit sought has little or no relationship to the property. See *Perry v. Sindermann,* 408 U.S. 593, 92 S.Ct. 2694, 33 L.Ed.2d 570 (1972); *Pickering v. Board of Ed. of Township High School Dist. 205, Will Cty.,* 391 U.S. 563, 568, 88 S.Ct. 1731, 1734, 20 L.Ed.2d 811 (1968).

Petitioner contends that the city has forced her to choose between the building permit and her right under the Fifth ***386** Amendment to just compensation for the public easements. Petitioner does not quarrel with the city's authority to exact some forms of dedication as a condition for the grant of a building permit, but challenges the showing made by the city to justify these exactions. She argues that the city has identified "no special benefits" conferred on her, and has not identified any "special quantifiable burdens" created by her new store that would justify the particular dedications required from her which are not required from the public at large.

III

In evaluating petitioner's claim, we must first determine whether the "essential nexus" exists between the "legitimate state interest" and the permit condition exacted by the city. *Nollan,* 483 U.S., at 837, 107 S.Ct., at 3148. If we find that a nexus exists, we must then decide the required degree of connection between the exactions and the projected impact of the proposed development. We were not required to reach this question in *Nollan,* because we concluded that the connection did not meet even the loosest standard. *Id.,* at 838, 107 S.Ct., at 3149. Here, however, we must decide this question.

A

We addressed the essential nexus question in *Nollan.* The California Coastal Commission demanded a lateral public easement across the Nollans' beachfront lot in exchange for a permit to demolish an existing bungalow and replace it with a three-bedroom house. *Id.,* at 828, 107 S.Ct., at 3144. The public easement was designed to connect two public beaches that were separated by the Nollan's property. The Coastal Commission had asserted that the public easement condition was imposed to promote the legitimate state interest of diminishing the "blockage of the view of the ocean" caused by construction of the larger house.

We agreed that the Coastal Commission's concern with protecting visual access to the ocean constituted a legitimate ***387** public interest. *Id.,* at 835, 107 S.Ct., at 3148. We also agreed that the permit condition would have been constitutional "even if it consisted of the requirement that the Nollans provide a viewing spot on their property for passersby with whose sighting of the ocean their new house would interfere." *Id.,* at 836, 107 S.Ct., at 3148. We resolved, however, that the Coastal Commission's regulatory authority was set completely adrift from its constitutional moorings when it claimed that a nexus existed between visual access to the ocean and a permit condition requiring lateral public access along the Nollans' beachfront lot. *Id.,* at 837, 107 S.Ct., at 3148. How enhancing the public's ability to "traverse to and along the shorefront" served the same governmental purpose of "visual access to the ocean" from the roadway was beyond our ability to countenance. The absence of a nexus left the

Coastal Commission in the position of simply trying to obtain an easement through gimmickry, which converted a valid regulation of land use into " 'an out-and-out plan of extortion.' " *Ibid.,* quoting *J.E.D. Associates, Inc. v. Atkinson,* 121 N.H. 581, 584, 432 A.2d 12, 14–15 (1981).

No such gimmicks are associated with the permit conditions imposed by the city in this case. Undoubtedly, the prevention of flooding ****2318** along Fanno Creek and the reduction of traffic congestion in the Central Business District qualify as the type of legitimate public purposes we have upheld. *Agins,* 447 U.S., at 260–262, 100 S.Ct., at 2141–2142. It seems equally obvious that a nexus exists between preventing flooding along Fanno Creek and limiting development within the creek's 100–year floodplain. Petitioner proposes to double the size of her retail store and to pave her now-gravel parking lot, thereby expanding the impervious surface on the property and increasing the amount of storm water runoff into Fanno Creek.

The same may be said for the city's attempt to reduce traffic congestion by providing for alternative means of transportation. In theory, a pedestrian/bicycle pathway provides a useful alternative means of transportation for workers and shoppers: "Pedestrians and bicyclists occupying dedicated ***388** spaces for walking and/or bicycling ... remove potential vehicles from streets, resulting in an overall improvement in total transportation system flow." A. Nelson, Public Provision of Pedestrian and Bicycle Access Ways: Public Policy Rationale and the Nature of Private Benefits 11, Center for Planning Development, Georgia Institute of Technology, Working Paper Series (Jan. 1994). See also Intermodal Surface Transportation Efficiency Act of 1991, Pub.L. 102–240, 105 Stat.1914 (recognizing pedestrian and bicycle facilities as necessary components of any strategy to reduce traffic congestion).

B

The second part of our analysis requires us to determine whether the degree of the exactions demanded by the city's permit conditions bears the required relationship to the projected impact of petitioner's proposed development. *Nollan, supra,* 483 U.S., at 834, 107 S.Ct., at 3147, quoting *Penn Central Transp. Co. v. New York City,* 438 U.S. 104, 127, 98 S.Ct. 2646, 2660, 57 L.Ed.2d 631 (1978) (" '[A] use restriction may constitute a "taking" if not reasonably necessary to the effectuation of a substantial government purpose' "). Here the Oregon Supreme Court deferred to what it termed the "city's unchallenged factual findings" supporting the dedication conditions and found them to be reasonably related to the impact of the expansion of petitioner's business. 317 Ore., at 120–121, 854 P.2d, at 443.

The city required that petitioner dedicate "to the City as Greenway all portions of the site that fall within the existing 100–year floodplain [of Fanno Creek] ... and all property 15 feet above [the floodplain] boundary." *Id.,* at 113, n. 3, 854 P.2d, at 439, n. 3. In addition, the city demanded that the retail store be designed so as not to intrude into the greenway area. The city relies on the Commission's rather tentative findings that increased storm water flow from petitioner's property "can only add to the public need to manage the [floodplain] for drainage purposes" to support its conclusion that the "requirement of dedication of the floodplain area on ***389** the site is related to the applicant's plan to intensify development on the site." City of Tigard Planning Commission Final Order No. 91–09 PC, App. to Pet. for Cert. G–37.

The city made the following specific findings relevant to the pedestrian/bicycle pathway:

> "In addition, the proposed expanded use of this site is anticipated to generate additional vehicular traffic thereby increasing congestion on nearby collector and arterial streets. Creation of a convenient, safe pedestrian/bicycle pathway system as an alternative means of transportation could offset some of the traffic demand on these nearby streets and lessen the increase in traffic congestion." *Id.,* at G–24.

The question for us is whether these findings are constitutionally sufficient to justify the conditions imposed by the city on petitioner's building permit. Since state courts have been dealing with this question a good deal longer than we have, we turn to representative decisions made by them.

In some States, very generalized statements as to the necessary connection between the required dedication and the proposed development seem to suffice. See, *e.g., Billings Properties, Inc. v. Yellowstone County,* 144 Mont. 25, 394 P.2d 182 (1964); ****2319** *Jenad, Inc. v. Scarsdale,* 18 N.Y.2d 78, 271 N.Y.S.2d 955, 218 N.E.2d 673 (1966). We think this standard is too lax to adequately protect petitioner's right to just compensation if her property is taken for a public purpose.

Other state courts require a very exacting correspondence, described as the "specifi[c] and uniquely attributable" test. The Supreme Court of Illinois first developed this test in *Pioneer Trust & Savings Bank v. Mount Prospect,* 22 Ill.2d 375, 380, 176 N.E.2d 799, 802 (1961). [7] Under this standard, ***390** if the local government cannot demonstrate that its exaction is directly proportional to the specifically created need, the exaction becomes "a veiled exercise of the power of eminent domain and a confiscation of private property behind the defense of police regulations." *Id.,* at 381, 176 N.E.2d, at 802. We do not think the Federal Constitution requires such exacting scrutiny, given the nature of the interests involved.

7 The "specifically and uniquely attributable" test has now been adopted by a minority of other courts. See, *e.g., J.E.D. Associates, Inc. v. Atkinson,* 121 N.H. 581, 585, 432 A.2d 12, 15 (1981); *Divan Builders, Inc. v. Planning Bd. of Twp. of Wayne,* 66 N.J. 582, 600–601, 334 A.2d 30, 40 (1975); *McKain v. Toledo City Plan Comm'n,* 26 Ohio App.2d 171, 176, 270 N.E.2d 370, 374 (1971); *Frank Ansuini, Inc. v. Cranston,* 107 R.I. 63, 69, 264 A.2d 910, 913 (1970).

A number of state courts have taken an intermediate position, requiring the municipality to show a "reasonable relationship" between the required dedication and the impact of the proposed development. Typical is the Supreme Court of Nebraska's opinion in *Simpson v. North Platte,* 206 Neb. 240, 245, 292 N.W.2d 297, 301 (1980), where that court stated:

> "The distinction, therefore, which must be made between an appropriate exercise of the police power and an improper exercise of eminent domain is whether the requirement has some reasonable relationship or nexus to the use to which the property is being made or is merely being used as an excuse for taking property simply because at that particular moment the landowner is asking the city for some license or permit."

Thus, the court held that a city may not require a property owner to dedicate private property for some future public use as a condition of obtaining a building permit when such future use is not "occasioned by the construction sought to be permitted." *Id.,* at 248, 292 N.W.2d, at 302.

Some form of the reasonable relationship test has been adopted in many other jurisdictions. See, *e.g., Jordan v. Menomonee Falls,* 28 Wis.2d 608, 137 N.W.2d 442 (1965); *Collis v. Bloomington,* 310 Minn. 5, 246 N.W.2d 19 (1976) (requiring a showing of a reasonable relationship between ***391** the planned subdivision and the municipality's need for land); *College Station v. Turtle Rock Corp.,* 680 S.W.2d 802, 807 (Tex.1984); *Call v. West Jordan,* 606 P.2d 217, 220 (Utah 1979) (affirming use of the reasonable relation test). Despite any semantical differences, general agreement exists among the courts "that the dedication should have some reasonable relationship to the needs created by the [development]." *Ibid.* See generally Note " 'Take' My Beach Please!": *Nollan v. California Coastal Commission* and a Rational-Nexus Constitutional Analysis of Development Exactions, 69 B.U.L.Rev. 823 (1989); see also *Parks v. Watson,* 716 F.2d 646, 651–653 (CA9 1983).

We think the "reasonable relationship" test adopted by a majority of the state courts is closer to the federal constitutional norm than either of those previously discussed. But we do not adopt it as such, partly because the term "reasonable relationship" seems confusingly similar to the term "rational basis" which describes the minimal level of scrutiny under the Equal Protection Clause of the Fourteenth Amendment. We think a term such as "rough proportionality" best encapsulates what we hold to be the requirement of the Fifth Amendment. No precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication ****2320** is related both in nature and extent to the impact of the proposed development. [8]

8 Justice STEVENS' dissent takes us to task for placing the burden on the city to justify the required dedication. He is correct in arguing that in evaluating most generally applicable zoning regulations, the burden properly rests on the party challenging the regulation to prove that it constitutes an arbitrary regulation of property rights. See, *e.g., Village of Euclid v. Ambler Realty Co.,* 272 U.S. 365, 47 S.Ct. 114, 71 L.Ed. 303 (1926). Here, by contrast, the city made an adjudicative decision to condition petitioner's application for a building permit on an individual parcel. In this situation, the burden properly rests on the city. See *Nollan,* 483 U.S., at 836, 107 S.Ct., at 3148. This conclusion is not, as he suggests, undermined by our decision in *Moore v. East Cleveland,* 431 U.S. 494, 97 S.Ct. 1932, 52 L.Ed.2d 531 (1977), in which we struck down a housing ordinance that limited occupancy of a dwelling unit to members of a single family as violating the Due

Process Clause of the Fourteenth Amendment. The ordinance at issue in *Moore* intruded on choices concerning family living arrangements, an area in which the usual deference to the legislature was found to be inappropriate. *Id.,* at 499, 97 S.Ct., at 1935.

***392** Justice STEVENS' dissent relies upon a law review article for the proposition that the city's conditional demands for part of petitioner's property are "a species of business regulation that heretofore warranted a strong presumption of constitutional validity." *Post,* at 2325. But simply denominating a governmental measure as a "business regulation" does not immunize it from constitutional challenge on the ground that it violates a provision of the Bill of Rights. In *Marshall v. Barlow's, Inc.,* 436 U.S. 307, 98 S.Ct. 1816, 56 L.Ed.2d 305 (1978), we held that a statute authorizing a warrantless search of business premises in order to detect OSHA violations violated the Fourth Amendment. See also *Air Pollution Variance Bd., of Colo. v. Western Alfalfa Corp.,* 416 U.S. 861, 94 S.Ct. 2114, 40 L.Ed.2d 607 (1974); *New York v. Burger,* 482 U.S. 691, 107 S.Ct. 2636, 96 L.Ed.2d 601 (1987). And in *Central Hudson Gas & Elec. Corp. v. Public Serv. Comm'n of N.Y.,* 447 U.S. 557, 100 S.Ct. 2343, 65 L.Ed.2d 341 (1980), we held that an order of the New York Public Service Commission, designed to cut down the use of electricity because of a fuel shortage, violated the First Amendment insofar as it prohibited advertising by a utility company to promote the use of electricity. We see no reason why the Takings Clause of the Fifth Amendment, as much a part of the Bill of Rights as the First Amendment or Fourth Amendment, should be relegated to the status of a poor relation in these comparable circumstances. We turn now to analysis of whether the findings relied upon by the city here, first with respect to the floodplain easement, and second with respect to the pedestrian/bicycle path, satisfied these requirements.

It is axiomatic that increasing the amount of impervious surface will increase the quantity and rate of storm water flow from petitioner's property. Record, Doc. No. F, ch. 4, ***393** p. 4–29. Therefore, keeping the floodplain open and free from development would likely confine the pressures on Fanno Creek created by petitioner's development. In fact, because petitioner's property lies within the Central Business District, the CDC already required that petitioner leave 15% of it as open space and the undeveloped floodplain would have nearly satisfied that requirement. App. to Pet. for Cert. G–16 to G–17. But the city demanded more—it not only wanted petitioner not to build in the floodplain, but it also wanted petitioner's property along Fanno Creek for its greenway system. The city has never said why a public greenway, as opposed to a private one, was required in the interest of flood control.

The difference to petitioner, of course, is the loss of her ability to exclude others. As we have noted, this right to exclude others is "one of the most essential sticks in the bundle of rights that are commonly characterized as property." *Kaiser Aetna,* 444 U.S., at 176, 100 S.Ct., at 391. It is difficult to see why recreational visitors trampling along petitioner's floodplain easement are sufficiently related to the city's legitimate interest in reducing flooding problems along Fanno Creek, and the city has not attempted to ****2321** make any individualized determination to support this part of its request.

The city contends that the recreational easement along the greenway is only ancillary to the city's chief purpose in controlling flood hazards. It further asserts that unlike the residential property at issue in *Nollan,* petitioner's property is commercial in character, and therefore, her right to exclude others is compromised. Brief for Respondent 41, quoting *United States v. Orito,* 413 U.S. 139, 142, 93 S.Ct. 2674, 2677, 37 L.Ed.2d 513 (1973) (" 'The Constitution extends special safeguards to the privacy of the home' "). The city maintains that "[t]here is nothing to suggest that preventing [petitioner] from prohibiting [the easements] will unreasonably impair the value of [her] property as a [retail store]." *PruneYard Shopping Center v. Robins,* 447 U.S. 74, 83, 100 S.Ct. 2035, 2042, 64 L.Ed.2d 741 (1980).

***394** Admittedly, petitioner wants to build a bigger store to attract members of the public to her property. She also wants, however, to be able to control the time and manner in which they enter. The recreational easement on the greenway is different in character from the exercise of state-protected rights of free expression and petition that we permitted in *PruneYard.* In *PruneYard,* we held that a major private shopping center that attracted more than 25,000 daily patrons had to provide access to persons exercising their state constitutional rights to distribute pamphlets and ask passers-by to sign their petitions. *Id.,* at 85, 100 S.Ct., at 2042. We based our decision, in part, on the fact that the shopping center "may restrict expressive activity by adopting time, place, and manner regulations that will minimize any interference with its commercial functions." *Id.,* at 83, 100 S.Ct., at 2042. By contrast, the city wants to impose a permanent recreational easement upon petitioner's property that borders Fanno Creek. Petitioner would lose all rights to regulate the time in which

the public entered onto the greenway, regardless of any interference it might pose with her retail store. Her right to exclude would not be regulated, it would be eviscerated.

If petitioner's proposed development had somehow encroached on existing greenway space in the city, it would have been reasonable to require petitioner to provide some alternative greenway space for the public either on her property or elsewhere. See *Nollan,* 483 U.S., at 836, 107 S.Ct., at 3148 ("Although such a requirement, constituting a permanent grant of continuous access to the property, would have to be considered a taking if it were not attached to a development permit, the Commission's assumed power to forbid construction of the house in order to protect the public's view of the beach must surely include the power to condition construction upon some concession by the owner, even a concession of property rights, that serves the same end"). But that is not the case here. We conclude that the findings upon which the city relies ***395** do not show the required reasonable relationship between the floodplain easement and the petitioner's proposed new building.

With respect to the pedestrian/bicycle pathway, we have no doubt that the city was correct in finding that the larger retail sales facility proposed by petitioner will increase traffic on the streets of the Central Business District. The city estimates that the proposed development would generate roughly 435 additional trips per day.[9] Dedications for streets, sidewalks, and other public ways are generally reasonable exactions to avoid excessive congestion from a proposed property use. But on the record before us, the city has not met its burden of demonstrating that the additional number of vehicle and bicycle trips generated by petitioner's development reasonably relate to the city's requirement for a dedication of the pedestrian/bicycle pathway easement. The city simply found that the creation of the pathway "could offset some of the traffic ****2322** demand ... and lessen the increase in traffic congestion."[10]

9 The city uses a weekday average trip rate of 53.21 trips per 1,000 square feet. Additional Trips Generated = 53.21 X (17,600–9,720). App. to Pet. for Cert. G–15.

10 In rejecting petitioner's request for a variance from the pathway dedication condition, the city stated that omitting the planned section of the pathway across petitioner's property would conflict with its adopted policy of providing a continuous pathway system. But the Takings Clause requires the city to implement its policy by condemnation unless the required relationship between petitioner's development and added traffic is shown.

As Justice Peterson of the Supreme Court of Oregon explained in his dissenting opinion, however, "[t]he findings of fact that the bicycle pathway system '*could* offset some of the traffic demand' is a far cry from a finding that the bicycle pathway system *will,* or is *likely to,* offset some of the traffic demand." 317 Ore., at 127, 854 P.2d, at 447 (emphasis in original). No precise mathematical calculation is required, but the city must make some effort to quantify its findings in ***396** support of the dedication for the pedestrian/bicycle pathway beyond the conclusory statement that it could offset some of the traffic demand generated.

IV

Cities have long engaged in the commendable task of land use planning, made necessary by increasing urbanization, particularly in metropolitan areas such as Portland. The city's goals of reducing flooding hazards and traffic congestion, and providing for public greenways, are laudable, but there are outer limits to how this may be done. "A strong public desire to improve the public condition [will not] warrant achieving the desire by a shorter cut than the constitutional way of paying for the change." *Pennsylvania Coal,* 260 U.S., at 416, 43 S.Ct., at 160.

The judgment of the Supreme Court of Oregon is reversed, and the case is remanded for further proceedings not inconsistent with this opinion.

It is so ordered.

Justice STEVENS, with whom Justice BLACKMUN and Justice GINSBURG join, dissenting.

The record does not tell us the dollar value of petitioner Florence Dolan's interest in excluding the public from the greenway adjacent to her hardware business. The mountain of briefs that the case has generated nevertheless makes it obvious that the pecuniary value of her victory is far less important than the rule of law that this case has been used to establish. It is unquestionably an important case.

Certain propositions are not in dispute. The enlargement of the Tigard unit in Dolan's chain of hardware stores will have an adverse impact on the city's legitimate and substantial interests in controlling drainage in Fanno Creek and minimizing traffic congestion in Tigard's business district. That impact is sufficient to justify an outright denial of her application for approval of the expansion. The city has nevertheless ***397** agreed to grant Dolan's application if she will comply with two conditions, each of which admittedly will mitigate the adverse effects of her proposed development. The disputed question is whether the city has violated the Fourteenth Amendment to the Federal Constitution by refusing to allow Dolan's planned construction to proceed unless those conditions are met.

The Court is correct in concluding that the city may not attach arbitrary conditions to a building permit or to a variance even when it can rightfully deny the application outright. I also agree that state court decisions dealing with ordinances that govern municipal development plans provide useful guidance in a case of this kind. Yet the Court's description of the doctrinal underpinnings of its decision, the phrasing of its fledgling test of "rough proportionality," and the application of that test to this case run contrary to the traditional treatment of these cases and break considerable and unpropitious new ground.

I

Candidly acknowledging the lack of federal precedent for its exercise in rulemaking, the Court purports to find guidance in 12 "representative" ****2323** state court decisions. To do so is certainly appropriate. [1] The state cases the Court consults, however, either fail to support or decidedly undermine the Court's conclusions in key respects.

1 Cf. *Moore v. East Cleveland,* 431 U.S. 494, 513–521, 97 S.Ct. 1932, 52 L.Ed.2d 531 (1977) (STEVENS, J., concurring in judgment).

First, although discussion of the state cases permeates the Court's analysis of the appropriate test to apply in this case, the test on which the Court settles is not naturally derived from those courts' decisions. The Court recognizes as an initial matter that the city's conditions satisfy the "essential nexus" requirement announced in *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987), because they serve the legitimate interests in minimizing floods and traffic congestions. ***398** *Ante,* at 2317–2318. [2] The Court goes on, however, to erect a new constitutional hurdle in the path of these conditions. In addition to showing a rational nexus to a public purpose that would justify an outright denial of the permit, the city must also demonstrate "rough proportionality" between the harm caused by the new land use and the benefit obtained by the condition. *Ante,* at 2319. The Court also decides for the first time that the city has the burden of establishing the constitutionality of its conditions by making an "individualized determination" that the condition in question satisfies the proportionality requirement. See *Ibid.*

2 In *Nollan* the Court recognized that a state agency may condition the grant of a land use permit on the dedication of a property interest if the dedication serves a legitimate police-power purpose that would justify a refusal to issue the permit. For the first time, however, it held that such a condition is unconstitutional if the condition "utterly fails" to further a goal that would justify the refusal. 483 U.S., at 837, 107 S.Ct., at 3148. In the *Nollan* Court's view, a condition would be constitutional even if it required the Nollans to provide a viewing spot for passers-by whose view of the ocean was obstructed by their new house. *Id.,* at 836, 107 S.Ct., at 3148. "Although such a requirement, constituting a permanent grant of continuous access to the property, would have to be considered a taking if it were not attached to a development permit, the Commission's assumed power to forbid construction of the house in order to protect the public's view of the beach must surely include the power to condition construction upon some concession by the owner, even a concession of property rights, that serves the same end." *Ibid.*

Not one of the state cases cited by the Court announces anything akin to a "rough proportionality" requirement. For the most part, moreover, those cases that invalidated municipal ordinances did so on state law or unspecified grounds roughly equivalent to *Nollan* 's "essential nexus" requirement. See, *e.g., Simpson v. North Platte,* 206 Neb. 240, 245–248, 292 N.W.2d 297, 301–302 (1980) (ordinance lacking "reasonable relationship" or "rational nexus" to property's use violated Nebraska Constitution); *J.E.D. Associates, Inc. v. Atkinson,* 121 N.H. 581, 583–585, 432 A.2d 12, 14–15 (1981) (state constitutional grounds). One case purporting ***399** to apply the strict "specifically

and uniquely attributable" test established by *Pioneer Trust & Savings Bank v. Mount Prospect,* 22 Ill.2d 375, 176 N.E.2d 799 (1961), nevertheless found that test was satisfied because the legislature had decided that the subdivision at issue created the need for a park or parks. *Billings Properties, Inc. v. Yellowstone County,* 144 Mont. 25, 33–36, 394 P.2d 182, 187–188 (1964). In only one of the seven cases upholding a land use regulation did the losing property owner petition this Court for certiorari. See *Jordan v. Menomonee Falls,* 28 Wis.2d 608, 137 N.W.2d 442 (1965), appeal dism'd, 385 U.S. 4, 87 S.Ct. 36, 17 L.Ed.2d 3 (1966) (want of substantial federal question). Although 4 of the 12 opinions mention the Federal Constitution—2 of those only in passing—it is quite obvious that neither the courts nor the litigants imagined they might be participating in the development of a new rule of federal law. Thus, although these state cases do lend support to the Court's reaffirmance of *Nollan* 's reasonable nexus requirement, the role the Court accords them in the announcement of its newly minted second phase of the constitutional inquiry is remarkably inventive.

****2324** In addition, the Court ignores the state courts' willingness to consider what the property owner gains from the exchange in question. The Supreme Court of Wisconsin, for example, found it significant that the village's approval of a proposed subdivision plat "enables the subdivider to profit financially by selling the subdivision lots as home-building sites and thus realizing a greater price than could have been obtained if he had sold his property as unplatted lands." *Jordan v. Menomonee Falls,* 28 Wis.2d, at 619–620, 137 N.W.2d, at 448. The required dedication as a condition of that approval was permissible "[i]n return for this benefit." *Ibid.* See also *Collis v. Bloomington,* 310 Minn. 5, 11–13, 246 N.W.2d 19, 23–24 (1976) (citing *Jordan*); *College Station v. Turtle Rock Corp.,* 680 S.W.2d 802, 806 (Tex.1984) (dedication requirement only triggered when developer *chooses* ***400** to develop land). In this case, moreover, Dolan's acceptance of the permit, with its attached conditions, would provide her with benefits that may well go beyond any advantage she gets from expanding her business. As the United States pointed out at oral argument, the improvement that the city's drainage plan contemplates would widen the channel and reinforce the slopes to increase the carrying capacity during serious floods, "confer[ring] considerable benefits on the property owners immediately adjacent to the creek." Tr. of Oral Arg. 41–42.

The state court decisions also are enlightening in the extent to which they required that the *entire parcel* be given controlling importance. All but one of the cases involve challenges to provisions in municipal ordinances requiring developers to dedicate either a percentage of the entire parcel (usually 7 or 10 percent of the platted subdivision) or an equivalent value in cash (usually a certain dollar amount per lot) to help finance the construction of roads, utilities, schools, parks, and playgrounds. In assessing the legality of the conditions, the courts gave no indication that the transfer of an interest in realty was any more objectionable than a cash payment. See, *e.g., Jenad, Inc. v. Scarsdale,* 18 N.Y.2d 78, 271 N.Y.S.2d 955, 218 N.E.2d 673 (1966); *Jordan v. Menomonee Falls,* 28 Wis.2d 608, 137 N.W.2d 442 (1965); *Collis v. Bloomington,* 310 Minn. 5, 246 N.W.2d 19 (1976). None of the decisions identified the surrender of the fee owner's "power to exclude" as having any special significance. Instead, the courts uniformly examined the character of the entire economic transaction.

II

It is not merely state cases, but our own cases as well, that require the analysis to focus on the impact of the city's action on the entire parcel of private property. In *Penn Central Transp. Co. v. New York City,* 438 U.S. 104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978), we stated that takings jurisprudence "does not divide a single parcel ***401** into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated." *Id.,* at 130–131, 98 S.Ct., at 2662. Instead, this Court focuses "both on the character of the action and on the nature and extent of the interference with rights in the parcel as a whole." *Ibid. Andrus v. Allard,* 444 U.S. 51, 100 S.Ct. 318, 62 L.Ed.2d 210 (1979), reaffirmed the nondivisibility principle outlined in *Penn Central,* stating that "[a]t least where an owner possesses a full 'bundle' of property rights, the destruction of one 'strand' of the bundle is not a taking, because the aggregate must be viewed in its entirety." 444 U.S., at 65–66, 100 S.Ct., at 327. [3] As recently as last Term, we approved the principle again. See *Concrete Pipe & Products of Cal., Inc. v. Construction Laborers Pension Trust for Southern Cal.,* 508 U.S. 602, 644, 113 S.Ct. 2264, 2290, 124 L.Ed.2d 539 (1993) (explaining that "a claimant's parcel of property [cannot] first be divided into what was taken and what was left" to demonstrate a compensable taking). Although limitation of the right to exclude others undoubtedly constitutes a significant ****2325** infringement upon property ownership, *Kaiser Aetna v. United States,* 444 U.S. 164, 179–180, 100 S.Ct. 383, 393, 62 L.Ed.2d 332 (1979), restrictions on that

right do not alone constitute a taking, and do not do so in any event unless they "unreasonably impair the value or use" of the property. *PruneYard Shopping Center v. Robins,* 447 U.S. 74, 82–84, 100 S.Ct. 2035, 2041–2042, 64 L.Ed.2d 741 (1980).

[3] Similarly, in *Keystone Bituminous Coal Assn. v. DeBenedictis,* 480 U.S. 470, 498–499, 107 S.Ct. 1232, 1249, 94 L.Ed.2d 472 (1987), we concluded that "[t]he 27 million tons of coal do not constitute a separate segment of property for takings law purposes" and that "[t]here is no basis for treating the less than 2% of petitioners' coal as a separate parcel of property."

The Court's narrow focus on one strand in the property owner's bundle of rights is particularly misguided in a case involving the development of commercial property. As Professor Johnston has noted:

> "The subdivider is a manufacturer, processer, and marketer of a product; land is but one of his raw materials. In subdivision control disputes, the developer is ***402** not defending hearth and home against the king's intrusion, but simply attempting to maximize his profits from the sale of a finished product. As applied to him, subdivision control exactions are actually business regulations." Johnston, Constitutionality of Subdivision Control Exactions: The Quest for A Rationale, 52 Cornell L.Q. 871, 923 (1967). [4]

[4] Johnston's article also sets forth a fair summary of the state cases from which the Court purports to derive its "rough proportionality" test. See 52 Cornell L.Q., at 917. Like the Court, Johnston observed that cases requiring a "rational nexus" between exactions and public needs created by the new subdivision—especially *Jordan v. Menomonee Falls,* 28 Wis.2d 608, 137 N.W.2d 442 (1965)—"stee[r] a moderate course" between the "judicial obstructionism" of *Pioneer Trust & Savings Bank v. Mount Prospect,* 22 Ill.2d 375, 176 N.E.2d 799 (1961), and the "excessive deference" of *Billings Properties, Inc. v. Yellowstone County,* 144 Mont. 25, 394 P.2d 182 (1964). 52 Cornell L.Q., at 917.

The exactions associated with the development of a retail business are likewise a species of business regulation that heretofore warranted a strong presumption of constitutional validity. In Johnston's view, "if the municipality can demonstrate that its assessment of financial burdens against subdividers is rational, impartial, and conducive to fulfillment of authorized planning objectives, its action need be invalidated only in those extreme and presumably rare cases where the burden of compliance is sufficiently great to deter the owner from proceeding with his planned development." *Id.,* at 917. The city of Tigard has demonstrated that its plan is rational and impartial and that the conditions at issue are "conducive to fulfillment of authorized planning objectives." Dolan, on the other hand, has offered no evidence that her burden of compliance has any impact at all on the value or profitability of her planned development. Following the teaching of the cases on which it purports to rely, the Court should not isolate the burden associated with the loss of the power to exclude ***403** from an evaluation of the benefit to be derived from the permit to enlarge the store and the parking lot.

The Court's assurances that its "rough proportionality" test leaves ample room for cities to pursue the "commendable task of land use planning," *ante,* at 2322—even twice avowing that "[n]o precise mathematical calculation is required," *ante,* at 2319, 2322—are wanting given the result that test compels here. Under the Court's approach, a city must not only "quantify its findings," *ante,* at 2322, and make "individualized determination[s]" with respect to the nature *and* the extent of the relationship between the conditions and the impact, *ante,* at 2319, 2320, but also demonstrate "proportionality." The correct inquiry should instead concentrate on whether the required nexus is present and venture beyond considerations of a condition's nature or germaneness only if the developer establishes that a concededly germane condition is so grossly disproportionate to the proposed development's adverse effects that it manifests motives other than land use regulation on the part of the city. [5] ****2326** The heightened requirement the Court imposes on cities is even more unjustified when all the tools needed to resolve the questions presented by this case can be garnered from our existing case law.

[5] Dolan's attorney overstated the danger when he suggested at oral argument that without some requirement for proportionality, "[t]he City could have found that Mrs. Dolan's new store would have increased traffic by one additional vehicle trip per day [and] could have required her to dedicate 75, 95

percent of her land for a widening of Main Street." Tr. of Oral Arg. 52–53.

III

Applying its new standard, the Court finds two defects in the city's case. First, while the record would adequately support a requirement that Dolan maintain the portion of the floodplain on her property as undeveloped open space, it does not support the additional requirement that the floodplain be dedicated to the city. *Ante,* at 2320–2322. Second, ***404** while the city adequately established the traffic increase that the proposed development would generate, it failed to quantify the offsetting decrease in automobile traffic that the bike path will produce. *Ante,* at 2321–2322. Even under the Court's new rule, both defects are, at most, nothing more than harmless error.

In her objections to the floodplain condition, Dolan made no effort to demonstrate that the dedication of that portion of her property would be any more onerous than a simple prohibition against any development on that portion of her property. Given the commercial character of both the existing and the proposed use of the property as a retail store, it seems likely that potential customers "trampling along petitioner's floodplain," *ante,* at 2320, are more valuable than a useless parcel of vacant land. Moreover, the duty to pay taxes and the responsibility for potential tort liability may well make ownership of the fee interest in useless land a liability rather than an asset. That may explain why Dolan never conceded that she could be prevented from building on the floodplain. The city attorney also pointed out that absent a dedication, property owners would be required to "build on their own land" and "with their own money" a storage facility for the water runoff. Tr. of Oral Arg. 30–31. Dolan apparently "did have that option," but chose not to seek it. *Id.,* at 31. If Dolan might have been entitled to a variance confining the city's condition in a manner this Court would accept, her failure to seek that narrower form of relief at any stage of the state administrative and judicial proceedings clearly should preclude that relief in this Court now.

The Court's rejection of the bike path condition amounts to nothing more than a play on words. Everyone agrees that the bike path "could" offset some of the increased traffic flow that the larger store will generate, but the findings do not unequivocally state that it *will* do so, or tell us just how many cyclists will replace motorists. Predictions on such matters are inherently nothing more than estimates. Certainly ***405** the assumption that there will be an offsetting benefit here is entirely reasonable and should suffice whether it amounts to 100 percent, 35 percent, or only 5 percent of the increase in automobile traffic that would otherwise occur. If the Court proposes to have the federal judiciary micro-manage state decisions of this kind, it is indeed extending its welcome mat to a significant new class of litigants. Although there is no reason to believe that state courts have failed to rise to the task, property owners have surely found a new friend today.

IV

The Court has made a serious error by abandoning the traditional presumption of constitutionality and imposing a novel burden of proof on a city implementing an admittedly valid comprehensive land use plan. Even more consequential than its incorrect disposition of this case, however, is the Court's resurrection of a species of substantive due process analysis that it firmly rejected decades ago. [6]

6 See, *e.g., Ferguson v. Skrupa,* 372 U.S. 726, 83 S.Ct. 1028, 10 L.Ed.2d 93 (1963).

The Court begins its constitutional analysis by citing *Chicago, B. & Q.R. Co. v. Chicago,* 166 U.S. 226, 239, 17 S.Ct. 581, 585, 41 L.Ed. 979 (1897), for the proposition that the Takings Clause of the Fifth Amendment is "applicable to the States through the Fourteenth ****2327** Amendment." *Ante,* at 2316. That opinion, however, contains no mention of either the Takings Clause or the Fifth Amendment; [7] it held that the protection afforded by the Due Process Clause of the Fourteenth Amendment extends to matters of substance as well as procedure, [8] and that the substance ***406** of "the due process of law enjoined by the Fourteenth Amendment requires compensation to be made or adequately secured to the owner of private property taken for public use under the authority of a State." 166 U.S., at 235, 236–241, 17 S.Ct., at 584, 584–586. It applied the same kind of substantive due process analysis more frequently identified with a better known case that accorded similar substantive protection to a baker's liberty interest in working 60 hours a week and 10 hours a day. See *Lochner v. New York,* 198 U.S. 45, 25 S.Ct. 539, 49 L.Ed. 937 (1905). [9]

7 An earlier case deemed it "well settled" that the Takings Clause "is a limitation on the power of the Federal government, and not on the States."

Pumpelly v. Green Bay Co., 13 Wall. 166, 177, 20 L.Ed. 557 (1872).

8 The Court held that a State "may not, by any of its agencies, disregard the prohibitions of the Fourteenth Amendment. Its judicial authorities may keep within the letter of the statute prescribing forms of procedure in the courts and give the parties interested the fullest opportunity to be heard, and yet it might be that its final action would be inconsistent with that amendment. In determining what is due process of law regard must be had to substance, not to form." *Chicago, B. & Q.R. Co. v. Chicago,* 166 U.S. 226, 234–235, 17 S.Ct. 581, 584, 41 L.Ed. 979 (1897).

9 The *Lochner* Court refused to presume that there was a reasonable connection between the regulation and the state interest in protecting the public health. 198 U.S., at 60–61, 25 S.Ct., at 544. A similar refusal to identify a sufficient nexus between an enlarged building with a newly paved parking lot and the state interests in minimizing the risks of flooding and traffic congestion proves fatal to the city's permit conditions in this case under the Court's novel approach.

Later cases have interpreted the Fourteenth Amendment's substantive protection against uncompensated deprivations of private property by the States as though it incorporated the text of the Fifth Amendment's Takings Clause. See, *e.g., Keystone Bituminous Coal Assn. v. DeBenedictis,* 480 U.S. 470, 481, n. 10, 107 S.Ct. 1232, 1240, n. 10, 94 L.Ed.2d 472 (1987). There was nothing problematic about that interpretation in cases enforcing the Fourteenth Amendment against state action that involved the actual physical invasion of private property. See *Loretto v. Teleprompter Manhattan CATV Corp.,* 458 U.S. 419, 427–433, 102 S.Ct. 3164, 3172–3175, 73 L.Ed.2d 868 (1982); *Kaiser Aetna v. United States,* 444 U.S., at 178–180, 100 S.Ct., at 392–393. Justice Holmes charted a significant new course, however, when he opined that a state law making it "commercially impracticable to mine certain coal" had "very nearly the same effect for constitutional purposes as appropriating or destroying it." *Pennsylvania Coal Co. v. Mahon,* 260 U.S. 393, 414, 43 S.Ct. 158, 159, 67 L.Ed. 322 (1922). The so-called "regulatory ***407** takings" doctrine that the Holmes dictum [10] kindled has an obvious kinship with the line of substantive due process cases that *Lochner* exemplified. Besides having similar ancestry, both doctrines are potentially open-ended sources of judicial power to invalidate state economic regulations that Members of this Court view as unwise or unfair.

10 See *Keystone Bituminous Coal Assn. v. DeBenedictis,* 480 U.S., at 484, 107 S.Ct., at 1241 (explaining why this portion of the opinion was merely "advisory").

This case inaugurates an even more recent judicial innovation than the regulatory takings doctrine: the application of the "unconstitutional conditions" label to a mutually beneficial transaction between a property owner and a city. The Court tells us that the city's refusal to grant Dolan a discretionary benefit infringes her right to receive just compensation for the property interests that she has refused to dedicate to the city "where the property sought has little or no relationship to the benefit." [11] Although it is ****2328** well settled that a government cannot deny a benefit on a basis that infringes constitutionally protected interests —"especially [one's] interest in freedom of speech," *Perry v. Sindermann,* 408 U.S. 593, 597, 92 S.Ct. 2694, 2697, 33 L.Ed.2d 570 (1972)—the "unconstitutional conditions" doctrine provides an inadequate framework in which to analyze this case. [12]

11 *Ante,* at 2317. The Court's entire explanation reads: "Under the well-settled doctrine of 'unconstitutional conditions,' the government may not require a person to give up a constitutional right—here the right to receive just compensation when property is taken for a public use—in exchange for a discretionary benefit conferred by the government where the benefit sought has little or no relationship to the property."

12 Although it has a long history, see *Home Ins. Co. v. Morse,* 20 Wall. 445, 451, 22 L.Ed. 365 (1874), the "unconstitutional conditions" doctrine has for just as long suffered from notoriously inconsistent application; it has never been an overarching principle of constitutional law that operates with equal force regardless of the nature of the rights and powers in question. See, *e.g.,* Sunstein, Why the Unconstitutional Conditions Doctrine is an Anachronism, 70 B.U.L.Rev. 593, 620 (1990) (doctrine is "too crude and too general to provide help in contested cases"); Sullivan, Unconstitutional

Conditions, 102 Harv.L.Rev. 1415, 1416 (1989) (doctrine is "riven with inconsistencies"); Hale, Unconstitutional Conditions and Constitutional Rights, 35 Colum.L.Rev. 321, 322 (1935) ("The Supreme Court has sustained many such exertions of power even after announcing the broad doctrine that would invalidate them"). As the majority's case citations suggest, *ante,* at 2316, modern decisions invoking the doctrine have most frequently involved First Amendment liberties, see also, *e.g., Connick v. Myers,* 461 U.S. 138, 143–144, 103 S.Ct. 1684, 1688, 75 L.Ed.2d 708 (1983); *Elrod v. Burns,* 427 U.S. 347, 361–363, 96 S.Ct. 2673, 2684, 49 L.Ed.2d 547 (1976) (plurality opinion); *Sherbert v. Verner,* 374 U.S. 398, 404, 83 S.Ct. 1790, 1794, 10 L.Ed.2d 965 (1963); *Speiser v. Randall,* 357 U.S. 513, 518–519, 78 S.Ct. 1332, 1338, 2 L.Ed.2d 1460 (1958). But see *Posadas de Puerto Rico Associates v. Tourism Co. of P.R.,* 478 U.S. 328, 345–346, 106 S.Ct. 2968, 2979, 92 L.Ed.2d 266 (1986) ("[T]he greater power to completely ban casino gambling necessarily includes the lesser power to ban advertising of casino gambling"). The necessary and traditional breadth of municipalities' power to regulate property development, together with the absence here of fragile and easily "chilled" constitutional rights such as that of free speech, make it quite clear that the Court is really writing on a clean slate rather than merely applying "well-settled" doctrine. *Ante,* at 2316.

***408** Dolan has no right to be compensated for a taking unless the city acquires the property interests that she has refused to surrender. Since no taking has yet occurred, there has not been any infringement of her constitutional right to compensation. See *Preseault v. ICC,* 494 U.S. 1, 11–17, 110 S.Ct. 914, 921–924, 108 L.Ed.2d 1 (1990) (finding takings claim premature because property owner had not yet sought compensation under Tucker Act); *Hodel v. Virginia Surface Mining & Reclamation Assn., Inc.,* 452 U.S. 264, 294–295, 101 S.Ct. 2352, 2370, 69 L.Ed.2d 1 (1981) (no taking where no one "identified any property ... that has allegedly been taken").

Even if Dolan should accept the city's conditions in exchange for the benefit that she seeks, it would not necessarily follow that she had been denied "just compensation" since it would be appropriate to consider the receipt of that benefit in any calculation of "just compensation." See *Pennsylvania Coal Co. v. Mahon,* 260 U.S., at 415, 43 S.Ct., at 160 (noting that an "average reciprocity of advantage" was deemed to justify many laws); *Hodel v. Irving,* 481 U.S. 704, 715, 107 S.Ct. 2076, 2082, 95 L.Ed.2d 668 (1987) (such " 'reciprocity of advantage' " weighed in favor of a statute's constitutionality). ***409** Particularly in the absence of any evidence on the point, we should not presume that the discretionary benefit the city has offered is less valuable than the property interests that Dolan can retain or surrender at her option. But even if that discretionary benefit were so trifling that it could not be considered just compensation when it has "little or no relationship" to the property, the Court fails to explain why the same value would suffice when the required nexus is present. In this respect, the Court's reliance on the "unconstitutional conditions" doctrine is assuredly novel, and arguably incoherent. The city's conditions are by no means immune from constitutional scrutiny. The level of scrutiny, however, does not approximate the kind of review that would apply if the city had insisted on a surrender of Dolan's First Amendment rights in exchange for a building ****2329** permit. One can only hope that the Court's reliance today on First Amendment cases, see *ante,* at 2317 (citing *Perry v. Sindermann, supra,* and *Pickering v. Board of Ed. of Township High School Dist. 205, Will Cty.,* 391 U.S. 563, 568, 88 S.Ct. 1731, 1734, 20 L.Ed.2d 811 (1968)), and its candid disavowal of the term "rational basis" to describe its new standard of review, see *ante,* at 2319, do not signify a reassertion of the kind of superlegislative power the Court exercised during the *Lochner* era.

The Court has decided to apply its heightened scrutiny to a single strand—the power to exclude—in the bundle of rights that enables a commercial enterprise to flourish in an urban environment. That intangible interest is undoubtedly worthy of constitutional protection—much like the grandmother's interest in deciding which of her relatives may share her home in *Moore v. East Cleveland,* 431 U.S. 494, 97 S.Ct. 1932, 52 L.Ed.2d 531 (1977). Both interests are protected from arbitrary state action by the Due Process Clause of the Fourteenth Amendment. It is, however, a curious irony that Members of the majority in this case would impose an almost insurmountable burden of proof on the property owner in the *Moore* case ***410** while saddling the city with a heightened burden in this case. [13]

13 The author of today's opinion joined Justice Stewart's dissent in *Moore v. East Cleveland,* 431 U.S. 494, 97 S.Ct. 1932, 52 L.Ed.2d 531 (1977). There the dissenters found it sufficient, in response

> to my argument that the zoning ordinance was an arbitrary regulation of property rights, that "if the ordinance is a rational attempt to promote 'the city's interest in preserving the character of its neighborhoods,' *Young v. American Mini Theatres [Inc.,]* 427 U.S. 50, 71 [96 S.Ct. 2440, 2452, 49 L.Ed.2d 310 (1976)] (opinion of STEVENS, J.), it is ... a permissible restriction on the use of private property under *Euclid v. Ambler Realty Co.,* 272 U.S. 365 [47 S.Ct. 114, 71 L.Ed. 303 (1926)], and *Nectow v. Cambridge,* 277 U.S. 183 [48 S.Ct. 447, 72 L.Ed. 842 (1928)]." *Id.,* 431 U.S., at 540, n. 10, 97 S.Ct., at 1956, n. 10. The dissent went on to state that my calling the city to task for failing to explain the need for enacting the ordinance *"place[d] the burden on the wrong party." Ibid.* (emphasis added). Recently, two other Members of today's majority severely criticized the holding in *Moore.* See *United States v. Carlton,* 512 U.S. 26, 40–42, 114 S.Ct. 2018, 2027, 129 L.Ed.2d 22 (1994) (SCALIA, J., concurring in judgment); see also *id.,* at 39, 114 S.Ct. at 2020 (SCALIA, J., concurring in judgment) (calling the doctrine of substantive due process "an oxymoron").

In its application of what is essentially the doctrine of substantive due process, the Court confuses the past with the present. On November 13, 1922, the village of Euclid, Ohio, adopted a zoning ordinance that effectively confiscated 75 percent of the value of property owned by the Ambler Realty Company. Despite its recognition that such an ordinance "would have been rejected as arbitrary and oppressive" at an earlier date, the Court (over the dissent of Justices Van Devanter, McReynolds, and Butler) upheld the ordinance. Today's majority should heed the words of Justice Sutherland:

> "Such regulations are sustained, under the complex conditions of our day, for reasons analogous to those which justify traffic regulations, which, before the advent of automobiles and rapid transit street railways, would have been condemned as fatally arbitrary and unreasonable. And in this there is no inconsistency, for while the meaning of constitutional guaranties never varies, the scope of their application must expand or contract ***411** to meet the new and different conditions which are constantly coming within the field of their operation. In a changing world, it is impossible that it should be otherwise." *Village of Euclid v. Ambler Realty Co.,* 272 U.S. 365, 387, 47 S.Ct. 114, 118, 71 L.Ed. 303 (1926).

In our changing world one thing is certain: uncertainty will characterize predictions about the impact of new urban developments on the risks of floods, earthquakes, traffic congestion, or environmental harms. When there is doubt concerning the magnitude of those impacts, the public interest in averting them must outweigh the private interest of the commercial entrepreneur. If the government can demonstrate that the conditions it has imposed in a land use permit are rational, impartial and conducive to fulfilling the aims of a valid land use plan, a strong presumption ****2330** of validity should attach to those conditions. The burden of demonstrating that those conditions have unreasonably impaired the economic value of the proposed improvement belongs squarely on the shoulders of the party challenging the state action's constitutionality. That allocation of burdens has served us well in the past. The Court has stumbled badly today by reversing it.

I respectfully dissent.

Justice SOUTER, dissenting.

This case, like *Nollan v. California Coastal Comm'n,* 483 U.S. 825, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987), invites the Court to examine the relationship between conditions imposed by development permits, requiring landowners to dedicate portions of their land for use by the public, and governmental interests in mitigating the adverse effects of such development. *Nollan* declared the need for a nexus between the nature of an exaction of an interest in land (a beach easement) and the nature of governmental interests. The Court treats this case as raising a further question, not about the nature, but about the degree, of connection required between such an exaction and the ***412** adverse effects of development. The Court's opinion announces a test to address this question, but as I read the opinion, the Court does not apply that test to these facts, which do not raise the question the Court addresses.

First, as to the floodplain and greenway, the Court acknowledges that an easement of this land for open space (and presumably including the five feet required for needed creek channel improvements) is reasonably related to flood control, see *ante,* at 2317–2318, 2320, but argues that the "permanent recreational easement" for the public on the greenway is not so related, see *ante,* at 2320–2321. If that is so, it is not because of any lack of proportionality between permit condition and adverse effect, but because of a lack of any rational connection at all between exaction of a public

recreational area and the governmental interest in providing for the effect of increased water runoff. That is merely an application of *Nollan* 's nexus analysis. As the Court notes, "[i]f petitioner's proposed development had somehow encroached on existing greenway space in the city, it would have been reasonable to require petitioner to provide some alternative greenway space for the public." *Ante,* at 2321. But that, of course, was not the fact, and the city of Tigard never sought to justify the public access portion of the dedication as related to flood control. It merely argued that whatever recreational uses were made of the bicycle path and the 1–foot edge on either side were incidental to the permit condition requiring dedication of the 15–foot easement for an 8–foot–wide bicycle path and for flood control, including open space requirements and relocation of the bank of the river by some 5 feet. It seems to me such incidental recreational use can stand or fall with the bicycle path, which the city justified by reference to traffic congestion. As to the relationship the Court examines, between the recreational easement and a purpose never put forth as a justification by the city, the Court unsurprisingly finds a recreation area to be unrelated to flood control.

***413** Second, as to the bicycle path, the Court again acknowledges the "theor[etically]" reasonable relationship between "the city's attempt to reduce traffic congestion by providing [a bicycle path] for alternative means of transportation," *ante,* at 2318, and the "correct" finding of the city that "the larger retail sales facility proposed by petitioner will increase traffic on the streets of the Central Business District," *ante,* at 2321. The Court only faults the city for saying that the bicycle path "could" rather than "would" offset the increased traffic from the store, *ante,* at 2322. That again, as far as I can tell, is an application of *Nollan,* for the Court holds that the stated connection ("could offset") between traffic congestion and bicycle paths is too tenuous; only if the bicycle path "would" offset the increased traffic by some amount could the bicycle path be said to be related to the city's legitimate interest in reducing traffic congestion.

****2331** I cannot agree that the application of *Nollan* is a sound one here, since it appears that the Court has placed the burden of producing evidence of relationship on the city, despite the usual rule in cases involving the police power that the government is presumed to have acted constitutionally. [*] Having thus assigned the burden, the Court concludes that the city loses based on one word ("could" instead of "would"), and despite the fact that this record shows the connection the Court looks for. Dolan has put forward no evidence that ***414** the burden of granting a dedication for the bicycle path is unrelated in kind to the anticipated increase in traffic congestion, nor, if there exists a requirement that the relationship be related in degree, has Dolan shown that the exaction fails any such test. The city, by contrast, calculated the increased traffic flow that would result from Dolan's proposed development to be 435 trips per day, and its Comprehensive Plan, applied here, relied on studies showing the link between alternative modes of transportation, including bicycle paths, and reduced street traffic congestion. See, *e.g.,* App. to Brief for Respondent A–5, quoting City of Tigard's Comprehensive Plan (" 'Bicycle and pedestrian pathway systems will result in some reduction of automobile trips within the community' "). *Nollan,* therefore, is satisfied, and on that assumption the city's conditions should not be held to fail a further rough proportionality test or any other that might be devised to give meaning to the constitutional limits. As Members of this Court have said before, "the common zoning regulations requiring subdividers to ... dedicate certain areas to public streets, are in accord with our constitutional traditions because the proposed property use would otherwise be the cause of excessive congestion." *Pennell v. San Jose,* 485 U.S. 1, 20, 108 S.Ct. 849, 862, 99 L.Ed.2d 1 (1988) (SCALIA, J., concurring in part and dissenting in part). The bicycle path permit condition is fundamentally no different from these.

[*] See, *e.g., Goldblatt v. Hempstead,* 369 U.S. 590, 594–596, 82 S.Ct. 987, 990, 8 L.Ed.2d 130 (1962); *United States v. Sperry Corp.,* 493 U.S. 52, 60, 110 S.Ct. 387, 393–394, 107 L.Ed.2d 290 (1989). The majority characterizes this case as involving an "adjudicative decision" to impose permit conditions, *ante,* at 2390, n. 8, but the permit conditions were imposed pursuant to Tigard's Community Development Code. See, *e.g.,* § 18.84.040, App. to Brief for Respondent B–26. The adjudication here was of Dolan's requested variance from the permit conditions otherwise required to be imposed by the Code. This case raises no question about discriminatory, or "reverse spot," zoning, which "singles out a particular parcel for different, less favorable treatment than the neighboring ones." *Penn Central Transp. Co. v. New York City,* 438 U.S. 104, 132, 98 S.Ct. 2646, 2663, 57 L.Ed.2d 631 (1978).

In any event, on my reading, the Court's conclusions about the city's vulnerability carry the Court no further than *Nollan* has gone already, and I do not view this case as a suitable vehicle

for taking the law beyond that point. The right case for the enunciation of takings doctrine seems hard to spot. See *Lucas v. South Carolina Coastal Council,* 505 U.S. 1003, 1076, 112 S.Ct. 2886, 2925, 120 L.Ed.2d 798 (1992) (statement of SOUTER, J.).

All Citations

512 U.S. 374, 114 S.Ct. 2309, 129 L.Ed.2d 304, 38 ERC 1769, 62 USLW 4576, 24 Envtl. L. Rep. 21,083

421 S.W.3d 74
Court of Appeals of Texas, Dallas.

MIRA MAR DEVELOPMENT CORPORATION, Appellant
v.
CITY OF COPPELL, TEXAS, Appellee.

No. 05–10–00283–CV
|
Oct. 7, 2013.

Synopsis

Background: Developer sought review of city council's decision regarding compensation for taking. The 101st Judicial District Court, Dallas County, Martin Lowy, J., mostly affirmed the city council's decision, but awarded developer an additional $8,785. Developer appealed.

Holdings: The Court of Appeals, Myers, J., held that:

city's requirement that developer use straight curbs in subdivision did not constitute a compensable exaction for property development;

city's requirement that developer add two extra drainage outlets did not constitute a compensable exaction for property development;

city's requirement that developer raise the elevation of the "pad site" did not constitute a compensable exaction for property development;

city's requirement that developer extend drainage pipe constituted a compensable exaction for property development;

city's requirement that developer add a sewer manhole did not constitute a compensable exaction for property development;

city's requirement that developer use concrete waterline caps did not constitute a compensable exaction for property development;

city's requirement that developer of subdivision change slopes from three-to-one to four-to-one was a compensable exaction;

city's $2000 fee for review of developer's floodplain study was not a compensable exaction;

city's assessment of a $34,500 tree retribution fee constituted a compensable exaction;

city's assessment of roadway, sewer, and water impact fees did not constitute a compensable exaction; and

developer's delays in construction while waiting for plat approval and building permits were not exactions by city.

Affirmed in part, reversed and rendered in part, and reversed and remanded in part.

Procedural Posture(s): On Appeal.

Attorneys and Law Firms

***80** Jeffrey Robert Sandberg, Palmer & Manuel, LLP, Dallas, TX, for Appellant.

Carvan E. Adkins, Taylor, Olson, Adkins, Sralla & Elam, Fort Worth, TX, for Appellee.

Before Justices LANG, MYERS, and MURPHY. [1]

[1] The Honorable Mary Murphy, Justice, participated in the submission of this cause and the issuance of this Court's original opinion on March 23, 2012. Justice Murphy resigned from the Court on June 7, 2013. Appellant filed its Unopposed Motion to Modify Judgment and Recall Mandate on September 23, 2013.

OPINION NUNC PRO TUNC

Opinion by Justice MYERS.

This case involves an appeal from a city council hearing to a district court pursuant to Texas Local Government Code section 212.904(e). Mira Mar Development Corporation appeals the district court's judgment in favor of City of Coppell, Texas on its claims seeking compensation for exactions. Appellant brings nine issues asserting the trial court erred by denying its motion for summary judgment and granting the City's motion for summary judgment and for awarding appellant only $40,280.84. We affirm in part,

reverse and render in part, and reverse and remand in part for further proceedings.

BACKGROUND

In 2006, appellant purchased approximately 18.5 acres in Coppell, Texas, to develop a 29–lot residential subdivision called Alexander Court. In 2008, appellant sold the lots to David Weekley Homes, a home builder.

This lawsuit concerns appellant's conflicts with the City in obtaining approval of the development, including delays and changes to the development plan that increased appellant's costs and reduced the sale price of the lots. Appellant demanded the City compensate it for the increased costs and reduced sale price. Appellant sought a review of its grievances in a hearing before the City Council pursuant to section 212.904 of the Texas Local Government Code. *See* TEX. LOC. GOV'T CODE ANN. § 212.904(b) (West 2008). The City Council approved procedures for the hearing, which did not permit appellant to cross-examine the City's witnesses or present rebuttal evidence. At the conclusion of the hearing, the City awarded appellant $21,709.84 for taking .147 acre of land for a roadway. The City credited $18,444 toward outstanding roadway-assessment fees ***81** appellant owed on the project, which left $3265.84 the City owed appellant. *See* TEX. LOC. GOV'T CODE ANN. § 395.023 (West 2005).

Appellant brought suit in district court appealing the City Council's decision pursuant to section 212.904(b) of the Local Government Code. Appellant also alleged violations of its substantive and procedural due process rights and that the City's actions constituted compensable exactions or takings under the federal and state constitutions. In its first motion for summary judgment, appellant contended the City's procedures for the hearing before the City Council denied it due process, and the trial court agreed. The trial court granted the motion for summary judgment and ordered the City Council to conduct another hearing under procedures that accorded appellant due process. The second hearing before the City Council took place over three days in March and April 2009. After the second hearing, the City issued findings of fact and conclusions of law and awarded appellant an additional $28,230 in compensation consisting of $12,465 for sidewalk construction costs, $11,265 for park fees, and $4500 for an extra water tap. The City Council also awarded appellant $1800 for attorney's fees. This second hearing was recorded by a court reporter.

In its second motion for summary judgment, appellant argued it was entitled to compensation as a matter of law because the City failed to prove the exactions were roughly proportional to the projected impact of the development and because appellant established the amount of compensation to which it was entitled as a matter of law: $792,657 plus attorney's fees. Appellant also argued the City Council's new procedures were unconstitutional. The district court denied appellant's second motion for summary judgment and stated it would "review the record of the proceedings before the Coppell City Council to determine whether the decision of the City Council is supported by substantial evidence."

On September 21, 2009, the trial court held a hearing under the substantial evidence standard of review. On October 5, 2009, the court signed an order mostly affirming the City Council's findings of fact and conclusions of law as supported by substantial evidence, but the court awarded appellant an additional $8785 for the value of the land occupied by the sidewalk. The court also reversed the award of attorney's fees to appellant, stating in the order that appellant was not a prevailing party.

Appellant then filed its third motion for summary judgment and the City filed its only motion for summary judgment. In these motions, the parties argued they were entitled to judgment as a matter of law concerning whether the procedures in the City Council hearing provided appellant substantive and procedural due process and whether the City's requirements, fees, and delays in the development-approval process were compensable exactions. Appellant's motion sought compensation of $801,762 for the City's exactions, plus attorney's fees.

The trial court granted the City's motion, denied appellant's motion, and rendered judgment for appellant awarding it $40,280.84, consisting of the $31,495.84 awarded by the City and the $8785 awarded by the trial court for the land occupied by the sidewalk. The court denied appellant's request for attorney's fees.

APPLICABLE LAW

Takings

Article I, section 17 of the Texas Constitution prohibits the taking of private property for public use without adequate

compensation. TEX. CONST. art. I, § 17; ***82** *see Mayhew v. Town of Sunnyvale,* 964 S.W.2d 922, 933 (Tex.1998). This provision and the Just Compensation Clause of the Fifth Amendment to the United States Constitution, applied to the individual states through the Fourteenth Amendment, were "designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." *Armstrong v. United States,* 364 U.S. 40, 49, 80 S.Ct. 1563, 4 L.Ed.2d 1554 (1960); *see* U.S. CONST. amends. V, XIV. Whether particular facts are sufficient to constitute a taking is a question of law. *Gen. Servs. v. Little–Tex Insulation Co.,* 39 S.W.3d 591, 598 (Tex.2001).

Takings can be classified as either physical or regulatory. *Mayhew,* 964 S.W.2d at 933. A physical taking occurs when the government authorizes an unwarranted physical occupation of an individual's property. *Id.* A regulatory taking may occur when a government conditions the granting of a permit or some other type of government approval on an exaction from a landowner seeking that approval. *See Dolan v. City of Tigard,* 512 U.S. 374, 384–85, 114 S.Ct. 2309, 129 L.Ed.2d 304 (1994); *Town of Flower Mound v. Stafford Estates Ltd. P'ship,* 135 S.W.3d 620, 634 (Tex.2004). An exaction occurs if a governmental entity requires an action by a landowner as a condition to obtaining government approval of a requested land development.[2] *Town of Flower Mound v. Stafford Estates Ltd. P'ship,* 71 S.W.3d 18, 30 (Tex.App.-Fort Worth 2002),*aff'd, Town of Flower Mound v. Stafford Estates Ltd. P'ship,* 135 S.W.3d 620 (Tex.2004); *City of Carrollton v. RIHR, Inc.,* 308 S.W.3d 444, 449 (Tex.App.-Dallas 2010, pet. denied). At oral argument, appellant's counsel confirmed that all of appellant's takings claims were under the exaction theory.[3]

2 The Houston (14th District) Court of Appeals has defined a land-use exaction as occurring "when the government requires an owner to give up his right to just compensation for property taken in exchange for a discretionary benefit conferred by the government." *City of Houston v. Maguire Oil Co.,* 342 S.W.3d 726, 736 (Tex.App.-Houston [14th Dist.] 2011, pet. denied) (citing *Lingle v. Chevron U.S.A., Inc.,* 544 U.S. 528, 548, 125 S.Ct. 2074, 161 L.Ed.2d 876 (2005)); *see also Dolan,* 512 U.S. at 385, 114 S.Ct. 2309 ("[T]he government may not require a person to give up a constitutional right—here the right to receive just compensation when property is taken for a public use—in exchange for a discretionary benefit conferred by the government where the benefit sought has little or no relationship to the property.").

3 In the discussion below, we conclude that some of appellant's allegations are not exactions. Whether those allegations may constitute another type of regulatory taking is not before us.

For an exaction to be compensable, it must be a cost that, in fairness and justice, should be borne by the public instead of the individual. As the Texas Supreme Court observed, "The touchstone of the constitutional takings protections is that a few not be forced ... ' "to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." ' " *Stafford Estates,* 135 S.W.3d 620, 642 (quoting *Nollan v. Cal. Coastal Comm'n,* 483 U.S. 825, 835 n. 4, 107 S.Ct. 3141, 97 L.Ed.2d 677 (1987) (quoting *Armstrong,* 364 U.S. at 49, 80 S.Ct. 1563)). To apply this sense of "fairness and justice," the Texas Supreme Court has adopted a "rough proportionality" test to determine whether an exaction constitutes a compensable taking:

> [C]onditioning government approval of a development of property on some exaction is a compensable taking unless the condition (1) bears an essential nexus to the substantial advancement of some legitimate government interest and (2) is ***83** roughly proportional to the projected impact of the proposed development.

Stafford Estates, 135 S.W.3d at 634; *see Dolan,* 512 U.S. at 391, 114 S.Ct. 2309; *Nollan,* 483 U.S. at 837, 107 S.Ct. 3141. Under this test, the government must make an "individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development." *Stafford Estates,* 135 S.W.3d at 633 (citing *Dolan,* 512 U.S. at 391, 114 S.Ct. 2309). Thus, after the plaintiff proves an exaction, the burden of proof shifts to the government to prove the exaction imposed meets the test. *See id.* at 643. The government's proof of rough proportionality of the impact must be more than bare conclusions; the government is "required to measure that impact in a meaningful, though not precisely mathematical, way, and must show how the impact,

thus measured, is roughly proportional in nature and extent to the required improvements." *Id.* at 644.

Summary Judgment

The standard for reviewing a traditional summary judgment is well established. *See* *Nixon v. Mr. Prop. Mgmt. Co.,* 690 S.W.2d 546, 548–49 (Tex.1985); *McAfee, Inc. v. Agilysys, Inc.,* 316 S.W.3d 820, 825 (Tex.App.-Dallas 2010, no pet.). The movant has the burden of showing that no genuine issue of material fact exists and that it is entitled to judgment as a matter of law. TEX.R. CIV. P. 166a(c). In deciding whether a disputed material fact issue exists precluding summary judgment, evidence favorable to the nonmovant will be taken as true. *Nixon,* 690 S.W.2d at 549; *In re Estate of Berry,* 280 S.W.3d 478, 480 (Tex.App.-Dallas 2009, no pet.). Every reasonable inference must be indulged in favor of the nonmovant and any doubts resolved in its favor. *City of Keller v. Wilson,* 168 S.W.3d 802, 824 (Tex.2005). We review a summary judgment de novo to determine whether a party's right to prevail is established as a matter of law. *Dickey v. Club Corp.,* 12 S.W.3d 172, 175 (Tex.App.-Dallas 2000, pet. denied).

When, as here, both parties move for summary judgment, each party bears the burden of establishing that it is entitled to judgment as a matter of law. *Guynes v. Galveston Cnty.,* 861 S.W.2d 861, 862 (Tex.1993); *Howard v. INA Cnty. Mut. Ins. Co.,* 933 S.W.2d 212, 216 (Tex.App.-Dallas 1996, writ denied). Neither party can prevail because of the other's failure to discharge its burden. *Howard,* 933 S.W.2d at 216. When both parties move for summary judgment, we consider all the evidence accompanying both motions in determining whether to grant either party's motion. *FM Props. Operating Co. v. City of Austin,* 22 S.W.3d 868, 872 (Tex.2000). When the trial court grants one motion and denies the other, the reviewing court should determine all questions presented. *Id.* The reviewing court should render the judgment that the trial court should have rendered. *Id.* When a trial court's order granting summary judgment does not specify the grounds relied upon, the reviewing court must affirm the summary judgment if any of the summary judgment grounds are meritorious. *Id.*

Summary Judgment Evidence

In the third issue, appellant contends the trial court erred by overruling its objections to the City's summary judgment evidence. Appellant objected to twenty-two of the exhibits attached to the City's motion for motion for summary judgment and to the transcript of the second City Council hearing. Appellant asserts these items were inadmissible because they were pleadings, unauthenticated, hearsay, or "not summary judgment evidence."

***84** The admission and exclusion of evidence is committed to the trial court's discretion. *City of Brownsville v. Alvarado,* 897 S.W.2d 750, 753 (Tex.1995); *Costilla v. Crown Equip. Corp.,* 148 S.W.3d 736, 738 (Tex.App.-Dallas 2004, no pet.). If we concluded the court erred by overruling appellant's objections to these items, we could not reverse unless we also concluded the error "probably caused the rendition of an improper judgment." TEX.R.APP. P. 44.1(a)(1). It is the appellant's burden to show harm from an erroneous evidentiary ruling. *In re M.S.,* 115 S.W.3d 534, 538 (Tex.2003); *see also* *City of Brownsville,* 897 S.W.2d at 753–54 ("A successful challenge to evidentiary rulings usually requires the complaining party to show that the judgment turns on the particular evidence excluded or admitted."). On appeal, appellant does not explain how the allegedly improper exhibits affected the case other than to state generally that the City's summary judgment is unsupported by "sufficient" evidence. Accordingly, we conclude appellant has failed to meet its burden of showing harm.

Appellant also asserts the testimony of the City's expert witness, Ken Griffin, must be struck because "it" was not disclosed. Appellant cites no authority in support of this argument and fails to analyze the record relating to the testimony. Accordingly, appellant has presented nothing for our review. *See* TEX.R.APP. P. 38.1(i); *In re B.A.B.,* 124 S.W.3d 417, 420 (Tex.App.-Dallas 2004, no pet.). Similarly, appellant has not met its burden of showing harm. *See* *In re M.S.,* 115 S.W.3d at 538.

Appellant also objected to the trial court overruling its objections to the City's arguments based on allegations the City neither pleaded nor disclosed in discovery. With one exception, as discussed below, neither appellant's brief nor its objection before the trial court identified the affirmative defenses and arguments that were not pleaded nor disclosed. Accordingly, those objections are waived for lack of a specific objection before the trial court and for insufficient briefing on appeal. *See* TEX.R.APP. P. 33.1; 38.1(i).

Appellant did object in the trial court "to Coppell's legal arguments that a condition precedent was not performed

by Mira Mar." That objection concerned appellant's request for roadway and water and sewer "impact" fees under chapter 395 of the Local Government Code. Appellant argues the City did not plead or disclose in discovery appellant's failure to perform a condition precedent. The City asserted appellant did not timely contest the impact fees under chapter 395 of the Local Government Code. *See* TEX. LOC. GOV'T CODE ANN. § 212.904(f); *id.* § 395.077(a), (b) (West 2005). The City also moved for summary judgment and opposed appellant's motion for summary judgment on alternate grounds discussed below. We resolve the issue of the impact fees on those alternate grounds. Accordingly, any error by the trial court in overruling appellant's objection concerning the condition precedent did not probably cause the rendition of an improper judgment and is not reversible. TEX.R.APP. P. 44.1(a)(1).

We overrule appellant's third issue.

Exactions and Rough Proportionality

In the first two issues, appellant contends the trial court erred by granting the City's motion for summary judgment and by denying appellant's third motion for summary judgment [4] because the City's requirements were exactions and the City ***85** did not establish, as a matter of law, that the alleged exactions were roughly proportional to the projected impact of the development. Appellant also makes other objections to some of the alleged exactions. To resolve these issues, we must first determine whether each requirement was an exaction and, if so, whether the City established (1) an essential nexus to the substantial advancement of a legitimate government interest and (2) the rough proportionality to the projected impact of the development. *Stafford Estates,* 135 S.W.3d at 634.

4 Unless otherwise noted, references to "appellant's motion for summary judgment" are to appellant's third motion for summary judgment.

Rolled Curbs

Appellant argues the City required straight curbs in the subdivision instead of the rolled curbs appellant planned to use. Appellant's president, John Hawkins, stated in his affidavit that appellant proposed using rolled curbs in Alexander Court on "a street with a twenty-seven-foot width." [5] He stated that the City's ordinance required a street width of at least twenty-seven feet. At the City Council hearing, Hawkins stated that when appellant's contract with David Weekley Homes was renegotiated, [6] the City's requirement that straight curbs be used instead of rolled curbs resulted in a $40,000 reduction in the price of all the lots because the straight curbs would cost David Weekley Homes approximately $1300 to $1400 per lot more than the rolled curbs would have cost.

5 Hawkins then stated, "This exceeded the minimum 27–foot width mandated by the Coppell engineer, as measured 'gutter-to-gutter' described in the Coppell ordinance." Appellant does not explain how the 27–foot street width "exceeded" the requirement that the streets be 27 feet wide. The parties do not cite, nor have we discovered, the ordinance requiring a 27–foot width in the voluminous record on appeal. The City's Subdivision Ordinance in the record before us required a street width of 28 feet "b-b," which appears to mean between the back of the curbs. *See* Coppell, Tex., Ordinance 94643, Subdivision Regulations App. C, § VII (Apr. 12, 1994).

6 The testimony at the City Council hearing showed the original contract between appellant and David Weekley Homes was for 26 lots. When the floodplain study showed less of the property was in the floodplain than appellant predicted, appellant changed the design of the subdivision to 29 lots. Appellant and David Weekley Homes renegotiated the contract to account for the increase in lots as well as other changes, including straight curbs instead of rolled curbs.

Hawkins told the City Council he designed the streets in the subdivision to be identical in width and curb style to those in The Springs subdivision on the other side of the road. However, when he submitted the plat, the City told him the streets had to conform to the City's regulation or "detail." According to testimony at the City Council hearing, the detail showed a street design with a minimum width of twenty-seven feet between the gutters of straight curbs. Hawkins testified that the City's regulations did not address rolled curbs.

Ken Griffin, the City Engineer, testified at the City Council hearing that the City required streets to be at least twenty-

eight feet measured from the back of one curb to the back of the opposite curb and to have a minimum width between the gutters or face-to-face of twenty-seven feet. Griffin stated that although appellant's proposed streets were twenty-eight feet measured between the back of the curbs as required by the City's ordinance, the streets were only twenty-four feet between the gutters. Griffin agreed that The Springs subdivision had streets of the same dimensions as appellant proposed, but he stated that subdivision was built in the mid–1990s and the rolled curbs there were a test. Griffin testified the City ***86** quickly learned that the streets were too narrow. The narrower streets limited maneuverability when cars were parked on both sides of the street and created a public safety issue. Griffin testified he told appellant's engineer that the streets with rolled curbs would be acceptable if they were at least twenty-seven feet from gutter to gutter, which would require a distance of thirty-one feet between the back of the curbs. Instead of redesigning the width of the streets, appellant changed the plat to use straight curbs keeping the twenty-eight-foot distance between the back of the curbs.

Although there is a fact issue regarding the width of the streets—Hawkins testified the proposed streets were twenty-seven feet wide between the gutters and Griffin testified they were only twenty-four feet wide—that fact question is not material because the parties agreed the proposed streets were the same design as in The Springs subdivision. The record conclusively shows the City made an individualized determination that the proposed streets, which were the same design as those in The Springs subdivision, were too narrow, and its requirement that the streets in Alexander Court be wider if they were to have rolled curbs was necessary for the public safety. Thus, the street-width requirement the City imposed on appellant bore "an essential nexus to the advancement of" the legitimate government interest of public safety. The street-width requirement was limited to the streets in the subdivision and did not require the improvement of any property outside the subdivision. Thus, the requirement was roughly proportional to the projected "impact" of the development. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion regarding the rolled curbs.

Extra Drainage Outlets

The City required appellant to add two extra drainage outlets to obtain approval of the subdivision. Hawkins testified the extra outlets cost appellant $14,020.

The evidence shows the City required the extra outlets be installed where two streets in the subdivision converged at almost ninety degrees to form a "T." As originally proposed, there was no drainage outlet in the vicinity of the T intersection. The City's regulations governing design criteria and standards for storm sewers and drainage required a subdivision's engineering design to conform to the City of Dallas Drainage Design Manual which, Griffin testified, required outlets be placed upstream to T intersections. Griffin testified he required the two extra outlets because of the potential for flooding caused by the street forming the pillar of the T sloping downhill toward the street forming the crossbar of the T. Griffin explained his reasons for requiring the inlets as follows:

> A couple of things happen when you go to T intersections. Water goes down at a high rate of speed on a sloped street, it hits the intersecting street. At times it will turn, at times it won't. In this particular case because of the layout of the lots, there are going to be driveways very near this intersection. Driveways have ... a habit of sucking water out of the street, taking it to and through the garage and sometimes through the house.
>
> Based on twenty-seven years of practice and what, twenty-two of those as a licensed engineer, it's always good judgment, and that's why Dallas put it in their drainage design manual, that inlets should be placed upstream to T intersections to collect the water before it gets ***87** into the intersection to create a potential problem.

Griffin testified that in deciding to require the additional drainage outlets, he considered the layout of the streets and the potential for flooding on the lots at the intersection.

This uncontroverted evidence shows Griffin, on behalf of the City, made an individualized determination based on the unique conditions of the development that the additional drainage outlets were necessary to prevent flooding of some of the lots in the subdivision. Prevention of flooding is a legitimate government interest. Thus, the evidence establishes that the condition for approval of the plat, the additional drainage outlets, bore an essential nexus to the substantial advancement of a legitimate government interest. The evidence also shows that the additional outlets would affect only the subdivision and not any other property and were required because of the subdivision's design. Accordingly, the condition was roughly proportionate to the projected impact of the development. We conclude the trial

court did not err by granting the City's motion for summary judgment and denying appellant's motion concerning the additional drainage outlets.

Offsite Sidewalk

The City required appellant to build a sidewalk outside the subdivision but on property owned by appellant. The dispute over this item concerns only the extent of appellant's compensation. The City Council concluded appellant was entitled to compensation for the cost of building the sidewalk, $12,465, but not for the value of the land occupied by the sidewalk. The trial court, however, concluded appellant was entitled to compensation for the value of the land and awarded appellant $8785, making the total compensation to appellant for the sidewalk $21,250. Appellant moved for summary judgment asserting it was entitled to $9000 for the value of the property for total compensation of $21,465. The City argues the trial court awarded $8785 for total compensation of $21,250 instead of $9000 for total compensation of $21,465 because appellant's demand letters to the City for compensation prior to the City Council hearing requested $21,250. Appellant's response on appeal to the City's argument is, "Mira Mar is entitled to the full amount —$21,465."

The only evidence of the value of the property is Hawkins's testimony at the City Council hearing and in his affidavit in support of appellant's motion for summary judgment that the property is worth $9000. As appellant's president, Hawkins is presumed to have had knowledge of the property's fair market value. *See Reid Rd. Mun. Dist. No. 2 v. Speedy Stop Food Stores, Ltd.,* 337 S.W.3d 846, 849 (Tex.2011); *Corniello v. State Bank & Trust, Dall.,* 344 S.W.3d 601, 607 (Tex.App.-Dallas 2011, no pet.). We conclude the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on the issue of the offsite sidewalk. We render judgment that appellant is entitled to total compensation of $21,465 (an additional $215 over what the trial court awarded) for the value of the property under the sidewalk and the cost to build the sidewalk.

Over–Fill for Pad Sites

The City required appellant to raise the elevation of the "pad site" or building location on two of the lots as a condition for approval of the subdivision. Hawkins testified that the City's ordinance required the pad sites be one foot above the 100–year flood plain, and the lots as proposed complied with that requirement. However, Griffin, as the City Engineer, ***88** required appellant to raise the level of the two lots at the end of the T intersection to one foot above the curb height. Appellant resubmitted the plans with the pad sites raised to the new level. Hawkins testified that the additional material and labor to raise the pad sites cost appellant $7600.

Griffin testified he required the additional height of the pad sites to protect the future homeowners of those lots from flooding caused by the slope of the street leading to the lots. Griffin agreed that the pad heights as originally submitted complied with the City's minimum requirements and the federal regulations. Griffin based his requirement that the pads be raised on his engineering judgment, which was based on his experience and education and not on any calculations. Griffin stated that the law applicable to engineers permits him to impose requirements exceeding the City's minimum requirements when, in his engineering judgment, the greater requirements are necessary to protect the health, safety, property, and welfare of the public. Griffin's sole concern in requiring the raised pad elevation was that the two houses not flood during a storm. Griffin testified that when there are lots at a T intersection, "you try to elevate one foot above top of curb and you try to provide positive drainage between the two houses so if water does go above the top of the curb, it can flow between the houses."

This evidence shows the City's requirement of one foot above the 100–year flood level was a minimum requirement. As City Engineer, Griffin had authority to impose greater requirements when necessary to protect the public health, safety, property, and welfare. Griffin required the additional height because the pad sites were at the bottom of a down slope at a T intersection. This requirement bore an essential nexus to the substantial advancement of a legitimate government interest, flood prevention. The requirement was a result of the design of the subdivision, and its impact was limited to the two lots, so the requirement was roughly proportional to the projected impact of the proposed development. Moreover, as the requirement benefitted only the two lots and did not benefit the City, this requirement was not a "public burden [ ] which in all fairness and justice, should be borne by the public as a whole." We conclude the City's requirement that the height of the pad sites be raised above the minimum requirements set out in the City's ordinances was not a compensable exaction, and the trial

court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

Additional Storm Drain Construction and Riprap

Hawkins testified that the City required appellant to install an additional storm drain to service the extra drainage outlets at the T intersection. Appellant originally planned to run a drainage pipe from the additional outlets at the street to a floodplain behind the lots. Hawkins testified that appellant planned to end the drainage pipe 120 feet from a creek behind the lots. Hawkins stated that the City required appellant to extend the drainage pipe 120 feet from the floodplain to the creek and to support the additional drainage pipe on a pier. The additional drainage pipe, riprap, and pier cost appellant $24,625.

Griffin testified the riprap was necessary to prevent erosion and the pier would prevent the headwall at the creek bed from collapsing. He also testified the City required appellant to extend the drainage pipe 20 feet, not 120 feet. Griffin stated the edge of the floodplain was 120 feet from the creek, and appellant's initial ***89** plans showed the drainage pipe extending 100 feet into the floodplain.

In its motion for summary judgment, the City asserted Griffin testified the drainage pipe extension was necessary to prevent erosion. However, Griffin did not so testify. During the City Council hearing, the City's attorney asked Griffin why the extension to the creek was necessary. Instead of answering the question, Griffin stated he asked appellant to extend the pipe twenty feet to the creek and to place it on piers. Griffin then explained the need for the piers—to prevent the pipe from collapsing the ground at the creek—but he never explained the need for the extension of the pipe to the creek. Griffin testified that storm sewer lines terminating in a floodplain are "a commonly used engineering factor" and do not violate the City's ordinances. In response to a question from a City Councilman, Griffin stated that he made his decision in his role as City Engineer to protect property owners from flooding. However, he never testified that the drainpipe extension was necessary to prevent flooding. He also testified that in his judgment, "this storm sewer [was] specifically designed and built for this subdivision and the impact this subdivision has in the [C]ity." This bare conclusion provides no evidence of the reason and necessity for the requirement that the drainpipe be extended to the creek. *Cf.* *Stafford Estates,* 135 S.W.3d at 644–45 (discussing insufficiency of town's assertions of rough proportionality).

With no evidence of the reason for the extension, the City did not conclusively establish that the extension of the drainage pipe to the creek bed was an essential nexus of a legitimate government interest and that the extension was roughly proportionate to the impact of the project. Accordingly, we conclude the trial court erred by granting the City's motion for summary judgment on this item.

Appellant's motion for summary judgment asserted the City required the additional storm drain, drainage pipe extension, riprap, and piers as a condition for approval of the subdivision. Appellant met its summary judgment burden by conclusively proving that the City imposed an exaction. The burden then shifted to the City, which failed to raise a fact question on the "essential-nexus/rough-proportionality" test. *See* *Stafford Estates,* 135 S.W.3d at 643. Griffin's testimony created a fact issue concerning the extent of appellant's damages, namely whether the drainage pipe had to be extended 20 feet or 120 feet. Accordingly, we conclude the trial court did not err by denying appellant's motion for summary judgment on this item.

Extra Sewer Manhole

Hawkins testified the City required appellant to add a sewer manhole before the City would approve the property development. Appellant's utilities contractor charged appellant $3500 for the materials and labor to add the manhole.

Griffin testified a City ordinance required there be a manhole every 500 feet of sewer line. The sewer line at issue was either 570 feet or 581 feet, so the City's ordinance required an additional manhole. Griffin explained the 500–foot rule was because the City's camera for viewing the condition of the sewer line and the City's equipment for clearing sewer blockages would reach only 500 feet. This sewer line also had four curves in it, which made it more difficult for the City's equipment to clear blockages. If there were a blockage beyond the reach of the City's equipment, the City would be required to cut open the sewer line though the street, which would impose additional expense on the City and ***90** interrupt sewer service for a portion of the community. The sewer line at issue serviced only the residents of Alexander Court.

Griffin's testimony established the City made an individualized determination of the need for the extra manhole. His testimony proved the requirement of the extra manhole bore an essential nexus to the advancement of a legitimate government interest, the efficiency of the sewage drainage system. Because the need for the extra manhole was created by the design of the subdivision and its beneficial effect was confined to the subdivision, the requirement of an extra manhole was roughly proportionate to the projected impact of the development. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

Waterline Concrete Caps

To bring water into the subdivision, appellant had to extend waterlines under the road outside the subdivision. The City permitted appellant to dig trenches across the road, lay the waterlines, cover them up, and re-pave those areas. The materials used to cover the waterlines and on which the asphalt paving was laid were the waterline caps. Appellant wanted to use compacted fill dirt for the caps. The City required that concrete be used. Hawkins testified the concrete caps were not necessary because they would be destroyed when the road was repaved. He stated that appellant had increased costs of $3000 due to the concrete caps.

Griffin testified the road was subject to caving where lines ran under it with fill dirt supporting the road instead of concrete caps. Griffin testified that concrete caps were necessary for the road to be able to sustain traffic on it. If fill dirt caps had been used and the road had failed before it was repaved, the City would have had to repair the road, incurring expenses.

Griffin's testimony established he made an individualized determination concerning the need for the concrete caps based on the unique characteristics of the road and the utilities appellant placed under the road. The requirement of concrete caps bore an essential nexus to the advancement of a legitimate government interest, safe and efficient roadways. The requirement of the concrete caps was the result of extending waterlines into Alexander Court, which benefitted only the residents of the subdivision. Accordingly, the requirement of concrete water caps was roughly proportionate to the projected impact of the development. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

Screen Wall Exterior Columns

The City's ordinances required appellant to build a screen wall around the subdivision with columns on the exterior portion of the wall and to have landscaping near the wall.[7] These requirements were a condition for approval of the subdivision. The columns and the landscaping were on appellant's property. Appellant argues the columns and landscaping were compensable exactions because they were aesthetic and not structural or otherwise functional. Hawkins testified that the columns and landscaping cost appellant $18,040.

[7] Appellant argued the screen wall landscaping exaction as items (8) and (25) of its brief. We discuss them together except for the portions of item (25) concerning the roadway cleanup, which is discussed below.

***91** Maintaining aesthetic values is a legitimate government interest. *See Members of City Council v. Taxpayers for Vincent,* 466 U.S. 789, 805, 104 S.Ct. 2118, 80 L.Ed.2d 772 (1984) ("It is well settled that the state may legitimately exercise its police powers to advance esthetic values."). Appellant's brief does not explain why the City's requirements of columns and landscaping fail the essential-nexus/rough-proportionality test. Appellant does not dispute that the columns and landscaping enhanced the visual aesthetics of the subdivision. Because the columns and landscaping were on appellant's property and there was no required improvement of the City's or third party's property, the requirement of the columns and landscaping was roughly proportional to the projected impact of the development. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

Retaining Walls and Four–to–One Slope

Appellant asserts the City required appellant to build certain retaining walls and to change slopes from three-to-one to four-to-one and that the retaining walls and the change of slope were conditions for approval of the subdivision. Hawkins testified that three-to-one slopes are "acceptable by the FHA and its standards" and that no City ordinance required a four-to-one slope. He also testified that although David Weekley Homes required some retaining

walls, the City required six other retaining walls. According to Hawkins, no City ordinance required the retaining walls. Hawkins testified that the City-required retaining walls and four-to-one slope cost appellant $55,517.

Griffin testified that the City did not mandate retaining walls as a condition for approval of the subdivision, and Griffin told appellant's engineer that the retaining walls were not required. According to Griffin, the plans the City received from appellant's engineer included retaining walls. Griffin marked on the plans that some of the retaining walls should be joined, but Griffin testified the joining of the walls was only a suggestion, not a requirement. Griffin stated that the project was approved without the City requiring any retaining walls on the lots, and David Weekley Homes later requested that appellant build the retaining walls. Griffin testified that the four-to-one slope requirement was an alternative to building retaining walls. Griffin testified that appellant built the four-to-one slopes the City required and built the retaining walls, which the City did not require. Hawkins sent several letters to Griffin complaining about what he believed to be a requirement that appellant build the retaining walls, but Griffin never responded to these letters.

The City's motion for summary judgment and its response to appellant's motion for summary judgment asserted there was no exaction as to the retaining walls because the City did not require the retaining walls. However, Hawkins's testimony that the retaining walls were required as a condition for approval of the subdivision created a genuine issue of material fact concerning whether the retaining walls were an exaction. The City's motion for summary judgment did not address the essential-nexus/rough-proportionality test concerning the retaining walls. Accordingly, the trial court erred by granting the City's motion for summary judgment on the retaining walls. Because of the fact issue on whether the retaining walls were an exaction, the trial court did ***92** not err by denying appellant's motion for summary judgment on the retaining walls.

Appellant proved the requirement of four-to-one slopes was an exaction. The City's motion for summary judgment and response to appellant's motion for summary judgment asserted the slope requirements would further erosion control and improve drainage. However, the City presented no evidence that the four-to-one slopes would control erosion and improve drainage in the subdivision better than appellant's proposed three-to-one slopes.[8] Thus, the City presented no evidence that the four-to-one slope requirement was roughly proportional to the projected impact of the subdivision. We conclude the trial court did not err by denying the City's motion for summary judgment on the four-to-one slope requirement.

8 The City Council's findings of fact and conclusions of law state the retaining walls were "for lateral soil support." However, neither Griffin nor Hawkins testified to that being their purpose or that lateral soil support was necessary. In its motion for summary judgment, the City asserted the four-to-one slope advanced the City's legitimate government interest "in furthering erosion control." However, the record contains no evidence that the four-to-one slope would prevent soil erosion at all, much less prevent erosion better than appellant's proposed three-to-one slope.

Appellant conclusively proved the four-to-one slope requirement was an exaction and the City failed to raise a genuine issue of material fact on the essential-nexus/rough-proportionality test, but appellant did not separate its damages for the slope requirement from those for the retaining walls. Thus, a genuine issue of material fact remains as to the amount, if any, of appellant's compensation for the added expense of the four-to-one slope requirement. We conclude the trial court did not err by denying appellant's motion for summary judgment on this item.

Redundant Excavation in Floodplain

During the initial work on the subdivision, most, if not all, of the property was classified as floodplain under the existing records of the Federal Emergency Management Association (FEMA). Appellant, through the City, applied to FEMA for a revision in the floodplain maps. While FEMA was reviewing the application, appellant planned to dig out the areas that would be the streets and use that dirt to build up the pad sites in areas then classified as floodplain. The City's ordinances prohibited work in the floodplain without a permit. Appellant asked the City for permission to use dirt from the streets to build the pads on the lots in the floodplain, but the City denied the request. The City told appellant it could either wait to dig the streets until FEMA had approved the new floodplain map or it could dig the streets, store the dirt out of the floodplain, and then move it again once FEMA approved the new floodplain map. Hawkins testified that appellant could not afford the delay, so appellant had its contractors move the

dirt twice. Hawkins testified the City's denial of appellant's permit to use the dirt in the floodplain increased its costs by $16,000. The City later granted appellant permission to work in the floodplain, but not until after appellant had dug the streets and stored the dirt.

In its motion for summary judgment, the City asserted that appellant's having to move the dirt twice was not an exaction. We agree. An exaction is a condition required for approval of a requested land development. Although the City required appellant to comply with its ordinance prohibiting work in the floodplain, that requirement was not a condition for approval of the subdivision. We conclude the trial ***93** court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

Floodplain Study Checking and Floodplain Delay

When appellant purchased the property, much of the property was designated as floodplain on existing maps. Appellant hired Nathan Maier to determine the current position of the floodplain. Maier's study showed the floodplain was nowhere near where FEMA's maps showed it and that most of the subdivision was out of the floodplain. Appellant had to apply to FEMA for a change in the floodplain designation. FEMA approves a change in the floodplain through a Letter of Map Revision. A developer's application for a map revision must first go to the local governmental entity, which submits it to FEMA.

The City received appellant's FEMA application on April 17, 2007. Before submitting appellant's application for map revision to FEMA, the City had it reviewed by an engineering firm with expertise in floodplain study, Kimley Horn & Associates, which charged the City $2500 to review the application. The City had earlier told appellant the fee for reviewing the floodplain application was $2000, so the City charged appellant only $2000 for the review. Hawkins testified Griffin told him the City would not submit the application to FEMA if appellant did not pay the fee. The City submitted the application to FEMA on July 10, 2007. Hawkins testified the nearly three-month delay for review of the floodplain application cost appellant $16,000. Hawkins testified that no City ordinance required the application be reviewed by an engineering firm before submitting the application to FEMA. Kimley Horn found some minor technical deficiencies in the application, but it eventually approved the application. The City then submitted the application to FEMA.

Griffin testified the City has all floodplain map-revision applications reviewed by Kimley Horn and charges Kimley Horn's fee to the developer. The City has the floodplain studies reviewed to protect the City's interest in preventing flooding of the residences in the subdivision. Griffin testified that review of the floodplain study is especially important when the study shows a significant change in the floodplain. The change in the floodplain in this case was significant. Erroneous determination of the floodplain could result in flooding and property damage.

Appellant asserts the City's threat not to submit the map-revision application to FEMA unless appellant paid the $2000 fee was an exaction. We agree. Although payment of the fee was not an express condition for approval of the subdivision, the failure to submit the application to FEMA would have resulted in the denial of approval for the subdivision because appellant could not build in a FEMA-designated floodplain.

Although the position of the floodplain was ultimately determined by FEMA, the City still had an interest in the accurate determination of the floodplain. As it is the City and not the developer that files the application with FEMA, the City was entitled to review the accuracy of the application before submitting it to FEMA. Any inaccuracies in the location leading to flooding of the lots would be the long-term concern of the City, not appellant, which had already agreed to sell the lots to David Weekley Homes. The summary judgment evidence shows Kimley Horn's review of the map-revision application before the City's submission of the application to FEMA bore an essential nexus to the substantial advancement of the legitimate government interest of flood prevention. The ***94** $2000 fee appellant paid to the City was less than Kimley Horn's fee paid by the City. Thus, the $2000 fee did not exceed what was roughly proportional to the subdivision's projected impact.

The City's $2000 fee for review of appellant's floodplain study was not a compensable exaction. Accordingly, appellant is not entitled to compensation for the $2000 fee or for the delay from Kimley Horn's review of the floodplain study. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion on these items.

Park Fees

The City conditioned approval of the subdivision on appellant's paying park fees of $37,265. During the first City Council hearing, which the trial court set aside, Hawkins testified he considered the roughly proportionate amount of park fees to be $26,000. At the second City Council hearing, Hawkins testified appellant sought compensation for all the park fees. The City Council awarded appellant $11,265, which was the difference between the park fees appellant paid and those Hawkins had agreed at the first hearing were roughly proportionate.

The City's ordinance required residential developments to dedicate one acre of land per 100 dwelling units in the development for use as a neighborhood public park. Coppell, Tex., Ordinance 94643, Subdivision Regulations App. C, § VII(B)(1) (Apr. 12, 1994). Because development of a public park of less than one acre is impractical, the ordinance required a development with fewer than 100 residential units to make a payment in lieu of land of $1285 per dwelling unit. *See id.* § VII(B)(2), (D)(3). Alexander Court had twenty-nine dwelling units; under the ordinance, it was required to pay a fee of $37,265. The City's reduction of the fees to $26,000 made the fees per lot $896.55, a reduction of about thirty percent. The ordinance required the park fees "be used only for acquisition or improvement of a neighborhood park located within the same zone as the development." *Id.* § VII(D)(3).

The City proved that the fees originally assessed were based on the individual characteristics of the subdivision, namely, how many dwelling units were within the subdivision. Hawkins testified there would probably be three to four people in each unit, making the population of the subdivision about ninety inhabitants. Brad Reid, the City's director of parks and recreation, testified the subdivision's ninety inhabitants would increase the burden on the City's park and recreation facilities. Reid explained that the money would "go for development of playgrounds, the structures, benches, more social type areas developing in the parks." The City presented no evidence of how the fee per dwelling was calculated or how the fee was roughly proportionate to the City's parks and recreation costs.

Appellant met its burden of proof by establishing the park fees were an exaction. Public parks and recreation spaces are a legitimate government interest, and the park fees appellant paid bore an essential nexus to the substantial advancement of that interest. However, the City failed to prove that the original fee of $1285 or the reduced fee of $896.55 per dwelling was roughly proportionate to the projected impact of one dwelling's residents on the park system. We conclude the trial court erred by granting the City's motion for summary judgment on this item.

Reid's testimony that the ninety inhabitants of Alexander Court would increase the park system's burdens raised a genuine issue of material fact that some part of the fees would be roughly proportionate to ***95** the development's impact on the park system. Accordingly, we conclude the trial court did not err by denying appellant's motion for summary judgment on this item.

Tree Retribution Fees

The City required appellant to pay "tree retribution fees" (called "tree mitigation fees" by the parties) of $34,500 before the City would approve the subdivision.

The City's tree preservation ordinance sought to protect trees and promote urban forestation for the many benefits trees provide. The preamble of the ordinance listed many benefits of trees, including shade and cooling, reduction of noise and glare, protection of soils, providing of ecosystems, and increasing property values.[9] Coppell, Tex., Ordinance 91500–A–203 (Dec. 8, 1998). Under the City's tree ordinance, a property developer must receive permission to remove a tree with a trunk diameter of six inches or greater. *Id.* §§ 34–2–7(A), 34–2–11(A). The developer must then pay the City a "retribution" fee of $100 per inch of trunk diameter to remove these trees. The developer receives a landscaping credit for each tree planted and a preservation credit for trees remaining on the property. *Id.* § 34–2–13(A)(1), (2). The retribution fees are used (1) for planting trees on public property, (2) for purchasing wooded natural areas "to preserve these highly-sensitive environmental areas for public protection and passive recreational enjoyment," and (3) for "[e]ducational projects, such as construction of outdoor learning centers or classroom/group tours led by foresters or park staff." *Id.* § 34–2–12(D).

9 The ordinance provides,

> **WHEREAS,** trees are a valuable amenity to the urban environment, providing shade, cooling

> of air, and windbreaks, thereby reducing the requirements for air conditioning, heating and watering thus reducing the use of limited and costly resources; and
>
> **WHEREAS,** trees purify the air we breathe by filtering pollutants and dust while restoring oxygen to the atmosphere; and
>
> **WHEREAS,** trees provide open spaces, reduction in noise levels and glare, and break the monotony of urbanized development; and
>
> **WHEREAS,** trees create local ecosystems that provide habitat for animals, birds, and plants that would otherwise be absent from urban areas; and
>
> **WHEREAS,** trees protect land and structures by providing soil stability and reducing storm water run-off thus minimizing flood damage and reducing the need for additional storage facilities; and
>
> **WHEREAS,** trees are known to add value to residential and commercial property, thus increasing tax revenues by attracting new business, industry, and residents to the City, and
>
> **WHEREAS,** trees should be protected for the education and enjoyment of future generations since large, mature trees, if destroyed, can be replaced only after generations, if at all....
>
> Coppell, Tex., Ordinance 91500–A–203 (Dec. 8, 1998).

Appellant established the fees were an exaction, and the burden shifted to the City to meet the essential-nexus/rough-proportionality test. The City asserts it proved the rough proportionality of the fees by proving the fees were based on the trees appellant removed from the property.

The preservation and expansion of public wooded areas and the educational programs are legitimate government interests, and the fees to promote the City's reforestation programs bear an essential nexus to the substantial advancement of those interests. The "impact" of the development was the need created by appellant's removal of trees on its property for the City to plant trees on public property, ***96** to purchase wooded property, and to conduct educational programs. However, the summary judgment evidence does not explain how the removal of trees on appellant's private property created such a need that did not exist before the trees were removed. The City did not show that the removal of trees in the development would harm the air quality, increase noise and glare, remove ecosystems, bring down property values, or reduce the other benefits of trees described in the ordinance. Unlike the park fees, where the City presented some evidence that the development would place increased burdens on the City's park system, the City presented no evidence that the removal of trees from appellant's private property would increase the need for trees on public property or for the other programs beyond what already existed before appellant removed the trees on its property. With no evidence of any projected impact caused by the removal of trees during the development, the City did not raise a genuine issue of material fact that any amount of tree retribution fees would be roughly proportional.

We conclude the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on this item, and we render judgment that appellant recover the $34,500 in tree retribution fees.

Roadway and Water and Sewer Impact Fees

The City conditioned approval of the subdivision on appellant's payment of roadway impact fees of $18,444. The City deducted the fees from the $21,709.84 it owed appellant as compensation for taking a .147 acre tract for a roadway. The City also assessed water and sewer impact fees of $100,527.

The roadway impact fees were an exaction because the City conditioned approval of the subdivision on appellant's payment of them. However, the record shows the water and sewer impact fees were not an exaction against appellant. The water and sewer fees are paid when the building permit is issued and not when the plat is filed. *See* TEX. LOC. GOV'T CODE ANN. § 395.016(d)(1) (West 2005). Hawkins testified the fees would be paid to the City by David Weekley Homes, not by appellant. Appellant argued it should be compensated for those fees because David Weekley Homes reduced the sales price of the lots by the amount of the water and sewer fees. However, because the City did not condition approval of anything applied for by appellant on payment of the water and sewer impact fees, those fees were not exactions against appellant. [10] Since the water and sewer fees were not exactions, the trial court did not err by denying appellant's motion for summary judgment as to those fees. The City did not move for summary judgment on the ground that the water and sewer fees were not exactions. Accordingly, we may not affirm the trial court's grant of the City's motion for summary judgment on that ground. *See City of Houston v. Clear Creek Basin Auth.,* 589 S.W.2d 671, 678 (Tex.1979).

10 Hawkins stated in his affidavit that the City "was paid $2,997 on July 31, 2008 a Water Impact Fee." The affidavit cited an attached list of "Development Fees" showing $2997 paid for a Water Impact Fee on July 31, 2008. However, Hawkins did not testify, and the cited exhibit does not show, that appellant paid the $2997 fee. Accordingly, this evidence does not raise a fact issue of whether the $2997 was an exaction from appellant.

Chapter 395 of the Local Government Code prohibits impact fees except as authorized ***97** by state law. TEX. LOC. GOV'T CODE ANN. § 395.011(a) (West 2005). Chapter 395 permits impact fees to pay the costs of constructing capital improvements. *Id.* § 395.012. The municipality determines the amount of the impact fees by preparing a "capital improvements plan." *See id.* § 395.014. The plan is prepared by licensed engineers and is a determination of the total capacity, current usage, and commitments of usage of existing capital improvements, a determination of the capital improvements or facility expansions "necessitated by and attributable to new developments in the service area," and "the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years." *Id.* § 395.014(a). Chapter 395 also sets out the method for determining the maximum fee per service unit. *Id.* § 395.015.

In this case, the City hired an engineering firm to prepare a capital improvements plan concerning the City's roadways, water, and wastewater. This plan is a precise mathematical formulation of the impact of development on the City's roadways and water and sewer facilities. From this study, the City could determine Alexander Court's projected impact with precision that far exceeded the constitutional requirement of rough proportionality. Because the statute requires the impact fees be spent only on the designated capital improvements, roadways and water and sewer services in this case, the impact fees bear an essential nexus to the substantial advancement of legitimate government interests. We conclude the trial court did not err by granting the City's motion for summary judgment and by denying appellant's motion on the impact fees.

Construction Inspection Fees

The City required appellant to pay construction inspection fees of $21,189 as a condition for approval of the subdivision. The inspection fees are determined as two or four percent of the developer's contract for the construction.

Appellant met its summary judgment burden of proving the fees were an exaction. The burden then shifted to the City to prove the essential nexus/rough proportionality test. The City argued the fees met the proportionality test because they were directly proportional to the value of the construction. The impact of the development, for this item, is the City's costs for the inspections, not the value of the construction. Griffin testified that the fees were "proportional to the impact that Alexander Court had on the city's time and resources for inspection," and he testified that there was at least one inspector at the development every day. However, the City presented no evidence of its costs for the inspectors or the proportion of the time the inspectors spent at the development. Griffin's bare conclusion lacking any factual support that the fees were roughly proportionate is insufficient to establish the rough proportionality of the fees as a matter of law. *See Riner v. Neumann,* 353 S.W.3d 312, 321 (Tex.App.-Dallas 2011, no pet.) ("a conclusory statement in an affidavit can neither support nor defeat summary judgment"). Accordingly, we conclude the trial court erred by granting the City's motion for summary judgment on this item.

Griffin's testimony was sufficient to raise a genuine issue of material fact whether the inspections were an essential nexus of a legitimate state interest, the safe and lawful development of the property, and that some of the fees could be roughly proportional to the projected impact of the development, the City's costs ***98** for the inspections. Accordingly, we conclude the trial court did not err by denying appellant's motion for summary judgment on this item.

Redundant Water–Bacteria Test

Appellant complains the City required two water-bacteria tests to obtain approval of the subdivision when one would have been sufficient. Griffin testified the water-bacteria tests determine whether there is harmful bacteria in the development's waterlines. The tests protect the City's water system from bacteria that could pollute the water system. State regulations require at least one test for each 1000 feet of waterline. 30 TEX. ADMIN. CODE § 290.44(f)(3). Alexander Court had more than 1000 feet of waterline, so two tests were required. The City established the second test bore an essential nexus to the legitimate government interest of protecting the public water system from contamination.

Because Alexander Court contained more than 1000 feet of waterline, the requirement of the second test was roughly proportionate to the projected impact of the development on the City's water system. We conclude the trial court did not err by granting the City's motion for summary judgment and denying appellant's motion on this item.

.725 Acre Land Surrender

Appellant contends the City required it to "surrender" a .725 acre tract to a neighbor below market value to obtain the City's approval for the subdivision. Appellant seeks compensation of $120,000, representing the amount below market value the neighbor paid for the tract.

The record contains conflicting evidence of whether there was an exaction. Hawkins testified generally in his affidavit and at the City Council hearing that the City required him to resolve a dispute over the .725 acre tract before it would approve the subdivision. However, the more specific evidence shows the following. When appellant submitted its preliminary plot of the subdivision for twenty-six lots, there was a boundary dispute with a neighbor over a .725 acre triangular tract at the southwest corner of the subdivision and an approximately 3100 square foot "sliver" on the western border. The sliver was platted as part of Alexander Court. The preliminary plat for twenty-six lots showed some of the boundary lines running through the .725 acre tract. Previous versions of the preliminary plat showed different square footage for lot eight, which, on the twenty-six lot plat, bordered the .725 acre tract. On January 14, 2007, the City conditioned approval of the preliminary plat, instructing appellant to "[r]esolve the conflicts with the size of the property and the boundary of proposed Lot 8." It does not appear that lot eight bordered on the sliver. Later, when the plat was resubmitted with twenty-nine lots, the .725 acre tract was no longer a concern for the City, but the City still required appellant to resolve the boundary dispute over the sliver before it would accept the final plat. In a "DRC Report" dated December 18, 2007, the City mentioned appellant's need "to work out the boundary dispute on the west side." Appellant offered to trade the sliver for a similar-sized tract to the neighbor, but the neighbor did not accept the offer. The neighbor demanded appellant sell him the .725 acre tract to which he also had a deed. [11] On January 14, 2008, Hawkins wrote to the City stating he had instructed his surveyor to remove the disputed sliver ***99** from the plat. The record contains no response from the City to this letter and does not show whether the City continued to demand appellant resolve the dispute over the sliver. Likewise, the record does not show whether appellant redrew the property lines to omit the sliver and submitted the revised documents to the City before appellant sold the property to the neighbor. On February 27, 2008, appellant deeded the .725 acre tract to the neighbor, and the neighbor deeded the sliver to appellant and paid appellant $25,000.

11 Both appellant and the neighbor had quitclaim deeds for the .725 acre tract. Appellant's title policy did not cover the .725 acre tract. The sliver was included in appellant's warranty deed and was covered by appellant's title policy.

Thus, according to Hawkins's general statements, the City conditioned approval of the subdivision on resolution of the dispute over the .175 acre tract. The more specific testimony shows the City conditioned approval on resolution of the sliver, and the sale of the .725 acre tract was part of the agreement with the neighbor to solve the dispute over the sliver. Under this view of the facts, the "surrender" of the .725 acre tract was not an exaction because, after the twenty-nine-lot plat was filed, the City did not require appellant to resolve the dispute concerning the .725 acre tract. There is also a fact issue regarding whether the City continued to condition approval of the subdivision on appellant's resolution of the boundary dispute over the sliver after Hawkins's January 14, 2008 letter stating the sliver would be removed from the subdivision. Accordingly, we conclude the trial court did not err by denying appellant's motion for summary judgment on this item.

The City's motion for summary judgment asserted there was no exaction because the City's requirement, if any, to appellant was to resolve the dispute over the .725 acre. The City argues it did not require appellant to resolve the dispute by selling the property or to sell the .725 acre tract for any price less than its full market value. If the City conditioned its approval of the subdivision on the resolution of the .725 acre tract, then there was an exaction. That it did not require the sale of the property at below market value does not mean there was no exaction.

The City also presented evidence that the requirement of resolution of boundary disputes for the plat is necessary because the plat defines the property for the subdivision. Thus, if there was a boundary dispute, then the requirement of resolution of that dispute bore an essential nexus to the substantial advancement of the legitimate government interest of clear property boundaries in the real estate records. This

condition was roughly proportional to the projected impact of the development on the records. However, if there was no boundary dispute after January 14, 2008, and if the City continued to condition approval of the final plat on resolution of the dispute over the sliver, then the City's essential-nexus/rough-proportionality argument fails. Because fact questions exist concerning whether the City required appellant to resolve the boundary dispute when no disputed property was included in Alexander Court, neither appellant nor the City was entitled to summary judgment on this item. We conclude the trial court erred by granting the City's motion for summary judgment but did not err by denying appellant's motion on this item.

.147 Acre Land Dedication

The City conditioned approval of the subdivision on appellant's dedicating a .147 acre tract for a roadway in front of the subdivision. The parties agree the condition was a compensable exaction, but they disagreed about the compensation. The City provided compensation to appellant of $21,709.84 for the land dedication, which was the appraised value in the records of the Dallas County Appraisal District. ***100** At the City Council hearing and in his affidavit, Hawkins testified the property was worth $46,879, an additional $25,170, based on the per-acre price appellant sold the property to David Weekley Homes.

The City argues appellant is not entitled to additional compensation because appellant, through Hawkins's testimony at the City Council hearing, agreed that the value of the land was $21,709.84 at the time of the dedication. The testimony at the City Council hearing shows the .147 acre tract was dedicated when the final plat was approved. Hawkins testified appellant paid $21,709.84 for .147 acre of raw land when it purchased the property. However, Hawkins did not testify that the land was "raw land" when dedicated or that the value of the land when dedicated was $21,709.84. Instead, he testified the .147 acre was worth $46,879 when dedicated.

As appellant's president, Hawkins is presumed to have had knowledge of the property's fair market value. *See Reid Rd. Mun. Dist. No. 2,* 337 S.W.3d at 849; *Corniello,* 344 S.W.3d at 607. Hawkins testified the property was worth $46,879. The City presented evidence the land in its raw state was worth $21,709.84, but it presented no evidence the land was raw at the time of dedication or that its value at the time of dedication was $21,709.84.

We conclude the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on this item. The City is entitled to credit the $46,879 for the .147 acre tract against the roadway impact fees of $18,444 due from the development. *See* TEX. LOC. GOV'T CODE ANN. § 395.023. Accordingly, we render judgment that appellant recover $28,435 for the value of the .147 acre tract minus the amount of the roadway impact fees.

Roadway Cleanup

Appellant also asserts, and Hawkins testified, the City conditioned approval of the subdivision on appellant clearing the .147 acre tract the City exacted for a roadway right of way. Hawkins testified appellant paid a contractor $8030 to perform this work.

Appellant established that clearing the roadway right of way was an exaction. The City presented no argument or evidence in support of the essential-nexus/rough-proportionality test on this item. Accordingly, we conclude the trial court erred by granting the City's motion for summary judgment and denying appellant's motion as to the $8030 for cleanup of the right of way. We render judgment that appellant recover $8030 for this item.

Additional Professional Fees

Appellant also asserts it incurred $49,000 in additional fees for surveying, landscape architecture, engineering, and testing for many of the alleged exactions discussed above. These fees are not themselves exactions—the City did not expressly require it incur these costs for the permit to be approved—but are expenses related to the alleged exactions. Accordingly, appellant is not entitled to recover fees corresponding to items on which we have concluded the trial court did not err by granting the City's motion for summary judgment. As for the remaining items, the issue appears to be whether appellant is entitled to recover the fees as a matter of law or whether there is a genuine issue of material fact as to the amount of the fees.

The invoices appellant used to support the compensation claim total $77,761, but Hawkins testified only $49,000

was attributable to the additional, exacted construction. The invoices do not break down ***101** their charges by the categories discussed above. For example, the surveying invoices do not identify how much of the fees are attributable to extending the drainage pipe from the floodplain to the creek, and the testing invoices do not explain how much it cost to test the soil for that work. The other professional invoices also fail to identify the part of the construction project to which they relate. The invoices provide no means to tie their amounts to the exactions discussed above.

At the City Council hearing, Hawkins testified he was unable to segregate how much of the fees were related to exactions concerning municipal infrastructure. In his affidavit in support of appellant's motion for summary judgment, appellant broke down the charges into "surveying and landscape architect costs" and "engineering and testing costs" for each item—rolled curbs, raised pad sites, etc. The invoices themselves give no indication how much of each invoice is attributable to each item, and appellant did not explain how he determined the invoice amounts attributable to each item.

The City asserts a genuine issue of material fact exists as to the amount of fees if any, attributable to each item. We agree. Hawkins, as appellant's president, was an interested witness, and summary judgment may not be based on his testimony unless it is "clear, positive and direct, otherwise credible and free from contradictions and inconsistencies, and could have been readily controverted." TEX.R. CIV. P. 166a(c). Appellant's unexplained testimony in his affidavit of the amount of fees related to each item could not have been readily controverted and will not support summary judgment. Accordingly, we conclude the trial court did not err by denying appellant's motion for summary judgment as to the professional fees.

The City's motion for summary judgment does not appear to move for summary judgment on the fees themselves but instead appears to assert a fact issue exists on the fees related to any items that appellant may prove are a compensable exaction. [12] Accordingly, we conclude the trial court erred by granting the City's motion for summary judgment on the professional fees related to the items on which the court erroneously granted the City's motion for summary judgment: offsite sidewalk, additional storm drain construction and riprap, retaining walls and four-to-one slope, park fees, tree retribution fees, inspection fees, .725 acre tract, .147 acre land dedication, and roadway cleanup.

12 The City argued in its motion for summary judgment,

> It is clear that these fees are not "stand-alone" damages items, but are instead ancillary to the other requirements that Mira Mar complains of. As such, Mira Mar is not entitled to these fees unless it can prevail on the other claims, and definitively segregate these fees among the items, if any, that it has prevailed on.

Delays

Appellant asserts it is entitled to compensation of $123,000 for its delays in construction while waiting for the City to approve the final plat and applications for building permits. Delays are not exactions because they are not conditions for approval. Appellant's argument fails to explain the legal basis for the claim that these delays are compensable. We conclude appellant has failed to show the trial court erred by granting the City's motion for summary judgment and denying appellant's motion as to the claim for compensation from the delays.

Conclusion

We sustain appellant's first and second ***102** issues in part and overrule them in part. [13]

13 The parties agreed appellant was entitled to $4500 for an extraneous water tap, and we render judgment that appellant recover that amount.

TEXAS CONSTITUTION

In the fifth issue, appellant contends the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on appellant's exaction claims under the Texas Constitution. In its petition, appellant pleaded that the alleged exactions were illegal takings and exactions under the Texas Constitution.

The Texas Constitution protects against the government's taking of property for public use without compensation. TEX. CONST. art. I, § 17. Appellant asserted in its motion for summary judgment that the Texas Supreme Court has stated an alternate standard for the compensability of exactions

under the Texas Constitution. Instead of the essential-nexus/rough-proportionality test, which did not exist at the time, the supreme court considered whether the cost to the landowner for the public improvement exacted was materially greater than the benefits conferred by the public improvement. *See Stafford Estates,* 135 S.W.3d at 642 (quoting *Haynes v. City of Abilene,* 659 S.W.2d 638, 641 (Tex.1983); *Hutcheson v. Storrie,* 92 Tex. 685, 51 S.W. 848, 850 (Tex.1899) (quoting *Vill. of Norwood v. Baker,* 172 U.S. 269, 279, 19 S.Ct. 187, 43 L.Ed. 443 (1898))). In *Stafford Estates,* the Texas Supreme Court observed that, although the parties had not argued a distinction between the federal and state constitutional standards, application of the *Nollan/Dolan* essential-nexus/rough-proportionality standard in the circumstances of that case—a developer required to repave in concrete an asphalt road outside the development—"is certainly consistent with, if not required by, well-established Texas law," including *Hutcheson v. Storrie. Stafford Estates,* 135 S.W.3d at 631, 642.

Appellant asserts the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on appellant's exaction claims under the Texas Constitution because the City's motion for summary judgment and response to appellant's motion for summary judgment did not address those claims. We disagree. Both the City's motion for summary judgment and its response to appellant's motion for summary judgment address the Texas Constitution. Moreover, appellant's brief on appeal fails to show how the outcome of any of the alleged exactions would be different under the Texas Constitution's "materially greater than the benefits conferred" standard.[14] *See* TEX.R.APP. P. 44.1(a)(1). Accordingly, we conclude appellant has failed to show the trial court erred by granting the City's motion for summary judgment and denying appellant's motion on appellant's exaction claims under the Texas Constitution. We overrule appellant's fifth issue.

14 We do not decide in this case whether the "materially greater than the benefits conferred" standard remains applicable.

LOCAL GOVERNMENT CODE § 212.904

Appellant's remaining issues concern the trial court's application of Local Government Code section 212.904. When a municipality requires a developer to bear part of the cost of improvements to the municipality's infrastructure as a condition for approval of a development project, Local Government Code section 212.904[15] provides limits on the amounts the developer ***103** may be required to pay: "the developer's portion of the costs may not exceed the amount required for infrastructure improvements that are roughly proportionate to the proposed development as approved by a professional engineer ... retained by the municipality." TEX. LOC. GOV'T CODE ANN. § 212.904(a) (West 2008). If the developer disagrees with the determination of the amount it is required to pay, the developer "may appeal to the governing body of the municipality" and "present evidence and testimony under procedures adopted by the governing body." *Id.* § 212.904(b). If the developer is dissatisfied with the municipal governing body's decision, the developer "may appeal the determination of the governing body to a county or district court." *Id.* § 212.904(c). If the developer prevails in an appeal under section 212.904, it is entitled to applicable costs and reasonable attorney's fees. *Id.* § 212.904(e).

15 Section 212.904 provides,

> Apportionment of Municipal Infrastructure Costs
>
> (a) If a municipality requires as a condition of approval for a property development project that the developer bear a portion of the costs of municipal infrastructure improvements by the making of dedications, the payment of fees, or the payment of construction costs, the developer's portion of the costs may not exceed the amount required for infrastructure improvements that are roughly proportionate to the proposed development as approved by a professional engineer who holds a license issued under Chapter 1001, Occupations Code, and is retained by the municipality.
>
> (b) A developer who disputes the determination made under Subsection (a) may appeal to the governing body of the municipality. At the appeal, the developer may present evidence and testimony under procedures adopted by the governing body. After hearing any testimony and reviewing the evidence, the governing body shall make the applicable determination within 30 days following the final submission of any testimony or evidence by the developer.
>
> (c) A developer may appeal the determination of the governing body to a county or district court of the county in which the development project is

> located within 30 days of the final determination by the governing body.
>
> (d) A municipality may not require a developer to waive the right of appeal authorized by this section as a condition of approval for a development project.
>
> (e) A developer who prevails in an appeal under this section is entitled to applicable costs and to reasonable attorney's fees, including expert witness fees.
>
> (f) This section does not diminish the authority or modify the procedures specified by Chapter 395.

TEX. LOC. GOV'T CODE ANN. § 212.904.

Standard of Review of City Council Decision

In the seventh issue, appellant contends the trial court erred by applying a "substantial evidence" standard of review instead of a "trial de novo" standard of review to appellant's appeal of the City Council's decision. Appellant also contends it is entitled to a jury trial.

Section 212.904 does not provide the standard of review to be utilized by the court in determining the appeal of the governing body's decision. In this case, the district court reviewed the City Council's decision under the substantial evidence standard of review. Appellant argues the appropriate standard of review is trial de novo. We agree that the standard of review in the trial court should be trial de novo.

Compensable exactions are constitutional takings. The Texas Supreme Court requires that constitutional takings cases be decided by courts, not government agencies. *City of Dallas v. Stewart,* 361 S.W.3d 562, 568–69 (Tex.2012). In takings cases, courts may grant deference to questions of historical fact, "but mixed questions of law and constitutionally relevant ***104** fact ... must be reviewed de novo." *Id.* at 575–76.

Appellant also asserts it is entitled to a jury in the trial de novo review. Whether facts constitute a taking is a question of law. *Mayhew,* 964 S.W.2d at 932, 936. Fact questions as to whether a taking occurred are tried to the court. *See Harris County v. Felts,* 881 S.W.2d 866, 870 (Tex.App.-Houston [14th Dist.] 1994), *aff'd,* 915 S.W.2d 482 (Tex.1996); [16] *see also Tarrant Reg'l Water Dist. v. Gragg,* 151 S.W.3d 546, 557 (Tex.2004); *Mayhew,* 964 S.W.2d at 932–33. However, the issue of the amount of compensation the property owner is due "is peculiarly one for the fact finding body," such as a jury. *City of Sherman v. Wayne,* 266 S.W.3d 34, 46 (Tex.App.-Dallas 2008, no pet.) (citing *Tex. Pipe Line Co. v. Hunt,* 149 Tex. 33, 228 S.W.2d 151, 156 (Tex.1950)); *see Gragg,* 151 S.W.3d at 557. We conclude appellant is not entitled to a jury trial on any fact issues concerning whether an exaction occurred, but appellant is entitled to a jury trial on any fact questions concerning the amount of compensation, if any, to which appellant is entitled. Accordingly, we sustain appellant's seventh issue in part and overrule it in part.

16 In *Felts,* the court of appeals described the procedure in an inverse condemnation case as follows:

> The proper procedure to be followed in a case of this type is that once the presentation of the evidence was completed, the trial judge, not the jury, should have decided whether there was a compensable taking under the Texas Constitution. Only if the Court answered that question in the affirmative should the court have submitted an issue concerning the amount of damages. Only then would this case have been decided in accordance with Texas law.

Felts, 881 S.W.2d at 870.

Due Process Under the City's Procedures

Appellant's fourth and sixth issues concern whether the procedures the City Council adopted for the second hearing accorded appellant due process. Because we have concluded review of the City Council's decision should be by trial de novo, any lack of due process at the City Council hearing could not have caused the rendition of an improper judgment in the trial court. Accordingly, the error, if any, is not reversible. *See* TEX.R.APP. P. 44.1(a)(1). We overrule appellant's fourth and sixth issues.

Attorney's Fees

In the eighth and ninth issues, appellant contends the trial court erred by denying appellant's request for reasonable attorney's fees. Section 212.904 states, "A developer who prevails in an appeal under this section is entitled to applicable costs and to reasonable attorney's fees, including expert witness fees." TEX. LOC. GOV'T CODE ANN. § 212.904(e).

In both the eighth and ninth issues, the question is whether appellant "prevail [ed]" in the "appeal."

Section 212.904 provides two different appeals. The first appeal is to "the governing body of the municipality" and is an appeal of "the determination made in Subsection (a)," which is the rough-proportionality analysis. *Id.* § 212.904(b). At the hearing, the developer may present evidence "under procedures adopted by the governing body." After the governing body makes its "determination," the developer may appeal that determination to the county or district court. *Id.* § 212.904(c). Thus, the appeal to the county or district court is from the governing body's "determination" of the rough-proportionality analysis.

***105** In its eighth issue, appellant asserts it is entitled to attorney's fees from its appeal of the City Council's first hearing. In that appeal, appellant argued the City Council's proceedings deprived it of due process. Appellant asserts it prevailed on that claim because the district court found due process violations and ordered the City Council to conduct a second hearing under section 212.904(b). We disagree. Appellant's claim of due process violations by the City Council was an attempt to appeal "the procedures adopted by the governing body." Under the statute, the municipal body's determination, not the procedures it adopted, are the subject of the appeal. Whether appellant prevailed on the "appeal" depends on whether it prevailed in challenging the rough-proportionality analysis and was awarded damages, not on whether it succeeded in challenging the City's procedures for conducting the initial appeal. We conclude the trial court did not err by denying appellant attorney's fees for challenging the City's procedures. We overrule appellant's eighth issue.

In its ninth issue, appellant contends the trial court erred by vacating the City Council's award of attorney's fees and by awarding appellant no attorney's fees even though appellant recovered over $40,000 on its claims. The court stated on the bench and in an order that appellant could not be considered a "prevailing party" when it had recovered only about $40,000 while seeking over $800,000 in damages. To be a prevailing party, "a plaintiff must prove compensable injury and secure an enforceable judgment in the form of damages or equitable relief." *Intercontinental Group P'ship v. KB Home Lone Star L.P.*, 295 S.W.3d 650, 652 (Tex.2009). To the extent appellant recovered $40,000, it was a prevailing party and was entitled to reasonable attorney's fees to the extent permitted by section 212.904(e). Because we have concluded appellant is entitled to compensation on items beyond those found by the trial court and that fact issues exist on other items on which appellant may eventually win compensation, we remand the attorney's fees issue to the trial court for further proceedings. [17] We sustain appellant's ninth issue.

17 Appellant's entitlement to attorney's fees comes from section 212.904, which applies only to exactions concerning municipal infrastructure. Section 212.904 does not authorize the award of attorney's fees to a party who prevails on an exaction claim that does not concern municipal infrastructure.

CONCLUSION

We reverse the trial court's judgment in part and render judgment in part that appellant recover from the City compensation on appellant's exaction claims of $96,930 consisting of: (1) $21,465 for the offsite sidewalk, (2) $34,500 for the tree retribution fees, (3) $28,435 for the .147 acre tract (consisting of $46,879 for the value of the .147 acre tract minus $18,444 in roadway impact fees), (4) $8030 for roadway cleanup, and (5) $4500 for an extraneous water tap.

We reverse the trial court's judgment on appellant's exaction claims concerning (6) the extension of the storm drainpipe, riprap, and piers; (7) the retaining walls and four-to-one slope; (8) construction inspection fees; (9) .725 acre tract; (10) park fees; and (11) the engineering, surveying, landscape architecture, and testing fees related to items (1) through (10) above, and we remand the exaction claims for items (6) through (11) above to the trial court for further proceedings consistent with this Court's opinion.

We further reverse the trial court's denial of attorney's fees to appellant, and we remand the claim for attorney's fees to the ***106** trial court for further proceedings consistent with this Court's opinion.

In all other respects, we affirm the trial court's judgment.

All Citations

421 S.W.3d 74

End of Document

Exhibit 2

Bunker Ranch/Hardy Tract Timeline

Bunker Ranch – First Subdivision Phase 2017 Final Plat signed – No Sidewalks

Bunker Ranch – Phases 2, 3, & 4 Construction Plans 2019 (Part of Subdivision Platted in 2017)

Phase 5 (condos) granted special exception for screening – March 13, 2020

Sidewalks Update: July 23, 2020 (Added DRC Process and updated Fee-in-Lieu)

Sidewalk Variance for all of Bunker Ranch was approved in September 2020 (for the 2017 project)

> The City is granting an exception from the sidewalk requirement for your project. This exception is based on the natural features of the project, including open ditches for storm water conveyance which is a basis for an exception under 1230.60, and the prior non-enforcement of our sidewalk requirements. Please keep in mind that this exception only applies to the 213.3 acres of the Bunker Ranch Subdivision within the legal description attached as Exhibit "A".

Letter to Bunker -- Variance granted based on language in old ordinance.

Florio Sidewalk Variance – May 2021 (Exhibit I – mislabeled as 2020)

Transportation Master Plan Update: October 2021

Approval of a Setback Variance for a Single Lot – March 2022

Hardy Tract Takings Assessment Request – May 2024

Hardy Tract Sidewalk Variances – August 2024 (denied)

Civil & Environmental Consultants, Inc.

Overlook at Bunker Ranch
Hardy Tract
Prelim Water, Drainage and Street Improvements
Engineer's Opinion of Probable Cost
09/12/2023

D. DRAINAGE IMPROVEMENTS					
Bid Item	Description	Unit	Unit Price	Quantity	Amount
D1	18" CMP	LF	$65.00	867	$56,355.00
D2	24" CMP	LF	$75.00	961	$72,075.00
D3	30" CMP	LF	$85.00	2,084	$177,990.00
D4	36" CMP	LF	$95.00	836	$79,420.00
D5	48" CMP	LF	$115.00	583	$67,045.00
D6	Swale Excavation (Outside ROW)	LF	$130.00	1,830	$237,900.00
D7	Detention Pond	EA	$30,000.00	3	$90,000.00
				SUBTOTAL	**$780,785.00**

E. POTABLE WATER IMPROVEMENTS					
Bid Item	Description	Unit	Unit Price	Quantity	Amount
E1	8" C-900 DR-14 PVC	LF	$60.00	8,832	$529,920.00
E2	8" Gate Valve	LF	$3,250.00	11	$35,750.00
E3	Fire Hydrant Assembly	EA	$5,450.00	14	$76,300.00
E4	Single Service	EA	$450.00	3	$1,350.00
E5	Double Service	EA	$500.00	36	$18,000.00
E6	Trench Safety	LF	$1.00	8,832	$8,832.00
				SUBTOTAL	**$670,152.00**

F. STREET IMPROVEMENTS					
Bid Item	Description	Unit	Unit Price	Quantity	Amount
F1	Subgrade Preparation (5' behind Back of Curb)	SY	$2.50	26,968	$67,420.00
F2	8" Base - Type A (Local Streets) (3' Beyond)	SY	$10.00	24,040	$240,400.00
F3	Concrete Paving	SY		19,644	
F4	Install Signage & Striping	LS	$3,000.00	1	$3,000.00
F5	4' Wide Sidewalk	LF	$15.00	6,609	$99,135.00
				SUBTOTAL	**$310,820.00**

Summary - Construction	
D. DRAINAGE IMPROVEMENTS	$780,785.00
E. POTABLE WATER IMPROVEMENTS	$670,152.00
F. STREET IMPROVEMENTS	$310,820.00

Subtotal	$1,761,757.00
15% Contingency	$264,260.00
TOTAL ESTIMATE	**$2,026,017.00**

Note:
1. This Engineer's Opinion of Probable Cost is not prepared by a contractor or professional

Exhibit 3

DRIPPING SPRINGS
Texas

December 1, 2022

Brian P. Casey
6836 Bee Caves Road, Bldg 1-245
Austin, Texas 78746

Susan J. Savage
Hurst Savage & Vanderburg, L.L.P.
814 W. 10th Street
Austin, Texas 78701-2005

Via e-mail: ***bcasey@caseylawtx.com; ssavage@hsvllp.com***

RE: Sidewalk Fee-in-Lieu Applications

Steve Harren sent an email to City Staff related to the Sidewalk Fee-in-Lieu project on Tuesday, November 29, 2022, and asked if there were any additional administrative steps before he pursued litigation against the City. First, it's important to note that there are two separate requests in process that have been made related to sidewalks.

Hardy Tract Subdivision SUB2021-0073: For the Sidewalks related to the Hardy Tract subdivision: you requested a statement on the reasoning for the Development Review Committee to deny the sidewalk fee-in-lieu for that tract. The email you received last week was in response to your request for the City to provide written justification of not approving the sidewalk fee-in-lieu for the streets within the Hardy Tract subdivision. Per our October 3 email to you, our staff could be supportive of either of the following.

1. Construct a 5' sidewalk on each side of all roads, thus meeting minimum code requirements;
2. Construct an 8' sidewalk on one side of each road and pay a fee in lieu for the remaining 2' not being constructed; or
3. Construct a 10' sidewalk on one side of each road.

To appeal this decision as it relates to platting this subdivision, you can file an appeal as a variance to the platting sidewalk requirements as noted in Section 1.7, Exhibit A. Subdivision Ordinance, Chapter 28.

Hardy Road Site Development SD2022-0025: Regarding your request for a fee-in-lieu for the approximately 1/2 mile road from the Hardy Tract to US 290; the City is requesting additional information before the City can make a decision on that fee-in-lieu. Please provide an updated plan

DRIPPING SPRINGS
Texas

showing a 6" curb and gutter along the east side of the road. This could address the ROW width issue and allow for a sidewalk immediately adjacent to the curb. Once the determination is made, if you wish to appeal the determination as it relates to site development, you would file for an appeal as a variance to the side development sidewalk requirements as noted in Section 28.04.015.

Please let me know if you have any additional questions.

Sincerely,

Laura Mueller
City Attorney

CC: Tory Carpenter, Planning Director
Ginger Faught, Deputy City Administrator

Exhibit 4

FINAL PLAT OF BUNKER RANCH PHASE 3 40.20 ACRES

BUNKER RANCH, LLC
REMAINDER OF CALLED
111.67 ACRES
DOC. NO. 16020931

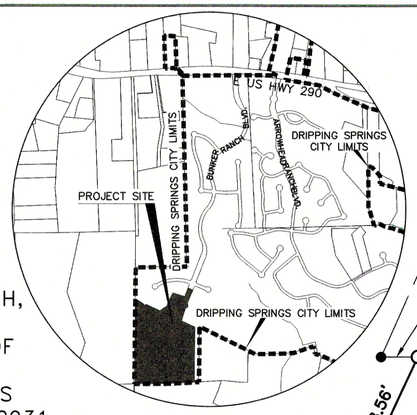
BOBBY GLENN STEVENS
DOC NO. 15011837

THE FINAL PLAT OF BUNKER RANCH, PHASE 2, BLOCK 2
DOC NO. 20017197

P&H LIMITED FAMILY PARTNERSHIP NO. 1
79.61 ACRES
VOL. 1733, PG. 755

CHARLES B FLORIO
DOC. NO. 15020909

VICINITY MAP
SCALE: 1"=2000'



LEGEND

- ● 1/2-INCH IRON ROD FOUND
- ○ 1/2-INCH IRON ROD WITH "KBGE" CAP SET
- ▲ PK NAIL FOUND (UNLESS NOTED OTHERWISE)
- ◬ CALCULATED POINT
- W.Q.B.Z. WATER QUALITY BUFFER ZONE
- BSL BUILDING SETBACK LINE
- AC ACRES
- PUE PUBLIC UTILITY EASEMENT
- —100yr— 100 YEAR FLOOD PLANE LINE
- BOUNDARY LINE
- ADJOINER BOUNDARY LINE
- INTERIOR LOT LINE
- BUILDING SETBACK LINE
- EASEMENT LINE

Civil & Environmental Consultants, Inc.
3711 South MoPac Expressway · Building 1, Suite 550 · Austin, TX 78746
Ph: 512.439.0400 · Fax: 512.329.0096
Texas Registered Surveying Firm 10194419 www.cecinc.com Texas Registered Engineering Firm F-38

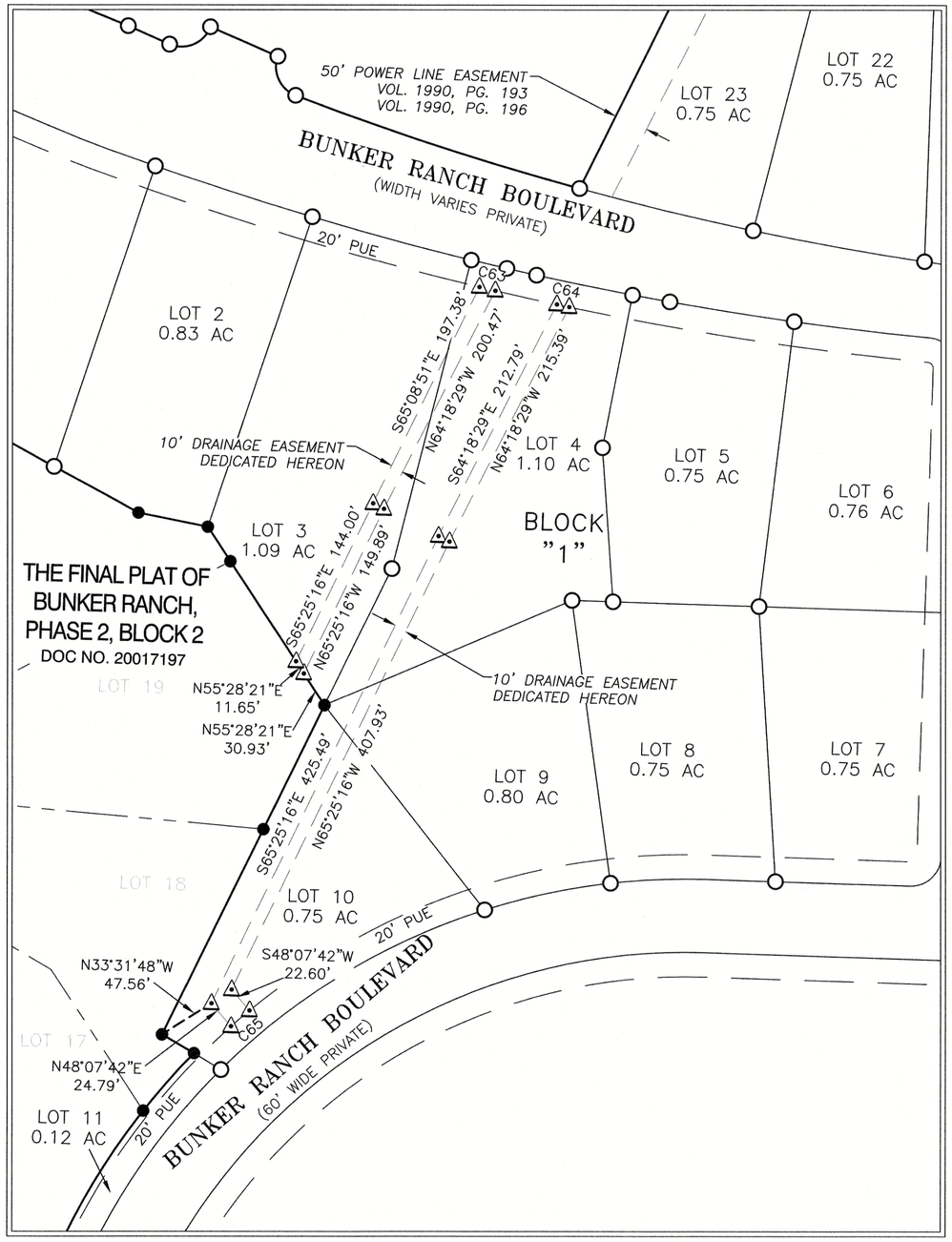
0 100 200 300

"FINAL PLAT" OF BUNKER RANCH PHASE 3, BLOCK "1", LOTS 1–11, BLOCK "2", LOTS 1–6 AND BLOCK "3", LOTS 1–23, WITHIN THE CITY OF DRIPPING SPRINGS, TEXAS

APPROVED BY: FWF
JOB NUMBER: 181–500 ISSUE DATE: 01/21/2021
SHEET: 1 OF 3
SUBMITTAL DATE: 12/14/2020

FINAL PLAT OF
BUNKER RANCH PHASE 3
40.20 ACRES

DETAIL "A"



LINE TABLE

LINE	BEARING	DISTANCE
L1	S65°25'16"E	33.92'
L2	N00°33'17"E	56.37'
L3	N66°36'12"W	22.47'
L4	N21°19'23"E	70.41'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	565.00'	185.02'	184.19'	S56°02'24"E	18°45'44"
C2	2509.02'	37.09'	37.09'	S22°30'02"W	0°50'49"
C3	25.00'	40.53'	36.24'	S24°22'09"E	92°53'33"
C4	25.00'	39.12'	35.25'	S64°21'42"W	89°38'45"
C5	2509.02'	244.88'	244.79'	S16°44'33"W	5°35'32"
C6	55.00'	175.80'	109.96'	N45°33'17"E	183°08'06"
C7	2520.00'	19.07'	19.07'	N00°46'18"E	0°26'01"
C8	1470.40'	103.83'	103.80'	N02°10'07"E	4°02'44"
C9	1049.98'	74.14'	74.12'	N04°11'29"E	4°02'44"
C10	2509.02'	32.06'	32.06'	N06°59'18"E	0°43'56"
C11	2509.02'	142.57'	142.55'	N08°58'56"E	3°15'21"
C12	2509.02'	146.10'	146.08'	N12°16'42"E	3°20'11"
C13	55.00'	175.80'	109.96'	S44°26'43"E	183°08'06"
C14	1466.76'	48.89'	48.88'	S18°58'42"W	1°54'35"
C15	2695.38'	150.93'	150.91'	S16°50'03"W	3°12'30"
C16	2684.24'	164.79'	164.76'	S13°28'08"W	3°31'03"
C17	672.52'	25.07'	25.07'	N11°26'35"E	2°08'10"
C18	2685.11'	111.20'	111.19'	S09°59'21"W	2°22'22"
C19	2685.13'	215.07'	215.01'	S06°30'29"W	4°35'21"
C20	25.00'	37.67'	34.21'	S47°23'03"W	86°20'29"
C21	25.00'	39.27'	35.36'	N44°26'43"W	90°00'00"
C22	25.00'	39.27'	35.36'	S45°33'17"W	90°00'00"
C23	25.00'	39.27'	35.36'	S44°26'43"E	90°00'00"
C24	25.00'	39.27'	35.36'	N45°33'17"E	90°00'00"
C25	25.00'	39.27'	35.36'	N44°26'43"W	90°00'00"
C26	25.00'	20.32'	19.76'	S22°43'44"E	46°34'03"
C27	25.00'	20.32'	19.76'	N66°09'41"W	46°34'03"
C28	25.00'	20.32'	19.76'	S67°16'16"W	46°34'03"
C29	25.00'	20.32'	19.76'	N23°50'19"E	46°34'03"
C30	480.00'	548.39'	519.05'	S32°10'30"E	65°27'34"
C31	540.00'	621.81'	588.02'	N32°25'59"W	65°58'33"
C32	55.00'	42.89'	41.81'	S24°46'56"W	44°40'49"
C33	55.00'	35.00'	34.42'	S15°47'27"E	36°27'57"
C34	55.00'	35.00'	34.42'	S52°15'24"E	36°27'57"
C35	55.00'	62.90'	59.53'	N76°44'56"E	65°31'23"
C36	25.00'	9.38'	9.32'	N54°44'02"E	21°29'36"
C37	25.00'	10.94'	10.85'	N78°01'04"E	25°04'27"
C38	25.00'	10.94'	10.85'	S76°54'29"E	25°04'27"
C39	25.00'	9.38'	9.32'	S53°37'28"E	21°29'36"
C40	55.00'	61.68'	58.50'	S75°00'15"E	64°15'10"
C41	55.00'	50.00'	48.30'	N46°49'31"E	52°05'19"
C42	55.00'	50.00'	48.30'	N05°15'48"W	52°05'19"
C43	55.00'	14.12'	14.08'	N38°39'37"W	14°42'18"
C44	540.00'	182.69'	181.82'	S55°43'44"E	19°23'03"
C45	540.00'	254.88'	252.52'	S32°30'54"E	27°02'37"
C46	540.00'	105.44'	105.28'	S13°23'57"E	11°11'17"
C47	540.00'	78.79'	78.72'	S03°37'31"E	8°21'36"
C48	480.00'	402.76'	391.04'	S40°52'01"E	48°04'31"
C49	480.00'	137.02'	136.55'	S08°39'06"E	16°21'19"
C50	2695.38'	15.90'	15.90'	N18°16'09"E	0°20'17"
C51	2695.38'	135.02'	135.01'	N16°39'54"E	2°52'13"
C52	2684.24'	135.01'	135.00'	S13°47'12"W	2°52'55"
C53	2684.24'	29.77'	29.77'	N12°01'41"E	0°38'08"
C54	2685.11'	80.17'	80.17'	S10°19'13"W	1°42'39"
C55	2685.11'	31.03'	31.03'	S09°08'01"W	0°39'44"
C56	2685.13'	103.07'	103.06'	S07°42'11"W	2°11'57"
C57	2685.13'	112.01'	112.00'	N05°24'30"E	2°23'24"
C58	1470.40'	74.65'	74.65'	N01°36'01"E	2°54'32"
C59	1470.40'	29.17'	29.17'	S03°37'23"W	1°08'12"
C60	480.00'	8.62'	8.62'	S00°02'26"W	1°01'43"
C61	565.00'	62.66'	62.63'	S49°50'10"E	6°21'15"
C62	565.00'	122.36'	122.12'	S59°13'02"E	12°24'29"
C63	2704.25'	13.27'	13.27'	S11°57'23"W	00°16'52"
C64	2705.11'	10.36'	10.36'	S10°36'46"W	00°13'10"
C65	565.00'	20.00'	20.00'	N41°52'18"W	02°02'47"

LOT TABLE

BLOCK "1"		
LOT #	SQUARE FEET	ACRES
1	33,733	0.77
2	36,169	0.83
3	47,464	1.09
4	47,677	1.09
5	32,799	0.75
6	33,120	0.76
7	32,538	0.75
8	32,577	0.75
9	34,696	0.80
10	32,528	0.75
11	5,309	0.12
BLOCK "2"		
LOT #	SQUARE FEET	ACRES
1	32,866	0.75
2	33,000	0.76
3	32,866	0.75
4	32,866	0.75
5	33,000	0.76
6	32,866	0.75
BLOCK "3"		
LOT #	SQUARE FEET	ACRES
1	49,054	1.13
2	36,678	0.84
3	37,656	0.86
4	37,593	0.86
5	37,530	0.86
6	37,467	0.86
7	37,404	0.86
8	32,463	0.75
9	32,502	0.75
10	39,631	0.91
11	38,132	0.88
12	45,305	1.04
13	44,848	1.03
14	44,179	1.01
15	44,179	1.01
16	51,785	1.19
17	42,700	0.98
18	42,696	0.98
19	42,645	0.98
20	42,832	0.98
21	41,906	0.96
22	32,702	0.75
23	32,745	0.75
STREET AREA		
	SQUARE FEET	ACRES
	260,495	5.98
TOTAL		
	SQUARE FEET	ACRES
	1,751,039	40.20

Civil & Environmental Consultants, Inc.
3711 South MoPac Expressway · Building 1, Suite 550 · Austin, TX 78746
Ph: 512.439.0400 · Fax: 512.329.0096
Texas Registered Surveying Firm 10194419 www.cecinc.com Texas Registered Engineering Firm F-38

"FINAL PLAT" OF BUNKER RANCH PHASE 3, BLOCK "1", LOTS 1–11, BLOCK "2", LOTS 1–6 AND BLOCK "3", LOTS 1–23, WITHIN THE CITY OF DRIPPING SPRINGS, TEXAS

APPROVED BY: FWF
JOB NUMBER: 181–500 ISSUE DATE: 01/21/2021
SHEET: 2 OF 3
SUBMITTAL DATE: 12/14/2020

FINAL PLAT OF
BUNKER RANCH PHASE 3
40.20 ACRES

OWNER'S ACKNOWLEDGEMENT

STATE OF TEXAS §
COUNTY OF TRAVIS §

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, BUNKER RANCH, LLC, OWNERS OF 43.18 ACRES OF LAND, 58.616 ACRES OF LAND, AND 111.67 ACRES OF LAND OUT OF THE BENJAMIN F. HANNA SURVEY NO. 28, ABSTRACT NO. 222, SAID 43.18 ACRES CONVEYED TO US BY DEED RECORDED IN DOCUMENT NO. 16020929, SAID 58.616 ACRES CONVEYED TO US BY DEED RECORDED IN DOCUMENT NO. 16020930, AND SAID 111.67 ACRES CONVEYED TO US BY DEED RECORDED IN DOCUMENT NO. 16020931, ALL OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, DO HEREBY SUBDIVIDE 40.20 ACRES OF LAND TO BE KNOWN AS BUNKER RANCH PHASE 3 IN ACCORDANCE WITH THE PLAT SHOWN HEREON, SUBJECT TO ANY AND ALL EASEMENTS OR RESTRICTIONS HERETOFORE GRANTED, AND DO HEREBY DEDICATE THE STREETS DESIGNATED HEREON AS PUBLIC ROAD TO THE PUBLIC AND WILL CONVEY THE STREETS DESIGNATED HEREON AS PRIVATE AS WELL AS THE WATER QUALITY LOTS AND PRIVATE PARK LOTS TO THE HOMEOWNERS ASSOCIATION.

IN WITNESS WHEREOF THE SAID BUNKER RANCH, LLC, HAS CAUSED THESE PRESENTS TO BE EXECUTED BY ITS DULY AUTHORIZED OFFICER

WITNESS MY HAND THIS THE 28 DAY OF January A.D. 2021

BUNKER RANCH, LLC
6836 BEE CAVES RD.
BUILDING 3, SUITE 302
AUSTIN, TX 78746

STATE OF TEXAS §
COUNTY OF §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND THE STATE, ON THIS DAY PERSONALLY APPEARED Steve Harren, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THE HE/SHE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE 28 DAY OF January A.D 2021.

NOTARY PUBLIC, IN AND FOR

THERESA M HAGOOD
Notary ID #130023142
My Commission Expires
November 12, 2022

MY COMMISSION EXPIRES: 11/12/2022

ENGINEERING AND PUBLIC WORKS DEPARTMENT
NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO AN INDIVIDUAL WATER SUPPLY OR A STATE APPROVED COMMUNITY WATER SYSTEM. NO STRUCTURE IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A PUBLIC SANITARY SEWER SYSTEM OR TO AN INDIVIDUAL ON-SITE SEWAGE FACILITY WHICH HAS BEEN APPROVED AND PERMITTED BY THE CITY OF DRIPPING SPRINGS ENGINEERING AND PUBLIC WORKS DEPARTMENT.

NO CONSTRUCTION OR OTHER DEVELOPMENT WITHIN THIS SUBDIVISION MAY BEGIN UNTIL ALL CITY OF DRIPPING SPRINGS DEVELOPMENT PERMIT REQUIREMENTS HAVE BEEN MET.

CHAD CULPIN 2-4-21
CITY ENGINEER DATE

PLAT NOTES:

1. THIS FINAL PLAT IS LOCATED WITHIN THE CITY OF DRIPPING SPRINGS CITY LIMITS.
2. NO PORTION OF THIS PLAT LIES WITHIN THE BOUNDARIES OF THE EDWARDS AQUIFER RECHARGE ZONE.
3. THIS PLAT LIES WITHIN THE BOUNDARIES OF THE CONTRIBUTING ZONE OF THE EDWARDS AQUIFER.
4. THIS PLAT IS LOCATED WITHIN THE DRIPPING SPRINGS INDEPENDENT SCHOOL DISTRICT.
5. ACCESS TO AND FROM CORNER LOTS SHALL ONLY BE PERMITTED FROM ONE STREET.
6. THE PROPERTY IS LOCATED WITHIN ZONE "X", AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FEDERAL INSURANCE RATE MAP. PANEL NOS. 48209C0085F & 48209C0105F, HAYS COUNTY, TEXAS DATED SEPTEMBER 2, 2005. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.
7. WATER SERVICE WILL BE PROVIDED TO EACH LOT FROM THE DRIPPING SPRINGS WATER SUPPLY CORPORATION.
8. WASTEWATER SERVICE WILL BE PROVIDED BY EACH LOT THROUGH USE OF O.S.S.F. PER CITY OF DRIPPING SPRINGS REGULATIONS.
9. ELECTRIC SERVICE WILL BE PROVIDED BY THE PEDERNALES ELECTRIC COOPERATIVE.
10. TELEPHONE SERVICE WILL BE PROVIDED BY AT&T.
11. GAS SERVICE TO BE PROVIDED BY TEXAS GAS.
12. ALL SETBACKS SHALL COMPLY WITH THE ZONING ORDINANCE.
13. UTILITY EASEMENTS OF 20 FEET SHALL BE LOCATED ALONG EACH SIDE OF DEDICATED R.O.W. AND 5' ALONG EACH SIDE LOT LINE.
14. ALL STREETS SHALL BE DESIGNED AS IN ACCORDANCE WITH APPLICABLE CITY OF DRIPPING SPRINGS AND HAYS COUNTY DEVELOPMENT REGULATIONS.
15. NO STRUCTURE SHALL BE OCCUPIED UNTIL A CERTIFICATE OF OCCUPANCY IS ISSUED BY THE CITY OF DRIPPING SPRINGS.
16. ANY DEVELOPMENT WITHIN A WQBZ ALLOWED UNDER SEC. 22.05.017(d) OF THE CITY WATER QUALITY ORDINANCE SHALL BE DESIGNED AND/OR CONDUCTED IN A MANNER WHICH LIMITS THE ALTERATION AND POLLUTION OF THE NATURAL RIPARIAN CORRIDOR TO THE MAXIMUM EXTENT FEASIBLE. IN NO CASE SHALL ANY WASTEWATER LINE BE LOCATED LESS THAN 100 FEET FROM THE CENTERLINE OF A STREAM UNLESS THE APPLICANT HAS DEMONSTRATED THAT INSTALLATION OF THE WASTEWATER LINE OUTSIDE OF THIS ZONE IS PHYSICALLY PROHIBITIVE OR ENVIRONMENTALLY UNSOUND. ANY WASTEWATER LINES LOCATED IN A WQBZ SHALL MEET DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS TO ENSURE ZERO LEAKAGE.
17. DRIVEWAYS SHALL BE PERMITTED BY THE CITY AND ALL REQUIRED CULVERTS MUST BE NO LESS THAN 18" CMP.
18. CITY IS AUTHORIZED TO ACCESS THE PRIVATE STREETS, EASEMENTS, ETC., FOR INSPECTION CODE COMPLIANCE, AND WASTEWATER MAINTENANCE AS NEEDED AND HAYS COUNTY EMERGENCY SERVICE DISTRICT #6 IS AUTHORIZED TO ACCESS THE PRIVATE STREETS FOR EMERGENCY ACCESS. BUNKER RANCH HOA TO PROVIDE CITY AND HAYS COUNTY EMERGENCY SERVICE DISTRICT #6 WITH GATE ACCESS CODE.
19. THE BUNKER RANCH HOA, WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL PRIVATE ROADS, WATER QUALITY LOTS, PRIVATE PARKS, AND TRAILS.
20. THIS PLAT AND SUBSEQUENT SITE DEVELOPMENT PLANS SHALL COMPLY WITH THE MOST CURRENT INTERNATIONAL FIRE CODE AS ADOPTED AND AMENDED BY THE EMERGENCY SERVICE DISTRICT #6, OR ITS SUCCESSORS.
21. THE BUNKER RANCH HOA WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF STORMWATER FACILITIES AND EASEMENT.

SURVEY CONTROL:

THE BASIS OF BEARINGS SHOWN HEREON IS THE TEXAS COORDINATE SYSTEM, NAD 83(2012A), SOUTH CENTRAL ZONE, REFERENCING THE LEICA SMARTNET CONTINUALLY OPERATING REFERENCE NETWORK.

ENGINEER'S CERTIFICATION

THIS IS TO CERTIFY THAT: I AM AUTHORIZED TO PRACTICE THE PROFESSION OF ENGINEERING IN THE STATE OF TEXAS; I AM RESPONSIBLE FOR THE PREPARATION OF THE ENGINEERING PORTION THE PLAT SUBMITTED HEREWITH; ALL ENGINEERING INFORMATION SHOWN ON THE PLAT IS ACCURATE AND CORRECT; AND WITH REGARD TO THE ENGINEERING PORTIONS THEREOF, THE PLAT COMPLIES CITY OF DRIPPING SPRINGS CODE, AS AMENDED, AND ALL OTHER APPLICABLE CITY AND HAYS COUNTY CODES, ORDINANCES AND RULES,

1-28-21

BRIAN ESTES DATE
P.E. NO. 89270
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
3711 S. MOPAC EXPRESSWAY, STE. 550
AUSTIN, TX 78746

STATE OF TEXAS
BRIAN ESTES
89270
LICENSED
PROFESSIONAL ENGINEER

NO PORTION OF THIS TRACT IS WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) #48209C0085F, HAYS COUNTY, TEXAS, DATED SEPTEMBER 2, 2005.

SURVEYOR'S CERTIFICATION

THIS IS TO CERTIFY THAT: I AM AUTHORIZED TO PRACTICE THE PROFESSION OF SURVEYING IN THE STATE OF TEXAS; I AM RESPONSIBLE FOR THE PREPARATION OF THE SURVEYING PORTIONS OF THE PLAT SUBMITTED HEREWITH; ALL SURVEYING INFORMATION SHOWN ON THE PLAT IS ACCURATE AND CORRECT; AND WITH REGARD TO THE SURVEYING PORTIONS THEREOF, THE PLAT COMPLIES WITH CITY OF DRIPPING SPRINGS CODE, AS AMENDED, AND ALL OTHER APPLICABLE CITY AND HAYS COUNTY CODES, ORDINANCES AND RULES.

1/27/2021

FRANK WILLIAM FUNK DATE
R.P.L.S. NO. 6803
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
3711 S. MOPAC EXPRESSWAY, STE. 550
AUSTIN, TX 78746

STATE OF TEXAS
REGISTERED
FRANK WILLIAM FUNK
6803
PROFESSIONAL
LAND SURVEYOR

STATE OF TEXAS
COUNTY OF HAYS

I, ELAINE H. CARDENAS, COUNTY CLERK OF HAYS COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE 1st DAY OF March 2021 A.D., AT 12:47 P.M. IN THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS, IN INSTRUMENT NO. 21009701

WITNESS MY SEAL OF OFFICE, THIS THE 1st DAY OF March, 2021, A.D.

Elaine H. Cardenas by Sue Holton, Deputy
ELAINE H. CARDENAS
COUNTY CLERK
HAYS COUNTY, TEXAS

COUNTY OF HAYS TEXAS

STATE OF TEXAS}
COUNTY OF HAYS}
CITY OF DRIPPING SPRINGS}

THIS PLAT, BUNKER RANCH, PHASE 3, HAS BEEN SUBMITTED TO AND CONSIDERED BY THE CITY OF DRIPPING SPRINGS AND IS HEREBY APPROVED.

APPROVED THIS THE 26 DAY OF January 2021.

BY:

PLANNING & ZONING COMMISSION CHAIR OR VICE CHAIR,
ATTEST:

ANDREA CUNNINGHAM, CITY SECRETARY
Andrea Cunningham

City of Dripping Springs
TEXAS
Inc. 1981

Civil & Environmental Consultants, Inc.
3711 South MoPac Expressway · Building 1, Suite 550 · Austin, TX 78746
Ph: 512.439.0400 · Fax: 512.329.0096
Texas Registered Surveying Firm 10194419 www.cecinc.com Texas Registered Engineering Firm F-38

"FINAL PLAT" OF BUNKER RANCH PHASE 3, BLOCK "1", LOTS 1-11, BLOCK "2", LOTS 1-6 AND BLOCK "3", LOTS 1-23, WITHIN THE CITY OF DRIPPING SPRINGS, TEXAS

APPROVED BY:	
FWF	
JOB NUMBER:	ISSUE DATE:
181-500	01/21/2021
SHEET:	
3 OF 3	
SUBMITTAL DATE:	
12/14/2020	

Exhibit 5

JUNE 9, 2021

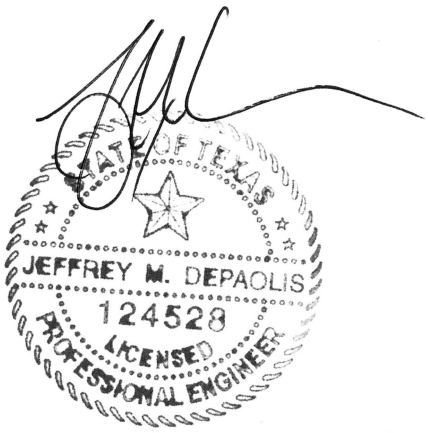
REVISED TRAFFIC IMPACT ANALYSIS FOR THE PROPOSED BUNKER RANCH SUBDIVISION EXPANSION

US 290 and
Bunker Ranch Boulevard

City of Dripping Springs
Hays County, Texas

Prepared for:

The Overlook at Bunker Ranch, LLC
Mr. Steve Harren
317 Grace Lane #240
Austin, Texas 78746
(512) 644-6800



Prepared by:

Civil & Environmental Consultants, Inc.
Mr. Jeffrey M. DePaolis, P.E., PTOE
333 Baldwin Road
Pittsburgh, Pennsylvania 15205
(412) 429-2324

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FOR THE PROPOSED
BUNKER RANCH SUBDIVISION EXPANSION
City of Dripping Springs, Hays County, Texas

EXECUTIVE SUMMARY

General Overview of the Development

- The Bunker Ranch subdivision is located south of US 290, at its intersection with Bunker Ranch Boulevard, in the City of Dripping Springs, Hays County, Texas.
- The Bunker Ranch subdivision was previously approved to include 160 single family units and 42 condominium units. At the time of the data collection for this project, 58 single family units and six (6) condominium units have been constructed and occupied.
- The proposed expansion will include the construction of an additional 228 single family units (388 total single family units).
- Access to the Bunker Ranch subdivision is provided via Bunker Ranch Boulevard at its intersection with US 290. No changes to the site access are planned with the expansion.
- Traffic Impact Analysis revised in order to address review comments received from the traffic engineering consultant for the City of Dripping Springs (HDR Engineering, Inc.) dated June 3, 2021.

Study Intersection

- US 290 with Bunker Ranch Boulevard (existing unsignalized);
- US 290 with Arrowhead Ranch Boulevard (existing unsignalized); and
- US 290 with Springs Lane (existing unsignalized).

Trip Generation and Distribution

- Trip generation of the proposed Bunker Ranch subdivision was determined using rates and formulae contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation*, Tenth Edition, 2017:
  - Land Use Code 210, *Single-Family Detached Housing*, was used to determine the trip generation of the proposed 228 additional single family units.
- Estimated Trip Generation for the proposed development:

  AM Peak Hour: 40 Entering / 122 Exiting / 162 Total

  PM Peak Hour: 134 Entering / 79 Exiting / 213 Total
- Trip distribution provided by the City of Dripping Springs indicates 80% / 20% distribution with the majority of trips originating from or destined to the east of the site along US 290.

Mitigation Measures to be Constructed Concurrent with Development

- No mitigation measures recommended for the Bunker Ranch development expansion.

REVISED TRAFFIC IMPACT ANALYSIS
FOR THE PROPOSED
BUNKER RANCH SUBDIVISION EXPANSION
City of Dripping Springs, Hays County, Texas

Civil & Environmental Consultants (CEC) has completed this Revised Traffic Impact Analysis for the construction of the proposed expansion of the Bunker Ranch subdivision, which is located south of US 290, at its intersection with Bunker Ranch Boulevard, in the City of Dripping Springs, Hays County, Texas.

This Traffic Impact Analysis has been revised in order to address review comments received from the traffic engineering consultant for the City of Dripping Springs, HDR Engineering Inc., dated June 3, 2021.

The following sections of this report contain a project description, data collection, site traffic generation and distribution, projected traffic volumes, analysis, and conclusions and recommendations.

PROJECT DESCRIPTION/DATA COLLECTION/EXISTING ROADWAY DESCRIPTION

PROJECT DESCRIPTION

As shown in Figure 1, the Bunker Ranch subdivision is located south of US 290, at its intersection with Bunker Ranch Boulevard, in the City of Dripping Springs, Hays County, Texas.

The Bunker Ranch subdivision was previously approved to include 160 single family units and 42 condominium units. At the time data collection was performed for this project, 58 single family units and six (6) condominium units had been constructed and occupied. The proposed expansion will include the construction of an additional 228 single family units, for a total of 388 single family units following the proposed expansion.

A copy of the site plan for the proposed Bunker Ranch subdivision has been included with this report as Figure 2.

In accordance with a scope of study developed by the representatives of the City of Dripping Springs and provided to CEC via an email dated March 31, 2021, the following intersections were selected for study:

- US 290 with Bunker Ranch Boulevard (existing unsignalized);
- US 290 with Arrowhead Ranch Boulevard (existing unsignalized); and
- US 290 with Springs Lane (existing unsignalized).

A total of three (3) existing intersections were included in the scope of the study. A copy of the completed City of Dripping Springs/Texas Department of Transportation Traffic Impact Analysis

Scope and Study Area form provided by the City of Dripping Springs has been included in Appendix A to this report.

The study intersections with respect to the site are illustrated in Figure 3.

DATA COLLECTION

Manual turning movement counts were performed at the existing study intersections on Tuesday, April 20, 2021 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. These time periods were assumed to include the weekday AM and weekday PM peak hours of vehicular activity for the study area. Summaries of the data collected during the turning movement counts at the study intersections have been included in Appendix C to this report.

The overall peak hours determined from these counts are as follows:

- AM Peak Hour – 8:00 AM – 9:00 AM
- PM Peak Hour – 4:30 PM – 5:30 PM

The results of the turning movement counts are presented in Figure 4.

However, as a result of measures put in place to prevent the spread of COVID-19 including stay at home orders, canceling of events and public gatherings, business closures, university and school closures, increased telecommuting, and increased jobless numbers, traffic volumes observed at the time the turning movement counts were conducted collected may be lower than under pre-COVID conditions in some locations. Therefore, at the request of the City of Dripping Springs, historic traffic count data during pre-COVID conditions was reviewed in order to determine if an adjustment factor is necessary to account for variations in traffic volumes due to the COVID-19 pandemic.

Pre-COVID 24-hour traffic volumes collected in January 2018 along US 290, west of Bell Springs Road, were provided by the City of Dripping Springs. According to this count data, the Average Daily Traffic (ADT) along US 290, west of Bell Springs Road, was 14,959 vehicles per day in 2018.

In order to project current year, 2021, traffic volumes, CEC calculated a background traffic growth rate for the study area. This growth rate was calculated based on Average Annual Daily Traffic (AADT) volume data obtained from the TXDOT Traffic Count Database System (TCDS). The data includes the five (5) most recent years of AADT count data available for three (3) count stations along US 290. Based on this count data, a background traffic growth rate of 2.44 percent per year, linear was calculated. This background traffic growth rate was approved by the City of Dripping Springs Traffic Consultant, HDR Inc., on April 30, 2021. Detailed background traffic growth rate calculations are provided in Appendix B to this report.

The background traffic growth rate of 2.44 percent per year, linear, was then applied to the 2018 ADT volumes provided by the City of Dripping Springs in order to depict existing 2021 24-hour

ADT traffic volumes along US 290, west of Bell Springs Road. The resultant 2021 ADT traffic volumes for US 290, west of Bell Springs Road, was estimated to be 16,054 vehicles per day.

An Automatic Traffic Recorder (ATR) was installed along US 290, west of Bell Springs Road, for 48-continuous hours on Tuesday, April 20, 2021 and Wednesday, April 21, 2021. Based on the data collected using the ATR, the average ADT for this location along US 290 was identified to be approximately 20,717 vehicles per day. This reflects an increase of 4,663 vehicles per day when compared to the ADT data provided by the City of Dripping Springs, grown to estimate existing 2021 conditions. As a result, it is CEC's opinion that traffic volumes within the study area do not require an adjustment factor to account for COVID-19. This evaluation was provided to and approved by the City of Dripping Spring's Traffic Consultant, HDR Inc., in a virtual meeting held on April 3, 2021.

Traffic volume comparisons to evaluate COVID-19 traffic conditions are provided in Appendix D to this report.

EXISTING CONDITIONS

A field reconnaissance of the study area was conducted by CEC to obtain information such as roadway widths, roadway grades, and posted speed limits within the environs of the study intersection. A description of the study roadways is as follows:

US 290 – Within the study area, US 290 is a State-maintained, principal arterial roadway providing a five (5) lane, 63-foot wide improved surface with a 15 foot wide center two-way left turn lane and five (5) foot-wide paved shoulders.

At its intersection with Bunker Ranch Boulevard, US 290 provides a three (3) lane approach for eastbound traffic (two (2) exclusive through lanes and an exclusive right turn lane) and a three (3) lane approach for westbound traffic (left turns from the center, two-way left turn lane and two (2) exclusive through lanes). The intersection is controlled by a Stop sign on the Bunker Ranch Boulevard approach to US 290.

At its intersection with Arrowhead Ranch Boulevard/Dripping Springs Independent School District (DSISD) Transportation Department driveway, US 290 provides a four (4) lane approach for eastbound traffic (left turns from the center, two-way left turn lane, two (2) exclusive through lanes and an exclusive right turn lane) and a three (3) lane approach for westbound traffic (left turns from the center, two-way left turn lane, an exclusive through lane, and a shared through/right turn lane). The intersection is controlled by a Stop sign on the Arrowhead Ranch Boulevard driveway approach to US 290. Although there is no Stop sign on the DSISD Transportation Department driveway approach to US 290, it is assumed that this minor street approach to US 290 is intended to stop prior to entering US 290.

At its intersection with Springs Lane, US 290 provides a three (3) lane approach for eastbound traffic (left turns from the center, two-way left turn lane and two (2) exclusive through lanes) and a two (2) lane approach for westbound traffic (an exclusive through lane and a shared through/right turn lane). The intersection is controlled by a Stop sign on the Springs Lane approach to US 290.

The posted speed limit of US 290 is 60 miles per hour west of Arrowhead Ranch Boulevard and 50 miles per hour east of Arrowhead Ranch Boulevard.

Bunker Ranch Boulevard – At its intersection with US 290, Bunker Ranch Boulevard is a privately-maintained roadway, providing a 20-foot wide lane for ingress traffic and a 20-foot wide lane for egress traffic, separated by a 20-foot wide median. Bunker Ranch Boulevard provides a one (1) lane approach to US 290 for northbound traffic. The posted speed limit on Bunker Ranch Boulevard is 25 mph.

Arrowhead Ranch Boulevard – At its intersection with US 290, Arrowhead Ranch Boulevard is a privately-maintained roadway providing a 24-foot wide lane for ingress traffic and a 24-foot wide lane for egress traffic, separated by a eight (8) foot wide median. Arrowhead Ranch Boulevard provides a one (1) lane approach to US 290 for northbound traffic. There is no posted speed limit on Arrowhead Ranch Boulevard.

Dripping Springs Independent School District (DSISD) Transportation Department Driveway – At its intersection with US 290, the Dripping Springs Independent School District (DSISD) Transportation Department driveway is a privately-maintained roadway providing a 40-foot wide improved lane with a single lane approach to US 290 for southbound traffic. There is no posted speed limit on the DSISD Transportation Department driveway.

Springs Lane – At its intersection with US 290, Springs Lane is a privately-owned roadway, providing a two (2) lane, 30-foot wide improved surface with a single lane approach to US 290 for southbound traffic. There is no posted speed limit on Springs Lane.

Photographs of each approach to the study intersections are included in Appendix E to this report.

EXISTING 2021 CONDITION CAPACITY ANALYSIS

Capacity calculations were performed for each of the existing study intersections using existing 2021 peak hour traffic volumes and the methodologies published by the Transportation Research Board in their *Highway Capacity Manual*, Sixth Edition, 2017. This methodology determines how well an intersection, approach to an intersection, or movement at an intersection operates, and assigns to it a Level of Service (LOS) A through F, with LOS A representing the best operating conditions and LOS F, the worst. Detailed definitions of LOS have been included in Appendix F to this report.

The results of the capacity calculations performed using existing 2021 peak hour traffic volumes and conditions at the existing study intersections are presented in Figure 5 for the weekday AM and weekday PM peak hours. LOS, delay, and volume to capacity ratios for each approach to each study intersection are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

The results of the capacity calculations performed using existing 2021 condition traffic volumes revealed that each of the existing study intersections currently operates at an overall intersection Level of Service A during both the weekday AM and weekday PM peak hours, with all movements

at the study intersections operating at a Level of Service C or better, with the exception of the DSISD Transportation Department driveway approach to US 290, which currently operates at a LOS D during the weekday AM peak hour and a LOS E during the weekday PM peak hour. Copies of the capacity calculations performed using existing 2021 peak hour traffic volumes and conditions at the existing study intersections are included in Appendix G to this report.

FORECASTED 2025 NO-BUILD (BASE) TRAFFIC VOLUMES

The proposed Bunker Ranch subdivision expansion is anticipated to be completed and fully occupied in 2025. Therefore, traffic volumes were projected for the study intersections for forecasted 2025 conditions.

Forecasted 2025 background traffic volumes for the weekday AM and weekday PM peak hours were determined by applying the aforementioned background traffic growth rate of 2.44 percent per year, linear, to the existing 2021 peak hour traffic volumes (Figure 4). The resultant forecasted 2025 background weekday AM and weekday PM peak hour traffic volumes are presented in Figure 6.

As previously discussed, the Bunker Ranch subdivision was previously approved to include 160 single family units and 42 condominium units but, at the time data collection was performed for this project, 58 single family units and six (6) condominium units had been constructed and occupied. Therefore, the anticipated weekday AM and PM peak hour trips to be generated by the 102 single family units and 36 condominium units that have been approved but not yet constructed or occupied have been included in the within the approved no-build (base) condition traffic volumes.

Vehicular trip generation of the 102 single family units and 36 condominium units that have been approved but not yet constructed or occupied was projected based upon data published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, Tenth Edition, 2017. Land Use Code 210, *Single-Family Detached Housing*, was used to estimate the trip generation for the 102 single family units and Land Use Code 220, *Multifamily Low-Rise*, was used to estimate the trip generation for the 36 multi-family condo units.

Using this methodology, the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision can be anticipated to generate a total of 90 trips during the weekday AM peak hour (22 trips entering and 68 trips exiting) and a total of 122 trips during the weekday PM peak hour (77 trips entering and 45 trips exiting). Copies of the trip generation calculations performed in order to estimate the anticipated trip generation of the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision are included in Appendix H to this report.

The forecasted trips to be generated by the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision were distributed onto the study roadways and through the study intersections based on an arrival/departure distribution provided by the Traffic Engineering Consultant for the City of Dripping Springs. According to this information, 80 percent of primary trips within the study area are anticipated to originate from and be destined to

the east along US 290 and the remaining 20 percent of primary trips are anticipated to originate from and be destined to the west along US 290. The anticipated distribution of the forecasted trips to be generated by the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision is presented in Figure 7.

The anticipated trips to be added to the study intersections by the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision during the weekday AM and weekday PM peak hours are presented in Figure 8.

Similarly, it is understood that approximately 181 of the 403 residential units that have been approved as part of the Arrowhead Ranch residential development have been constructed and are occupied. Therefore, the anticipated weekday AM and PM peak hour trips to be generated by the 222 single family units that have been approved but not yet constructed or occupied have been included in the within the approved no-build (base) condition traffic volumes.

Vehicular trip generation of the 222 single family units that have been approved but not yet constructed or occupied was projected based upon data published by the aforementioned *Trip Generation*. Land Use Code 210, *Single-Family Detached Housing*, was used to estimate the trip generation for the 222 single family units.

Using this methodology, the approved but not constructed or occupied residential units within the Arrowhead Ranch residential development can be anticipated to generate a total of 158 trips during the weekday AM peak hour (40 trips entering and 118 trips exiting) and a total of 207 trips during the weekday PM peak hour (131 trips entering and 76 trips exiting).

The forecasted trips to be generated by the approved but not yet constructed or occupied residential units within the Arrowhead Ranch development were distributed onto the study roadways and through the study intersections based on the aforementioned arrival/departure distribution provided by the Traffic Engineering Consultant for the City of Dripping Springs. The anticipated distribution of the forecasted trips to be generated by the approved but not yet constructed or occupied residential units within the Arrowhead Ranch residential development is presented in Figure 9.

In addition, according to representatives of the City of Dripping Springs, a 6,000 SF super convenience store with 10 vehicle fueling positions and a 1,800 SF liquor store are currently planned to be constructed as part of the Arrowhead Ranch development. It is CEC's understanding that these commercial developments have not submitted a TIA and are not currently approved by the City of Dripping Springs. However, the City of Dripping Springs has requested that the anticipated trips to be generated by these planned commercial developments be included in the background traffic projections.

The City of Dripping Springs provided a conceptual site plan for these planned Arrowhead Ranch commercial developments. Based on the site plan provided, access to these commercial developments is proposed via a new site access driveway to US 290, the centerline of which is shown to be located approximately 320 feet west of the centerline of Arrowhead Ranch Boulevard, that will be restricted to right turns in/right turns out only. A second, full-movement driveway to

Arrowhead Ranch Boulevard is also planned to provide access to these commercial developments. A copy of the conceptual site plan for the planned Arrowhead Ranch commercial developments is included in Appendix I to this report.

Vehicular trip generation for the planned Arrowhead Ranch commercial developments was projected based upon data published in the aforementioned *Trip Generation*. Land Use Code 960, *Super Convenience Market/Gas Station*, was used to estimate the trip generation for the 6,000 SF super convenience store with 10 vehicle fueling positions. Land Use Code 899, *Liquor Store*, was used to estimate the trip generation for the 1,800 SF liquor store.

Using this methodology, the proposed 6,000 SF super convenience store with 10 vehicle fueling positions can be anticipated to generate a total of 488 trips during the weekday AM peak hour (244 trips entering and 244 trips exiting) and a total of 386 trips during the weekday PM peak hour (193 trips entering and 193 trips exiting). Similarly, the proposed 1,800 SF liquor store can be anticipated to generate a total of eight (8) trips during the weekday AM peak hour (four (4) trips entering and four (4) trips exiting) and a total of 29 trips during the weekday PM peak hour (15 trips entering and 14 trips exiting).

In addition, a portion of the total trips to be generated by the proposed Arrowhead Ranch 6,000 SF super convenience store with 10 vehicle fueling positions can be anticipated to be pass-by trips (those trips that are already traveling the study roadways and will stop at the site as an intermediate stop between their primary origin and their primary destination). The forecasted pass-by trips to be generated by the planned 6,000 SF super convenience store with 10 vehicle fueling positions, as a percentage of the total site trip generation, were estimated using data published by ITE in their *Trip Generation Handbook*, Third Edition, 2017. Land Use Code 960, *Super Convenience Market/Gas Station*, was used to estimate the trip generation for the 6,000 SF super convenience store with 10 vehicle fueling positions. According to this information, a *Super Convenience Market/Gas Station* can be anticipated to generate approximately 76 percent pass-by trips during both the weekday AM and PM peak hours.

Using this methodology, approximately 370 of the 488 trips generated by the planned 6,000 SF super convenience store with 10 vehicle fueling positions during the weekday AM peak hour can be anticipated to be pass-by trips (185 trips entering/185 trips exiting) and approximately 294 of the total 386 trips generated by the planned 6,000 SF super convenience store with 10 vehicle fueling positions during the weekday PM peak hour can be anticipated to be pass-by trips (147 trips entering/147 trips exiting).

The forecasted primary trips to be generated by the planned Arrowhead Ranch commercial developments were distributed onto the study roadways and through the study intersections based on the aforementioned arrival/departure distribution provided by the Traffic Engineering Consultant for the City of Dripping Springs. The anticipated distribution of the forecasted trips to be generated by the planned Arrowhead Ranch commercial developments is presented in Figure 10.

Forecasted pass-by trips to be generated by the planned super convenience store with 10 vehicle fueling positions were distributed through the study intersections based on the existing peak hour

traffic volume distributions along US 290 during each individual peak hours analyzed for both the weekday AM and PM peak hours. The forecasted pass-by trip distribution percentages are presented in Figure 11.

The anticipated trips to be added to the study intersections by the approved but not yet constructed or occupied residential units within the Arrowhead Ranch residential development during the weekday AM and weekday PM peak hours are presented in Figure 12.

The anticipated trips to be added to the study intersections by the planned Arrowhead Ranch liquor store during the weekday AM and weekday PM peak hours are presented in Figure 13.

The forecasted primary trips to be added to the study intersections by the planned Arrowhead Ranch super convenience market/gas station are presented in Figure 14.

The forecasted pass-by trips to be added to the study intersections by the planned Arrowhead Ranch super convenience market/gas station are presented in Figure 15.

The total trips to be added to each of the study intersections by the Arrowhead Ranch development, including both primary and pass-by trips, are presented in Figure 16.

Forecasted 2025 no-build traffic volumes for the weekday AM and weekday PM peak hours were determined by adding anticipated trips to be added to the study intersections by the approved but not yet constructed or occupied residential units within the Bunker Ranch subdivision (Figure 8) and the total trips to be added to each of the study intersections by the Arrowhead Ranch development (Figure 16) to the forecasted 2025 background traffic volumes (Figure 6). The resultant 2025 no-build (base) traffic volumes are presented in Figure 17.

FORECASTED 2025 NO-BUILD (BASE) CONDITION CAPACITY CALCULATIONS

Capacity calculations were performed for each of the study intersections using forecasted 2025 no-build (base) condition traffic volumes during the weekday AM and weekday PM peak hours. The results of the capacity calculations performed using forecasted 2025 no-build (base) condition traffic volumes are presented in Figure 18 for the weekday AM and weekday PM peak hours. LOS, delay, and volume to capacity ratios for each approach to each study intersection are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

The results of the capacity calculations performed using forecasted 2025 no-build (base) condition traffic volumes revealed that the study intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane are anticipated to operate at an overall intersection Level of Service A during the weekday AM and PM peak hours, with all movements at each intersection forecasted to operate at a LOS C or better during each of the peak hours analyzed.

However, the study intersection of US 290 with Arrowhead Ranch Boulevard/DSISD Transportation Department driveway is anticipated to operate at an overall intersection Level of Service F during both the weekday AM and PM peak hours, with both the northbound Arrowhead

Ranch Boulevard and the southbound DSISD Transportation Department driveway approaches to the intersection operating at LOS F during each of the peak hours analyzed.

Copies of the capacity calculations performed using forecasted 2025 no-build (base) traffic volumes and conditions are included in Appendix L to this report.

According to the City of Dripping Springs Code of Ordinances, Chapter 28, Exhibit A, Section 11.11, *"The intersections included within the traffic impact analysis shall be considered adequate to serve the proposed development if existing intersections can accommodate the existing service volume, the service volume of the proposed development, and the service volume of approved but unbuilt developments holding valid, unexpired building permits at level of service "C" or above."* Therefore, because of the forecasted decrease in Level of Service, mitigation measures will need to be considered for the intersection of US 290 with Arrowhead Ranch Boulevard.

Warrants for the installation of traffic signal control were evaluated at the study intersection of US 290 with Arrowhead Ranch Boulevard. These analyses were performed using criteria published in Chapter 4C, Traffic Control Signal Needs Studies, contained in the *Texas Manual on Uniform Traffic Control Devices* (TMUTCD). Specifically Warrant III, the *Peak Hour* warrant, was evaluated. The peak hour signal warrant is anticipated to be satisfied at the intersection of US 290 with Arrowhead Ranch Boulevard under forecasted 2025 no-build (base) conditions during both the weekday AM and weekday PM peak hours. Therefore, traffic signal control is assumed to be necessary for the planned Arrowhead Ranch development and the installation of traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard would be the sole responsibility of the Arrowhead Ranch development.

Copies of the graphs used to verify warrants for the installation of traffic signal control are included in Appendix L to this report.

Therefore, capacity calculations were then performed for the study intersection of US 290 with Arrowhead Ranch Boulevard assuming the installation of a traffic signal at the intersection. The results of these capacity calculations revealed that the intersection of US 290 with Arrowhead Ranch Boulevard could be anticipated to operate at an overall intersection Level of Service C or better during the weekday AM and PM peak hours, with all movements operating at a LOS C or better, following installation of traffic signal control. The anticipated Levels of Service at the intersection of US 290 with Arrowhead Ranch Boulevard, assuming the installation of a traffic signal, are presented in Figure 19 for the weekday AM and weekday PM peak hours. LOS, delay, and volume to capacity ratios for each approach are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

Copies of the capacity calculations performed using forecasted 2025 no-build (base) traffic volumes including mitigations are included in Appendix M to this report.

SITE TRAFFIC GENERATION AND DISTRIBUTION

VEHICULAR TRIP GENERATION

Vehicular trip generation for the proposed Bunker Ranch subdivision expansion was projected based upon data published in the aforementioned *Trip Generation*. Land Use Code 210, *Single-Family Detached Housing*, was used to estimate the trip generation for the proposed 228 Single family units.

Using this methodology, the proposed Bunker Ranch subdivision expansion can be anticipated to generate a total of 162 trips during the weekday AM peak hour (40 trips entering and 122 trips exiting) and a total of 213 trips during the weekday PM peak hour (134 trips entering and 79 trips exiting).

SITE TRAFFIC DISTRIBUTION

As previously detailed, arrival and departure distribution for the proposed Bunker Ranch subdivision expansion was provided by the Traffic Engineering Consultant for the City of Dripping Springs. This trip distribution is summarized in Figure 7.

The forecasted trips to be added to each of the study intersections by the proposed Bunker Ranch subdivision expansion are presented in Figure 20.

FORECASTED 2025 BUILD (WITH DEVELOPMENT) TRAFFIC VOLUMES

The forecasted 2025 build traffic volumes (with development) at each of the study intersections during the weekday AM and weekday PM hours were determined by adding the forecasted trips to be added to the study intersection by the proposed Bunker Ranch subdivision expansion (Figure 20) to the forecasted 2025 no-build (base) traffic volumes (Figure 17). The resultant forecasted 2025 build (with development) traffic volumes are presented in Figure 21.

FORECASTED 2025 BUILD (WITH DEVELOPMENT) CONDITION CAPACITY CALCULATIONS

Capacity calculations were performed for each of the study intersections using forecasted 2025 build (with development) traffic volumes and conditions during the weekday AM and weekday PM peak hours. The results of the capacity calculations performed using forecasted 2025 build (with development) conditions and traffic volumes are presented in Figure 22 for the weekday AM and weekday PM peak hours. LOS, delay, and volume to capacity ratios for each approach are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

The results of the capacity calculations performed using forecasted 2025 build (with development) condition traffic volumes revealed that the study intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane are anticipated to continue to operate at an overall intersection Level of Service A during the weekday AM and PM peak hours, with all movements

at each intersection forecasted to operate at a LOS D or better. Therefore, no mitigation measures are necessary for the intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane following completion of the Bunker Ranch subdivision expansion.

However, similar to the analyses performed for the 2025 no-build (base) conditions, the study intersection of US 290 with Arrowhead Ranch Boulevard is anticipated to operate with an overall intersection Level of Service F during both the weekday AM and PM peak hours, with both the northbound Arrowhead Ranch Boulevard and the southbound DSISD Transportation Department driveway approaches to the intersection operating at LOS F during each of the peak hours analyzed under existing traffic control. As previously detailed, warrants for the installation of traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard are forecasted to be satisfied under forecasted 2025 no-build (base) conditions. Therefore, traffic signal control is assumed to be necessary for the planned Arrowhead Ranch development. Installation of traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard is the sole responsibility of the Arrowhead Ranch development.

Copies of the capacity calculations performed using forecasted 2025 build (with development) traffic volumes are included in Appendix N to this report.

Therefore, capacity calculations were then performed for the study intersection of US 290 with Arrowhead Ranch Boulevard assuming the installation of a traffic signal at the intersection. The results of these capacity calculations revealed that the intersection of US 290 with Arrowhead Ranch Boulevard could be anticipated to operate at an overall intersection Level of Service C or better during the weekday AM and PM peak hours, with all movements operating at a LOS C or better, following installation of traffic signal control. The anticipated Levels of Service at the intersection of US 290 with Arrowhead Ranch Boulevard, assuming the installation of a traffic signal, are presented in Figure 23 for the weekday AM and weekday PM peak hours. LOS, delay, and volume to capacity ratios for each approach are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

Copies of the capacity calculations performed using forecasted 2025 build (with development) traffic volumes including mitigations are included in Appendix O to this report.

ADDITIONAL ANALYSES

SIGNAL WARRANT EVALUATION

As previously discussed, warrants for the installation of traffic signal control at the study intersection of US 290 with Arrowhead Ranch Boulevard are anticipated to be satisfied under forecasted 2025 no-build (base) conditions and are forecasted to continue to be satisfied under forecasted 2025 build (with development) conditions.

According to the City of Dripping Springs Code of Ordinances, Chapter 28, Exhibit A, Section 11.11, *"The intersections included within the traffic impact analysis shall be considered adequate to serve the proposed development if existing intersections can accommodate the existing service volume, the service volume of the proposed development, and the service volume of approved but*

unbuilt developments holding valid, unexpired building permits at level of service "C" or above." Therefore, signal warrant evaluations were not performed for the intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane.

QUEUING ANALYSIS

Traffic volumes at each of the study intersections were used to perform queuing analyses for each approach to each intersection. These queuing analyses were reported as the 95th percentile queue from the average of five (5) runs of SimTraffic Traffic Signal Coordination Software by TrafficWare. The results of these queuing analyses are summarized in Table 1 and Table 2 for the weekday AM and weekday PM peak hours, respectively.

As described under Existing Conditions, a center, two-way left turn lane is provided along US 290 within the study area. SimTraffic Traffic Signal Coordination Software does not account for left turns being made within a center two-way left turn lane. Therefore, in order to accurately model the intersections, the center, two-way left turn lane was treated as an exclusive left turn lane at each of the study intersections.

Based on the results of these queueing analyses, each of the existing auxiliary turn lanes at the study intersections is of sufficient length to accommodate all existing queues, as well as all forecasted 2025 queues, both without and following the proposed Bunker Ranch subdivision expansion.

However it should be noted that the right turn in/right turn out driveway proposed to be constructed as part of the planned Arrowhead Ranch commercial developments will be located in the middle of the taper of the existing eastbound right turn lane on US 290 at its intersection with Arrowhead Ranch Boulevard. Therefore, it is anticipated that the eastbound right turn lane on US 290 will need to be lengthened in order to accommodate the location of the right turn in/right turn out driveway and the increase in traffic volumes associated with the Arrowhead Ranch development.

Copies of the queuing analyses performed for existing 2021, forecasted 2025 no-build (base), forecasted 2025 no-build (base) mitigated, forecasted 2025 build (with development), and forecasted 2025 build (with development) mitigated conditions have been included in Appendix P, Appendix Q, Appendix R, Appendix S and Appendix T to this report, respectively.

STOPPING SIGHT DISTANCE

Stopping sight distance calculations were performed for the US 290 approaches to Arrowhead Ranch Boulevard, as warrants for the installation of traffic signal control at the intersection are anticipated to be satisfied and the installation of a traffic signal is anticipated to be required in order to mitigate the impacts caused by the construction of the proposed Arrowhead Ranch commercial development. Stopping sight distance calculations were completed based on the methodologies presented in the TXDOT *Roadway Design Manual*, July 2020. For analysis purposes, the stopping sight distance required for vehicles approaching a stopped vehicle along US 290 was evaluated

The posted speed limit of US 290 is 60 miles per hour west of Arrowhead Ranch Boulevard and 50 miles per hour east of Arrowhead Ranch Boulevard. Therefore, for analysis purposes, the stopping sight distance calculations were conservatively based on a posted speed limit of 60 miles per hour. According to the TXDOT Roadway Design Manual, Section 3, Table 2-1, the required stopping sight distance for a 60 mph posted speed limit is 570 feet.

The available stopping sight distance for the US 290 approaches to Arrowhead Ranch Boulevard was measured to the location of the projected back of the queues on US 290. Based on the results of the queuing analysis performed, the back of queue on the eastbound US 290 approach to Arrowhead Ranch Boulevard was identified to be approximately 230 feet back from the intersection during the weekday AM peak hour and approximately 196 feet back from the intersection during the weekday PM peak hour. The back of queue on the westbound US 290 approach to Arrowhead Ranch Boulevard was identified to be approximately 170 feet back from the intersection during the weekday AM peak hour and approximately 152 feet back from the intersection during the weekday PM peak hour.

Based on the sight distance measurements performed at the intersection of US 290 with Arrowhead Ranch Boulevard, greater than 1,000 feet of sight distance is available to the back of queue along eastbound US 290 and greater than 1,000 feet of sight distance is available to the back of queue along westbound US 290. Therefore, the available sight distance along US 290 to the back of queue at Arrowhead Ranch Boulevard exceeds the required stopping sight distance for a posted speed limit of 60 miles per hour.

CONCLUSIONS/RECOMMENDATIONS

The study concluded that the construction of the proposed Bunker Ranch Residential Development expansion will have no significant impact on the operation of the study intersections.

Following completion of the proposed Bunker Ranch Residential Development expansion, the study intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane are anticipated to continue to operate at an overall intersection Level of Service A during the weekday AM and PM peak hours, with all movements operating at a LOS D or better.

However, it should be noted that, under both forecasted 2025 no-build (base) and forecasted 2025 build (with development) conditions, the study intersection of US 290 with Arrowhead Ranch Boulevard is anticipated to operate at an overall intersection Level of Service F during both the weekday AM and PM peak hours, with both the northbound Arrowhead Ranch Boulevard and the southbound DSISD Transportation Department driveway approaches to the intersection operating at LOS F during each of the peak hours analyzed. These Failure Levels of Service can be directly attributed to the traffic volumes generated by the planned Arrowhead Ranch commercial developments, including a 1,800 SF liquor store and a 6,000 SF super convenience store with 10 vehicle fueling positions.

Warrants for the installation of traffic signal control are anticipated to be satisfied at the intersection of US 290 with Arrowhead Ranch Boulevard under forecasted 2025 no-build (base)

TABLES

TABLE 1
SUMMARY OF CAPACITY ANALYSIS RESULTS - AM PEAK HOUR
Proposed Bunker Ranch Subdivision Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Intersection/Movement	2021 Existing Conditions					2025 No-Build Conditions					2025 No-Build Mitigated Conditions [5]					2025 Build Conditions					2025 Build Mitigated Conditions [5]				
	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]
US 290 with Bunker Ranch Boulevard																									
Eastbound US 290																									
EB Through	A	0.0	--	0'	1490'	A	0.0	--	0'	1490'	--	--	--	--	--	A	0.0	--	0'	1490'	--	--	--	--	--
EB Right			--	0'	240'			--	0'	240'			--	--	--			--	0'	240'			--	--	--
EB Approach			--	--	--			--	--	--			--	--	--			--	--	--			--	--	--
Westbound US 290																									
WB Left [6]	A	9.4	0.046	36'	150'+	A	9.9	0.075	43'	150'+	--	--	--	--	--	B	10.2	0.123	45'	150'+	--	--	--	--	--
WB Through	A	0.0	--	0'	780'	A	0.0	--	0'	780'	--	--	--	--	--	A	0.0	--	0'	780'	--	--	--	--	--
WB Approach	A	0.6	--	--	--	A	0.9	--	--	--	--	--	--	--	--	A	1.4	--	--	--	--	--	--	--	--
Northbound Bunker Ranch Blvd.																									
NB Approach	B	11.8	0.045	48'	--	B	14.4	0.213	60'	--	--	--	--	--	--	C	20.5	0.517	156'	--	--	--	--	--	--
Overall Intersection	A	0.5	--	--	--	A	1.3	--	--	--	--	--	--	--	--	A	3.3	--	--	--	--	--	--	--	--
US 290 with Arrowhead Ranch Boulevard																									
Eastbound US 290																									
EB Left [6]	A	8.9	0.001	3'	150'+	A	8.7	0.001	0'	150'+	B	16.6	0.00	5'	150'+	A	8.8	0.001	5'	150'+	B	20.0	0.00	4'	150'+
EB Through	A	0.0	--	0'	780'	A	0.0	--	2'	780'	C	23.5	0.78	201'	780'	A	0.0	--	0'	780'	C	32.2	0.85	230'	780'
EB Right	A	0.0	--	0'	250'	A	0.0	--	10'	250'	B	18.0	0.17	58'	250'	A	0.0	--	9'	250'	C	21.5	0.16	59'	250'
EB Approach	A	0.0	--	--	--	A	0.0	--	--	--	C	23.3	--	--	--	A	0.0	--	--	--	C	31.9	--	--	--
Westbound US 290																									
WB Left [6]	A	0.2	0.053	32'	150'	B	11.3	0.296	96'	150'	B	17.5	0.63	132'	150'	B	12.3	0.327	95'	150'	C	27.1	0.74	160'	150'
WB Through	A	0.0	--	0'	440'	A	0.0	--	11'	440'	B	14.8	0.45	150'	440'	A	0.0	--	21'	440'	B	18.2	0.46	170'	440'
WB Right																									
WB Approach	A	0.6	--	--	--	A	3.2	--	--	--	B	15.5	--	--	--	A	3.4	--	--	--	C	20.7	--	--	--
Northbound Arrowhead Ranch Blvd.																									
NB Approach	C	19.6	0.248	68'	--	F	2,413	6.111	358'	--	C	22.9	0.74	318'	--	F	3508.7	8.462	355'	--	C	28.5	0.67	335'	--
Southbound DSISD Driveway																									
SB Approach	D	31.9	0.017	15'	--	F	105.9	0.062	13'	--	B	15.5	0.01	9'	--	F	145.0	0.084	13'	--	B	16.9	0.00	10'	--
Overall Intersection	A	1.3	--	--	--	F	509.9	--	--	--	C	20.1	--	--	--	F	690.3	--	--	--	C	26.8	--	--	--
US 290 with Springs Lane																									
Eastbound US 290																									
EB Left [6]	A	9.1	0.003	11'	150'+	A	9.6	0.003	8'	150'+	--	--	--	--	--	A	9.7	0.003	10'	150'+	--	--	--	--	--
EB Through	A	0.0	--	0'	440'	A	0.0	--	0'	440'	--	--	--	--	--	A	0.0	--	0'	440'	--	--	--	--	--
EB Approach	A	0.0	--	--	--	A	0.0	--	--	--	--	--	--	--	--	A	0.0	--	--	--	--	--	--	--	--
Westbound US 290																									
WB Through	A	0.0	--	0'	490'	A	0.0	--	0'	490'	--	--	--	--	--	A	0.0	--	0'	490'	--	--	--	--	--
WB Right																									
WB Approach			--	--	--			--	--	--			--		--			--	--	--			--	--	--
Southbound Springs Lane																									
SB Approach	C	17.0	0.056	35'	--	C	19.7	0.067	36'	--	--	--	--	--	--	C	20.9	0.072	40'	--	--	--	--	--	--
Overall Intersection	A	0.2	--	--	--	A	0.2	--	--	--	--	--	--	--	--	A	0.2	--	--	--	--	--	--	--	--

(1) Level of service determined through the use of Synchro Traffic Simulation Software, Version 11. All calculations were performed using the methodologies published in Highway Capacity Manual 6th Edition by the Transportation Research Board.

(2) Volume to capacity ration (v/c) were calculated using Synchro Traffic Simulation Software, Version 11. All calculations were performed using the methodologies published in Highway Capacity Manual 6th Edition by the Transportation Research Board.

(3) 95th percentile queue lengths were calculated using SimTraffic Traffic Signal Coordination Software. Results of queueing analysis represent the average of five (5) SimTraffic simulation runs.

(4) Existing queue storage capacity was determined through the use of Google Earth Software and signal plans. All storage lengths were rounded up to the nearest 5 ft. increment.

(5) Results of the capacity analyses performed without mitigations indicate that the intersection of US 290 with Arrowhead Ranch Boulevard is forecasted to operate under LOS F conditions. Therefore, it is anticipated that mitigation measures will need to be constructed by the Arrowhead Ranch development in order to mitigate the projected LOS F conditions. As a result, mitigated conditions for this study represent the anticipated need to install traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard.

TABLE 2
SUMMARY OF CAPACITY ANALYSIS RESULTS - PM PEAK HOUR
Proposed Bunker Ranch Subdivision Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Intersection/Movement	2021 Existing Conditions					2025 No-Build Conditions					2025 No-Build Mitigated Conditions [5]					2025 Build Conditions					2025 Build Mitigated Conditions [5]				
	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]	LOS [1]	Delay [1]	V/C [2]	95th % Queue (ft) [3]	Bay Length (ft) [4]
US 290 with Bunker Ranch Boulevard																									
Eastbound US 290																									
EB Through	A	0.0	--	0'	1490'	A	0.0	--	0'	1490'	--	--	--	--	--	A	0.0	--	0'	1490'	--	--	--	--	--
EB Right			--	0'	240'			--	0'	240'			--	--	--			--	4'	240'			--	--	--
EB Approach			--	--	--			--	--	--			--	--	--			--	--	--			--	--	--
Westbound US 290																									
WB Left [6]	A	9.1	0.016	21'	150'+	A	9.7	0.1	45'	150'+	--	--	--	--	--	B	10.9	0.254	68'	150'+	--	--	--	--	--
WB Through	A	0.0	--	0'	780'	A	0.0	--	0'	780'	--	--	--	--	--	A	0.0	--	0'	780'	--	--	--	--	--
WB Approach	A	0.1	--	--	--	A	0.8	--	--	--	--	--	--	--	--	A	1.8	--	--	--	--	--	--	--	--
Northbound Bunker Ranch Blvd.																									
NB Approach	B	12.1	0.078	50'	--	B	14.2	0.196	98'	--	--	--	--	--	--	C	20.5	0.45	196'	--	--	--	--	--	--
Overall Intersection	A	0.3	--	--	--	A	1.1	--	--	--	--	--	--	--	--	A	2.7	--	--	--	--	--	--	--	--
US 290 with Arrowhead Ranch Boulevard																									
Eastbound US 290																									
EB Left [6]	B	11.8	0.004	2'	150'+	B	11.7	0.004	8'	150'+	B	13.6	0.01	5'	150'+	B	12.5	0.004	6'	150'+	B	13.4	0.01	9'	150'+
EB Through	A	0.0	--	0'	780'	A	0.0	--	0'	780'	B	18.0	0.69	196'	780'	A	0.0	--	0'	780'	B	18.1	0.71	196'	780'
EB Right	A	0.0	--	0'	250'	A	0.0	--	10'	250'	B	14.0	0.08	45'	250'	A	0.0	--	13'	250'	B	13.8	0.08	42'	250'
EB Approach	A	0.0	--	--	--	A	0.0	--	--	--	B	17.8	--	--	--	A	0.0	--	--	--	B	17.9	--	--	--
Westbound US 290																									
WB Left [6]	A	9.4	0.068	33'	150'	B	11.4	0.352	116'	150'	B	12.3	0.62	151'	150'	B	12	0.372	148'	150'	B	12.8	0.64	152'	150'
WB Through	A	0.0	--	0'	440'	A	0.0	--	0'	440'	B	11.8	0.54	143'	440'	A	0.0	--	111'	440'	B	12.2	0.59	152'	440'
WB Right																									
WB Approach	A	0.6	--	--	--	A	3.0	--	--	--	B	11.9	--	--	--	A	2.9	--	--	--	B	12.4	--	--	--
Northbound Arrowhead Ranch Blvd.																									
NB Approach	B	14.2	0.106	42'	--	F	1,016.3	3.051	326'	--	C	21.2	0.63	183'	--	F	1362.1	3.78	321'	--	C	22.2	0.64	189'	--
Southbound DSISD Driveway																									
SB Approach	E	41.4	0.02	11'	--	F	155.1	0.079	11'	--	B	16.3	0.01	14'	--	F	204.7	0.103	20'	--	B	17.1	0.01	12'	--
Overall Intersection	A	0.8	--	--	--	F	140.0	--	--	--	B	15.2	--	--	--	F	171.2	--	--	--	B	15.5	--	--	--
US 290 with Springs Lane																									
Eastbound US 290																									
EB Left [6]	B	10.1	0.003	6'	150'+	B	11.2	0.004	12'	150'+	--	--	--	--	--	B	11.8	0.004	9'	150'+	--	--	--	--	--
EB Through	A	0.0	--	0'	440'	A	0.0	--	0'	440'	--	--	--	--	--	A	0.0	--	0'	440'	--	--	--	--	--
EB Approach	A	0.0	--	--	--	A	0.0	--	--	--	--	--	--	--	--	A	0.0	--	--	--	--	--	--	--	--
Westbound US 290																									
WB Through	A	0.0	--	0'	490'	A	0.0	--	0'	490'	--	--	--	--	--	A	0.0	--	0'	490'	--	--	--	--	--
WB Right																									
WB Approach			--	--	--			--	--	--			--		--			--	--	--			--	--	--
Southbound Springs Lane																									
SB Approach	C	18.9	0.068	46'	--	C	23.6	0.089	44'	--	--	--	--	--	--	D	26.7	0.102	46'	--	--	--	--	--	--
Overall Intersection	A	0.2	--	--	--	A	0.2	--	--	--	--	--	--	--	--	A	0.2	--	--	--	--	--	--	--	--

(1) Level of service determined through the use of Synchro Traffic Simulation Software, Version 11. All calculations were performed using the methodologies published in Highway Capacity Manual 6th Edition by the Transportation Research Board.

(2) Volume to capacity ration (v/c) were calculated using Synchro Traffic Simulation Software, Version 11. All calculations were performed using the methodologies published in Highway Capacity Manual 6th Edition by the Transportation Research Board.

(3) 95th percentile queue lengths were calculated using SimTraffic Traffic Signal Coordination Software. Results of queueing analysis represent the average of five (5) SimTraffic simulation runs.

(4) Existing queue storage capacity was determined through the use of Google Earth Software and signal plans. All storage lengths were rounded up to the nearest 5 ft. increment.

(5) Results of the capacity analyses performed without mitigations indicate that the intersection of US 290 with Arrowhead Ranch Boulevard is forecasted to operate under LOS F conditions. Therefore, it is anticipated that mitigation measures will need to be constructed by the Arrowhead Ranch development in order to mitigate the projected LOS F conditions. As a result, mitigated conditions for this study represent the anticipated need to install traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard.

(6) A two-way center left turn lane is provided along US 290 within the environs of the study. Synchro Traffic Simulation Software, Version 11 does not account for left turns being made within a center two-way left turn lane. Therefore, in order to accurately model the intersections, the center two-way left turn lane was treated as an exclusive left turn lane at each of the study intersections. For analysis purpose, the lanes were evaluated as having a storage length of 150 feet. However, additional storage is available within this center two-way left turn lane.

Source: Analysis by CEC.

TABLE 3
APPROVED BUNKER RANCH SUBDIVISION TRIP GENERATION SUMMARY
Proposed Bunker Ranch Subdivision Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Description/Land Use Code	Size	Time Period	Trip Generation[1]		
			Primary Trips		
			In	Out	Total
APPROVED BUNKER RANCH SUBDIVISION					
Approved Existing Bunker Ranch Subdivision					
Single-Family Detached Housing	160 units	Weekday 24 Hour	801	801	1602
		Weekday AM Peak Hour	30	88	118
		Weekday PM Peak Hour	101	59	160
Multifamily Low-Rise	42 units	Weekday 24 Hour	153	154	307
		Weekday AM Peak Hour	5	16	21
		Weekday PM Peak Hour	17	10	27
Subtotal	--	Weekday 24 Hour	954	955	1,909
		Weekday AM Peak Hour	35	104	139
		Weekday PM Peak Hour	118	69	187
Existing Bunker Ranch Subdivision Currently Constructed/Occupied [2]					
Single-Family Detached Housing	58 units	Weekday 24 Hour	315	315	630
		Weekday AM Peak Hour	12	34	46
		Weekday PM Peak Hour	38	22	60
Multifamily Low-Rise	6 units	Weekday 24 Hour	22	22	44
		Weekday AM Peak Hour	1	2	3
		Weekday PM Peak Hour	3	2	5
Subtotal	--	Weekday 24 Hour	337	337	674
		Weekday AM Peak Hour	13	36	49
		Weekday PM Peak Hour	41	24	65
Bunker Ranch Subdivison Approved Residential Units Not Yet Constructed/Occupied to be Included in Background Traffic Volumes					
Single-Family Detached Housing	102 units	Weekday 24 Hour	486	486	972
		Weekday AM Peak Hour	18	54	72
		Weekday PM Peak Hour	63	37	100
Multifamily Low-Rise	36 units	Weekday 24 Hour	131	132	263
		Weekday AM Peak Hour	4	14	18
		Weekday PM Peak Hour	14	8	22
Subtotal	--	Weekday 24 Hour	617	618	1,235
		Weekday AM Peak Hour	22	68	90
		Weekday PM Peak Hour	77	45	122

(1) Anticipated trip generation calculated based on the rates published in the Institute of Transportation Engineers (ITE) *Trip Generation*, 10th Edition publication.

(2) Data regarding the number of residential units that have yet to be constructed or occupied have been provided by the City of Dripping Springs. The Bunker Ranch Development has currently been approved for the construction of 160 single family units and 42 condo units. At this time, 102 single family units and 36 condo units have yet to be constructed or occupied.

Source: Analysis by CEC.

TABLE 4
PROPOSED BUNKER RANCH SUBDIVISION EXPANSION TRIP GENERATION SUMMARY
Proposed Bunker Subdivsion Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Description/Land Use Code	Size	Time Period	Trip Generation[1]		
			Primary Trips		
			In	Out	Total
BUNKER RANCH RESIDENTIAL DEVELOPMENT					
Proposed Total Bunker Ranch Subdivision After Expansion					
Single-Family Detached Housing	388 units	Weekday 24 Hour	1810	1810	3620
		Weekday AM Peak Hour	70	210	280
		Weekday PM Peak Hour	235	138	373
Approved Bunker Ranch Subdivision Single Family Units [3]					
Single-Family Detached Housing	160 units	Weekday 24 Hour	801	801	1602
		Weekday AM Peak Hour	30	88	118
		Weekday PM Peak Hour	101	59	160
Proposed New Bunker Ranch Subdivsion Residential Single Family Units [3]					
Single-Family Detached Housing	228 units	Weekday 24 Hour	1,009	1,009	2,018
		Weekday AM Peak Hour	40	122	162
		Weekday PM Peak Hour	134	79	213

(1) Anticipated trip generation calculated based on the rates published in the Institute of Transportation Engineers (ITE) *Trip Generation* , 10th Edition publication.

(2) Data regarding the number of residential units that have yet to be constructed or occupied have been provided by the City of Dripping Springs. The Bunker Ranch Development has currently been approved for the construction of 160 single family units and 42 condo units. At this time, 102 single family units and 36 condo units have yet to be constructed or occupied.

(3) From Table 3.

(4) The total Bunker Ranch Subdivision Trips was calcualted by adding the existing approved Bunker Ranch Subdivison trips (160 Single Family Residential Units plus 42 Multifamily Low-Rise Residential Units shown on Table 3) to the proposed Bunker Ranch Subdivision Expansion trips (Additional 228 Single Family Residential Units shown on Table 4).

Source: Analysis by CEC.

TABLE 5
PROPOSED BUNKER RANCH SUBDIVISION APPROVED PLUS EXPANSION TRIP GENERATION SUMMARY
Proposed Bunker Subdivsion Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Description/Land Use Code	Size	Time Period	Trip Generation[1]		
			Primary Trips		
			In	Out	Total
APPROVED BUNKER RANCH SUBDIVISION [1]					
Approved Existing Bunker Ranch Subdivision					
Single-Family Detached Housing	160 units	Weekday 24 Hour	801	801	1602
		Weekday AM Peak Hour	30	88	118
		Weekday PM Peak Hour	101	59	160
Multifamily Low-Rise	42 units	Weekday 24 Hour	153	154	307
		Weekday AM Peak Hour	5	16	21
		Weekday PM Peak Hour	17	10	27
Subtotal	--	Weekday 24 Hour	954	955	1,909
		Weekday AM Peak Hour	35	104	139
		Weekday PM Peak Hour	118	69	187
PROPOSED NEW BUNKER RANCH SUBDIVISION EXPANSION [2]					
Single-Family Detached Housing	228 units	Weekday 24 Hour	1,009	1,009	2,018
		Weekday AM Peak Hour	40	122	162
		Weekday PM Peak Hour	134	79	213
Multifamily Low-Rise	--	Weekday 24 Hour	--	--	--
		Weekday AM Peak Hour	--	--	--
		Weekday PM Peak Hour	--	--	--
Subtotal	--	Weekday 24 Hour	1,009	1,009	2,018
		Weekday AM Peak Hour	40	122	162
		Weekday PM Peak Hour	134	79	213
TOTAL APPROVED BUNKER RANCH SUBDIVISION PLUS PROPOSED NEW BUNKER RANCH SUBDIVISION EXPANSION					
Single-Family Detached Housing	388 units	Weekday 24 Hour	1,810	1,810	3,620
		Weekday AM Peak Hour	70	210	280
		Weekday PM Peak Hour	235	138	373
Multifamily Low-Rise	42 units	Weekday 24 Hour	153	154	307
		Weekday AM Peak Hour	5	16	21
		Weekday PM Peak Hour	17	10	27
Subtotal	--	Weekday 24 Hour	1,963	1,964	3,927
		Weekday AM Peak Hour	75	226	301
		Weekday PM Peak Hour	252	148	400

(1) From Table 3.

(2) From Table 4.

Source: Analysis by CEC.

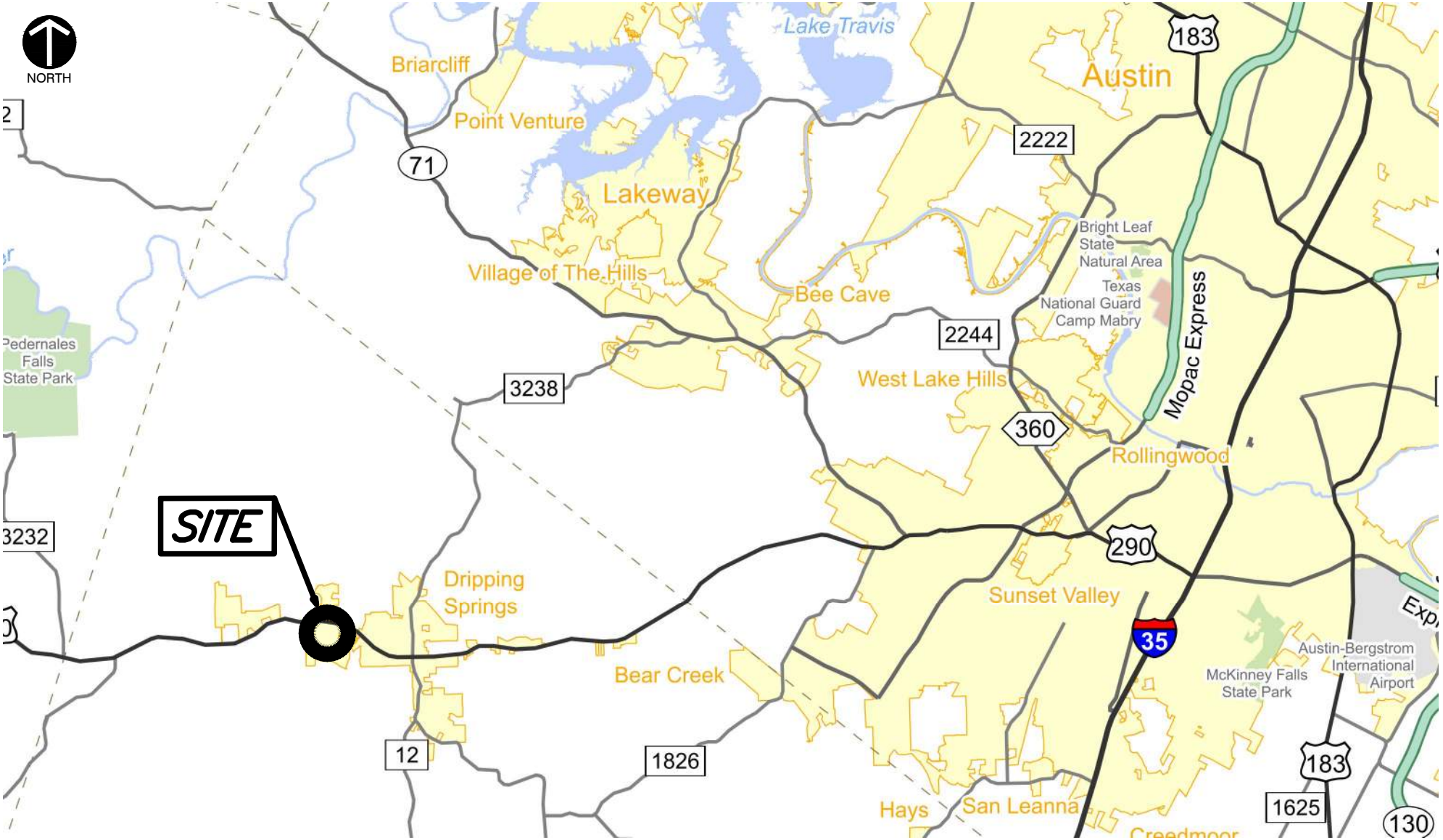
TABLE 6
ARROWHEAD RANCH DEVELOPMENT TRIP GENERATION SUMMARY
Proposed Bunker Ranch Subdivision Expansion Traffic Impact Analysis
City of Dripping Springs, Hays County, Texas

Description/Land Use Code	Size	Time Period	Trip Generation[1]								
			Primary Trips			Pass-By Trips			Total Trips		
			In	Out	Total	In	Out	Total	In	Out	Total
ARROWHEAD RANCH DEVELOPMENT											
Total Approved Arrowhead Ranch Residential Development											
Single-Family Detached Housing	403 units	Weekday 24 Hour	1874	1874	3748	0	0	0	1,874	1,874	3,748
		Weekday AM Peak Hour	73	218	291	0	0	0	73	218	291
		Weekday PM Peak Hour	244	143	387	0	0	0	244	143	387
Existing Arrowhead Ranch Residential Development Currently Constructed/Occupied [2]											
Single-Family Detached Housing	181 units	Weekday 24 Hour	898	897	1795	0	0	0	898	897	1,795
		Weekday AM Peak Hour	33	100	133	0	0	0	33	100	133
		Weekday PM Peak Hour	113	67	180	0	0	0	113	67	180
Arrowhead Ranch Residential Development Approved Residential Units Not Yet Constructed/Occupied to be Included in Background Traffic Volumes											
Single-Family Detached Housing	222 units	Weekday 24 Hour	976	977	1953	0	0	0	976	977	1,953
		Weekday AM Peak Hour	40	118	158	0	0	0	40	118	158
		Weekday PM Peak Hour	131	76	207	0	0	0	131	76	207
Planned Arrowhead Ranch Development Commercial Development [3]											
Liquor Store	1,800 SF	Weekday 24 Hour	92	91	183	0	0	0	92	91	183
		Weekday AM Peak Hour	4	4	8	0	0	0	4	4	8
		Weekday PM Peak Hour	15	14	29	0	0	0	15	14	29
Super Convenience Market/Gas Station	6,000 SF	Weekday 24 Hour	No Data Available for Weekday 24-Hour Period						1,153	1,152	2,305
		Weekday AM Peak Hour	59	59	118	185	185	370	244	244	488
		Weekday PM Peak Hour	46	46	92	147	147	294	193	193	386
SubTotal		Weekday 24 Hour	--	--	--	--	--	--	1,245	1,243	2488
		Weekday AM Peak Hour	63	63	126	185	185	370	248	248	496
		Weekday PM Peak Hour	61	60	121	147	147	294	208	207	415

(1) Anticipated trip generation calculated based on the rates published in the Institute of Transportation Engineers (ITE) *Trip Generation*, 10th Edition publication.
(2) Data regarding the number of residential units that are currently constructed and occupied have been provided by the City of Dripping Springs.
(3) The City of Dripping Springs has requested that trips associated with the planned Arrowhead Ranch Super Convenience Market/Gas Station and Liquor Store be included in the background traffic projections. A conceptual site plan for these commercial developments has been provided by the City of Dripping Springs.

Source: Analysis by CEC.

FIGURES



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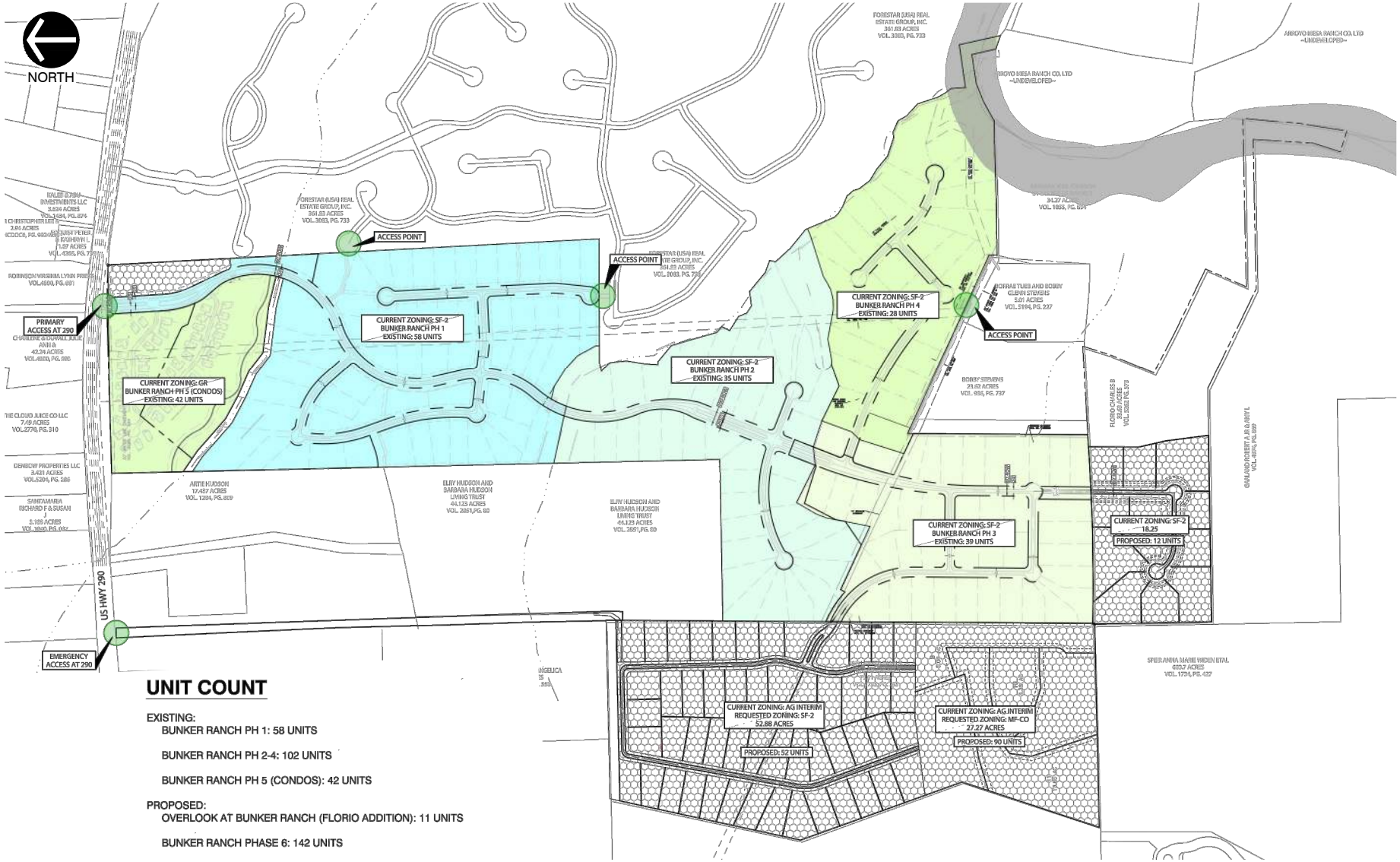
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

SITE LOCATION

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	1
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



UNIT COUNT

EXISTING:

BUNKER RANCH PH 1: 58 UNITS

BUNKER RANCH PH 2-4: 102 UNITS

BUNKER RANCH PH 5 (CONDOS): 42 UNITS

PROPOSED:

OVERLOOK AT BUNKER RANCH (FLORIO ADDITION): 11 UNITS

BUNKER RANCH PHASE 6: 142 UNITS

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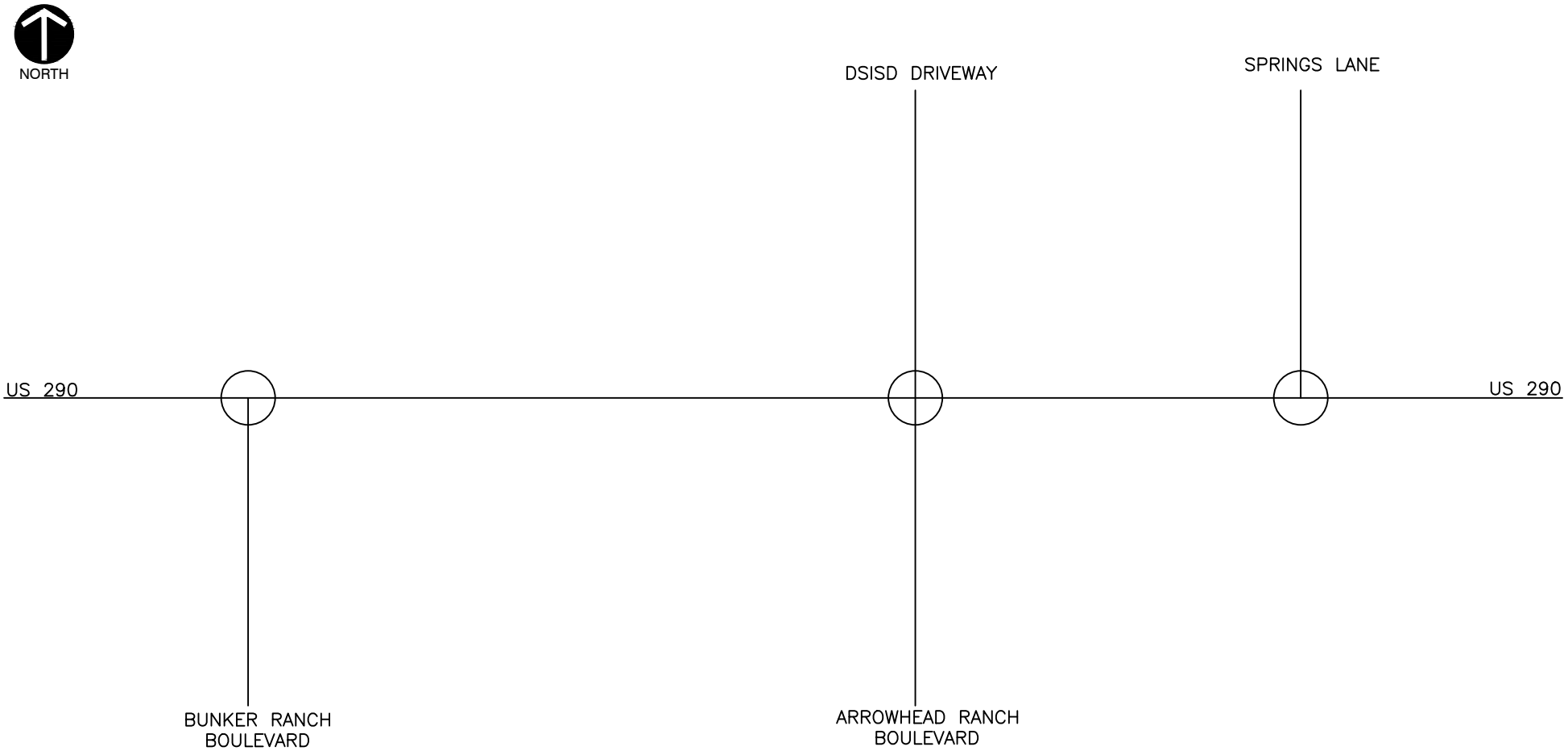
SITE PLAN

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	2
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

Existing Unsignalized Intersection

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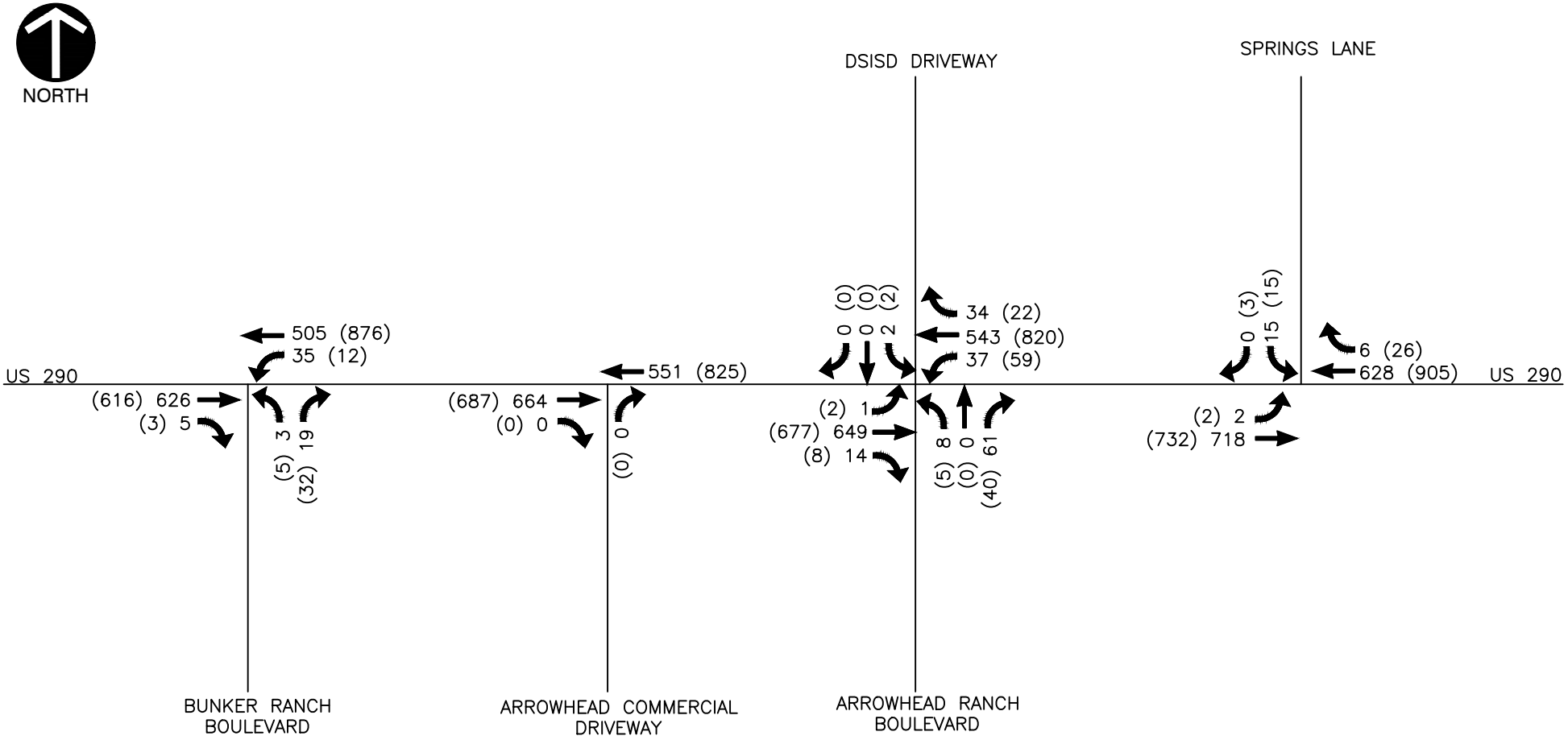
STUDY INTERSECTIONS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	3
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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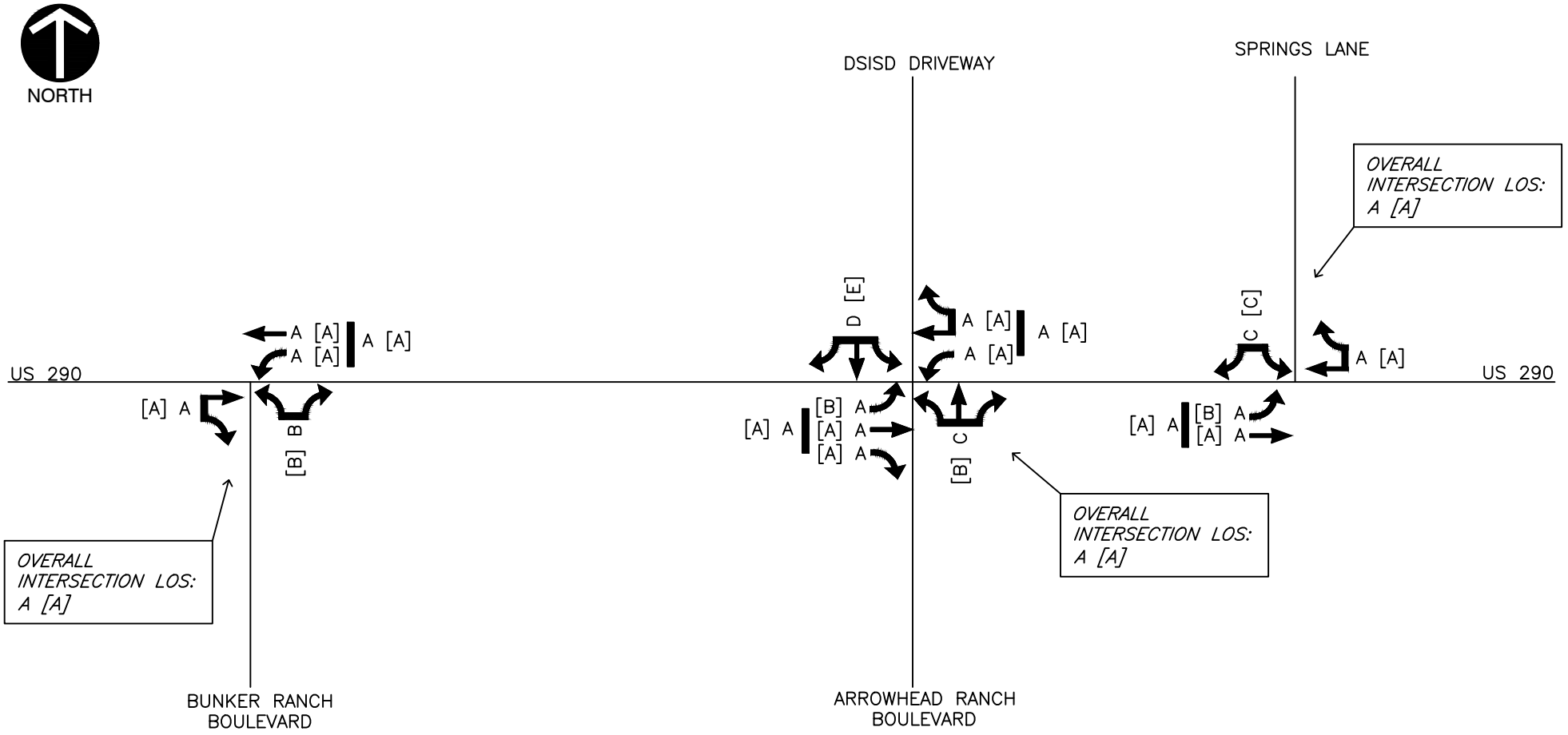
EXISTING 2021
PEAK HOUR TRAFFIC VOLUMES

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	4
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

A A.M. Peak Hour Levels of Service

[B] P.M. Peak Hour Levels of Service

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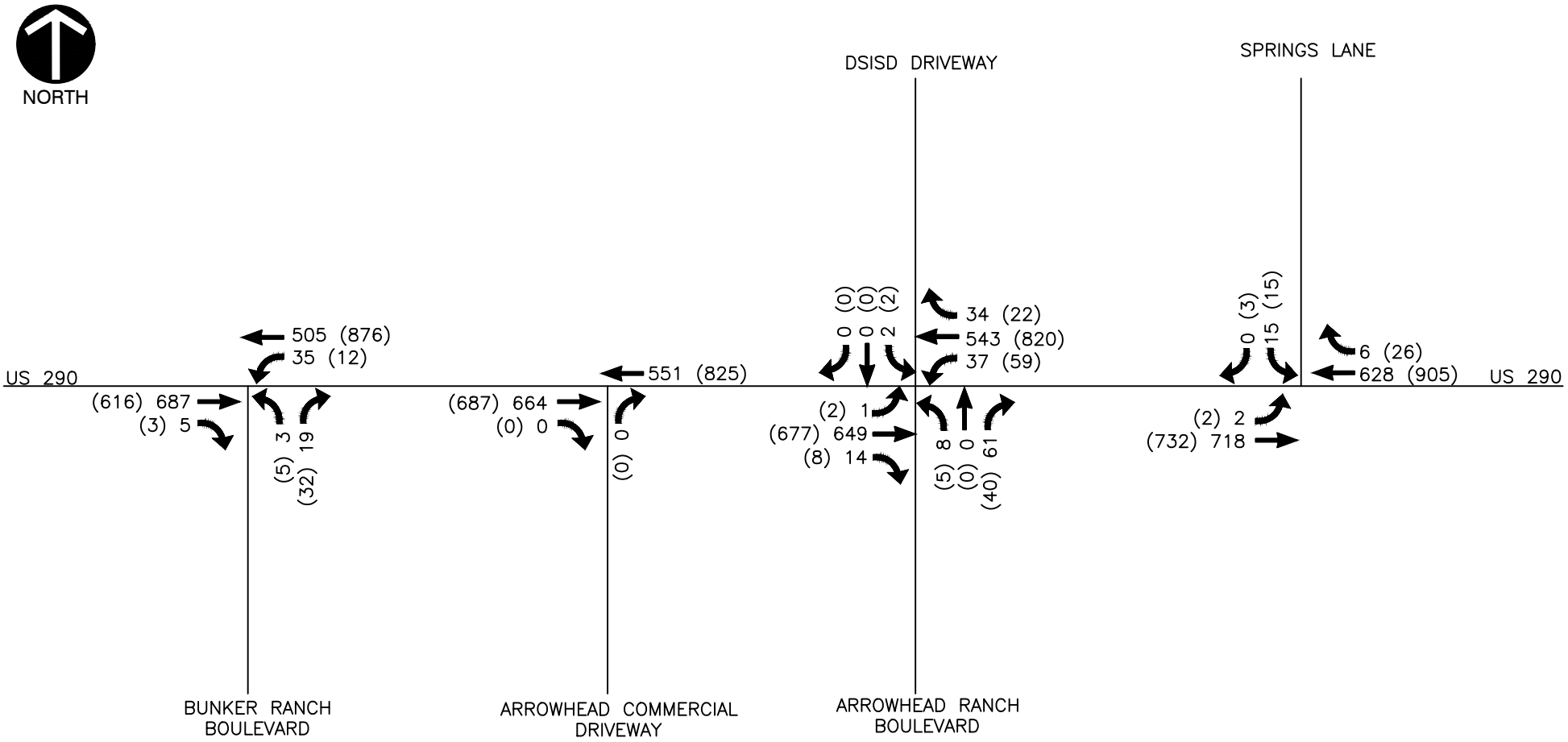
EXISTING 2021
PEAK HOUR LEVELS OF SERVICE

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	5
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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FORECASTED 2025 BACKGROUND
PEAK HOUR TRAFFIC VOLUMES

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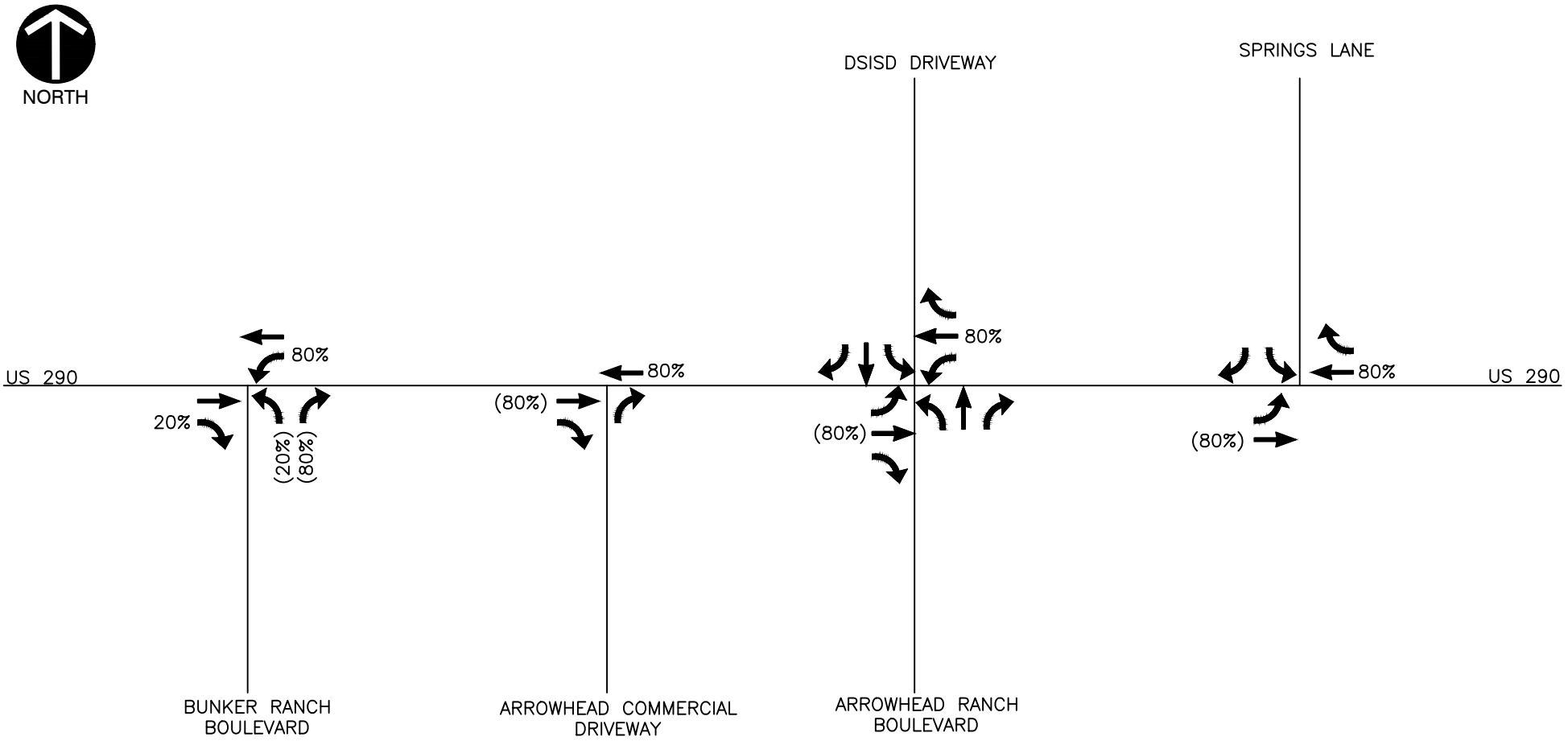
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

12% Primary Trip Arrival Distribution

(12%) Primary Trip Departure Distribution

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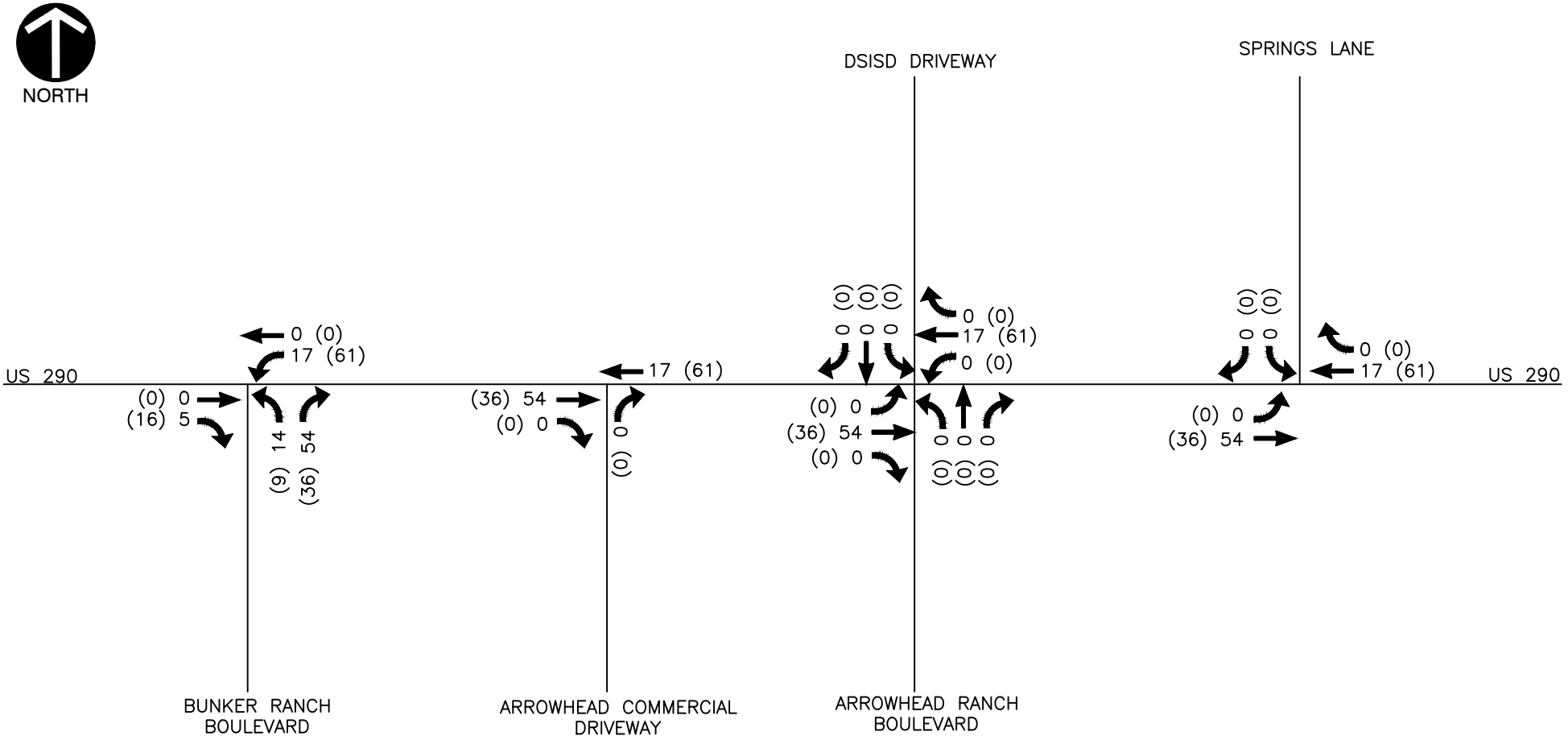
ANTICIPATED BUNKER RANCH RESIDENTIAL PRIMARY TRIP ARRIVAL/DEPARTURE DISTRIBUTION

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	7
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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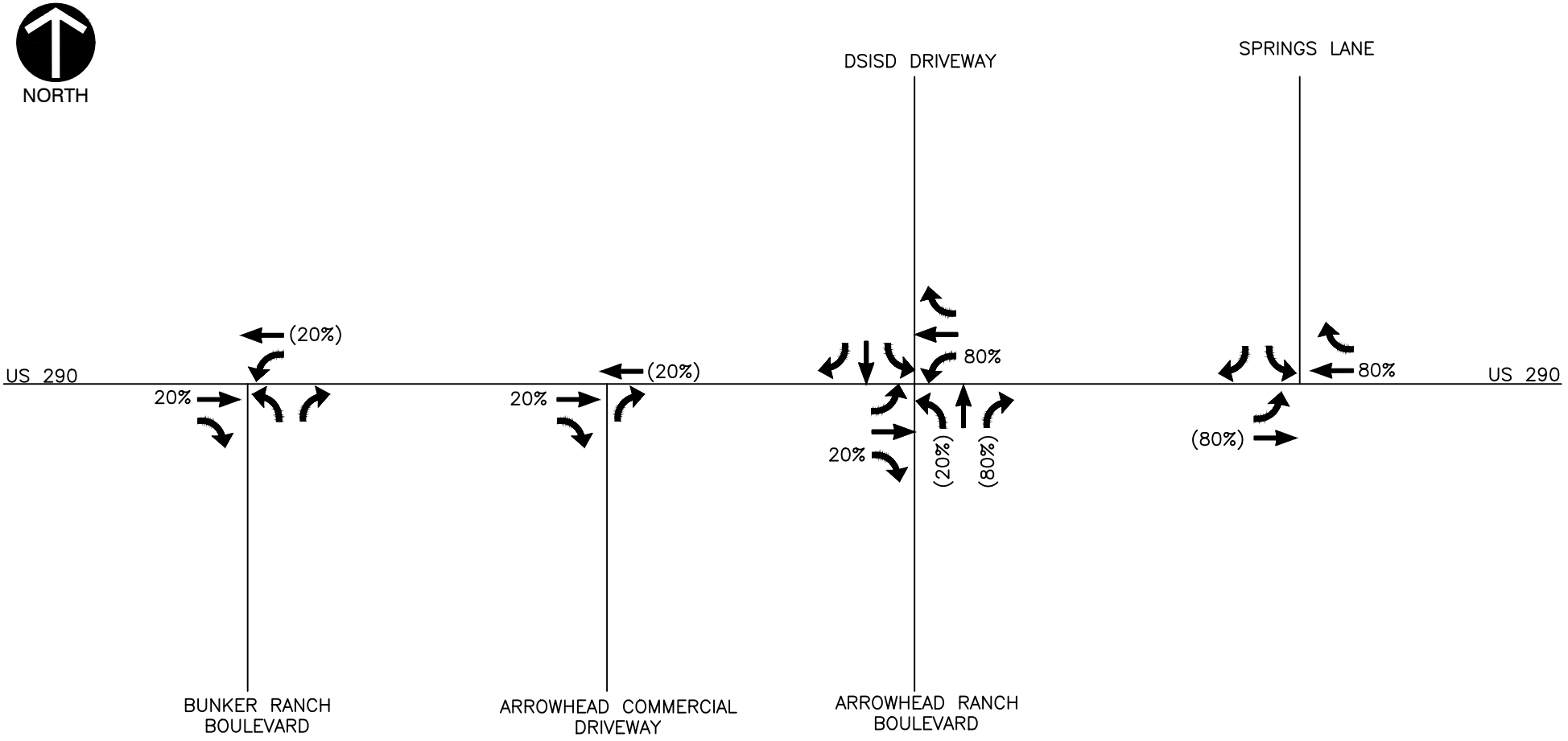
ANTICIPATED BUNKER RANCH APPROVED BACKGROUND PRIMARY SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	8
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

12% Primary Trip Arrival Distribution

(12%) Primary Trip Departure Distribution

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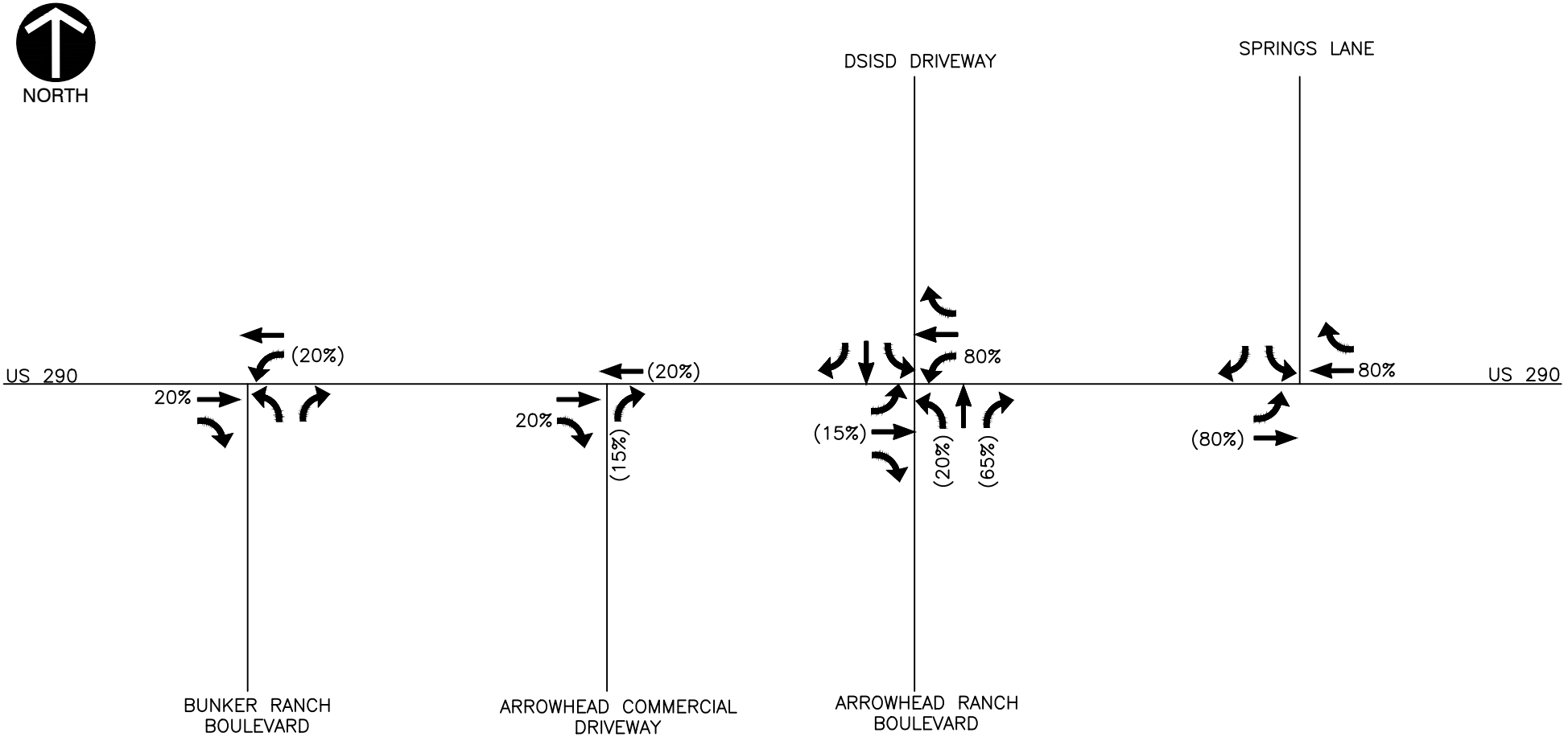
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

ANTICIPATED ARROWHEAD RANCH RESIDENTIAL PRIMARY TRIP ARRIVAL/DEPARTURE DISTRIBUTION

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	9
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

12% Primary Trip Arrival Distribution

(12%) Primary Trip Departure Distribution

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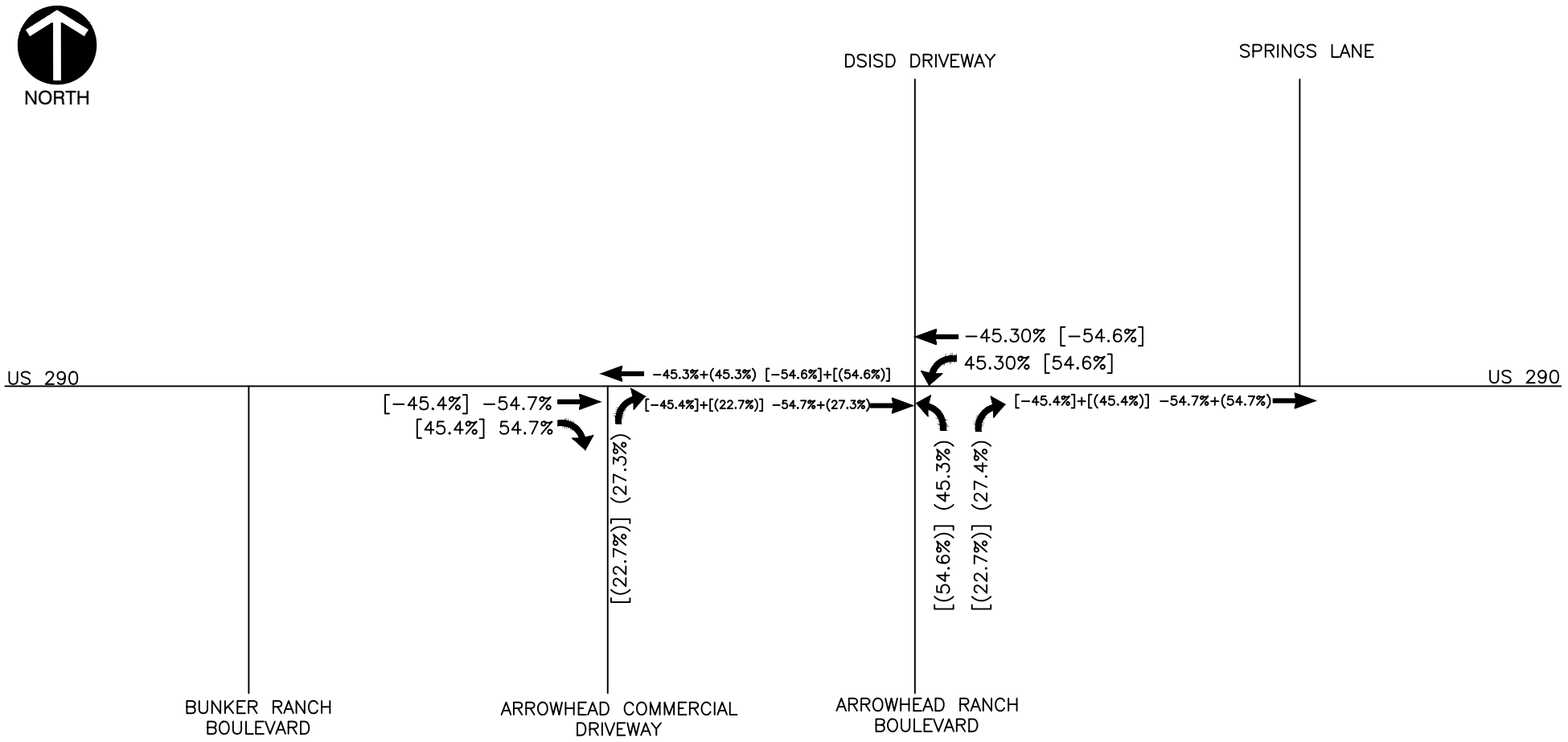
ANTICIPATED ARROWHEAD RANCH COMMERCIAL
PRIMARY TRIP ARRIVAL/DEPARTURE DISTRIBUTION

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	10
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

12%	AM Peak Hour Arrival Trip Distribution
(12%)	AM Peak Hour Departure Trip Distribution
[12%]	PM Peak Hour Arrival Trip Distribution
[(12%)]	PM Peak Hour Departure Trip Distribution

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ANTICIPATED ARROWHEAD RANCH COMMERCIAL PASS-BY TRIP ARRIVAL/DEPARTURE DISTRIBUTION

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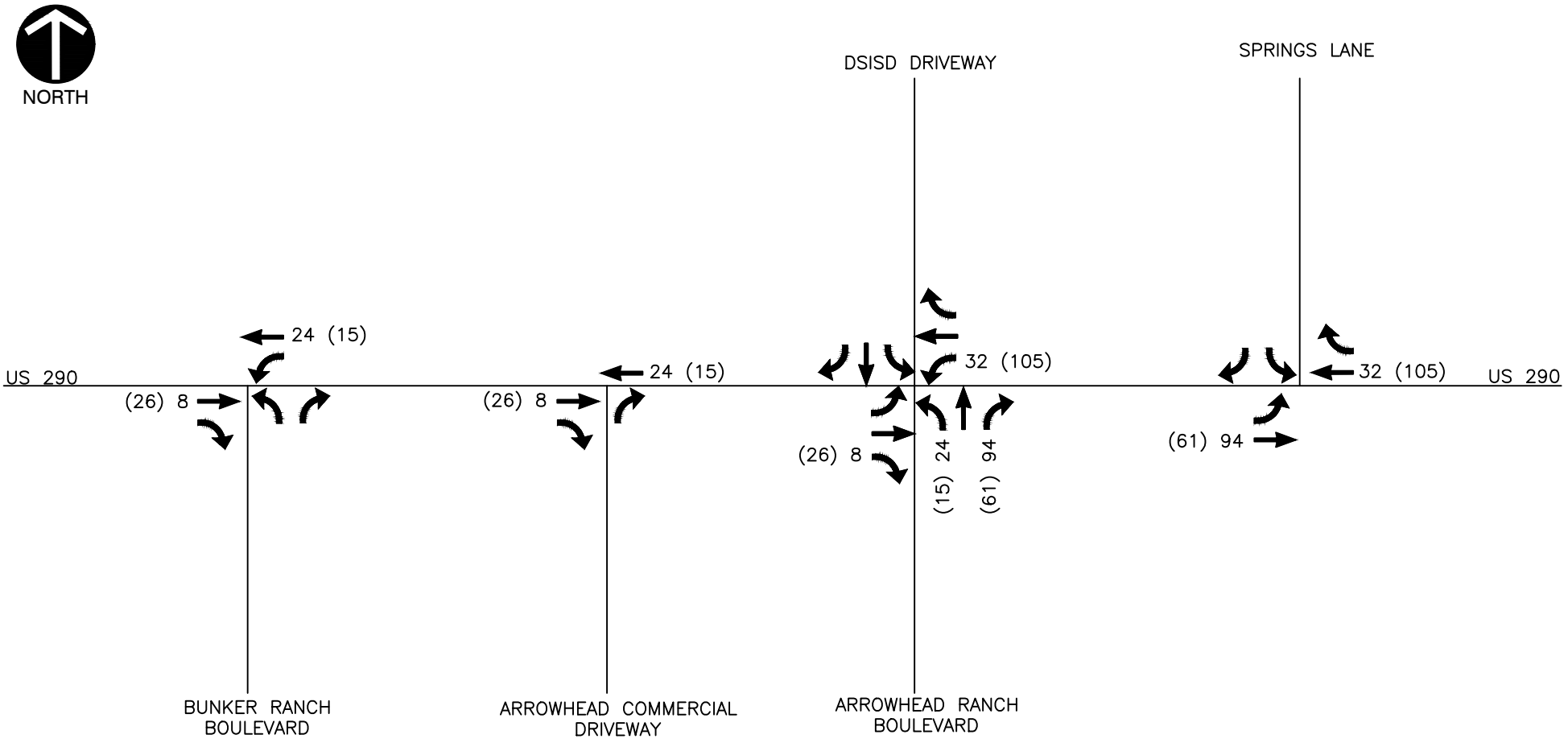

LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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ANTICIPATED ARROWHEAD RANCH APPROVED BACKGROUND RESIDENTIAL SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	12
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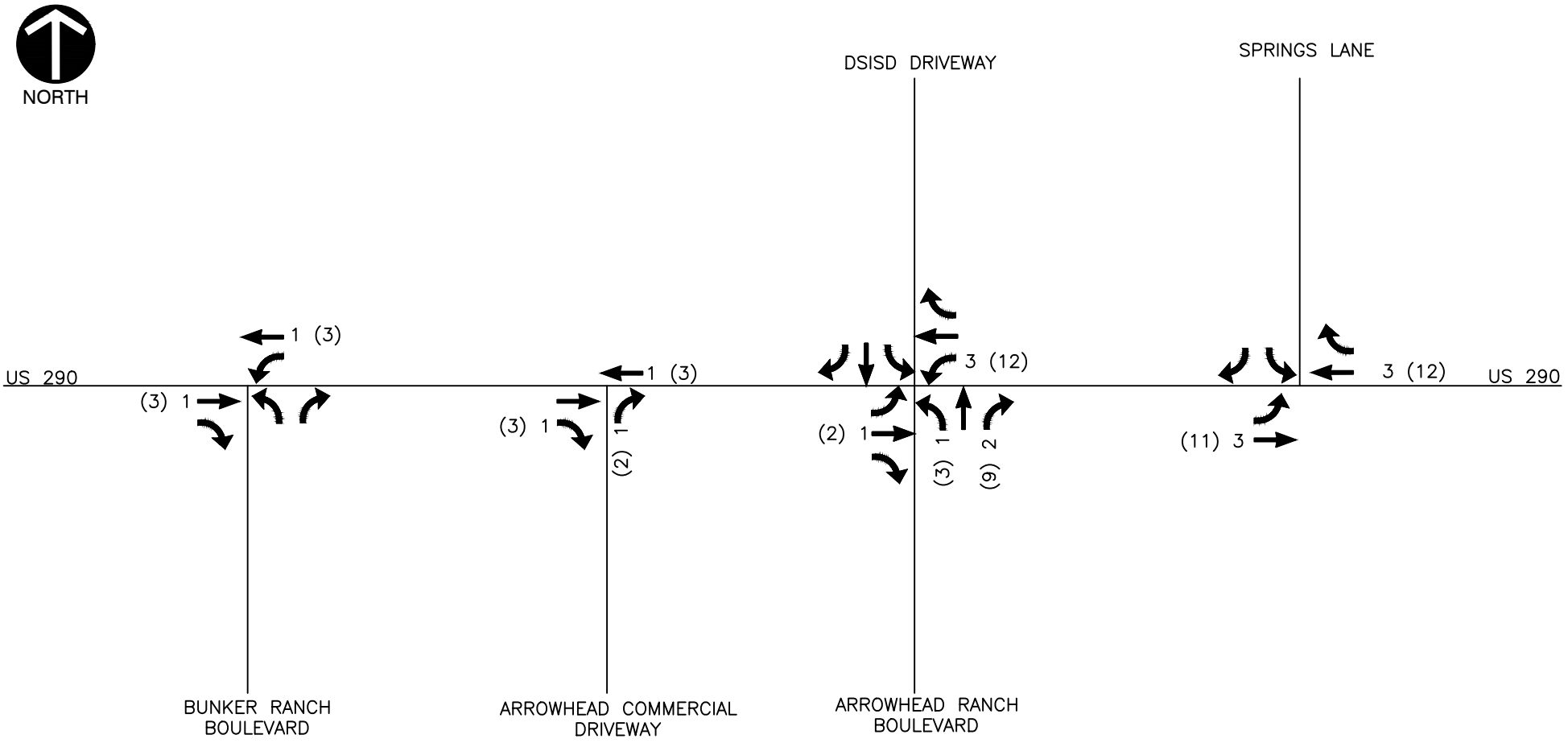

LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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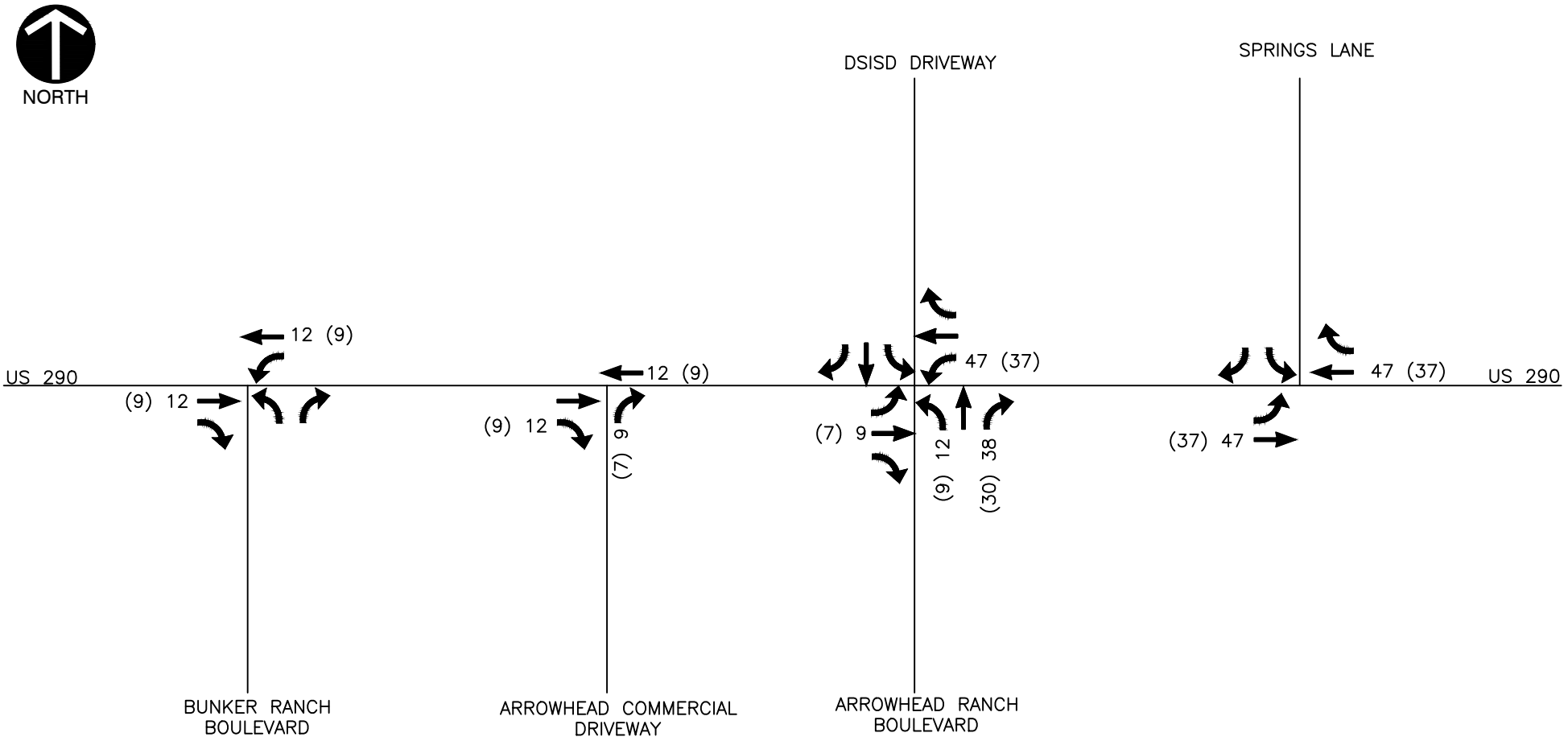
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

ANTICIPATED ARROWHEAD RANCH PLANNED LIQUOR STORE
PRIMARY SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	13
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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HAYS COUNTY, TEXAS

ANTICIPATED ARROWHEAD RANCH PLANNED GAS STATION
PRIMARY SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	14
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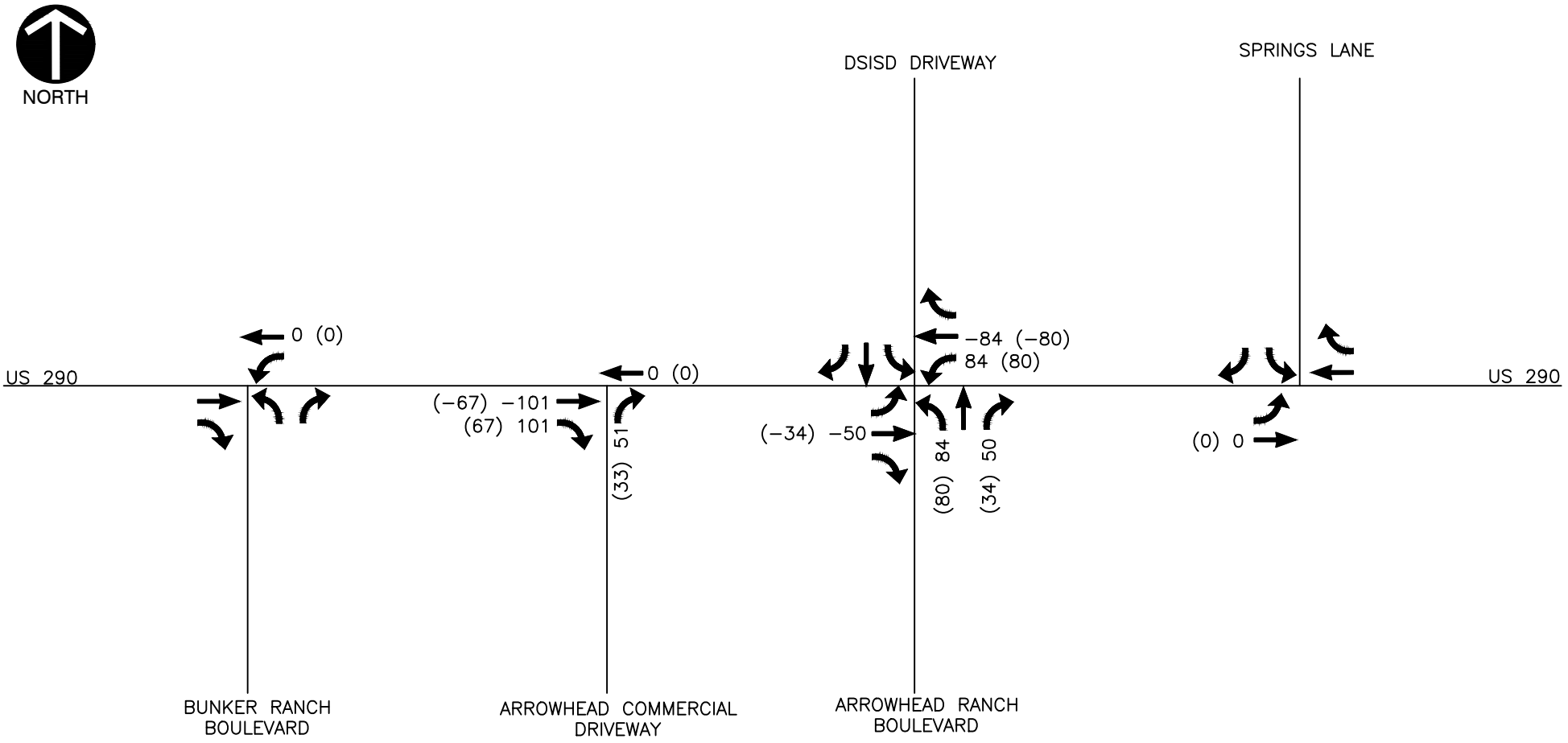

LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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BUNKER RANCH SUBDIVISION EXPANSION
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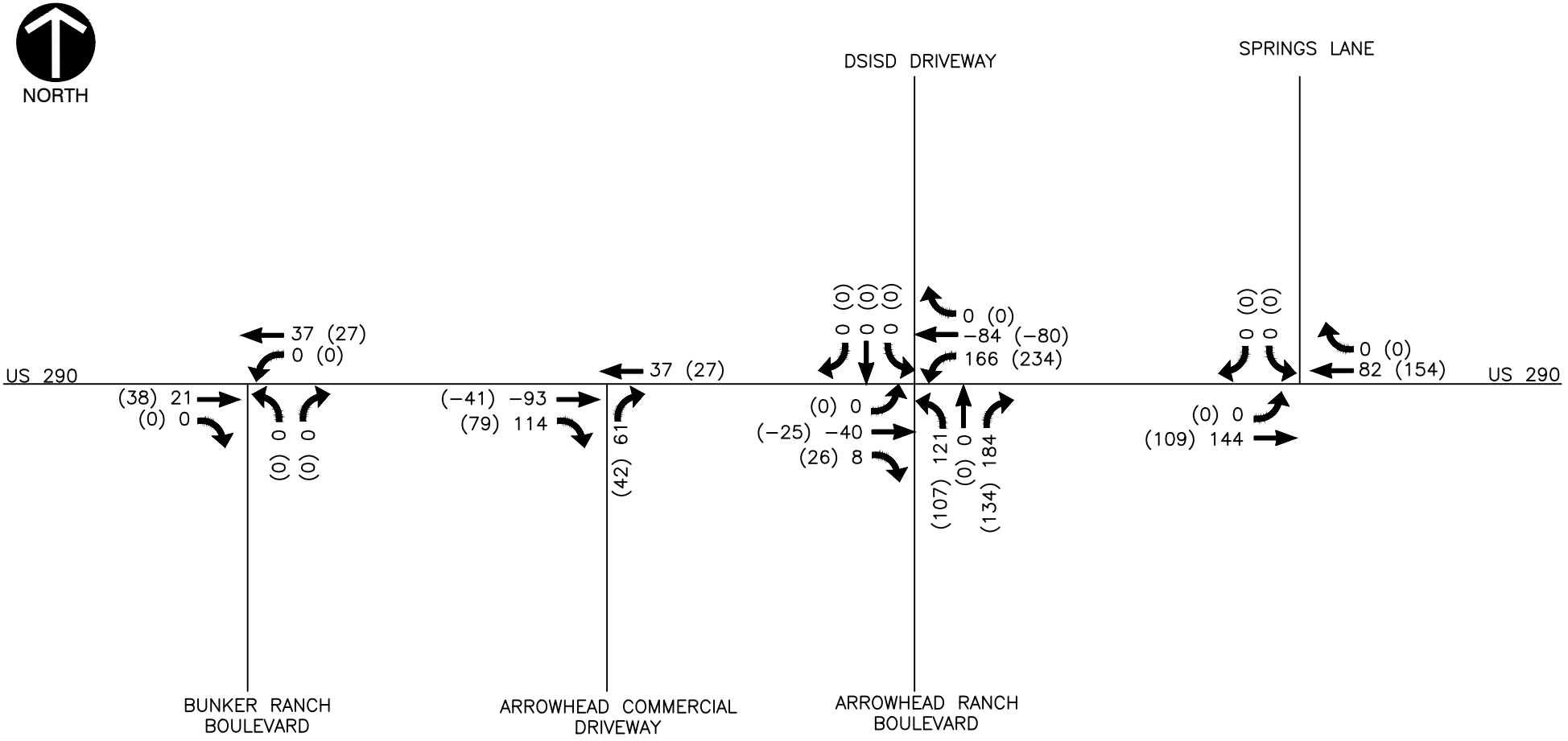
ANTICIPATED ARROWHEAD RANCH PLANNED GAS STATION
PASS-BY SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	15
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
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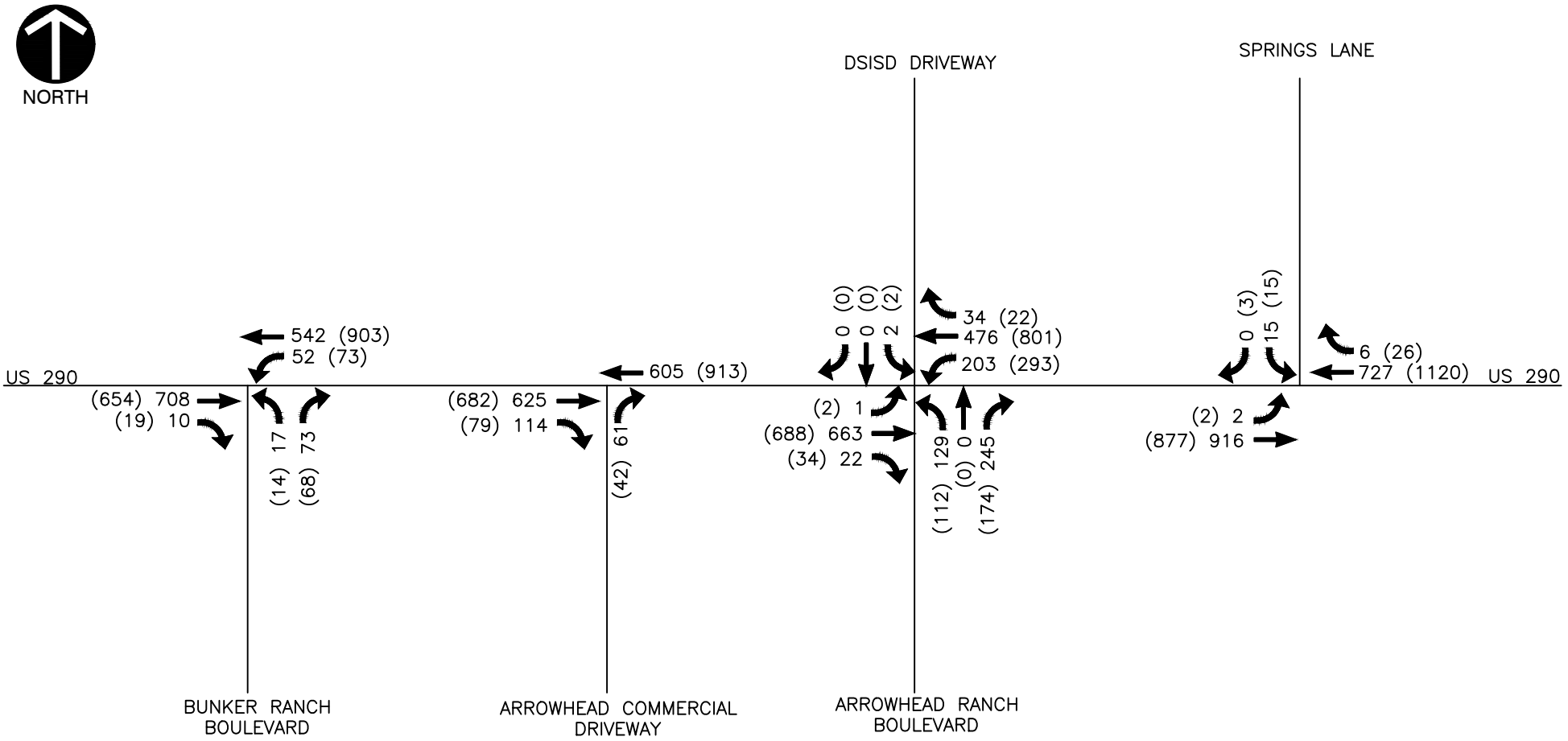
ANTICIPATED ARROWHEAD RANCH TOTAL BACKGROUND SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	16
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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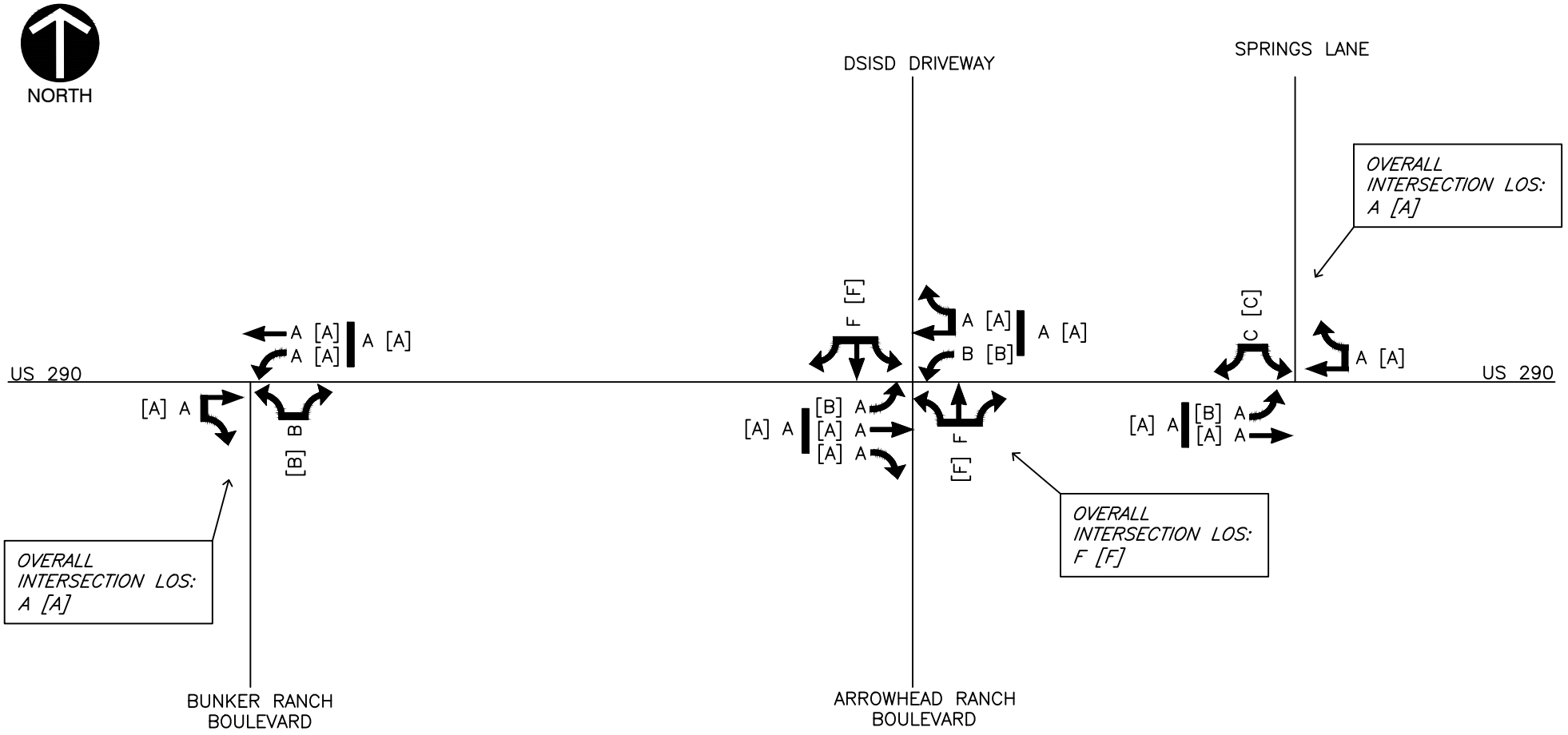
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

FORECASTED 2025 NO-BUILD (BASE)
PEAK HOUR TRAFFIC VOLUMES

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	17
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

A A.M. Peak Hour Levels of Service

[B] P.M. Peak Hour Levels of Service

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BUNKER RANCH SUBDIVISION EXPANSION
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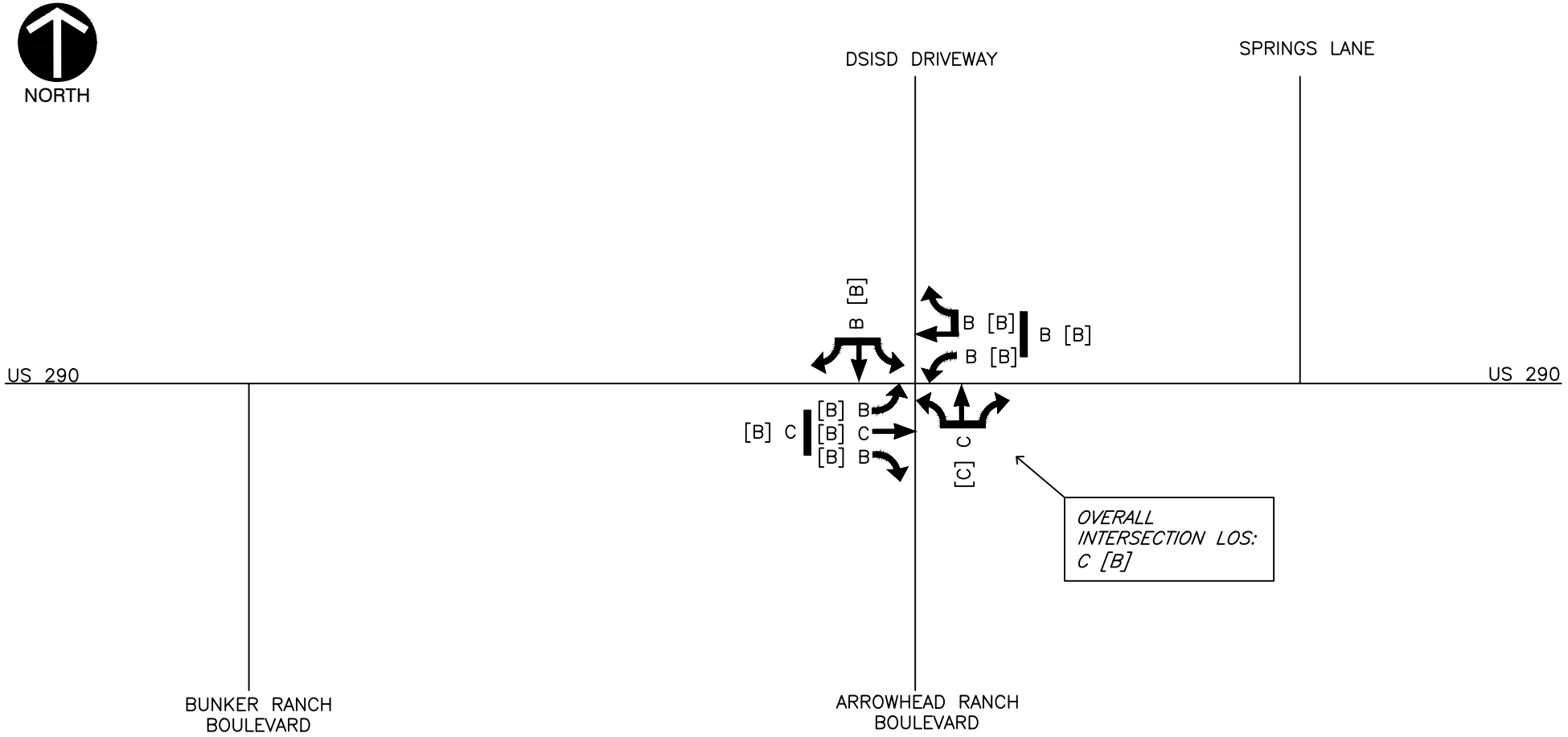
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

FORECASTED 2025 NO-BUILD(BASE) LEVELS OF SERVICE

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	18
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

A A.M. Peak Hour Levels of Service

[B] P.M. Peak Hour Levels of Service

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BUNKER RANCH SUBDIVISION EXPANSION
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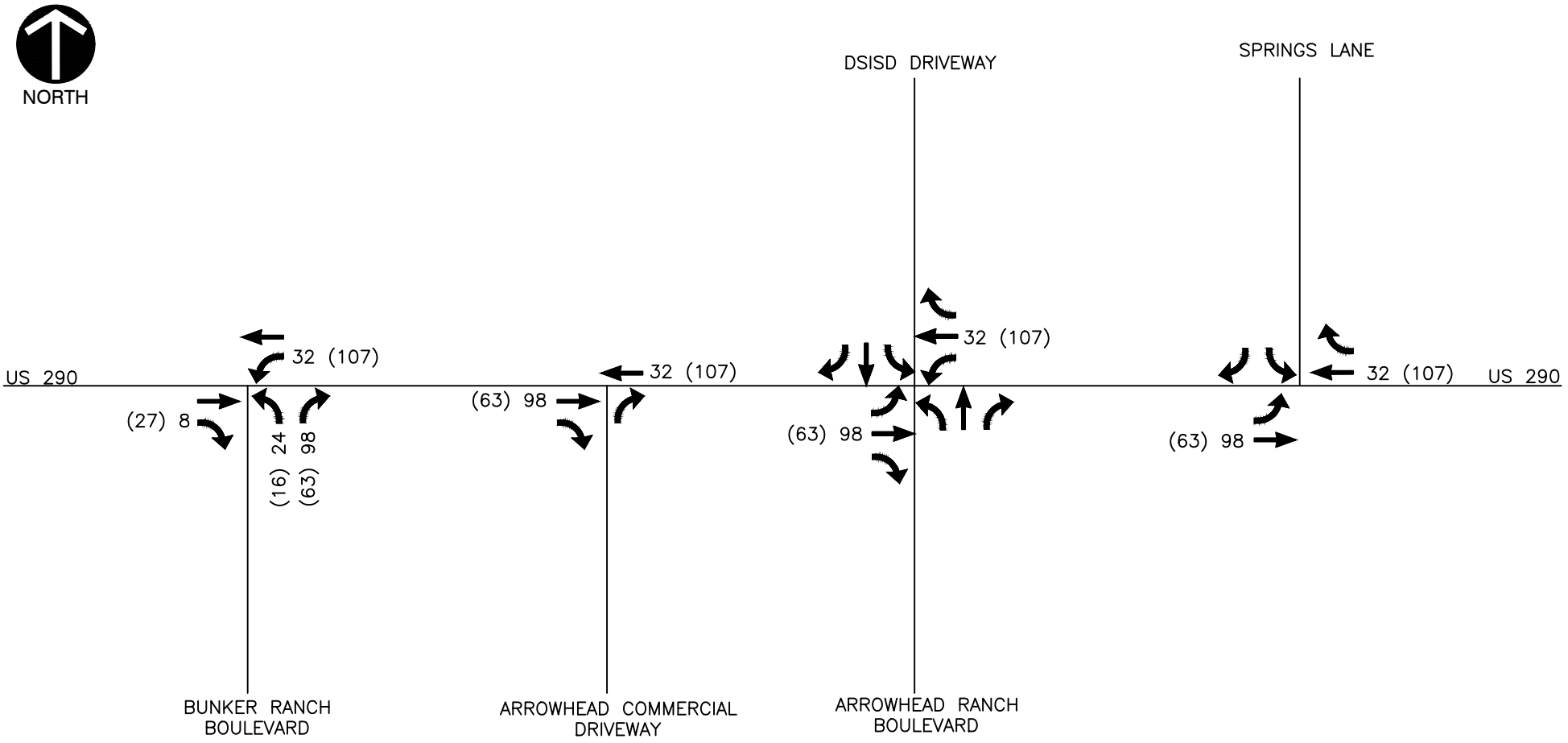
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

FORECASTED 2025 NO BUILD(BASE)-MITIGATED LEVELS OF SERVICE

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	19
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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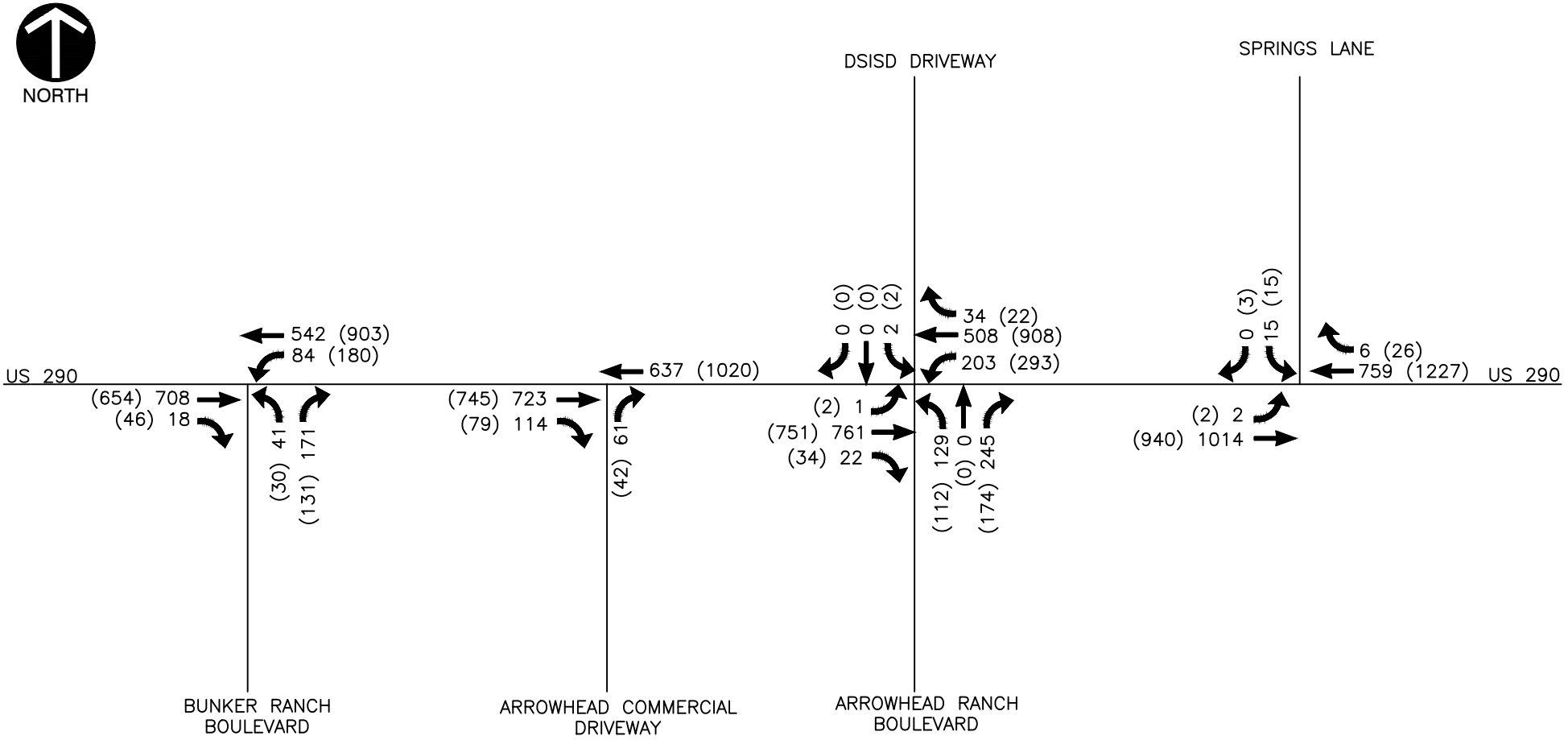
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

ANTICIPATED PROPOSED BUNKER RANCH
PRIMARY SITE GENERATED PEAK HOUR TRIPS

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	20
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

123 A.M. Peak Hour Traffic Volumes

(123) P.M. Peak Hour Traffic Volumes

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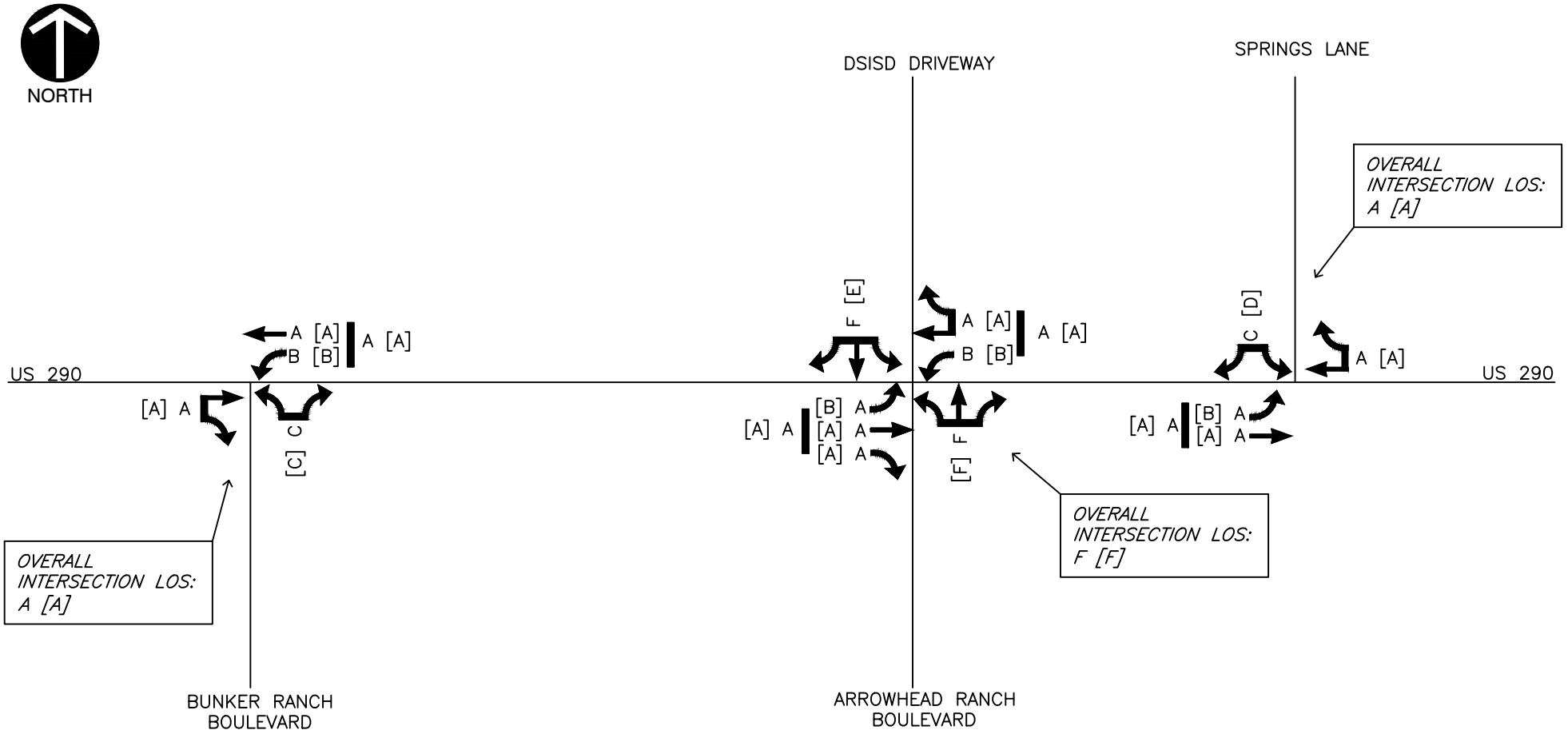
BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

FORECASTED 2025 BUILD (WITH DEVELOPMENT)
PEAK HOUR TRAFFIC VOLUMES

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	21
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		



LEGEND

A A.M. Peak Hour Levels of Service

[B] P.M. Peak Hour Levels of Service

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BUNKER RANCH SUBDIVISION EXPANSION
TRAFFIC IMPACT ANALYSIS
CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS

FORECASTED 2025 BUILD (WITH DEVELOPMENT)
PEAK HOUR LEVELS OF SERVICE

DRAWN BY:	ANL	CHECKED BY:	CAD	APPROVED BY:	JMD	FIGURE NO.:	22
DATE:	MAY 2021	DWG SCALE:	NOT TO SCALE	PROJECT NO:	304-065		

APPENDIX A
TRAFFIC IMPACT ANALYSIS SCOPE OF STUDY

TRAFFIC IMPACT ANALYSIS SCOPE AND STUDY AREA

Project Name:	Bunker Ranch	**Date:**	March 31, 2021
Location:	South of the intersection of US 290 and Bunker Ranch Boulevard		
Owner's Agent:	Civil & Environmental Consultants, Inc.	**Phone:**	512-439-0400

1. Background Information

The following information should be provided:

- Site Map or Site Plan.
- Location/Study area map specifying major roadways within the study area.
- Identify state and county roadways in the study area. Scope should be provided to all agencies impacted by the study.
- Identify adopted plans and public infrastructure improvement projects applicable to this site.

2. Intersection Level of Service

Calculations for AM and PM peak hours must be performed for the intersections listed below, showing existing traffic conditions and projected traffic conditions, identifying site, non-site, and total traffic:

- US 290 and Bunker Ranch Boulevard
- US 290 and Arrowhead Ranch Boulevard
- US 290 and Springs Lane
- All Site Driveways Accessing US 290

AM and PM peak-hour turning movement counts will be collected at the study intersections to determine existing background traffic and should be collected while school is in session. If

historical counts must be obtained due to the COVID-19 pandemic and reduced traffic, a growth rate approved by the city must be applied to reflect existing “2021” conditions. If counts are collected during the COVID-19 reduced traffic conditions, adjustments to the traffic counts should be made, and data to justify the adjustments should be provided with the submittal of the TIA.

The Intersection Capacity Analysis should include the following build-out phases/years:

- Phase 1 – Residential land use buildout year
- Phase 2 – Commercial land use buildout year

Intersection Capacity Analysis for each phase/year shall include:

- Level of Service by movements
- Delay by movements
- V/C by movements
- Queuing analysis with 95% queue length by movements, vs existing storage bay and/or distance from adjacent intersection(s)

3. Roadway Analysis

Document the projected daily volumes on Bunker Ranch Boulevard for each analysis phase/year.

4. Sight Distance Analysis

- When proposed mitigation recommends a new traffic signal be installed, an analysis of the stopping sight distance on approach to stopped queues (back of queue) should be included.
- New intersections or driveways must provide an analysis of the intersection sight distance. The intersection of US 290 and Bunker Ranch Boulevard is considered an existing driveway and does not require a sight distance analysis.

5. Transportation Improvements

The following adopted plans and public infrastructure improvement projects applicable to this site should be considered in the analysis.

- Dripping Springs Traffic Study 2020 (Dripping Springs)
- Dripping Springs Thoroughfare Plan (Dripping Springs)

Consider the following for transportation improvements related to the site:

- Improvements required to mitigate the impact of site traffic for intersections below Level of Service C, based on City of Dripping Springs Code Chapter 28, Exhibit A, Section 11.11.

6. Other Considerations

- Ensure automated traffic data captures demand. Manual observations or a multiple period analysis may be necessary.
- Capture and report data to calibrate model for existing operational analysis (i.e. queue length and approach/movement delay recommended)
- Methodology for capacity and level of service shall be Highway Capacity Manual, latest edition (i.e. Synchro, version 10).
- Discuss and illustrate model calibration (i.e. queue length and approach/movement delay recommended).

7. Study Assumptions

The following assumptions must be included in the analysis:

- Background traffic ——the average annual growth rate shall be calculated using available sources and documented in the report. Identified growth rate for use in analysis which must be approved by the City prior to submittal
- Projects for background traffic calculations:
    - Arrowhead Ranch

  The City will provide available land use information for the proposed development.
- Transit Trips/Walking/Biking Reductions – N/A
- Internal Capture Reductions – N/A
- Pass-By Trip Reductions – Appropriate pass-by trip reductions may be applied to commercial land uses based on the ITE Trip Generation Manual, 10th Edition.
- Trip distribution – To be determined based on existing and historical data. Analysis used to support distribution assumptions should be provided with the submittal of the TIA. Obtain approval by the City prior to submittal.

8. Submittal Requirements

- Submit an electronic version of the draft TIA report for agency review. Once all agency comments are resolved, submit two (2) printed copies of the final report, signed and sealed by a professional engineer licensed in the State of Texas for submittal to City of Dripping Springs. The final report should also be provided in electronic format. Submit an electronic version of the draft and final TIA report TxDOT through DropBox.
- The submittal should include the following: PDF of the TIA, Synchro Network for all conditions analyzed and background DXF or aerial format (Synchro files must be in real world coordinates), excel spreadsheets with, overall trip generation, internal and pass-by trip reduction rates if applicable, site trip distribution and assignment within roadway network and site driveways, A CAD file for the site plan, if available.
- Traffic signal modeling requirements:
    - All intersections must be modeled in one Synchro file (including unsignalized intersections).
    - Synchro signal timing sheets are to be included with the submittal.

    - Present intersection LOS by movements, Delay by movements, v/c by movements, and 95% queue length by movements in a tabular format (preferably in 11”x17”) for different scenarios noted.
- The following Maps should be included in the TIA report:
    - Site Map or Site Plan.
    - Location/Study area map specifying major roadways within the study area.
    - A map showing all bicycle routes, bus transit and bus stops within ½ mile of the site
    - A map showing all background projects and trip generation for each project,
    - A map showing all roadways and driveways analyzed (labeled and dimensioned)
    - An aerial map of all intersections with roadway improvements (dimensioned), including above ground utilities called out.

This scope and study are based upon discussions between Civil & Environmental Consultants, Inc., the City of Dripping Springs transportation consultant, and TxDOT. Any change in these assumptions may require a change in scope.

Approved by: _____
Chad Gilpin, P.E., City Engineer, City of Dripping Springs

Reviewed by: _____
Leslie D. Pollack, P.E., PTOE, HDR Engineering, Inc.

Approved by: _____
Scott R. Cunningham, P.E., TxDOT Austin District

Agree to follow: _____
Jeffrey M. DePaolis, P.E., PTOE, Civil & Environmental Consultants, Inc.

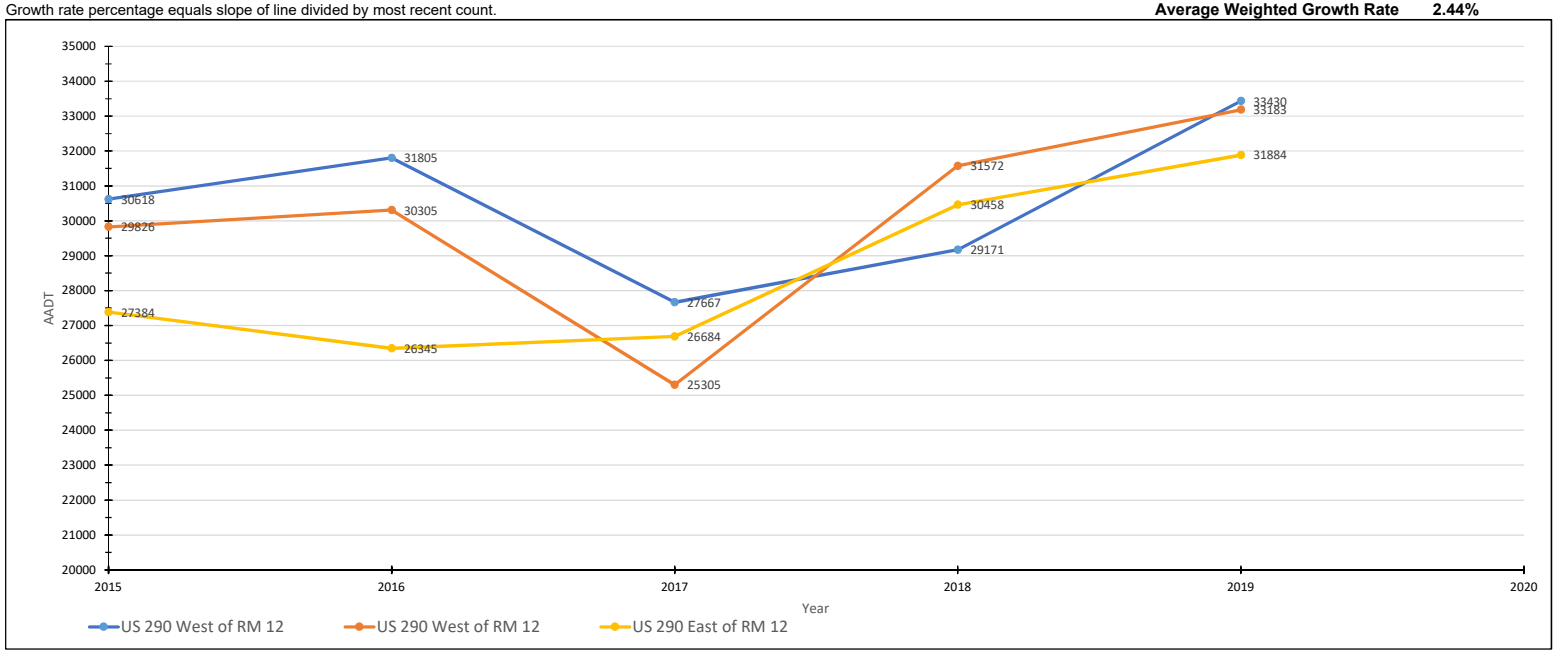
APPENDIX B
BACKGROUND TRAFFIC GROWTH RATE CALCULATIONS

TABLE A1
BACKGROUND TRAFFIC GROWTH RATE CALCULATIONS

Station ID #	Location	AADT Traffic Counts (1)											Statistics						
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Slope	Y-Intercept	Number of Data Points	R Squared	Growth Rate (2)	Weight	Weighted Growth
109,265	US 290 West of RM 12						30618	31805	27667	29171	33430		299.0000	-572544.8	5	0.045	0.90%	0.34	0.31%
109,273	US 290 West of RM 12						29826	30305	25305	31572	33183		798.1000	-1579729.5	5	0.183	2.40%	0.34	0.81%
109,321	US 290 East of RM 12						27384	26345	26684	30458	31884		1311.3	-2616341.1	5	0.703	4.10%	0.32	1.33%
										Total	98,497							1.00	2.44%

(1) Traffic count data obtained form the TXDOT Traffic Count Database System (TCDS)
(2) Growth rate percentage equals slope of line divided by most recent count.

Average Weighted Growth Rate 2.44%



Droznek, Chris

From: Pollack, Leslie <Leslie.Pollack@hdrinc.com>
Sent: Friday, April 30, 2021 4:06 PM
To: Droznek, Chris
Subject: RE: Bunker Ranch TIA

Hi Chris, I am good with the growth rate as proposed. Thank you!

Leslie D. Pollack, P.E., PTOE
D 512.904.3728 **M** 512.560.1619

hdrinc.com/follow-us

From: Droznek, Chris <cdroznek@cecinc.com>
Sent: Friday, April 30, 2021 7:23 AM
To: Pollack, Leslie <Leslie.Pollack@hdrinc.com>
Subject: RE: Bunker Ranch TIA

Leslie,

Thank you. I'm also attaching a copy of the calculated growth rate for the study area. Since our project is located on US 290, I collected AADT data along US 290. From the TXDOT Traffic Count Database System (TCDS) I was able to locate 3 count locations along US 290 and within Dripping Springs. I utilized the most recent 5 years of AADT data available for the calculations. From this data I calculated a linear growth rate of 2.44% per year using a weighted average of the three locations.

I understand that you want to verify this information prior to submission of the TIA. Please review the attached calculated growth rate and provide me with any comments or suggestions as to what background traffic growth rate you would like to utilize for the study area.

Thank you,

Chris

Chris A. Droznek II, P.E. | *Project Manager*
Civil & Environmental Consultants, Inc.
333 Baldwin Road, Pittsburgh, PA 15205
direct 412.249.3177 **office** 412.429.2324 **mobile** 412.804.8807
www.cecinc.com

APPENDIX C
TURNING MOVEMENT COUNT SUMMARIES

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 1 - US 290 & Bunker Ranch Blvd - AM
Site Code : 1_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy vehicles

	Southbound					US 290 Westbound					Bunker Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
07:00	0	0	0	0	0	4	82	0	0	86	0	0	2	0	2	0	148	0	0	148	236
07:15	0	0	0	0	0	4	100	0	0	104	0	0	4	0	4	0	161	0	0	161	269
07:30	0	0	0	0	0	8	131	0	1	140	0	0	5	0	5	0	178	1	0	179	324
07:45	0	0	0	0	0	11	118	0	0	129	1	0	3	0	4	0	157	0	0	157	290
Total	0	0	0	0	0	27	431	0	1	459	1	0	14	0	15	0	644	1	0	645	1119
08:00	0	0	0	0	0	12	137	0	0	149	0	0	5	0	5	0	137	1	0	138	292
08:15	0	0	0	0	0	5	109	0	0	114	0	0	3	0	3	0	141	0	0	141	258
08:30	0	0	0	0	0	7	108	0	0	115	3	0	1	0	4	0	180	2	0	182	301
08:45	0	0	0	0	0	11	151	0	0	162	0	0	10	1	11	0	168	2	0	170	343
Total	0	0	0	0	0	35	505	0	0	540	3	0	19	1	23	0	626	5	0	631	1194
Grand Total	0	0	0	0	0	62	936	0	1	999	4	0	33	1	38	0	1270	6	0	1276	2313
Apprch %	0	0	0	0		6.2	93.7	0	0.1		10.5	0	86.8	2.6		0	99.5	0.5	0		
Total %	0	0	0	0	0	2.7	40.5	0	0	43.2	0.2	0	1.4	0	1.6	0	54.9	0.3	0	55.2	
Vehicles	0	0	0	0	0	60	825	0	1	886	3	0	32	1	36	0	1168				
% Vehicles	0	0	0	0	0	96.8	88.1	0	100	88.7	75	0	97	100	94.7	0	92	83.3	0	91.9	90.6
Heavy vehicles																					
% Heavy vehicles	0	0	0	0	0	3.2	11.9	0	0	11.3	25	0	3	0	5.3	0	8	16.7	0	8.1	9.4

	Southbound					US 290 Westbound					Bunker Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	**12**	137	0	0	149	0	0	5	0	5	0	137	1	0	138	292
08:15	0	0	0	0	0	5	109	0	0	114	0	0	3	0	3	0	141	0	0	141	258
08:30	0	0	0	0	0	7	108	0	0	115	**3**	0	1	0	4	0	**180**	**2**	0	**182**	301
08:45	0	0	0	0	0	11	**151**	0	0	**162**	0	0	**10**	**1**	**11**	0	168	2	0	170	**343**
Total Volume	0	0	0	0	0	35	505	0	0	540	3	0	19	1	23	0	626	5	0	631	1194
% App. Total	0	0	0	0		6.5	93.5	0	0		13	0	82.6	4.3		0	99.2	0.8	0		
PHF	.000	.000	.000	.000	.000	.729	.836	.000	.000	.833	.250	.000	.475	.250	.523	.000	.869	.625	.000	.867	.870
Vehicles	0	0	0	0	0	34	433	0	0	467	3	0	18	1	22	0	569	4	0	573	1062
% Vehicles						97.1	85.7	0	0	86.5	100	0	94.7	100	95.7	0	90.9	80.0	0	90.8	88.9
Heavy vehicles																					
% Heavy vehicles	0	0	0	0	0	2.9	14.3	0	0	13.5	0	0	5.3	0	4.3	0	9.1	20.0	0	9.2	11.1

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 1 - US 290 & Bunker Ranch Blvd - PM
Site Code : 1_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy vehicles

	Southbound					US 290 Westbound					Bunker Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
16:00	0	0	0	0	0	6	151	0	0	157	2	0	10	0	12	0	172	1	0	173	342
16:15	0	0	0	0	0	8	188	0	0	196	0	0	10	0	10	0	155	0	0	155	361
16:30	0	0	0	0	0	5	295	0	0	300	0	0	7	0	7	0	141	1	0	142	449
16:45	0	0	0	0	0	5	196	0	0	201	2	0	5	0	7	0	156	1	0	157	365
Total	0	0	0	0	0	24	830	0	0	854	4	0	32	0	36	0	624	3	0	627	1517
17:00	0	0	0	0	0	2	186	0	0	188	2	0	10	0	12	0	157	1	0	158	358
17:15	0	0	0	0	0	0	199	0	0	199	1	0	10	0	11	0	162	0	0	162	372
17:30	0	0	0	0	0	6	178	0	0	184	2	0	8	0	10	0	162	1	0	163	357
17:45	0	0	0	0	0	2	164	0	0	166	0	0	10	0	10	0	142	1	0	143	319
Total	0	0	0	0	0	10	727	0	0	737	5	0	38	0	43	0	623	3	0	626	1406
Grand Total	0	0	0	0	0	34	1557	0	0	1591	9	0	70	0	79	0	1247	6	0	1253	2923
Apprch %	0	0	0	0		2.1	97.9	0	0		11.4	0	88.6	0		0	99.5	0.5	0		
Total %	0	0	0	0	0	1.2	53.3	0	0	54.4	0.3	0	2.4	0	2.7	0	42.7	0.2	0	42.9	
Vehicles	0	0	0	0	0	32	1508										1186				
% Vehicles	0	0	0	0	0	94.1	96.9	0	0	96.8	100	0	95.7	0	96.2	0	95.1	100	0	95.1	96.1
Heavy vehicles																					
% Heavy vehicles	0	0	0	0	0	5.9	3.1	0	0	3.2	0	0	4.3	0	3.8	0	4.9	0	0	4.9	3.9

	Southbound					US 290 Westbound					Bunker Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	**5**	**295**	0	0	**300**	0	0	7	0	7	0	141	**1**	0	142	**449**
16:45	0	0	0	0	0	5	196	0	0	201	**2**	0	5	0	7	0	156	1	0	157	365
17:00	0	0	0	0	0	2	186	0	0	188	2	0	**10**	0	**12**	0	157	1	0	158	358
17:15	0	0	0	0	0	0	199	0	0	199	1	0	10	0	11	0	**162**	0	0	**162**	372
Total Volume	0	0	0	0	0	12	876	0	0	888	5	0	32	0	37	0	616	3	0	619	1544
% App. Total	0	0	0	0		1.4	98.6	0	0		13.5	0	86.5	0		0	99.5	0.5	0		
PHF	.000	.000	.000	.000	.000	.600	.742	.000	.000	.740	.625	.000	.800	.000	.771	.000	.951	.750	.000	.955	.860
Vehicles	0	0	0	0	0	12	860	0	0	872	5	0	31	0	36	0	583	3	0	586	1494
% Vehicles							98.2	0	0	98.2	100	0	96.9	0	97.3	0	94.6	100	0	94.7	96.8
Heavy vehicles																					
% Heavy vehicles	0	0	0	0	0	0	1.8	0	0	1.8	0	0	3.1	0	2.7	0	5.4	0	0	5.3	3.2

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 2 - US 290 & Arrowhead Ranch Blvd - AM
Site Code : 2_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Bus Barn Driveway Southbound					US 290 Westbound					Arrowhead Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
07:00	0	0	0	0	0	4	97	0	0	101	1	0	22	0	23	0	156	0	0	156	280
07:15	3	0	0	0	3	9	106	0	0	115	1	0	20	0	21	0	160	2	0	162	301
07:30	1	0	1	0	2	12	138	3	1	154	2	0	21	0	23	0	176	0	0	176	355
07:45	1	0	0	0	1	11	143	4	0	158	2	0	10	0	12	0	168	0	0	168	339
Total	5	0	1	0	6	36	484	7	1	528	6	0	73	0	79	0	660	2	0	662	1275
08:00	0	0	0	0	0	6	144	0	0	150	2	0	15	0	17	0	142	2	0	144	311
08:15	1	0	0	0	1	11	119	2	0	132	3	0	16	0	19	0	155	3	0	158	310
08:30	0	0	0	0	0	8	126	6	0	140	2	0	13	0	15	1	173	4	0	178	333
08:45	1	0	0	0	1	12	154	26	0	192	1	0	17	0	18	0	179	5	0	184	395
Total	2	0	0	0	2	37	543	34	0	614	8	0	61	0	69	1	649	14	0	664	1349
Grand Total	7	0	1	0	8	73	1027	41	1	1142	14	0	134	0	148	1	1309	16	0	1326	2624
Apprch %	87.5	0	12.5	0		6.4	89.9	3.6	0.1		9.5	0	90.5	0		0.1	98.7	1.2	0		
Total %	0.3	0	0	0	0.3	2.8	39.1	1.6	0	43.5	0.5	0	5.1	0	5.6	0	49.9	0.6	0	50.5	
Vehicles	4	0	0	0	4	69	919	7	1	996	7	0	130	0	137	1	1223				
% Vehicles	57.1	0	0	0	50	94.5	89.5	17.1	100	87.2	50	0	97	0	92.6	100	93.4	12.5	0	92.5	90.1
Heavy Vehicles																					
% Heavy Vehicles	42.9	0	100	0	50	5.5	10.5	82.9	0	12.8	50	0	3	0	7.4	0	6.6	87.5	0	7.5	9.9

	Bus Barn Driveway Southbound					US 290 Westbound					Arrowhead Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	6	144	0	0	150	2	0	15	0	17	0	142	2	0	144	311
08:15	**1**	0	0	0	**1**	11	119	2	0	132	**3**	0	16	0	**19**	0	155	3	0	158	310
08:30	0	0	0	0	0	8	126	6	0	140	2	0	13	0	15	**1**	173	4	0	178	333
08:45	1	0	0	0	1	**12**	**154**	**26**	0	**192**	1	0	**17**	0	18	0	**179**	**5**	0	**184**	**395**
Total Volume	2	0	0	0	2	37	543	34	0	614	8	0	61	0	69	1	649	14	0	664	1349
% App. Total	100	0	0	0		6	88.4	5.5	0		11.6	0	88.4	0		0.2	97.7	2.1	0		
PHF	.500	.000	.000	.000	.500	.771	.881	.327	.000	.799	.667	.000	.897	.000	.908	.250	.906	.700	.000	.902	.854
Vehicles	2	0	0	0	2	36	476	3	0	515	1	0	59	0	60	1	601	2	0	604	1181
% Vehicles						97.3	87.7	8.8	0	83.9	12.5	0	96.7	0	87.0	100	92.6	14.3	0	91.0	87.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	2.7	12.3	91.2	0	16.1	87.5	0	3.3	0	13.0	0	7.4	85.7	0	9.0	12.5

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 2 - US 290 & Arrowhead Ranch Blvd - PM
Site Code : 2_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Bus Barn Driveway Southbound					US 290 Westbound					Arrowhead Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
16:00	2	0	0	0	2	7	161	0	0	168	2	0	8	0	10	0	183	2	0	185	365
16:15	1	0	0	0	1	14	205	2	0	221	0	0	16	0	16	0	161	1	0	162	400
16:30	0	0	0	0	0	18	236	2	0	256	0	0	11	0	11	1	152	2	0	155	422
16:45	1	0	0	0	1	13	189	1	0	203	0	0	12	0	12	0	166	4	0	170	386
Total	4	0	0	0	4	52	791	5	0	848	2	0	47	0	49	1	662	9	0	672	1573
17:00	0	0	0	0	0	9	198	5	0	212	3	0	11	0	14	1	182	0	0	183	409
17:15	1	0	0	0	1	19	197	14	0	230	2	0	6	0	8	0	177	2	0	179	418
17:30	3	0	2	0	5	15	175	10	0	200	0	0	8	0	8	2	182	0	0	184	397
17:45	6	0	0	0	6	12	157	6	0	175	0	0	11	0	11	0	158	4	0	162	354
Total	10	0	2	0	12	55	727	35	0	817	5	0	36	0	41	3	699	6	0	708	1578
Grand Total	14	0	2	0	16	107	1518	40	0	1665	7	0	83	0	90	4	1361	15	0	1380	3151
Apprch %	87.5	0	12.5	0		6.4	91.2	2.4	0		7.8	0	92.2	0		0.3	98.6	1.1	0		
Total %	0.4	0	0.1	0	0.5	3.4	48.2	1.3	0	52.8	0.2	0	2.6	0	2.9	0.1	43.2	0.5	0	43.8	
Vehicles	13	0	2	0	15	105	1464										1302				
% Vehicles	92.9	0	100	0	93.8	98.1	96.4	7.5	0	94.4	85.7	0	97.6	0	96.7	75	95.7	93.3	0	95.6	95
Heavy Vehicles																					
% Heavy Vehicles	7.1	0	0	0	6.2	1.9	3.6	92.5	0	5.6	14.3	0	2.4	0	3.3	25	4.3	6.7	0	4.4	5

	Bus Barn Driveway Southbound					US 290 Westbound					Arrowhead Ranch Blvd Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	18	**236**	2	0	**256**	0	0	11	0	11	**1**	152	2	0	155	**422**
16:45	**1**	0	0	0	**1**	13	189	1	0	203	0	0	**12**	0	12	0	166	**4**	0	170	386
17:00	0	0	0	0	0	9	198	5	0	212	**3**	0	11	0	**14**	1	**182**	0	0	**183**	409
17:15	1	0	0	0	1	**19**	197	**14**	0	230	2	0	6	0	8	0	177	2	0	179	418
Total Volume	2	0	0	0	2	59	820	22	0	901	5	0	40	0	45	2	677	8	0	687	1635
% App. Total	100	0	0	0		6.5	91	2.4	0		11.1	0	88.9	0		0.3	98.5	1.2	0		
PHF	.500	.000	.000	.000	.500	.776	.869	.393	.000	.880	.417	.000	.833	.000	.804	.500	.930	.500	.000	.939	.969
Vehicles	2	0	0	0	2	58	796	1	0	855	5	0	38	0	43	1	647	7	0	655	1555
% Vehicles						98.3	97.1	4.5	0	94.9	100	0	95.0	0	95.6	50.0	95.6	87.5	0	95.3	95.1
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	1.7	2.9	95.5	0	5.1	0	0	5.0	0	4.4	50.0	4.4	12.5	0	4.7	4.9

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 3 - US 290 & Springs Ln - AM
Site Code : 3_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Springs Ln Southbound					US 290 Westbound					Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
07:00	9	0	1	0	10	0	97	2	0	99	0	0	0	0	0	1	181	0	0	182	291
07:15	7	0	2	0	9	0	122	2	0	124	0	0	0	0	0	1	191	0	0	192	325
07:30	6	0	1	0	7	0	146	6	0	152	0	0	0	0	0	0	208	0	0	208	367
07:45	9	0	1	0	10	0	158	4	0	162	0	0	0	0	0	0	177	0	0	177	349
Total	31	0	5	0	36	0	523	14	0	537	0	0	0	0	0	2	757	0	0	759	1332
08:00	5	0	0	0	5	0	158	1	0	159	0	0	0	0	0	0	159	0	0	159	323
08:15	5	0	0	0	5	0	135	0	0	135	0	0	0	0	0	1	173	0	0	174	314
08:30	2	0	0	0	2	0	138	3	0	141	0	0	0	0	0	0	187	0	1	188	331
08:45	3	0	0	0	3	0	197	2	0	199	0	0	0	0	0	1	199	0	0	200	402
Total	15	0	0	0	15	0	628	6	0	634	0	0	0	0	0	2	718	0	1	721	1370
Grand Total	46	0	5	0	51	0	1151	20	0	1171	0	0	0	0	0	4	1475	0	1	1480	2702
Apprch %	90.2	0	9.8	0		0	98.3	1.7	0		0	0	0	0		0.3	99.7	0	0.1		
Total %	1.7	0	0.2	0	1.9	0	42.6	0.7	0	43.3	0	0	0	0	0	0.1	54.6	0	0	54.8	
Vehicles	44	0	4	0	48	0	1004										1372				
% Vehicles	95.7	0	80	0	94.1	0	87.2	90	0	87.3	0	0	0	0	0	75	93	0	100	93	90.5
Heavy Vehicles																					
% Heavy Vehicles	4.3	0	20	0	5.9	0	12.8	10	0	12.7	0	0	0	0	0	25	7	0	0	7	9.5

	Springs Ln Southbound					US 290 Westbound					Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total		Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	**5**	0	0	0	**5**	0	158	1	0	159	0	0	0	0	0	0	159	0	0	159	323
08:15	5	0	0	0	5	0	135	0	0	135	0	0	0	0	0	**1**	173	0	0	174	314
08:30	2	0	0	0	2	0	138	**3**	0	141	0	0	0	0	0	0	187	0	**1**	188	331
08:45	3	0	0	0	3	0	**197**	2	0	**199**	0	0	0	0	0	1	**199**	0	0	**200**	**402**
Total Volume	15	0	0	0	15	0	628	6	0	634	0	0	0	0	0	2	718	0	1	721	1370
% App. Total	100	0	0	0		0	99.1	0.9	0		0	0	0	0		0.3	99.6	0	0.1		
PHF	.750	.000	.000	.000	.750	.000	.797	.500	.000	.796	.000	.000	.000	.000	.000	.500	.902	.000	.250	.901	.852
Vehicles	15	0	0	0	15	0	525	6	0	531	0	0	0	0	0	2	667	0	1	670	1216
% Vehicles							83.6	100	0	83.8	0	0	0	0	0	100	92.9	0	100	92.9	88.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	16.4	0	0	16.2	0	0	0	0	0	0	7.1	0	0	7.1	11.2

GRAM Traffic Counting, Inc.

3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

File Name : Site 3 - US 290 & Springs Ln - PM
Site Code : 3_____
Start Date : 4/20/2021
Page No : 1

Groups Printed- Vehicles - Heavy Vehicles

	Springs Ln Southbound					US 290 Westbound					Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
16:00	3	0	0	0	3	0	185	4	0	189	0	0	0	0	0	0	203	0	0	203	395
16:15	4	0	1	0	5	0	226	6	0	232	0	0	0	0	0	0	182	0	0	182	419
16:30	4	0	0	0	4	0	260	6	0	266	0	0	0	0	0	1	162	0	0	163	433
16:45	2	0	2	0	4	0	192	7	0	199	0	0	0	0	0	1	187	0	0	188	391
Total	13	0	3	0	16	0	863	23	0	886	0	0	0	0	0	2	734	0	0	736	1638
17:00	7	0	1	0	8	0	211	6	0	217	0	0	0	0	0	0	190	0	0	190	415
17:15	2	0	0	0	2	0	242	7	0	249	0	0	0	0	0	0	193	0	0	193	444
17:30	3	0	0	0	3	0	193	4	0	197	0	0	0	0	0	1	195	0	0	196	396
17:45	3	0	0	0	3	0	189	4	0	193	0	0	0	0	0	0	169	0	0	169	365
Total	15	0	1	0	16	0	835	21	0	856	0	0	0	0	0	1	747	0	0	748	1620
Grand Total	28	0	4	0	32	0	1698	44	0	1742	0	0	0	0	0	3	1481	0	0	1484	3258
Apprch %	87.5	0	12.5	0		0	97.5	2.5	0		0	0	0	0		0.2	99.8	0	0		
Total %	0.9	0	0.1	0	1	0	52.1	1.4	0	53.5	0	0	0	0	0	0.1	45.5	0	0	45.5	
Vehicles	28	0	3	0	31	0	1613										1419				
% Vehicles	100	0	75	0	96.9	0	95	97.7	0	95.1	0	0	0	0	0	100	95.8	0	0	95.8	95.4
Heavy Vehicles																					
% Heavy Vehicles	0	0	25	0	3.1	0	5	2.3	0	4.9	0	0	0	0	0	0	4.2	0	0	4.2	4.6

	Springs Ln Southbound					US 290 Westbound					Northbound					US 290 Eastbound					
Start Time	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Left	Thru	Right	U-TURN	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	4	0	0	0	4	0	**260**	6	0	**266**	0	0	0	0	0	**1**	162	0	0	163	433
16:45	2	0	**2**	0	4	0	192	**7**	0	199	0	0	0	0	0	1	187	0	0	188	391
17:00	**7**	0	1	0	**8**	0	211	6	0	217	0	0	0	0	0	0	190	0	0	190	415
17:15	2	0	0	0	2	0	242	7	0	249	0	0	0	0	0	0	**193**	0	0	**193**	**444**
Total Volume	15	0	3	0	18	0	905	26	0	931	0	0	0	0	0	2	732	0	0	734	1683
% App. Total	83.3	0	16.7	0		0	97.2	2.8	0		0	0	0	0		0.3	99.7	0	0		
PHF	.536	.000	.375	.000	.563	.000	.870	.929	.000	.875	.000	.000	.000	.000	.000	.500	.948	.000	.000	.951	.948
Vehicles	15	0	2	0	17	0	864	25	0	889	0	0	0	0	0	2	700	0	0	702	1608
% Vehicles			66.7	0	94.4	0	95.5	96.2	0	95.5	0	0	0	0	0	100	95.6	0	0	95.6	95.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	33.3	0	5.6	0	4.5	3.8	0	4.5	0	0	0	0	0	0	4.4	0	0	4.4	4.5

GRAM Traffic Counting, Inc.
3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

Site Code: 1
Station ID:
US 290
East of CR 239
Latitude: 0' 0.0000 Undefined

Start Time	20-Apr-21 Tue	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		9	167			7	192				
12:15		11	164			4	179				
12:30		6	219			5	148				
12:45		4	183	30	733	4	140	20	659	50	1392
01:00		4	182			1	159				
01:15		3	216			2	153				
01:30		4	202			8	154				
01:45		3	177	14	777	4	162	15	628	29	1405
02:00		2	216			2	139				
02:15		1	201			3	189				
02:30		5	190			4	216				
02:45		4	164	12	771	3	176	12	720	24	1491
03:00		6	215			3	201				
03:15		3	234			4	184				
03:30		3	209			5	168				
03:45		3	173	15	831	6	184	18	737	33	1568
04:00		4	197			8	189				
04:15		5	225			7	221				
04:30		9	261			24	182				
04:45		16	211	34	894	21	188	60	780	94	1674
05:00		12	212			28	200				
05:15		26	241			33	190				
05:30		51	210			56	197				
05:45		70	180	159	843	59	173	176	760	335	1603
06:00		66	210			89	155				
06:15		71	169			99	157				
06:30		66	167			132	164				
06:45		86	135	289	681	141	134	461	610	750	1291
07:00		101	104			173	108				
07:15		122	118			195	100				
07:30		165	131			218	117				
07:45		170	96	558	449	177	88	763	413	1321	862
08:00		159	107			167	92				
08:15		138	71			163	70				
08:30		163	66			173	65				
08:45		190	81	650	325	187	62	690	289	1340	614
09:00		193	77			175	52				
09:15		133	61			172	52				
09:30		159	45			166	38				
09:45		161	43	646	226	171	41	684	183	1330	409
10:00		162	40			175	25				
10:15		178	30			175	24				
10:30		168	23			153	21				
10:45		158	36	666	129	150	16	653	86	1319	215
11:00		159	28			171	19				
11:15		153	14			164	11				
11:30		176	13			209	17				
11:45		139	12	627	67	182	6	726	53	1353	120
Total		3700	6726			4278	5918			7978	12644
Percent		35.5%	64.5%			42.0%	58.0%			38.7%	61.3%

GRAM Traffic Counting, Inc.
3751 FM 1105, Bldg. A
Georgetown, TX 78626
512-832-8650

Site Code: 1
Station ID:
US 290
East of CR 239
Latitude: 0' 0.0000 Undefined

Start Time	21-Apr-21 Wed	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		12	159			3	173				
12:15		9	197			7	157				
12:30		4	189			3	152				
12:45		8	181	33	726	1	151	14	633	47	1359
01:00		3	153			0	152				
01:15		4	208			2	158				
01:30		6	188			9	170				
01:45		2	158	15	707	2	146	13	626	28	1333
02:00		2	176			4	151				
02:15		3	180			3	186				
02:30		3	177			5	222				
02:45		4	182	12	715	3	176	15	735	27	1450
03:00		4	152			1	174				
03:15		6	207			2	160				
03:30		5	184			5	168				
03:45		2	200	17	743	8	192	16	694	33	1437
04:00		10	194			8	219				
04:15		5	232			9	200				
04:30		8	225			21	176				
04:45		13	220	36	871	15	168	53	763	89	1634
05:00		12	243			23	172				
05:15		23	227			45	194				
05:30		47	219			39	194				
05:45		61	266	143	955	65	180	172	740	315	1695
06:00		66	201			64	184				
06:15		68	178			117	163				
06:30		80	193			112	166				
06:45		96	168	310	740	151	136	444	649	754	1389
07:00		81	130			187	115				
07:15		139	118			194	123				
07:30		155	124			188	95				
07:45		183	128	558	500	188	89	757	422	1315	922
08:00		149	102			187	91				
08:15		144	93			170	105				
08:30		149	82			172	91				
08:45		175	88	617	365	196	89	725	376	1342	741
09:00		171	80			177	59				
09:15		175	67			164	51				
09:30		166	60			167	36				
09:45		154	44	666	251	170	38	678	184	1344	435
10:00		148	38			173	58				
10:15		163	33			164	30				
10:30		161	25			177	28				
10:45		188	23	660	119	177	28	691	144	1351	263
11:00		168	17			162	32				
11:15		156	23			174	14				
11:30		184	8			182	13				
11:45		184	17	692	65	169	5	687	64	1379	129
Total		3759	6757			4265	6030			8024	12787
Percent		35.7%	64.3%			41.4%	58.6%			38.6%	61.4%
Grand Total		7459	13483			8543	11948			16002	25431
Percent		35.6%	64.4%			41.7%	58.3%			38.6%	61.4%
ADT		ADT 20,716		AADT 20,716							

APPENDIX D
COVID-19 TRAFFIC VOLUME FACTOR EVALUATION

Volume Comparison for COVID-19 Factor Determination

Data Source	ADT Traffic Volumes		
	Eastbound	Westbound	Total
Tuesday, January 30, 2018	7,570	7,389	14,959
Grown to 2021 (2.44% per year linear)	8,124	7,930	16,054
Tuesday, April 20, 2021	10,196	10,426	20,622
Wednesday, April 21, 2021	10,295	10,516	20,811
Average	10,246	10,471	20,717
Difference	2,122	2,541	4,663

Linear Growth Rate	2.44%
2018	**2021**
1.0732	

Based on data, no factor to adjust 2021 traffic volumes to account for COVID conditions will be applied.

2018 traffic count data provided by the City of Dripping Springs

GRAM Traffic Counting Inc.
3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

Site Code: 2
Station ID:
Hwy 290
West of Bell Springs Rd
Latitude: 0' 0.0000 Undefined

Start	30-Jan-18	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	131			18	124				
12:15		3	110			5	132				
12:30		6	133			6	120				
12:45		4	122	17	496	3	122	32	498	49	994
01:00		1	145			1	125				
01:15		2	135			4	113				
01:30		4	115			2	124				
01:45		2	117	9	512	1	116	8	478	17	990
02:00		3	113			3	121				
02:15		2	152			2	125				
02:30		1	170			1	115				
02:45		3	142	9	577	2	148	8	509	17	1086
03:00		4	136			5	161				
03:15		1	107			2	146				
03:30		12	100			0	173				
03:45		7	105	24	448	3	130	10	610	34	1058
04:00		6	107			3	150				
04:15		3	121			5	160				
04:30		10	97			6	171				
04:45		19	101	38	426	8	156	22	637	60	1063
05:00		23	123			9	195				
05:15		35	129			20	170				
05:30		55	164			34	142				
05:45		67	130	180	546	52	166	115	673	295	1219
06:00		91	125			36	159				
06:15		108	109			60	151				
06:30		134	106			51	145				
06:45		123	83	456	423	64	101	211	556	667	979
07:00		118	69			65	115				
07:15		166	70			84	60				
07:30		168	63			89	95				
07:45		153	55	605	257	106	85	344	355	949	612
08:00		152	32			90	66				
08:15		144	43			92	63				
08:30		164	36			95	78				
08:45		166	26	626	137	122	55	399	262	1025	399
09:00		147	17			104	69				
09:15		150	30			109	49				
09:30		127	36			126	36				
09:45		147	24	571	107	123	30	462	184	1033	291
10:00		141	23			89	24				
10:15		117	15			93	34				
10:30		116	20			122	32				
10:45		134	12	508	70	108	23	412	113	920	183
11:00		133	16			97	16				
11:15		134	5			120	15				
11:30		114	6			118	10				
11:45		116	4	497	31	109	6	444	47	941	78
Total		3540	4030			2467	4922			6007	8952
Percent		46.8%	53.2%			33.4%	66.6%			40.2%	59.8%
Grand Total		3540	4030			2467	4922			6007	8952
Percent		46.8%	53.2%			33.4%	66.6%			40.2%	59.8%
ADT		ADT 3,815		AADT 3,815							

APPENDIX E
INTERSECTION APPROACH PHOTOGRAPHS

Intersection: US 290 with Bunker Ranch Boulevard

Eastbound US 290 Approach

Westbound US 290 Approach

Intersection: US 290 with Bunker Ranch Boulevard

Northbound Bunker Ranch Boulevard

Intersection: US 290 with Arrowhead Ranch Boulevard/DSISD Driveway

Eastbound US 290 Approach

Westbound US 290 Approach

Intersection: US 290 with Arrowhead Ranch Boulevard/DSISD Driveway

Northbound Arrowhead Ranch Boulevard Approach

Looking at Southbound DSISD Driveway

Intersection: US 290 with Springs Lane Road

Eastbound US 290 Approach

Westbound US 290 Approach

Intersection: US 290 with Springs Lane Road

Southbound Springs Lane Approach

APPENDIX F
LEVEL OF SERVICE DEFINITIONS

LEVELS OF SERVICE

Intersection levels of service (LOS) were determined through implementation of the methodology presented in the *Highway Capacity Manual 6th Edition*, published by the Transportation Research Board.

i. Signalized Intersections

An explanation of level of service at signalized intersections is as follows:

This subsection describes the LOS criteria for the motorized vehicle mode. The criteria for the motorized vehicle mode are different from those for other modes. Specifically, the motorized vehicle mode criteria are based on performance measures that are field measurable and perceivable by travelers. The criteria for other modes are based on scores reported by travelers indicating their perception of service quality.

LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection of an approach. Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phases's capacity is utilized by a lane group. The following paragraphs describe each LOS.

LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

Exhibit 19-8 lists the LOS thresholds established for the motor vehicle mode at a signalized intersection.

Exhibit 19-8
LOS Criteria: Signalized Intersection

Control Delay (s/veh)	LOS by Volume-to-Capacity (v/c) Ratio[1]	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

(1) For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

ii. Unsignalized Intersections

The following level-of-service criteria for two-way stop-controlled and all-way stop-controlled intersections differ from the criteria for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from various kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Thus, a higher level of control delay is acceptable at a signalized intersection for the same level of service.

Level of service for two-way stop-controlled (TWSC) intersections and an all-way stop control intersections is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement), as well as the major-street left turns, by using the criteria given in Exhibit 20-2 and Exhibit 21-8. For TWSC intersections, LOS is not defined for the intersection as a whole or for major –street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements. Level of service for two-way stop control is not defined for the intersection as a whole, while level of service for all-way stop control is defined for the intersection as a whole. Level of service criteria are given in Exhibit 20-2 (two-way stop-controlled intersections) and Exhibit 21-8 (all-way stop controlled intersections).

Exhibit 20-2 and Exhibit 21-8
LOS Criteria: Two-Way and All-Way Stop Controlled Intersections

Control Delay (s/veh)	LOS by Volume-to-Capacity (v/c) Ratio (1)(2)	
	v/c ≤ 1.0	v/c > 1.0
0 – 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

(1) TWSC: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.
(2) AWSC: For approaches and intersectionwide assessment, LOS is defined solely by control delay.

APPENDIX G
EXISTING 2021 CAPACITY CALCULATIONS

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	626	5	35	505	3	19
Future Vol, veh/h	626	5	35	505	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	10	20	3	15	0	6
Mvmt Flow	720	6	40	580	3	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	726	0	1090	360
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.16	-	6.8	7.02
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.36
Pot Cap-1 Maneuver	-	-	866	-	213	625
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	203	625
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	644	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	557	-	-	866	-
HCM Lane V/C Ratio	0.045	-	-	0.046	-
HCM Control Delay (s)	11.8	-	-	9.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	649	14	37	543	34	8	0	61	2	0	0
Future Vol, veh/h	1	649	14	37	543	34	8	0	61	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	86	3	13	92	88	0	4	0	0	0
Mvmt Flow	1	764	16	44	639	40	9	0	72	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	679	0	0	780	0	0	1174	1533	382	1131	1529	340
Stage 1	-	-	-	-	-	-	766	766	-	747	747	-
Stage 2	-	-	-	-	-	-	408	767	-	384	782	-
Critical Hdwy	4.1	-	-	4.16	-	-	9.26	6.5	6.98	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.23	-	-	4.38	4	3.34	3.5	4	3.3
Pot Cap-1 Maneuver	923	-	-	827	-	-	75	118	610	161	118	662
Stage 1	-	-	-	-	-	-	218	415	-	376	423	-
Stage 2	-	-	-	-	-	-	409	414	-	616	408	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	923	-	-	827	-	-	72	112	610	136	112	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	112	-	136	112	-
Stage 1	-	-	-	-	-	-	218	415	-	376	401	-
Stage 2	-	-	-	-	-	-	387	392	-	543	408	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	19.6	31.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	327	923	-	-	827	-	-	136
HCM Lane V/C Ratio	0.248	0.001	-	-	0.053	-	-	0.017
HCM Control Delay (s)	19.6	8.9	-	-	9.6	-	-	31.9
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	718	628	6	15	0
Future Vol, veh/h	2	718	628	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	17	0	0	0
Mvmt Flow	2	845	739	7	18	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	746	0	-	0	1170	373
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	427	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	871	-	-	-	189	630
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	871	-	-	-	189	630
Mov Cap-2 Maneuver	-	-	-	-	317	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	871	-	-	-	317
HCM Lane V/C Ratio	0.003	-	-	-	0.056
HCM Control Delay (s)	9.1	-	-	-	17
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	616	3	12	876	5	32
Future Vol, veh/h	616	3	12	876	5	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	6	0	0	2	0	4
Mvmt Flow	716	3	14	1019	6	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	719	0	1254	358
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	-	-	4.1	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	892	-	167	633
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	555	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	892	-	164	633
Mov Cap-2 Maneuver	-	-	-	-	299	-
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	550	-	-	892	-
HCM Lane V/C Ratio	0.078	-	-	0.016	-
HCM Control Delay (s)	12.1	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	677	8	59	820	22	5	0	40	2	0	0
Future Vol, veh/h	2	677	8	59	820	22	5	0	40	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	50	5	13	2	3	96	0	0	5	0	0	0
Mvmt Flow	2	698	8	61	845	23	5	0	41	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	868	0	0	706	0	0	1247	1692	349	1332	1689	434
Stage 1	-	-	-	-	-	-	702	702	-	979	979	-
Stage 2	-	-	-	-	-	-	545	990	-	353	710	-
Critical Hdwy	5.1	-	-	4.14	-	-	7.5	6.5	7	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.7	-	-	2.22	-	-	3.5	4	3.35	3.5	4	3.3
Pot Cap-1 Maneuver	530	-	-	888	-	-	132	94	638	114	94	576
Stage 1	-	-	-	-	-	-	400	443	-	272	331	-
Stage 2	-	-	-	-	-	-	495	327	-	642	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	530	-	-	888	-	-	125	87	638	101	87	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	87	-	101	87	-
Stage 1	-	-	-	-	-	-	398	441	-	271	308	-
Stage 2	-	-	-	-	-	-	461	304	-	598	438	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	14.2	41.4
HCM LOS			B	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	438	530	-	-	888	-	-	101
HCM Lane V/C Ratio	0.106	0.004	-	-	0.068	-	-	0.02
HCM Control Delay (s)	14.2	11.8	-	-	9.4	-	-	41.4
HCM Lane LOS	B	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	732	905	26	15	3
Future Vol, veh/h	2	732	905	26	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	5	5	4	0	34
Mvmt Flow	2	771	953	27	16	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	980	0	-	0	1357	490
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	390	-
Critical Hdwy	4.1	-	-	-	6.8	7.58
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.64
Pot Cap-1 Maneuver	712	-	-	-	143	447
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	712	-	-	-	143	447
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	659	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	712	-	-	-	277
HCM Lane V/C Ratio	0.003	-	-	-	0.068
HCM Control Delay (s)	10.1	-	-	-	18.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

APPENDIX H
BUNKER RANCH TRIP GENERATION CALCULATIONS

Trip Generation Calculations
Bunker Ranch Development
City of Dripping Springs, Hays County, Texas

Proposed Total Bunker Ranch Development Single Family Homes (160 Approved plus 228 Proposed)

388 units ITE Land Use Code 210 Single-Family Detached Housing

Weekday 24-Hour	=======>	Ln(T) =	0.92	Ln(	X	) +	2.71	(	50	% Entering/	50	% Exiting)		
		Ln(T) =	0.92	Ln(	388	) +	2.71							
		Ln(T) =	0.92	(	5.961	) +	2.71							
		Ln(T) =			8.19			(	1810	Entering/	1810	Exiting)		
		T =			3619.622									
		T =			3620									
A.M. Peak Hour	=======>	T =	0.71	(	X	) +	4.8	(	25	% Entering/	75	% Exiting)		
		T =	0.71	(	388.00	) +	4.80							
		T =			280.28									
		T =			280			(	70	Entering/	210	Exiting)		
P.M. Peak Hour	=======>	Ln(T) =	0.96	Ln(	X	) +	0.2	(	63	% Entering/	37	% Exiting)		
		Ln(T) =	0.96	Ln(	388	) +	0.2							
		Ln(T) =	0.96	(	5.961	) +	0.2							
		Ln(T) =			5.92			(	235	Entering/	138	Exiting)		
		T =			373.368									
		T =			373									

Trip Generation Calculations
Bunker Ranch Development
City of Dripping Springs, Hays County, Texas

Bunker Ranch Approved Single Family Units

160	units	ITE Land Use Code			210				Single-Family Detached Housing							
	Weekday 24-Hour	=======>	Ln(T) =	0.92	Ln(	X	) +	2.71	(	50	% Entering/	50	% Exiting)			
			Ln(T) =	0.92	Ln(	160	) +	2.71								
			Ln(T) =	0.92	(	5.075	) +	2.71								
			Ln(T) =			7.38			(	801	Entering/	801	Exiting)			
			T =			1602.243										
			T =			1602										
	A.M. Peak Hour	=======>	T =	0.71	(	X	) +	4.8	(	25	% Entering/	75	% Exiting)			
			T =	0.71	(	160.00	) +	4.80								
			T =			118.4										
			T =			118			(	30	Entering/	88	Exiting)			
	P.M. Peak Hour	=======>	Ln(T) =	0.96	Ln(	X	) +	0.2	(	63	% Entering/	37	% Exiting)			
			Ln(T) =	0.96	Ln(	160	) +	0.2								
			Ln(T) =	0.96	(	5.075	) +	0.2								
			Ln(T) =			5.07			(	101	Entering/	59	Exiting)			
			T =			159.520										
			T =			160										

Trip Generation Calculations
Bunker Ranch Development
City of Dripping Springs, Hays County, Texas

Bunker Ranch Single Family Homes Currently Built and Occupied

58	units	ITE Land Use Code			210				Single-Family Detached Housing							
	Weekday 24-Hour	=======>	Ln(T) =	0.92	Ln(	X	) +	2.71		(	50	% Entering/	50	% Exiting)		
			Ln(T) =	0.92	Ln(	58	) +	2.71								
			Ln(T) =	0.92	(	4.060	) +	2.71								
			Ln(T) =			6.45				(	315	Entering/	315	Exiting)		
			T =			629.929										
			T =			630										
	A.M. Peak Hour	=======>	T =	0.71	(	X	) +	4.8		(	25	% Entering/	75	% Exiting)		
			T =	0.71	(	58.00	) +	4.80								
			T =			45.98										
			T =			46				(	12	Entering/	34	Exiting)		
	P.M. Peak Hour	=======>	Ln(T) =	0.96	Ln(	X	) +	0.2		(	63	% Entering/	37	% Exiting)		
			Ln(T) =	0.96	Ln(	58	) +	0.2								
			Ln(T) =	0.96	(	4.060	) +	0.2								
			Ln(T) =			4.10				(	38	Entering/	22	Exiting)		
			T =			60.221										
			T =			60										

Trip Generation Calculations
Bunker Ranch Development
City of Dripping Springs, Hays County, Texas

Bunker Ranch Development Approved Multifamily Units

42	units	ITE Land Use Code			220					Multfamily Low-Rise							
	Weekday 24-Hour	=======>	T =	7.32	(	X	)				(	50	% Entering/	50	% Exiting)
			T =	7.32	(	42.00	)								
			T =			307.44									
			T =			307					(	153	Entering/	154	Exiting)
	A.M. Peak Hour	=======>	Ln(T) =	0.95	Ln(	X	)	-	0.51		(	23	% Entering/	77	% Exiting)
			Ln(T) =	0.95	Ln(	42	)	-	0.51						
			Ln(T) =	0.95	(	3.738	)	-	0.51						
			Ln(T) =			3.04					(	5	Entering/	16	Exiting)
			T =			20.922									
			T =			21									
	P.M. Peak Hour	=======>	Ln(T) =	0.89	Ln(	X	)	-	0.02		(	63	% Entering/	37	% Exiting)
			Ln(T) =	0.89	Ln(	42	)	-	0.02						
			Ln(T) =	0.89	(	3.738	)	-	0.02						
			Ln(T) =			3.31					(	17	Entering/	10	Exiting)
			T =			27.290									
			T =			27									

Trip Generation Calculations
Bunker Ranch Development
City of Dripping Springs, Hays County, Texas

Bunker Ranch Development Multifamily Units Currently Constructed and Occupied

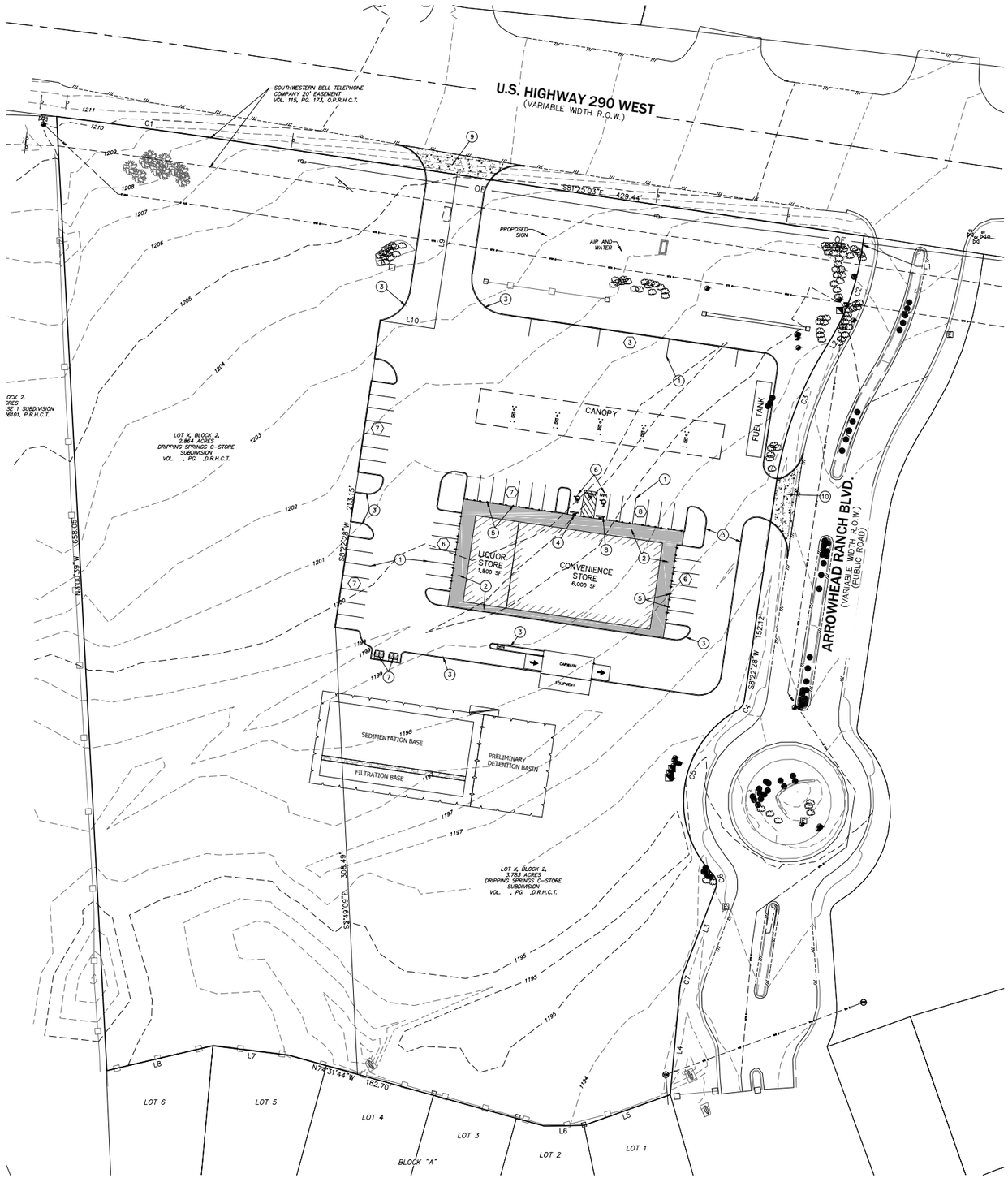
6	units	ITE Land Use Code			220					Multfamily Low-Rise						
	Weekday 24-Hour	=======>	T =	7.56	(	X	)	-	40.86		(	50	% Entering/	50	% Exiting)
			T =	7.56	(	6.00	)	-	40.86						
			T =			4.5									
			T =			5					(	2	Entering/	3	Exiting)
	A.M. Peak Hour	=======>	Ln(T) =	0.95	Ln(	X	)	-	0.51		(	23	% Entering/	77	% Exiting)
			Ln(T) =	0.95	Ln(	6	)	-	0.51						
			Ln(T) =	0.95	(	1.792	)	-	0.51						
			Ln(T) =			1.19					(	1	Entering/	2	Exiting)
			T =			3.294									
			T =			3									
	P.M. Peak Hour	=======>	Ln(T) =	0.89	Ln(	X	)	-	0.02		(	63	% Entering/	37	% Exiting)
			Ln(T) =	0.89	Ln(	6	)	-	0.02						
			Ln(T) =	0.89	(	1.792	)	-	0.02						
			Ln(T) =			1.57					(	3	Entering/	2	Exiting)
			T =			4.829									
			T =			5									

APPENDIX I
ARROWHEAD RANCH CONCEPTUAL SITE PLAN

TRAFFIC SUMMARY TABLE

SITE USE CONVENIENCE STORE	6,000 SF
PARKING STORAGE STANDARDS MINIMUM PARKING RATIO	1 PER 200 SF GFA
SITE USE LIQUOR STORE	1,800 SF
PARKING STORAGE STANDARDS MINIMUM PARKING RATIO	1 PER 200 SF GFA
SITE USE CAR WASH	910 SF
PARKING STORAGE STANDARDS MINIMUM PARKING RATIO	1 PER WASHING BAY
REGULAR MINIMUM REQUIRED PARKING PARKING SPACES PARKING BY GAS PUMPS ACTUAL/PROPOSED PARKING (INCLUDING H.C. PARKING)	40 44 10 54
HANDICAPPED (ADA) REQUIRED REGULAR H.C. PARKING PROPOSED H.C. PARKING REQUIRED V.A. PARKING	2 TOTAL 2 (1 V.A. INCLUDED) 1 (1 INCLUDED IN TOTAL)

	TOTAL ACRES	IMPERVIOUS COVER (SF)	IMPERVIOUS COVER (AC)	IMPERVIOUS COVER (%)
LOT A C-STORE	3.783	70,430	1.617	42.74 %
LOT B RETAIL	2.864	32,346	0.743	25.94 %
TOTAL SITE	6.647	102,776	2.36	35.50 %



SCALE: 1" = 30'

LEGEND

	BOUNDARY / RIGHT OF WAY LINE
	CONCRETE CURB
	EASEMENT / SETBACK LINE
FIRE LANE	FIRE LANE
OU OU	OVERHEAD UTILITIES
G G	EXISTING GAS MAIN
	EXISTING EDGE OF ASPHALT
E.G.T.CA. ESMT	ELECTRIC, GAS, TELEPHONE AND CABLE T.V. EASEMENT
B.S.L.	BUILDING SETBACK LINE
V.N.A.E.	VEHICULAR NON-ACCESS EASEMENT
DS	DOWNSPOUT
	LIGHT POLES
	EXISTING LIGHT POLES
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
P	EXISTING TRAFFIC SIGNAL POLE
	EXISTING WATER METER
E	EXISTING ELECTRIC METER
T	EXISTING TELEPHONE PEDESTAL
E	EXISTING CABLE BOX
	CONCRETE WHEEL STOP
	SIGN
9	PARKING STALL COUNT
	ACCESSIBLE PARKING
4	CONCRETE DRIVEWAY

CIVIL KEY NOTES

1	PAVEMENT STRIPING (TYPICAL) (REFERENCE SHEET C13)
2	CONCRETE SIDEWALK (REFERENCE SHEET C13)
3	6" CONCRETE CURB (TYPICAL) (REFERENCE SHEET C13)
4	HANDICAP SIGN (REFERENCE ARCHITECTURAL PLANS FOR DETAILS)
5	BOLLARDS (REFERENCE SHEET C13)
6	ACCESSIBILITY STRIPING (REFERENCE SHEET C13)
7	GARBAGE DUMPSTER (REFERENCE ARCHITECTURAL PLANS FOR DETAILS)
8	CONCRETE WHEEL STOP (REFERENCE SHEET C13)
9	TXDOT CONCRETE DRIVEWAY (REFERENCE SHEET C13)
10	CONCRETE DRIVEWAY (REFERENCE SHEET C14)
11	CURB RAMP (REFERENCE SHEET C13)
12	DOWNSPOUT (REFERENCE ARCHITECTURAL PLANS FOR DETAILS)

NOTES:

1. REFERENCE STRUCTURAL PLANS FOR FOUNDATION.
2. ALL CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
3. REFER TO GENERAL NOTE SHEET FOR ADDITIONAL SITE NOTES.
4. "C" IN PARKING SPACE DENOTES COMPACT SPACE. COMPACT SPACES ARE 8' X 16'.
5. PAVEMENT MARKINGS IN BEXAR COUNTY R.O.W. MUST BE THERMOPLASTIC.
6. PAVEMENT DESIGN FOR AUXILIARY LANES ABUTTING AN EXISTING ROAD SHALL BE MINIMUM 2" HMAC TYPE D (OR TYPE C) AND 12" HMAC TYPE B OR MATCH EXISTING PAVEMENT SECTION (IF KNOWN).
7. REFERENCE CANOPY PLANS FOR CANOPY AND FUEL TANK DETAILS.
8. REFERENCE ARCHITECTURAL PLANS FOR CAR WASH CONFIGURATION AND DETAILS.

UP ENGINEERING + SURVEYING
11903 JONES MALTSBERGER ROAD, SUITE 102
SAN ANTONIO, TX 78216 TEL 210-774-5504
WWW.UPENGINEERING.COM TBPE F-17992
TBPELS F-10194408

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

PREPARED UNDER THE SUPERVISION OF NATASHA F. UHLRICH, P.E. #135002 ON March 26, 2021

DRIPPING SPRINGS REAL ESTATE, LLC
7410 BLANCO ROAD, SUITE 225
SAN ANTONIO, TEXAS 78216

DRIPPING SPRINGS C-STORE
PLAT NO.

##########

REV	DATE	DESCRIPTION	BY

DESIGNED BY: WPF
DRAFTED BY: JWH
CHECKED BY: NFU

SHEET
##
OF C17

Date: Mar 26, 2021, 4:33pm User ID: TJM
File: c:_Projects\128 - Dripping Springs C-Store\CAD\Exhibits\Site Exhibit.dwg

APPENDIX J
ARROWHEAD RANCH TRIP GENERATION CALCULATIONS

Trip Generation Calculations
Arrowhead Ranch Development
City of Dripping Springs, Hays County, Texas

Approved Arrowhead Ranch Residential Units

403	units	ITE Land Use Code			210				Single-Family Detached Housing						
	Weekday 24-Hour	=======>	Ln(T) =	0.92	Ln(	X	) +	2.71	(	50	% Entering/	50	% Exiting)		
			Ln(T) =	0.92	Ln(	403	) +	2.71							
			Ln(T) =	0.92	(	5.999	) +	2.71							
			Ln(T) =			8.23			(	1874	Entering/	1874	Exiting)		
			T =			3748.165									
			T =			3748									
	A.M. Peak Hour	=======>	T =	0.71	(	X	) +	4.8	(	25	% Entering/	75	% Exiting)		
			T =	0.71	(	403.00	) +	4.80							
			T =			290.93									
			T =			291			(	73	Entering/	218	Exiting)		
	P.M. Peak Hour	=======>	Ln(T) =	0.96	Ln(	X	) +	0.2	(	63	% Entering/	37	% Exiting)		
			Ln(T) =	0.96	Ln(	403	) +	0.2							
			Ln(T) =	0.96	(	5.999	) +	0.2							
			Ln(T) =			5.96			(	244	Entering/	143	Exiting)		
			T =			387.215									
			T =			387									

Trip Generation Calculations
Arrowhead Ranch Development
City of Dripping Springs, Hays County, Texas

Arrowhead Ranch Single Family Residential Units Currently Constructed and Occupiec

181 units ITE Land Use Code 210 Single-Family Detached Housing

Weekday 24-Hour	=======>	Ln(T) =	0.92	Ln(	X	) +	2.71		(	50	% Entering/	50	% Exiting)
		Ln(T) =	0.92	Ln(	181	) +	2.71						
		Ln(T) =	0.92	(	5.198	) +	2.71						
		Ln(T) =			7.49				(	898	Entering/	897	Exiting)
		T =			1794.743								
		T =			1795								
A.M. Peak Hour	=======>	T =	0.71	(	X	) +	4.8		(	25	% Entering/	75	% Exiting)
		T =	0.71	(	181.00	) +	4.80						
		T =			133.31								
		T =			133				(	33	Entering/	100	Exiting)
P.M. Peak Hour	=======>	Ln(T) =	0.96	Ln(	X	) +	0.2		(	63	% Entering/	37	% Exiting)
		Ln(T) =	0.96	Ln(	181	) +	0.2						
		Ln(T) =	0.96	(	5.198	) +	0.2						
		Ln(T) =			5.19				(	113	Entering/	67	Exiting)
		T =			179.569								
		T =			180								

Trip Generation Calculations
Arrowhead Ranch Development
City of Dripping Springs, Hays County, Texas

1,800	Square Feet	ITE Land Use Code		899				Liquor Store						
	Weekday 24-Hour	=======>	T =	101.49	(	X	)		(	50	% Entering/	50	% Exiting)
			T =	101.49	(	1.80	)						
			T =			182.682							
			T =			183			(	92	Entering/	91	Exiting)
	A.M. Peak Hour	=======>	T =	4.55	(	X	)		(	51	% Entering/	49	% Exiting)
	Peak Hour of Generator		T =	4.55	(	1.80	)						
			T =			8.19							
			T =			8			(	4	Entering/	4	Exiting)
	P.M. Peak Hour	=======>	T =	16.37	(	X	)		(	50	% Entering/	50	% Exiting)
			T =	16.37	(	1.80	)						
			T =			29.466							
			T =			29			(	15	Entering/	14	Exiting)

Trip Generation Calculations
Arrowhead Ranch Development
City of Dripping Springs, Hays County, Texas

10 Vehicle Fueling Positions
6,000 Square Feet ITE Land Use Code 960 Super Convenience Market/Gas Station

Weekday 24-Hour =======>
T = 230.52 (X)
T = 230.52 (10)
T = 2305.2
T = 2305
(50 % Entering/ 50 % Exiting)
(1153 Entering/ 1152 Exiting)

A.M. Peak Hour =======>
T = [(VFP Factor) x (Number of VFP)] + [(GFA Factor) x (GFA)] + (Constant)
T = (16.1 x 10) + (135 x 6) + -483
T = 488
T = 488
(50 % Entering/ 50 % Exiting)
(244 Entering/ 244 Exiting)

P.M. Peak Hour =======>
T = [(VFP Factor) x (Number of VFP)] + [(GFA Factor) x (GFA)] + (Constant)
T = (11.5 x 10) + (82.9 x 6) + -226
T = 386.4
T = 386
(50 % Entering/ 50 % Exiting)
(193 Entering/ 193 Exiting)

Pass-By Trip Generation

A.M. Peak Hour =======> 76 % Pass-By Trips

Primary = 59 Entering / 59 Exiting

Pass-By = 185 Entering / 185 Exiting

P.M. Peak Hour =======> 76 % Pass-By Trips

Primary = 46 Entering / 46 Exiting

Pass-By = 147 Entering / 147 Exiting

APPENDIX K
FORECASTED 2025 NO-BUILD (BASE) CAPACITY CALCULATIONS

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	708	10	52	542	17	73
Future Vol, veh/h	708	10	52	542	17	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	10	20	3	15	0	6
Mvmt Flow	814	11	60	623	20	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	825	0	1246	407
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	432	-
Critical Hdwy	-	-	4.16	-	6.8	7.02
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.36
Pot Cap-1 Maneuver	-	-	795	-	169	582
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	795	-	156	582
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	581	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	486	-	-	795	-
HCM Lane V/C Ratio	0.213	-	-	0.075	-
HCM Control Delay (s)	14.4	-	-	9.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

Intersection	
Int Delay, s/veh	509.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	663	22	203	476	34	129	0	245	2	0	0
Future Vol, veh/h	1	663	22	203	476	34	129	0	245	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	86	3	13	92	88	0	4	0	0	0
Mvmt Flow	1	780	26	239	560	40	152	0	288	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	600	0	0	806	0	0	1540	1860	390	1450	1866	300
Stage 1	-	-	-	-	-	-	782	782	-	1058	1058	-
Stage 2	-	-	-	-	-	-	758	1078	-	392	808	-
Critical Hdwy	4.1	-	-	4.16	-	-	9.26	6.5	6.98	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.23	-	-	4.38	4	3.34	3.5	4	3.3
Pot Cap-1 Maneuver	987	-	-	808	-	-	~ 35	74	603	94	73	702
Stage 1	-	-	-	-	-	-	212	408	-	244	304	-
Stage 2	-	-	-	-	-	-	221	297	-	610	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	987	-	-	808	-	-	~ 27	52	603	38	51	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 27	52	-	38	51	-
Stage 1	-	-	-	-	-	-	212	408	-	244	214	-
Stage 2	-	-	-	-	-	-	156	209	-	318	397	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.2	$ 2413.3	105.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	72	987	-	-	808	-	-	38
HCM Lane V/C Ratio	6.111	0.001	-	-	0.296	-	-	0.062
HCM Control Delay (s)	$ 2413.3	8.7	-	-	11.3	-	-	105.9
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	49.3	0	-	-	1.2	-	-	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	916	727	6	15	0
Future Vol, veh/h	2	916	727	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	17	0	0	0
Mvmt Flow	2	1078	855	7	18	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	862	0	-	0	1402	431
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	789	-	-	-	133	578
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	552	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	789	-	-	-	133	578
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	379	-
Stage 2	-	-	-	-	552	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	789	-	-	-	263
HCM Lane V/C Ratio	0.003	-	-	-	0.067
HCM Control Delay (s)	9.6	-	-	-	19.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	654	19	73	903	14	68
Future Vol, veh/h	654	19	73	903	14	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	6	0	0	2	0	4
Mvmt Flow	760	22	85	1050	16	79

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	782	0	1455	380
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	695	-
Critical Hdwy	-	-	4.1	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	845	-	123	612
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	845	-	111	612
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	415	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	486	-	-	845	-
HCM Lane V/C Ratio	0.196	-	-	0.1	-
HCM Control Delay (s)	14.2	-	-	9.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.3	-

Intersection	
Int Delay, s/veh	140

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	688	34	293	801	22	112	0	178	2	0	0
Future Vol, veh/h	2	688	34	293	801	22	112	0	178	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	50	5	13	2	3	96	0	0	5	0	0	0
Mvmt Flow	2	709	35	302	826	23	115	0	184	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	849	0	0	744	0	0	1730	2166	355	1801	2190	425
Stage 1	-	-	-	-	-	-	713	713	-	1442	1442	-
Stage 2	-	-	-	-	-	-	1017	1453	-	359	748	-
Critical Hdwy	5.1	-	-	4.14	-	-	7.5	6.5	7	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.7	-	-	2.22	-	-	3.5	4	3.35	3.5	4	3.3
Pot Cap-1 Maneuver	541	-	-	859	-	-	~ 58	48	633	51	46	583
Stage 1	-	-	-	-	-	-	394	438	-	142	199	-
Stage 2	-	-	-	-	-	-	258	197	-	637	423	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	541	-	-	859	-	-	~ 42	31	633	26	30	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 42	31	-	26	30	-
Stage 1	-	-	-	-	-	-	392	436	-	141	129	-
Stage 2	-	-	-	-	-	-	167	128	-	451	421	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3	$ 1016.3	155.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	98	541	-	-	859	-	-	26
HCM Lane V/C Ratio	3.051	0.004	-	-	0.352	-	-	0.079
HCM Control Delay (s)	$ 1016.3	11.7	-	-	11.4	-	-	155.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	29	0	-	-	1.6	-	-	0.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	877	1120	26	15	3
Future Vol, veh/h	2	877	1120	26	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	5	5	4	0	34
Mvmt Flow	2	923	1179	27	16	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1206	0	-	0	1659	603
Stage 1	-	-	-	-	1193	-
Stage 2	-	-	-	-	466	-
Critical Hdwy	4.1	-	-	-	6.8	7.58
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.64
Pot Cap-1 Maneuver	586	-	-	-	90	371
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	586	-	-	-	90	371
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	604	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	586	-	-	-	212
HCM Lane V/C Ratio	0.004	-	-	-	0.089
HCM Control Delay (s)	11.2	-	-	-	23.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

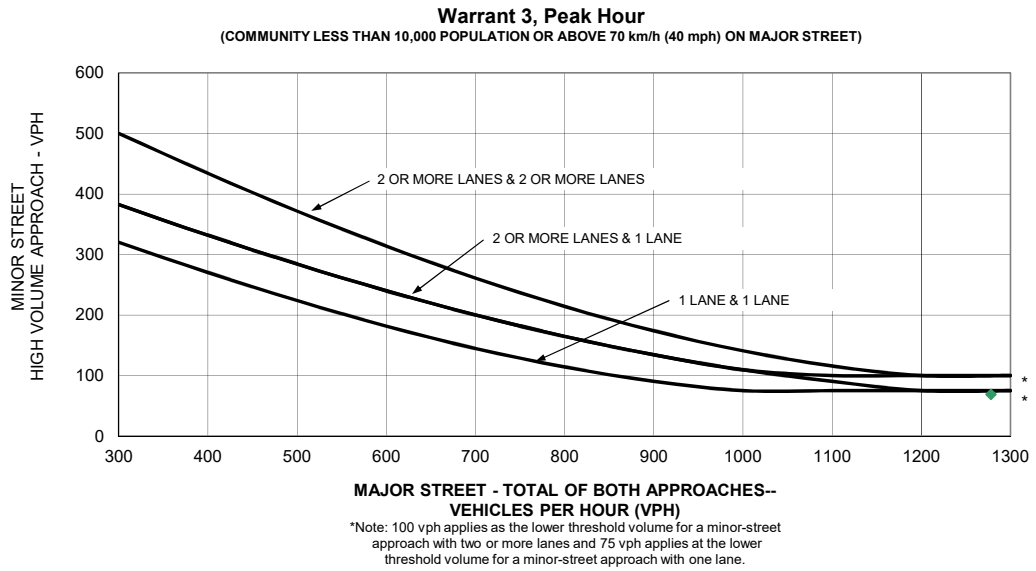
APPENDIX L
TRAFFIC SIGNAL WARRANT EVALUATION

Project:		Bunker Ranch TIA	**Calculations:**	CAD
Major Street	**Name:**	US 290	**Date:**	5/6/21
	Speed Limit (mph):	50-60	**Checked by:**	JMD
	Approach Lanes:	2	**Date:**	5/6/21
Minor Street	**Name:**	Arrowhead Ranch Blvd		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		Yes		

Civil & Environmental Consultants, Inc.

Warrant 3 - Peak Hour

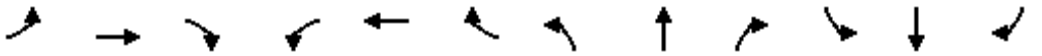
Signal Warrant Satisfied? [X] Yes [ ] No



Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2021 Existing, AM Peak	1278	69	75	NO
2021 Existing, PM Peak	1588	45	75	NO
2025 No-Build, AM Peak	1399	374	75	YES
2025 No-Build, PM Peak	1840	286	75	YES
2025 Build, AM Peak	1529	374	75	YES
2025 Build, PM Peak	2010	286	75	YES

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

APPENDIX M
FORECASTED 2025 NO-BUILD (BASE) MITIGATED CAPACITY CALCULATIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	663	22	203	476	34	129	0	245	2	0	0
Future Volume (veh/h)	1	663	22	203	476	34	129	0	245	2	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1781	625	1930	1707	537	596	1976	1841	1900	1976	1900
Adj Flow Rate, veh/h	1	780	26	239	560	40	152	0	288	2	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	8	86	3	13	92	88	0	4	0	0	0
Cap, veh/h	350	1002	157	377	1256	90	233	19	342	387	0	0
Arrive On Green	0.00	0.30	0.30	0.11	0.41	0.41	0.32	0.00	0.32	0.32	0.00	0.00
Sat Flow, veh/h	1882	3385	530	1838	3071	219	501	60	1063	870	0	0
Grp Volume(v), veh/h	1	780	26	239	295	305	440	0	0	2	0	0
Grp Sat Flow(s),veh/h/ln	1882	1692	530	1838	1622	1668	1624	0	0	871	0	0
Q Serve(g_s), s	0.0	14.2	2.4	5.6	8.8	8.9	14.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.2	2.4	5.6	8.8	8.9	16.9	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.13	0.35		0.65	1.00		0.00
Lane Grp Cap(c), veh/h	350	1002	157	377	663	682	594	0	0	387	0	0
V/C Ratio(X)	0.00	0.78	0.17	0.63	0.45	0.45	0.74	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	487	1412	221	440	797	820	892	0	0	600	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.6	21.6	17.5	14.9	14.3	14.3	21.1	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.5	2.3	0.5	0.5	1.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.9	0.3	2.0	2.6	2.7	6.3	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	23.5	18.0	17.3	14.8	14.8	22.9	0.0	0.0	15.5	0.0	0.0
LnGrp LOS	B	C	B	B	B	B	C	A	A	B	A	A
Approach Vol, veh/h		807			839			440			2	
Approach Delay, s/veh		23.3			15.5			22.9			15.5	
Approach LOS		C			B			C			B	

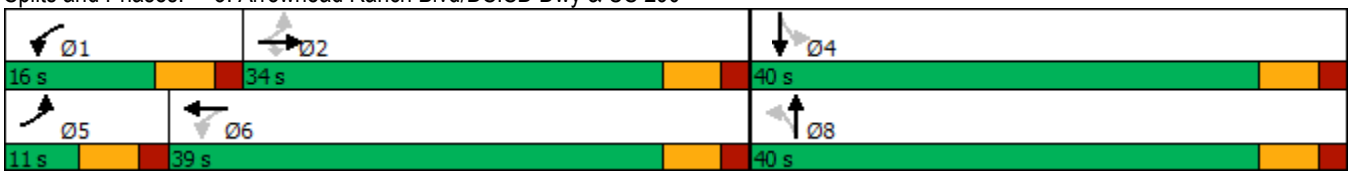
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	25.9		27.6	6.1	33.4		27.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	28.0		34.0	5.0	33.0		34.0				
Max Q Clear Time (g_c+I1), s	7.6	16.2		2.1	2.0	10.9		18.9				
Green Ext Time (p_c), s	0.2	3.7		0.0	0.0	3.0		2.7				

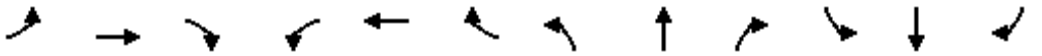
Intersection Summary			
HCM 6th Ctrl Delay		20.1	
HCM 6th LOS		C	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	663	22	203	476	129	0	2	0
Future Volume (vph)	1	663	22	203	476	129	0	2	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2		1	6		8		4
Permitted Phases	2		2	6		8		4	
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	34.0	34.0	16.0	39.0	40.0	40.0	40.0	40.0
Total Split (%)	12.2%	37.8%	37.8%	17.8%	43.3%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	27.9	22.7	22.7	38.3	36.7		25.3		25.3
Actuated g/C Ratio	0.37	0.30	0.30	0.50	0.48		0.33		0.33
v/c Ratio	0.00	0.78	0.08	0.62	0.41		0.86		0.01
Control Delay	12.0	31.8	0.5	19.8	15.8		34.8		17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	12.0	31.8	0.5	19.8	15.8		34.8		17.5
LOS	B	C	A	B	B		C		B
Approach Delay		30.8			16.9		34.8		17.5
Approach LOS		C			B		C		B

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 76.3			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	688	34	293	801	22	112	0	174	2	0	0
Future Volume (veh/h)	2	688	34	293	801	22	112	0	174	2	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1205	1826	1707	1945	1856	477	1900	1976	1826	1900	1976	1900
Adj Flow Rate, veh/h	2	709	35	302	826	23	115	0	179	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	50	5	13	2	3	96	0	0	5	0	0	0
Cap, veh/h	246	1023	427	490	1541	43	215	22	227	389	0	0
Arrive On Green	0.00	0.30	0.30	0.15	0.44	0.44	0.23	0.00	0.23	0.23	0.00	0.00
Sat Flow, veh/h	1148	3469	1447	1853	3503	98	542	94	989	1124	0	0
Grp Volume(v), veh/h	2	709	35	302	416	433	294	0	0	2	0	0
Grp Sat Flow(s),veh/h/ln	1148	1735	1447	1853	1763	1838	1625	0	0	1124	0	0
Q Serve(g_s), s	0.1	9.9	1.0	5.6	9.5	9.5	7.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	9.9	1.0	5.6	9.5	9.5	9.3	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.39		0.61	1.00		0.00
Lane Grp Cap(c), veh/h	246	1023	427	490	775	809	464	0	0	389	0	0
V/C Ratio(X)	0.01	0.69	0.08	0.62	0.54	0.54	0.63	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	348	2088	871	824	1479	1542	710	0	0	585	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.6	17.1	14.0	11.0	11.3	11.3	19.8	0.0	0.0	16.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.1	1.3	0.6	0.6	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.3	1.6	2.6	2.7	3.4	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	18.0	14.0	12.3	11.8	11.8	21.2	0.0	0.0	16.3	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	C	A	A	B	A	A
Approach Vol, veh/h		746			1151			294			2	
Approach Delay, s/veh		17.8			11.9			21.2			16.3	
Approach LOS		B			B			C			B	

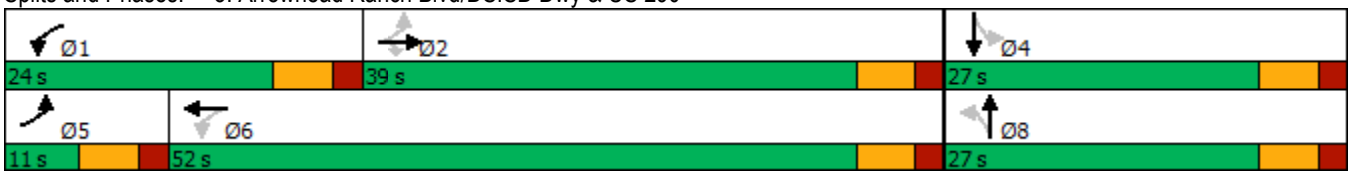
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	22.2		18.6	6.2	30.1		18.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	33.0		21.0	5.0	46.0		21.0				
Max Q Clear Time (g_c+I1), s	7.6	11.9		2.1	2.1	11.5		11.3				
Green Ext Time (p_c), s	0.6	4.2		0.0	0.0	4.9		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		15.2	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	688	34	293	801	112	0	2	0
Future Volume (vph)	2	688	34	293	801	112	0	2	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2		1	6		8		4
Permitted Phases	2		2	6		8		4	
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	39.0	39.0	24.0	52.0	27.0	27.0	27.0	27.0
Total Split (%)	12.2%	43.3%	43.3%	26.7%	57.8%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	23.8	18.5	18.5	35.0	33.5		10.4		10.4
Actuated g/C Ratio	0.41	0.32	0.32	0.60	0.58		0.18		0.18
v/c Ratio	0.01	0.65	0.06	0.54	0.43		0.65		0.01
Control Delay	7.0	20.6	0.2	9.6	9.1		17.6		22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	7.0	20.6	0.2	9.6	9.1		17.6		22.5
LOS	A	C	A	A	A		B		C
Approach Delay		19.6			9.2		17.6		22.5
Approach LOS		B			A		B		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 58.1	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290



APPENDIX N
FORECASTED 2025 BUILD (WITH DEVELOPMENT) CAPACITY CALCULATIONS

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	708	18	84	542	41	171
Future Vol, veh/h	708	18	84	542	41	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	10	20	3	15	0	6
Mvmt Flow	814	21	97	623	47	197

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	835	0	1320	407
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	506	-
Critical Hdwy	-	-	4.16	-	6.8	7.02
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.36
Pot Cap-1 Maneuver	-	-	788	-	151	582
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	788	-	132	582
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	505	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	471	-	-	788	-
HCM Lane V/C Ratio	0.517	-	-	0.123	-
HCM Control Delay (s)	20.5	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	2.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	690.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	761	22	203	508	34	129	0	245	2	0	0
Future Vol, veh/h	1	761	22	203	508	34	129	0	245	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	86	3	13	92	88	0	4	0	0	0
Mvmt Flow	1	895	26	239	598	40	152	0	288	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	921	0	0	1674	2013	448	1546	2019	319
Stage 1	-	-	-	-	-	-	897	897	-	1096	1096	-
Stage 2	-	-	-	-	-	-	777	1116	-	450	923	-
Critical Hdwy	4.1	-	-	4.16	-	-	9.26	6.5	6.98	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.26	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.23	-	-	4.38	4	3.34	3.5	4	3.3
Pot Cap-1 Maneuver	956	-	-	731	-	-	~ 26	59	553	79	59	683
Stage 1	-	-	-	-	-	-	172	361	-	231	292	-
Stage 2	-	-	-	-	-	-	214	285	-	564	351	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	956	-	-	731	-	-	~ 19	40	553	28	40	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 19	40	-	28	40	-
Stage 1	-	-	-	-	-	-	172	361	-	231	197	-
Stage 2	-	-	-	-	-	-	~ 144	192	-	270	351	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.4	$ 3508.7	145
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	52	956	-	-	731	-	-	28
HCM Lane V/C Ratio	8.462	0.001	-	-	0.327	-	-	0.084
HCM Control Delay (s)	$ 3508.7	8.8	-	-	12.3	-	-	145
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	51.7	0	-	-	1.4	-	-	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1014	759	6	15	0
Future Vol, veh/h	2	1014	759	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	17	0	0	0
Mvmt Flow	2	1193	893	7	18	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	900	0	-	0	1498	450
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	763	-	-	-	115	562
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	763	-	-	-	115	562
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	516	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	763	-	-	-	244
HCM Lane V/C Ratio	0.003	-	-	-	0.072
HCM Control Delay (s)	9.7	-	-	-	20.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	654	46	180	903	30	131
Future Vol, veh/h	654	46	180	903	30	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	240	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	6	0	0	2	0	4
Mvmt Flow	760	53	209	1050	35	152

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	813	0	1703	380
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	943	-
Critical Hdwy	-	-	4.1	-	6.8	6.98
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.34
Pot Cap-1 Maneuver	-	-	823	-	84	612
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	344	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	823	-	63	612
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	257	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	416	-	-	823	-
HCM Lane V/C Ratio	0.45	-	-	0.254	-
HCM Control Delay (s)	20.5	-	-	10.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	2.3	-	-	1	-

Intersection	
Int Delay, s/veh	171.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	751	34	293	908	22	112	0	174	2	0	0
Future Vol, veh/h	2	751	34	293	908	22	112	0	174	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	250	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	50	5	13	2	3	96	0	0	5	0	0	0
Mvmt Flow	2	774	35	302	936	23	115	0	179	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	959	0	0	809	0	0	1850	2341	387	1943	2365	480
Stage 1	-	-	-	-	-	-	778	778	-	1552	1552	-
Stage 2	-	-	-	-	-	-	1072	1563	-	391	813	-
Critical Hdwy	5.1	-	-	4.14	-	-	7.5	6.5	7	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.7	-	-	2.22	-	-	3.5	4	3.35	3.5	4	3.3
Pot Cap-1 Maneuver	481	-	-	812	-	-	~ 47	37	603	40	36	537
Stage 1	-	-	-	-	-	-	360	410	-	121	176	-
Stage 2	-	-	-	-	-	-	239	174	-	610	395	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	481	-	-	812	-	-	~ 33	23	603	20	23	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 33	23	-	20	23	-
Stage 1	-	-	-	-	-	-	359	408	-	121	111	-
Stage 2	-	-	-	-	-	-	150	109	-	427	393	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.9	$ 1362.1	204.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	78	481	-	-	812	-	-	20
HCM Lane V/C Ratio	3.78	0.004	-	-	0.372	-	-	0.103
HCM Control Delay (s)	$ 1362.1	12.5	-	-	12	-	-	204.7
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	30.7	0	-	-	1.7	-	-	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

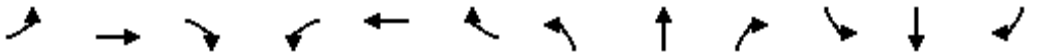
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	940	1227	26	15	3
Future Vol, veh/h	2	940	1227	26	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	5	5	4	0	34
Mvmt Flow	2	989	1292	27	16	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1319	0	-	0	1805	660
Stage 1	-	-	-	-	1306	-
Stage 2	-	-	-	-	499	-
Critical Hdwy	4.1	-	-	-	6.8	7.58
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.64
Pot Cap-1 Maneuver	531	-	-	-	72	338
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	581	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	531	-	-	-	72	338
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	581	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	531	-	-	-	185
HCM Lane V/C Ratio	0.004	-	-	-	0.102
HCM Control Delay (s)	11.8	-	-	-	26.7
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.3

APPENDIX O
FORECASTED 2025 BUILD (WITH DEVELOPMENT) MITIGATED CAPACITY CALCULATIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	761	22	203	508	34	129	0	245	2	0	0
Future Volume (veh/h)	1	761	22	203	508	34	129	0	245	2	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1781	625	1930	1707	537	596	1976	1841	1900	1976	1900
Adj Flow Rate, veh/h	1	895	26	239	598	40	152	0	288	2	0	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	8	86	3	13	92	88	0	4	0	0	0
Cap, veh/h	320	1054	165	323	1289	86	245	19	390	417	0	0
Arrive On Green	0.00	0.31	0.31	0.11	0.42	0.42	0.37	0.00	0.37	0.37	0.00	0.00
Sat Flow, veh/h	1882	3385	530	1838	3086	206	509	51	1062	901	0	0
Grp Volume(v), veh/h	1	895	26	239	314	324	440	0	0	2	0	0
Grp Sat Flow(s),veh/h/ln	1882	1692	530	1838	1622	1670	1622	0	0	901	0	0
Q Serve(g_s), s	0.0	20.9	3.0	7.0	11.8	11.8	17.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.9	3.0	7.0	11.8	11.8	19.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.12	0.35		0.65	1.00		0.00
Lane Grp Cap(c), veh/h	320	1054	165	323	677	697	654	0	0	417	0	0
V/C Ratio(X)	0.00	0.85	0.16	0.74	0.46	0.46	0.67	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	429	1244	195	343	692	713	654	0	0	417	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.0	27.2	21.0	19.3	17.7	17.7	23.0	0.0	0.0	16.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.0	0.4	7.8	0.5	0.5	5.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	0.4	3.2	3.8	4.0	8.3	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	32.2	21.5	27.1	18.2	18.2	28.5	0.0	0.0	16.9	0.0	0.0
LnGrp LOS	B	C	C	C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		922			877			440			2	
Approach Delay, s/veh		31.9			20.7			28.5			16.9	
Approach LOS		C			C			C			B	

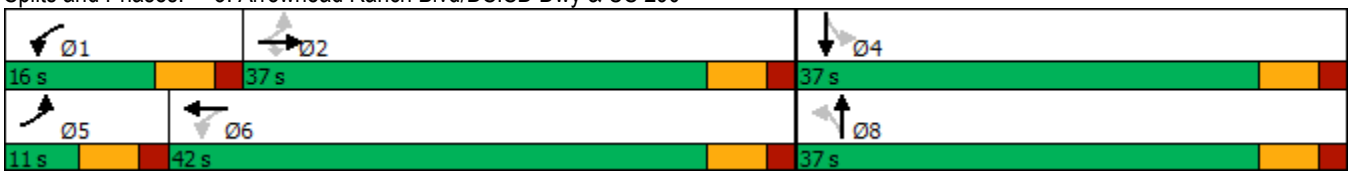
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.1	32.3		37.0	6.1	41.2		37.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	31.0		31.0	5.0	36.0		31.0				
Max Q Clear Time (g_c+I1), s	9.0	22.9		2.1	2.0	13.8		21.7				
Green Ext Time (p_c), s	0.1	3.4		0.0	0.0	3.3		2.1				

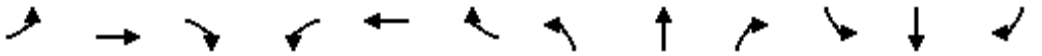
Intersection Summary												
HCM 6th Ctrl Delay			26.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	761	22	203	508	129	0	2	0
Future Volume (vph)	1	761	22	203	508	129	0	2	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2		1	6		8		4
Permitted Phases	2		2	6		8		4	
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	37.0	37.0	16.0	42.0	37.0	37.0	37.0	37.0
Total Split (%)	12.2%	41.1%	41.1%	17.8%	46.7%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	32.6	27.6	27.6	43.1	41.2		31.1		31.1
Actuated g/C Ratio	0.38	0.32	0.32	0.50	0.48		0.36		0.36
v/c Ratio	0.00	0.84	0.07	0.72	0.44		0.81		0.01
Control Delay	11.0	35.4	0.4	27.5	16.5		32.7		19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	11.0	35.4	0.4	27.5	16.5		32.7		19.5
LOS	B	D	A	C	B		C		B
Approach Delay		34.4			19.5		32.7		19.5
Approach LOS		C			B		C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 86.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	751	34	293	908	22	112	0	174	2	0	0
Future Volume (veh/h)	2	751	34	293	908	22	112	0	174	2	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1205	1826	1707	1945	1856	477	1900	1976	1826	1900	1976	1900
Adj Flow Rate, veh/h	2	774	35	302	936	23	115	0	179	2	0	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	50	5	13	2	3	96	0	0	5	0	0	0
Cap, veh/h	226	1090	455	473	1598	39	211	21	224	377	0	0
Arrive On Green	0.00	0.31	0.31	0.14	0.45	0.45	0.23	0.00	0.23	0.23	0.00	0.00
Sat Flow, veh/h	1148	3469	1447	1853	3516	86	544	91	989	1106	0	0
Grp Volume(v), veh/h	2	774	35	302	469	490	294	0	0	2	0	0
Grp Sat Flow(s),veh/h/ln	1148	1735	1447	1853	1763	1840	1624	0	0	1106	0	0
Q Serve(g_s), s	0.1	11.2	1.0	5.6	11.3	11.3	8.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	11.2	1.0	5.6	11.3	11.3	9.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.39		0.61	1.00		0.00
Lane Grp Cap(c), veh/h	226	1090	455	473	801	836	456	0	0	377	0	0
V/C Ratio(X)	0.01	0.71	0.08	0.64	0.59	0.59	0.64	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	324	2070	863	761	1423	1486	683	0	0	558	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.4	17.2	13.7	11.3	11.6	11.6	20.7	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.1	1.4	0.7	0.7	1.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	0.3	1.6	3.1	3.2	3.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	18.1	13.8	12.8	12.2	12.2	22.2	0.0	0.0	17.1	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	C	A	A	B	A	A
Approach Vol, veh/h		811			1261			294			2	
Approach Delay, s/veh		17.9			12.4			22.2			17.1	
Approach LOS		B			B			C			B	

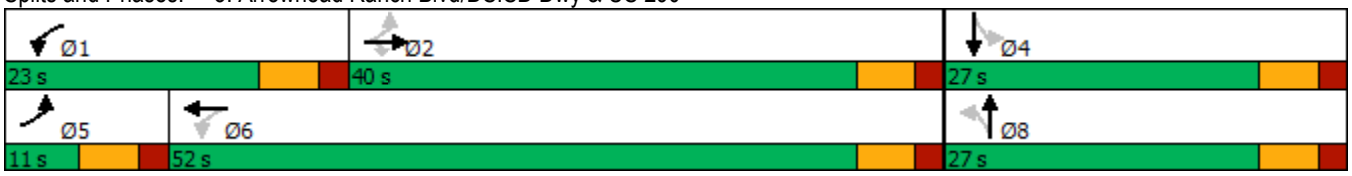
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	23.9		18.9	6.2	31.9		18.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	17.0	34.0		21.0	5.0	46.0		21.0				
Max Q Clear Time (g_c+I1), s	7.6	13.2		2.1	2.1	13.3		11.7				
Green Ext Time (p_c), s	0.6	4.7		0.0	0.0	5.8		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		15.5	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	751	34	293	908	112	0	2	0
Future Volume (vph)	2	751	34	293	908	112	0	2	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2		1	6		8		4
Permitted Phases	2		2	6		8		4	
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	16.0	16.0	11.0	16.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	40.0	40.0	23.0	52.0	27.0	27.0	27.0	27.0
Total Split (%)	12.2%	44.4%	44.4%	25.6%	57.8%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	25.5	20.2	20.2	36.8	35.2		10.6		10.6
Actuated g/C Ratio	0.42	0.34	0.34	0.61	0.59		0.18		0.18
v/c Ratio	0.01	0.67	0.06	0.56	0.48		0.66		0.01
Control Delay	7.0	20.8	0.2	10.0	9.3		18.3		23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	7.0	20.8	0.2	10.0	9.3		18.3		23.5
LOS	A	C	A	A	A		B		C
Approach Delay		19.9			9.5		18.3		23.5
Approach LOS		B			A		B		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 60	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290



APPENDIX P
EXISTING 2021 QUEUING ANALYSIS

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:45	7:45	7:45	7:45	7:45	7:45
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1423	1415	1417	1350	1407	1402
Vehs Exited	1423	1421	1416	1351	1403	1404
Starting Vehs	20	20	17	14	9	15
Ending Vehs	20	14	18	13	13	15
Travel Distance (mi)	728	716	724	689	709	713
Travel Time (hr)	15.2	15.2	15.1	14.5	14.9	15.0
Total Delay (hr)	1.0	1.2	1.0	1.0	1.0	1.0
Total Stops	146	163	145	152	138	148
Fuel Used (gal)	24.0	24.0	23.8	23.0	23.2	23.6

Interval #0 Information Seeding

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1423	1415	1417	1350	1407	1402
Vehs Exited	1423	1421	1416	1351	1403	1404
Starting Vehs	20	20	17	14	9	15
Ending Vehs	20	14	18	13	13	15
Travel Distance (mi)	728	716	724	689	709	713
Travel Time (hr)	15.2	15.2	15.1	14.5	14.9	15.0
Total Delay (hr)	1.0	1.2	1.0	1.0	1.0	1.0
Total Stops	146	163	145	152	138	148
Fuel Used (gal)	24.0	24.0	23.8	23.0	23.2	23.6

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	48	59
Average Queue (ft)	13	20
95th Queue (ft)	36	48
Link Distance (ft)		357
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	4	46	101	30
Average Queue (ft)	0	11	27	2
95th Queue (ft)	3	32	68	15
Link Distance (ft)			292	108
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	26	36
Average Queue (ft)	2	11
95th Queue (ft)	11	35
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1759	1821	1717	1816	1742	1771
Vehs Exited	1762	1804	1712	1813	1739	1766
Starting Vehs	16	7	18	15	17	13
Ending Vehs	13	24	23	18	20	19
Travel Distance (mi)	890	914	860	922	879	893
Travel Time (hr)	18.6	19.1	17.9	19.2	18.4	18.7
Total Delay (hr)	1.3	1.4	1.1	1.4	1.3	1.3
Total Stops	144	148	141	139	130	141
Fuel Used (gal)	30.0	30.9	28.9	31.0	29.4	30.0

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1759	1821	1717	1816	1742	1771
Vehs Exited	1762	1804	1712	1813	1739	1766
Starting Vehs	16	7	18	15	17	13
Ending Vehs	13	24	23	18	20	19
Travel Distance (mi)	890	914	860	922	879	893
Travel Time (hr)	18.6	19.1	17.9	19.2	18.4	18.7
Total Delay (hr)	1.3	1.4	1.1	1.4	1.3	1.3
Total Stops	144	148	141	139	130	141
Fuel Used (gal)	30.0	30.9	28.9	31.0	29.4	30.0

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	32	57
Average Queue (ft)	4	25
95th Queue (ft)	21	50
Link Distance (ft)		357
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	4	38	64	24
Average Queue (ft)	0	15	17	1
95th Queue (ft)	2	33	42	11
Link Distance (ft)			292	108
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	15	57
Average Queue (ft)	1	16
95th Queue (ft)	6	46
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

APPENDIX Q
FORECASTED 2025 NO-BUILD (BASE) QUEUING ANALYSIS

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:45	7:45	7:45	7:45	7:45	7:45
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1725	1757	1766	1806	1744	1759
Vehs Exited	1736	1754	1768	1802	1740	1761
Starting Vehs	39	23	27	29	24	27
Ending Vehs	28	26	25	33	28	28
Travel Distance (mi)	754	767	777	786	757	768
Travel Time (hr)	188.2	192.6	205.5	178.7	148.8	182.8
Total Delay (hr)	172.4	176.6	189.0	162.2	132.7	166.6
Total Stops	297	253	272	335	293	290
Fuel Used (gal)	60.4	62.6	66.3	60.9	53.1	60.7

Interval #0 Information Seeding

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1725	1757	1766	1806	1744	1759
Vehs Exited	1736	1754	1768	1802	1740	1761
Starting Vehs	39	23	27	29	24	27
Ending Vehs	28	26	25	33	28	28
Travel Distance (mi)	754	767	777	786	757	768
Travel Time (hr)	188.2	192.6	205.5	178.7	148.8	182.8
Total Delay (hr)	172.4	176.6	189.0	162.2	132.7	166.6
Total Stops	297	253	272	335	293	290
Fuel Used (gal)	60.4	62.6	66.3	60.9	53.1	60.7

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	51	72
Average Queue (ft)	19	36
95th Queue (ft)	43	60
Link Distance (ft)		357
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	R	L	T	LTR	LTR
Maximum Queue (ft)	4	24	122	19	355	24
Average Queue (ft)	0	1	51	1	326	2
95th Queue (ft)	2	10	96	11	358	13
Link Distance (ft)	780			451	292	108
Upstream Blk Time (%)					100	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)		250	150			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	16	40
Average Queue (ft)	1	11
95th Queue (ft)	8	36
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2088	2118	2059	2049	2112	2086
Vehs Exited	2082	2113	2055	2044	2108	2080
Starting Vehs	28	27	40	33	33	31
Ending Vehs	34	32	44	38	37	36
Travel Distance (mi)	975	992	973	966	1004	982
Travel Time (hr)	161.3	154.7	177.2	173.6	159.4	165.2
Total Delay (hr)	141.0	133.9	157.0	153.6	138.7	144.8
Total Stops	378	390	344	356	374	369
Fuel Used (gal)	66.9	66.0	69.8	69.3	66.7	67.7

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2088	2118	2059	2049	2112	2086
Vehs Exited	2082	2113	2055	2044	2108	2080
Starting Vehs	28	27	40	33	33	31
Ending Vehs	34	32	44	38	37	36
Travel Distance (mi)	975	992	973	966	1004	982
Travel Time (hr)	161.3	154.7	177.2	173.6	159.4	165.2
Total Delay (hr)	141.0	133.9	157.0	153.6	138.7	144.8
Total Stops	378	390	344	356	374	369
Fuel Used (gal)	66.9	66.0	69.8	69.3	66.7	67.7

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	56	135
Average Queue (ft)	21	45
95th Queue (ft)	45	98
Link Distance (ft)		357
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	WB	NB	SB
Directions Served	L	R	L	LTR	LTR
Maximum Queue (ft)	11	24	134	345	18
Average Queue (ft)	0	1	68	301	1
95th Queue (ft)	8	10	116	326	11
Link Distance (ft)				292	108
Upstream Blk Time (%)				100	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)	150	250	150		
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	27	52
Average Queue (ft)	2	16
95th Queue (ft)	12	44
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

APPENDIX R
FORECASTED 2025 NO-BUILD (BASE) MITIGATED QUEUING ANALYSIS

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:45	7:45	7:45	7:45	7:45	7:45
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1998	2020	2035	1992	2016	2012
Vehs Exited	2018	2017	2066	2005	1996	2021
Starting Vehs	42	33	53	33	20	37
Ending Vehs	22	36	22	20	40	25
Travel Distance (mi)	842	857	854	836	851	848
Travel Time (hr)	29.6	30.2	31.6	29.3	30.7	30.3
Total Delay (hr)	10.9	11.2	12.4	10.6	11.8	11.4
Total Stops	1135	1186	1231	1135	1221	1183
Fuel Used (gal)	34.9	35.3	36.0	34.9	35.8	35.4

Interval #0 Information Seeding

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1998	2020	2035	1992	2016	2012
Vehs Exited	2018	2017	2066	2005	1996	2021
Starting Vehs	42	33	53	33	20	37
Ending Vehs	22	36	22	20	40	25
Travel Distance (mi)	842	857	854	836	851	848
Travel Time (hr)	29.6	30.2	31.6	29.3	30.7	30.3
Total Delay (hr)	10.9	11.2	12.4	10.6	11.8	11.4
Total Stops	1135	1186	1231	1135	1221	1183
Fuel Used (gal)	34.9	35.3	36.0	34.9	35.8	35.4

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	9	241	221	64	163	182	162	340	18
Average Queue (ft)	0	133	112	19	74	81	61	178	1
95th Queue (ft)	5	201	184	58	132	150	135	318	9
Link Distance (ft)		780	780			451	451	292	108
Upstream Blk Time (%)								2	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	150			250	150				
Storage Blk Time (%)		4	0		0	1			
Queuing Penalty (veh)		0	0		1	2			

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2332	2349	2228	2258	2295	2292
Vehs Exited	2336	2340	2229	2262	2293	2294
Starting Vehs	41	35	42	32	29	35
Ending Vehs	37	44	41	28	31	37
Travel Distance (mi)	1064	1088	1010	1052	1049	1053
Travel Time (hr)	35.8	36.0	33.5	34.3	35.6	35.1
Total Delay (hr)	12.8	12.5	11.3	11.7	12.8	12.2
Total Stops	1278	1276	1209	1209	1252	1243
Fuel Used (gal)	43.7	43.8	41.1	42.7	42.7	42.8

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2332	2349	2228	2258	2295	2292
Vehs Exited	2336	2340	2229	2262	2293	2294
Starting Vehs	41	35	42	32	29	35
Ending Vehs	37	44	41	28	31	37
Travel Distance (mi)	1064	1088	1010	1052	1049	1053
Travel Time (hr)	35.8	36.0	33.5	34.3	35.6	35.1
Total Delay (hr)	12.8	12.5	11.3	11.7	12.8	12.2
Total Stops	1278	1276	1209	1209	1252	1243
Fuel Used (gal)	43.7	43.8	41.1	42.7	42.7	42.8

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	14	203	185	56	164	199	152	214	18
Average Queue (ft)	1	127	106	13	91	78	57	98	1
95th Queue (ft)	8	187	169	40	150	144	115	179	10
Link Distance (ft)		780	780			451	451	292	108
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	150			250	150				
Storage Blk Time (%)		3			2	0			
Queuing Penalty (veh)		0			6	0			

APPENDIX S
FORECASTED 2025 BUILD (WITH DEVELOPMENT) QUEUING ANALYSIS

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:45	7:45	7:45	7:45	7:45	7:45
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1897	1884	1853	1951	1875	1891
Vehs Exited	1907	1894	1845	1939	1874	1892
Starting Vehs	41	34	24	18	30	29
Ending Vehs	31	24	32	30	31	28
Travel Distance (mi)	831	815	817	855	815	827
Travel Time (hr)	226.8	235.8	279.0	194.6	213.3	229.9
Total Delay (hr)	209.0	218.4	261.6	176.3	195.7	212.2
Total Stops	439	402	373	426	435	414
Fuel Used (gal)	71.8	74.1	82.8	67.1	68.7	72.9

Interval #0 Information Seeding

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1897	1884	1853	1951	1875	1891
Vehs Exited	1907	1894	1845	1939	1874	1892
Starting Vehs	41	34	24	18	30	29
Ending Vehs	31	24	32	30	31	28
Travel Distance (mi)	831	815	817	855	815	827
Travel Time (hr)	226.8	235.8	279.0	194.6	213.3	229.9
Total Delay (hr)	209.0	218.4	261.6	176.3	195.7	212.2
Total Stops	439	402	373	426	435	414
Fuel Used (gal)	71.8	74.1	82.8	67.1	68.7	72.9

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	58	218
Average Queue (ft)	22	76
95th Queue (ft)	45	156
Link Distance (ft)		357
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	R	L	T	LTR	LTR
Maximum Queue (ft)	11	17	115	29	353	24
Average Queue (ft)	0	1	52	1	322	2
95th Queue (ft)	5	9	95	21	355	13
Link Distance (ft)				451	292	108
Upstream Blk Time (%)					100	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	150	250	150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			1	0		

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	21	49
Average Queue (ft)	1	13
95th Queue (ft)	10	40
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2247	2322	2298	2290	2217	2275
Vehs Exited	2235	2315	2293	2293	2214	2270
Starting Vehs	32	32	36	44	41	36
Ending Vehs	44	39	41	41	44	42
Travel Distance (mi)	1038	1084	1068	1068	1041	1060
Travel Time (hr)	210.3	204.7	191.7	183.5	171.6	192.4
Total Delay (hr)	188.1	181.9	169.0	160.7	149.7	169.9
Total Stops	500	543	524	553	485	520
Fuel Used (gal)	80.3	80.7	77.6	75.9	71.7	77.3

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2247	2322	2298	2290	2217	2275
Vehs Exited	2235	2315	2293	2293	2214	2270
Starting Vehs	32	32	36	44	41	36
Ending Vehs	44	39	41	41	44	42
Travel Distance (mi)	1038	1084	1068	1068	1041	1060
Travel Time (hr)	210.3	204.7	191.7	183.5	171.6	192.4
Total Delay (hr)	188.1	181.9	169.0	160.7	149.7	169.9
Total Stops	500	543	524	553	485	520
Fuel Used (gal)	80.3	80.7	77.6	75.9	71.7	77.3

Intersection: 2: Bunker Ranch Blvd & US 290

Movement	EB	WB	NB
Directions Served	R	L	LR
Maximum Queue (ft)	9	83	262
Average Queue (ft)	0	38	84
95th Queue (ft)	4	68	196
Link Distance (ft)			357
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	240	150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	8	35	160	183	92	329	35
Average Queue (ft)	0	1	79	15	6	301	4
95th Queue (ft)	6	13	148	111	65	321	20
Link Distance (ft)				451	451	292	108
Upstream Blk Time (%)						100	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	150	250	150				
Storage Blk Time (%)			2	0			
Queuing Penalty (veh)			10	0			

Intersection: 4: US 290 & Spring Lane

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	11	54
Average Queue (ft)	1	17
95th Queue (ft)	9	46
Link Distance (ft)		207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 10

APPENDIX T
FORECASTED 2025 BUILD (WITH DEVELOPMENT) MITIGATED QUEUING ANALYSIS

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:45	7:45	7:45	7:45	7:45	7:45
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2194	2168	2165	2115	2205	2168
Vehs Exited	2195	2164	2162	2120	2197	2169
Starting Vehs	47	36	31	37	31	37
Ending Vehs	46	40	34	32	39	35
Travel Distance (mi)	933	909	916	884	913	911
Travel Time (hr)	38.0	36.9	35.7	34.0	37.1	36.3
Total Delay (hr)	16.9	16.3	15.0	14.0	16.1	15.7
Total Stops	1432	1476	1425	1367	1483	1436
Fuel Used (gal)	40.8	39.7	39.6	38.1	39.2	39.5

Interval #0 Information Seeding

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2194	2168	2165	2115	2205	2168
Vehs Exited	2195	2164	2162	2120	2197	2169
Starting Vehs	47	36	31	37	31	37
Ending Vehs	46	40	34	32	39	35
Travel Distance (mi)	933	909	916	884	913	911
Travel Time (hr)	38.0	36.9	35.7	34.0	37.1	36.3
Total Delay (hr)	16.9	16.3	15.0	14.0	16.1	15.7
Total Stops	1432	1476	1425	1367	1483	1436
Fuel Used (gal)	40.8	39.7	39.6	38.1	39.2	39.5

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	9	254	249	72	171	202	160	337	24
Average Queue (ft)	0	162	142	18	90	99	73	189	1
95th Queue (ft)	4	230	219	59	160	170	141	335	10
Link Distance (ft)		780	780			451	451	292	108
Upstream Blk Time (%)								4	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	150			250	150				
Storage Blk Time (%)		10	0		1	1			
Queuing Penalty (veh)		0	0		3	2			

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2498	2531	2518	2541	2481	2514
Vehs Exited	2511	2537	2512	2563	2485	2521
Starting Vehs	49	34	32	47	43	42
Ending Vehs	36	28	38	25	39	34
Travel Distance (mi)	1126	1159	1150	1157	1121	1143
Travel Time (hr)	40.4	40.9	39.9	41.5	39.7	40.5
Total Delay (hr)	15.4	15.4	14.7	15.8	14.8	15.2
Total Stops	1408	1465	1362	1503	1398	1427
Fuel Used (gal)	46.7	48.2	47.5	48.7	46.7	47.5

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2498	2531	2518	2541	2481	2514
Vehs Exited	2511	2537	2512	2563	2485	2521
Starting Vehs	49	34	32	47	43	42
Ending Vehs	36	28	38	25	39	34
Travel Distance (mi)	1126	1159	1150	1157	1121	1143
Travel Time (hr)	40.4	40.9	39.9	41.5	39.7	40.5
Total Delay (hr)	15.4	15.4	14.7	15.8	14.8	15.2
Total Stops	1408	1465	1362	1503	1398	1427
Fuel Used (gal)	46.7	48.2	47.5	48.7	46.7	47.5

Intersection: 3: Arrowhead Ranch Blvd/DSISD Dwy & US 290

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	TR	LTR	LTR
Maximum Queue (ft)	14	220	209	50	170	192	160	261	24
Average Queue (ft)	1	127	108	15	93	84	58	100	1
95th Queue (ft)	9	196	179	42	152	152	122	189	12
Link Distance (ft)		780	780			451	451	292	108
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	150			250	150				
Storage Blk Time (%)		3	0		1	0			
Queuing Penalty (veh)		0	0		5	1			

conditions during both the weekday AM and weekday PM peak hours, and can be anticipated to continue to be satisfied under forecasted 2025 build (with development) conditions. Therefore, the installation of traffic signal control at the intersection of US 290 with Arrowhead Ranch Boulevard is required to accommodate the traffic volumes generated by the proposed Arrowhead Ranch commercial development and the installation of traffic signal control at the intersection would be the sole responsibility of the Arrowhead Ranch development.

The available sight distance along US 290 to the back of queue at Arrowhead Ranch Boulevard exceeds the required stopping sight distance for a posted speed limit of 60 miles per hour.

Capacity calculations performed for the intersection of US 290 with Arrowhead Ranch Boulevard assuming the installation of a traffic signal at the intersection revealed that the intersection can be anticipated to operate at an overall intersection Level of Service C or better during the weekday AM and PM peak hours, with all movements operating at a LOS C or better, following installation of traffic signal control.

The right turn in/right turn out driveway proposed to be constructed as part of the planned Arrowhead Ranch commercial developments will be located in the middle of the taper of the existing eastbound right turn lane on US 290 at its intersection with Arrowhead Ranch Boulevard. Therefore, it is anticipated that the eastbound right turn lane on US 290 will need to be lengthened in order to accommodate the location of the right turn in/right turn out driveway and the increase in traffic volumes associated with the Arrowhead Ranch development.

According to the City of Dripping Springs Code of Ordinances, Chapter 28, Exhibit A, Section 11.11, *"The intersections included within the traffic impact analysis shall be considered adequate to serve the proposed development if existing intersections can accommodate the existing service volume, the service volume of the proposed development, and the service volume of approved but unbuilt developments holding valid, unexpired building permits at level of service "C" or above."* Therefore, signal warrant evaluations were not performed for the intersections of US 290 with Bunker Ranch Boulevard and US 290 with Springs Lane.

The results of queueing analyses performed for the remaining study intersections revealed that each of the existing auxiliary turn lanes at the study intersections is of sufficient length to accommodate all existing queues, as well as all forecasted 2025 queues, both without and following the proposed Bunker Ranch subdivision expansion.

Therefore, no mitigations to the existing study intersections are anticipated to be required in order to accommodate the traffic volumes anticipated to be generated by the proposed Bunker Ranch subdivision expansion.

This concludes CEC's Revised Traffic Impact Analysis for the construction of the proposed Bunker Ranch subdivision expansion, located south of US 290 at its intersection with Bunker Ranch Boulevard in the City of Dripping Springs, Hays County, Texas.

Included with this report is a Technical Appendix containing all counts, analyses and calculations.

Exhibit 6

YouTube link to the Planning and Zoning Commission Regular Meeting on August 27, 2024

https://www.youtube.com/watch?v=-3CZax8lYUs