



HIGH DENSITY MINERAL BOND



**City of Bastrop
Strategy for Pavement Preservation
Total Project Size: 269,465 SY
Proposal for HDMB Project**

Summary:

The highest return on investment (ROI) is achieved by installing HA5 - High Density Mineral Bond.

Performance is calculated to be two to three times longer compared to using seal coats and premium seal coats.

Beyond the preservation benefits that HA5 provides, residents experience less community intrusion as road closures are needed much less frequently.

Performance History of Surface Treatments

The biggest items to focus on for preservation treatments are:

- » What will provide the maximum extension of pavement life per every dollar spent?
- » Validating a product's performance goes beyond pictures of black roads. Initially, all tools for pavement preservation turn a road black, but HA5 has proven to slow the age hardening of asphalt pavement that leads to cracking and deterioration.



HA5™ High Density Mineral Bond

A breakthrough that is changing the aging characteristics of asphalt, and confirmed by university testing, is igniting enthusiasm for a profound reduction in pavement life-cycle costs.

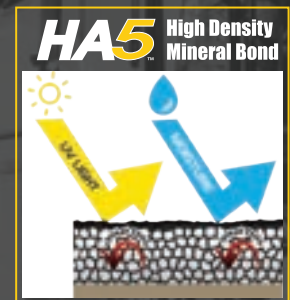
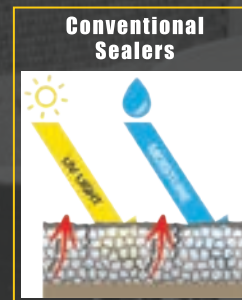
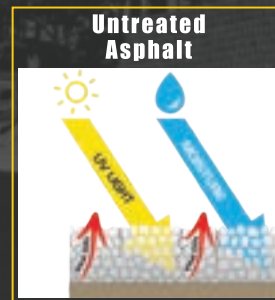
**RESEARCH PROVES
HA5 DELAYS AGE
HARDENING**

67%

DELAY IN ASPHALT AGING



HOW HA5 IMPACTS ASPHALT AGING



"Using conventional as well as leading-edge testing methods to identify the age hardening of the asphalt binders, researchers have identified a 67% delay in the age hardening of the asphalt binder with HA5 installed as a pavement preservation strategy. This ability to reduce flexibility loss supports an in-field case study where after just a four-year period a side-by-side comparison identified cracking to be reduced by nearly 9 times with HA5 installed."

"Transportation Research 2020" Dr. Shakir Shatnawi, P.h.D., P.E. Former State Pavement Engineer and Division Chief at Caltrans with 30 years of experience in pavement design, management, and preservation.

For more information visit:

www.holbrookasphalt.com/HA5

HA5 Treatment Report

Below are core samples taken from roadways comparing municipality specified, time-tested pavement preservation treatments. Look closely at each core. The HA5 core aesthetically looks to be the most desirable with the darkest surface. However, what the engineering community has identified is the darker color beneath the surface. This uncovers HA5's ability to retain the critical oils and resins that keep asphalt pavements flexible. ***More flexibility results in pavements lasting longer with less cracking and other manifestations of deterioration***

Core Sample Comparison



Slurry

Date Pavement Installed:
1999

Preservation:
Type II Slurry



Chip Seal

Date Pavement Installed:
1999

Preservation:
Chip Seal



HA5

Date Pavement Installed:
1995

Preservation:
HA5 (High Density Mineral Bond)

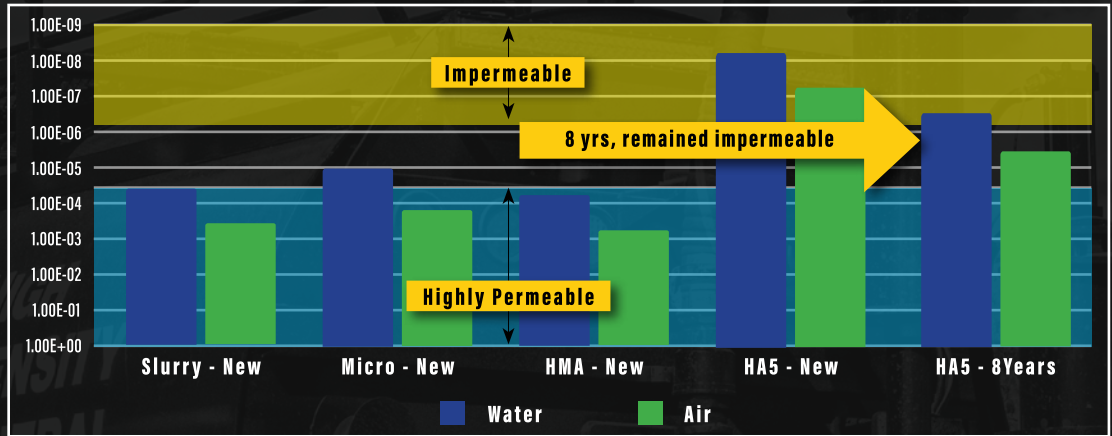
A report from the engineering firm Rosenberg & Associates, assessing a side-by-side of HA5 to a premium seal coat installation, found **9x less cracking** in the HA5 treated section compared to the premium seal coat treated section after a **4-year period**.

KEYS TO PAVEMENT PRESERVATION:
The Right Treatment, on the Right Road, at the Right Time.

For more information visit:

www.holbrookasphalt.com/HA5

AIR & WATER PERMEABILITY COMPARISON



Research on binder elasticity and pavement permeability proves that asphalt treated with HA5 significantly increases the useful life of asphalt pavement and therefore dramatically lowers the cost of transportation infrastructure.

ROI

Primary Treatment Strategy	Avg PCI	(Subdivision Public Acceptance Rating) PAR	\$/Centerline Mile*	Cost of Ownership Savings
1. Do Nothing	70	4	\$5,642,846.54	0%
2. Partial Recon/ Surface removal	73	4	\$3,612,576.63	36%
3. Mill & Overlay	76	6	\$3,099,706.96	45%
4. Thin Overlay	75	6	\$2,961,391.49	48%
5. Seal Coat/Mastic Sealer	79	7	\$2,639,047.53	53%
6. FOG/Rejuvenator	81	7	\$2,590,647.40	54%
7. Type II Slurry	86	4	\$1,281,249.01	77%
8. Micro Surface	80	5	\$1,247,331.18	78%
9. Chip Seal	80	2	\$1,115,431.75	80%
10. High Density Mineral Bond (HA5)	88	9	\$954,838.49	83%

- Highest Return on Investment (ROI)
- Highest Pavement Condition Index (PCI)
- Highest Public Acceptance Rating (PAR)

Every agency's design specifications and goals are different but HA5 has proven its effectiveness at extending design life no matter what your goals look like.



Data analysis provided by Scot Gordon, PE, IAM, President, Roadway Asset Services, LLC. Scot has a Bachelor's and Master's degree in civil engineering from Texas A&M University with 30 years experience involving design of major highway infrastructure, evaluation and research of pavements, soil stabilization, and pavement management plan development.



HIGH DENSITY MINERAL BOND

Proactive DOTs, Municipalities, and HOAs across the country have uncovered a strategy that saves them money while effectively preserving their pavement assets using HA5 High Density Mineral Bond

- » Lower & more predictable costs
- » Extends pavement life
- » Unmatched Durability
- » No loose or grainy residue
- » Fewer premature failures
- » High Homeowner acceptance

Garland, TX



Sachse, TX



Claremore, OK



Alabama DOT



St. George, UT



Queen Creek, AZ



Matthews, NC



Rocklin, CA



Nashville, TN



For more information visit:
www.holbrookasphalt.com/HA5



Project Location	Proposal #	Date Issued	PO/LD #
City of Bastrop TX Various Streets Bastrop TX 78602	HAU948987	1/9/2024	

Terms

Due Upon Completion

Adviser Information

Kent Nobis
P: 435-619-0575 | E: kent@preserveasphalt.com

Description

HA5 High Density Mineral Bond

Bill To

City of Bastrop TX
Attn: John Eddleton
1311 Chestnut St
Bastrop TX 78602

Item	Quantity	UM	Rate	Amount
HA5 Clean & prepare surface using high pressure air & wire bristle brooms. Install "HA5" High Density Mineral Bond advanced performance pavement preservation treatment. No guarantee surface treatments will adhere to areas saturated with motor oil. HA5 meets demands of High Density Mineral Bond Specification established by agency engineers.	269,465	SqYd	4.10	1,104,806.50
Traffic Control Traffic control for TxDOT intersections to perform road closure and/or lane closures. Includes 2 days per set up, digital message boards, encroachment permit from TxDOT, and mobilization to cover initial set up and final pick up. Intersections for Traffic Control: Hunters Crossing and Hwy 21 Home Depot Way and Hwy 304 Hunters Point Dr and Hwy 304 Hospital Dr and Hwy 150 Perkins St and Hwy 150 Eskew and Hwy 150 Perkins and Hwy 21 Eskew and Hwy 21 Cedar St and Hwy 95 Farm St and Hwy 95 Walnut St and Hwy 21 Pitt St and Hwy 21 Spring St and Chestnut Hills St and Chestnut Jefferson St and Chestnut		LS		74,692.50

Note: Crack Fill, Asphalt Repairs, and Striping to be provided by others.

Total	\$1,179,499.00
--------------	----------------

Please sign for proposal acceptance: **Do not sign this page, see final page for signing**



Date	Number
1/9/2024	HAUB13475

Terms and Conditions

TERMS AND CONDITIONS: Any proposals returned to Holbrook Asphalt Company ("Contractor") more than 14 days after the proposal is submitted to the Client is subject to revision, updated pricing, or may be voided by Contractor. Engineering, tests, permits, inspection fees and bonding fees are not included in price unless stated otherwise. Pricing based on no more than area and depth dimensions listed. Upon construction, if it is determined that concrete or asphalt area or depth is greater than the estimation, client agrees to pricing adjustment as a result of project overrun. Client specifically represents and warrants that either the Client is the owner of the premises where the work is to be performed, or, in the alternative, Client has authority from the owner of the premises authorizing the Work to be performed on the said premises.

GENERAL EXCLUSIONS: Contractor is not liable for any ADA compliance, if needed, Client should consult with an ADA compliance professional prior to specific project approval. Contractor not responsible for claims related to pavement markings or lack thereof during or following project work. Contractor will not be responsible for its product failure if said failure is directly or indirectly caused by "Existing Surface Conditions," as defined below, and any written or implied warranty will become void. Existing Surface Conditions are defined as: water drainage issues or delamination or failure of existing paint, asphalt, surface sealer, wearing course or any other material that is in a failing or in an unstable state. If any portion of the project area has Existing Surface Conditions not caused or created by Contractor that impact Contractor's HA5 product or any other product Contractor applies to project area, the warranty is void. Client is responsible for having entry gates open on day of work. Any damage to gates, sensors or loop sensors above or below asphalt are responsibility of Client. Any hot-applied sealants will not be exactly level with pavement surface as material settles to fill voids. There may also be excess material on pavement surface. Regarding asphalt, concrete and excavation work: Contractor is not responsible for subgrade scarification, re-compaction or concrete damage due to removal of asphalt. Contractor is not responsible for existing condition of subgrade, drainage in areas of less than 1% grade, adjustments of utilities, manholes and valve covers. Contractor is not responsible for any damage to underground utilities and cost to repair the same.

PAYMENT TERMS: Payment is due upon completion of work (Completion by line item 'Progress Billing' and/or completion of project core). Payment is due upon Client receipt of invoice. Client understands and agrees that it will be billed for towing as incurred and will be due on receipt. If the Client has a discrepancy with the Contractor regarding the contracted work, a retention of 5% of invoice up to a maximum of \$750.00 may be retained by Client up to 45 days. Client agrees that it may be billed as each line item is completed and each item may become their own respective invoice and due upon receipt of the same. Contractor reserves the right to charge up to 50% of Proposal Total if client cancels project within 25 days of scheduled project commencement. Upon request, post-project walk-throughs may be scheduled to review concerns.

Client agrees that interest accrues on all past-due amounts at 24% per annum from invoice date, until paid in full; and may be billed collection fees of up to 40% and all fees incurred by collection efforts. Total Proposal price includes one mobilization unless stated otherwise. Additional mobilizations may be billed up to \$3,500 per additional mobilization. This agreement provides Client written Notice of Right to Lien. Pricing does not include bonding or prevailing wage/Davis Bacon Certification, unless stated otherwise. By signing this proposal (contract), Client agrees that Contractor may not be held liable for delays, conditions, or Acts of God beyond their control, which situations may delay or cause cancellation partially or entirely on any project. Delays include project demand and material supply.

INSURANCE: These insurance limits are listed by Contractor to inform Client of such. Any premiums above the following to be paid by Client. This disclosure overrules any other contract language wherein Contractor agrees to differing limits. Certificates available upon request. **GENERAL LIABILITY:** \$1m (inc.), \$2m (agg.) **AUTO:** \$1m **UMBRELLA:** \$2m (inc.), \$2m (agg.) **PERSONAL INJ:** \$1m **WORKERS COMP:** \$1m

ADDITIONAL HA5 WARRANTY LIMITATIONS AND EXCLUSIONS: No claim will be honored unless Holbrook Asphalt has been notified in writing and is given the opportunity to inspect the claimed failure. Surface treatments applied previous to HA5 being installed are not covered under this warranty. (For example, if a previously applied preservation treatment is peeling or delaminating from the pavement surface—even if the surface was cleaned and prepped prior to HA5 being installed on top of it—this warranty does not cover HA5 in these circumstances.) Any attempt to repair the surface prior to Holbrook Asphalt's inspection will render this warranty invalid. Areas where HA5 was installed over pavements with motor oil, brake fluid, hydraulic fluid, or other substances that disturb the adhesion of HA5 and that lead to delamination are not covered under warranty. This warranty does not cover structural defects in the asphalt (e.g. base failure or damage caused by faulty construction and or design), cracks, exposure to fuel, oil, or other chemicals determined to be harmful to the HA5 treatment, areas exposed to frequent sprinkler water run-off, or standing and/or ponding water, damage caused by heavy truck or equipment traffic, damage caused by equipment inflicting excessive stress or scraping to the pavement surface, damage caused by landscaping installation, or damage caused by earthquakes or other acts of God. Mechanical disturbances by snowplow chatter, studded tires, etc. are excluded from warranty. This warranty is not valid for areas located in elevations above 6500 feet. A valid Warranty Certificate must be signed with a copy returned to Holbrook Asphalt within 60 days of the HA5 installation for the warranty to be valid and executable.

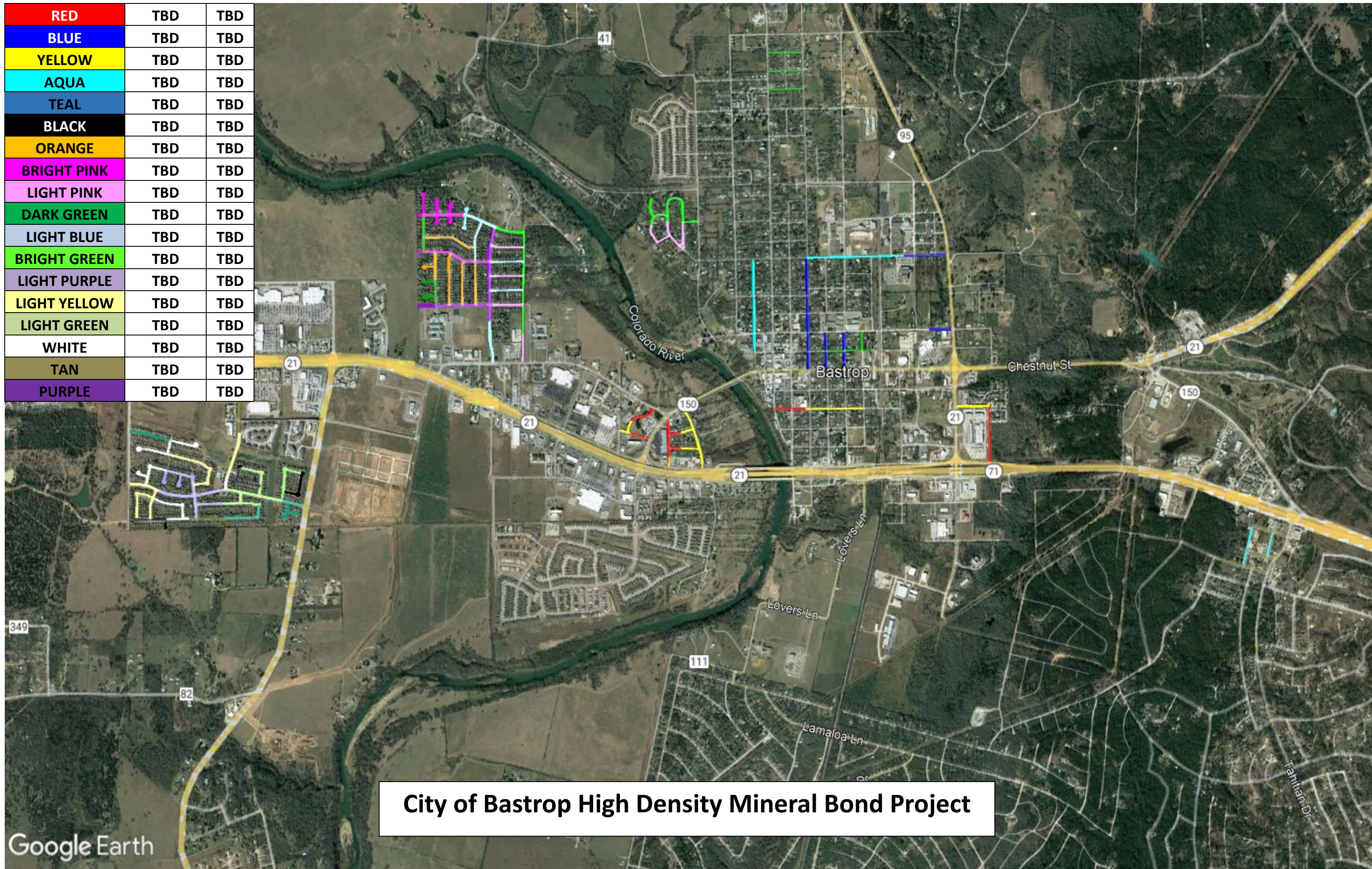
Pre-mature wear of HA5 during the five-year period is defined as anything less than 70% residual inter-aggregate coverage of HA5 to the asphalt binder of the treated surface. If premature failure of HA5 is deemed by Holbrook Asphalt or an approved third-party expert within the five year period, reinstallation will take place at no charge or at the reduced rate identified on the Warranty Certificate for the project. Contractor reserves the right appoint the third-party expert should there be a dispute regarding the premature failure between the Client and Contractor. Client and Contractor agree to be bound by and abide by the decision of the third party expert regarding whether a premature failure has occurred.

I have read and agree with these terms and conditions. I elect to proceed with the signed option below.

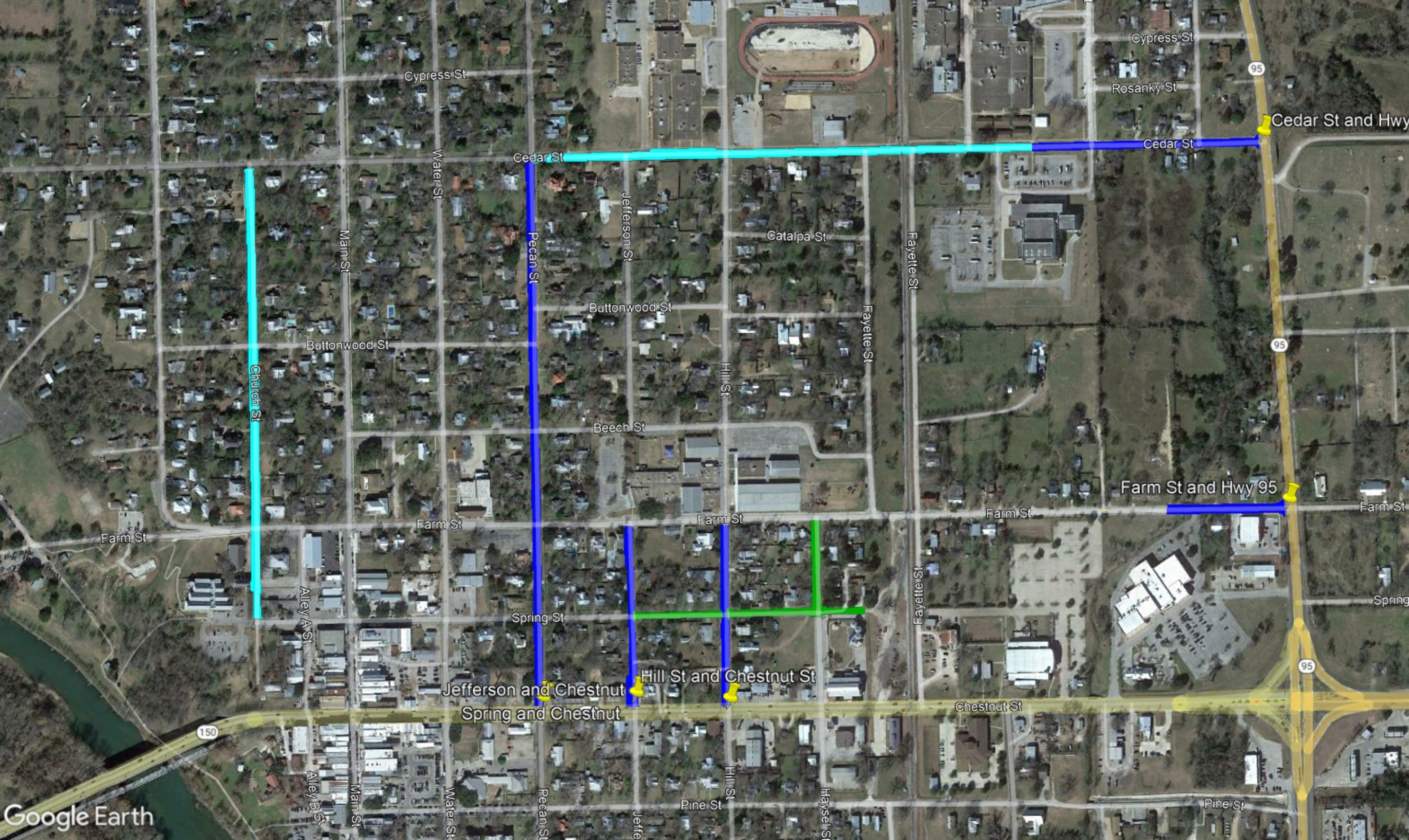
HAU948987 - HA5 High Density Mineral Bond (Sign to accept this proposal)

Name _____ Signature _____ Date _____ Contractor _____

RED	TBD	TBD
BLUE	TBD	TBD
YELLOW	TBD	TBD
AQUA	TBD	TBD
TEAL	TBD	TBD
BLACK	TBD	TBD
ORANGE	TBD	TBD
BRIGHT PINK	TBD	TBD
LIGHT PINK	TBD	TBD
DARK GREEN	TBD	TBD
LIGHT BLUE	TBD	TBD
BRIGHT GREEN	TBD	TBD
LIGHT PURPLE	TBD	TBD
LIGHT YELLOW	TBD	TBD
LIGHT GREEN	TBD	TBD
WHITE	TBD	TBD
TAN	TBD	TBD
PURPLE	TBD	TBD



City of Bastrop High Density Mineral Bond Project



Cypress St

Cypress St

Rosanky St

95

Cedar St and Hwy

Cedar St

Cedar St

Water St

Jefferson St

Catalpa St

Fayette St

Main St

Buttonwood St

Buttonwood St

Fayette St

Church St

Hill St

Beech St

Farm St and Hwy 95

95

Farm St

Farm St

Farm St

Farm St

Farm St

Alley A St

Spring St

Hill St and Chestnut St

Jefferson and Chestnut

Spring and Chestnut

Fayette St

Spring

95

Chestnut St

150

Alley B St

Main St

Water St

Pecan St

Jeffe

Pine St

Hill St

Hayse

Pine St



Industry Dr

Commercial Dr

Park Ln

Corporate Dr

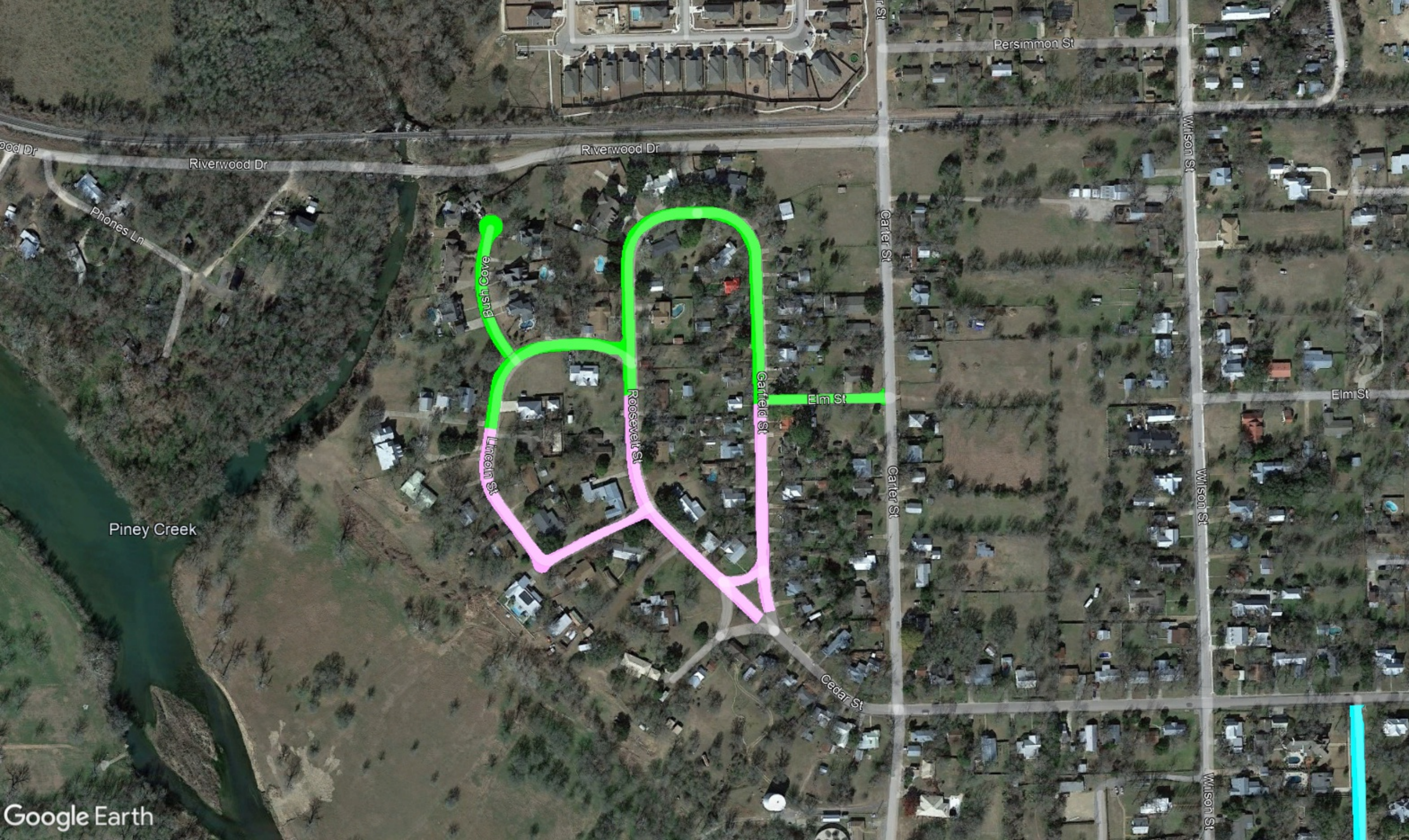
Tahitian Dr

Mauna Loa Ln

Mauna Loa Ln

Conference Dr

Briar Forest Dr



ood Dr

Riverwood Dr

Riverwood Dr

Persimmon St

Wilson St

Phones Ln

Bush Cove

Carter St

Elm St

Piney Creek

Lincoln St

Roosevelt St

Garfield St

Elm St

Carter St

Wilson St

Cedar St

Wilson St



Perkins St and Hwy 150

Eskew and Hwy 150

Hospital Dr and Hwy 150

Eskew and Hwy 21

Perkins St and Hwy 21

Grady Tuck Ln

Jones

Higgins St

Frontage Rd

Frontage Rd

Colorado River

Old Austin Hwy

Old Austin Hwy

Hasler Blvd

Alley B St

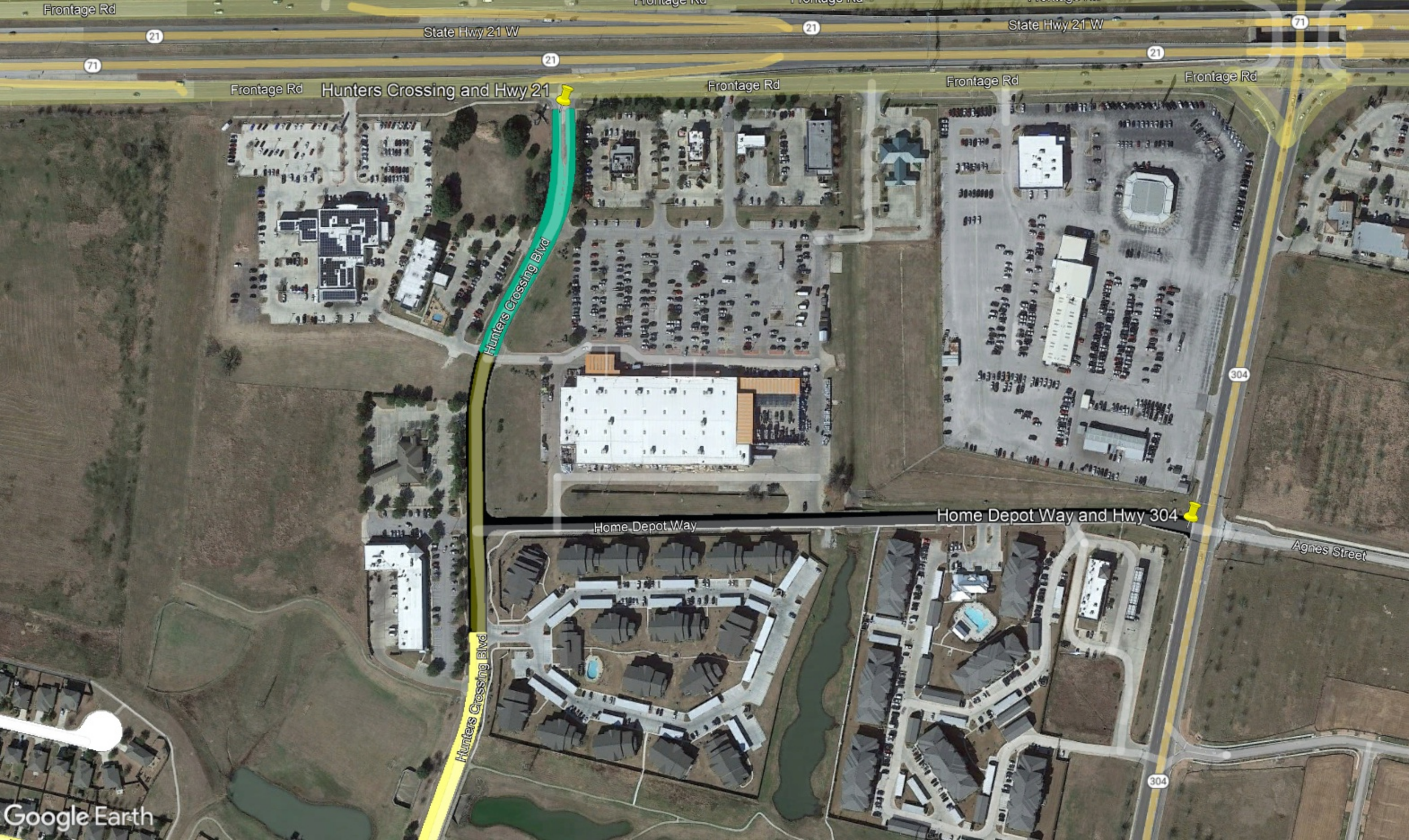
Main St

Agnes

Childers Dr

S Eskew

Hasler St



21

State Hwy 21 W

21

State Hwy 21 W

21

71

21

21

Frontage Rd
Hunters Crossing and Hwy 21

Frontage Rd

Frontage Rd

Frontage Rd

Hunters Crossing Blvd

Home Depot Way

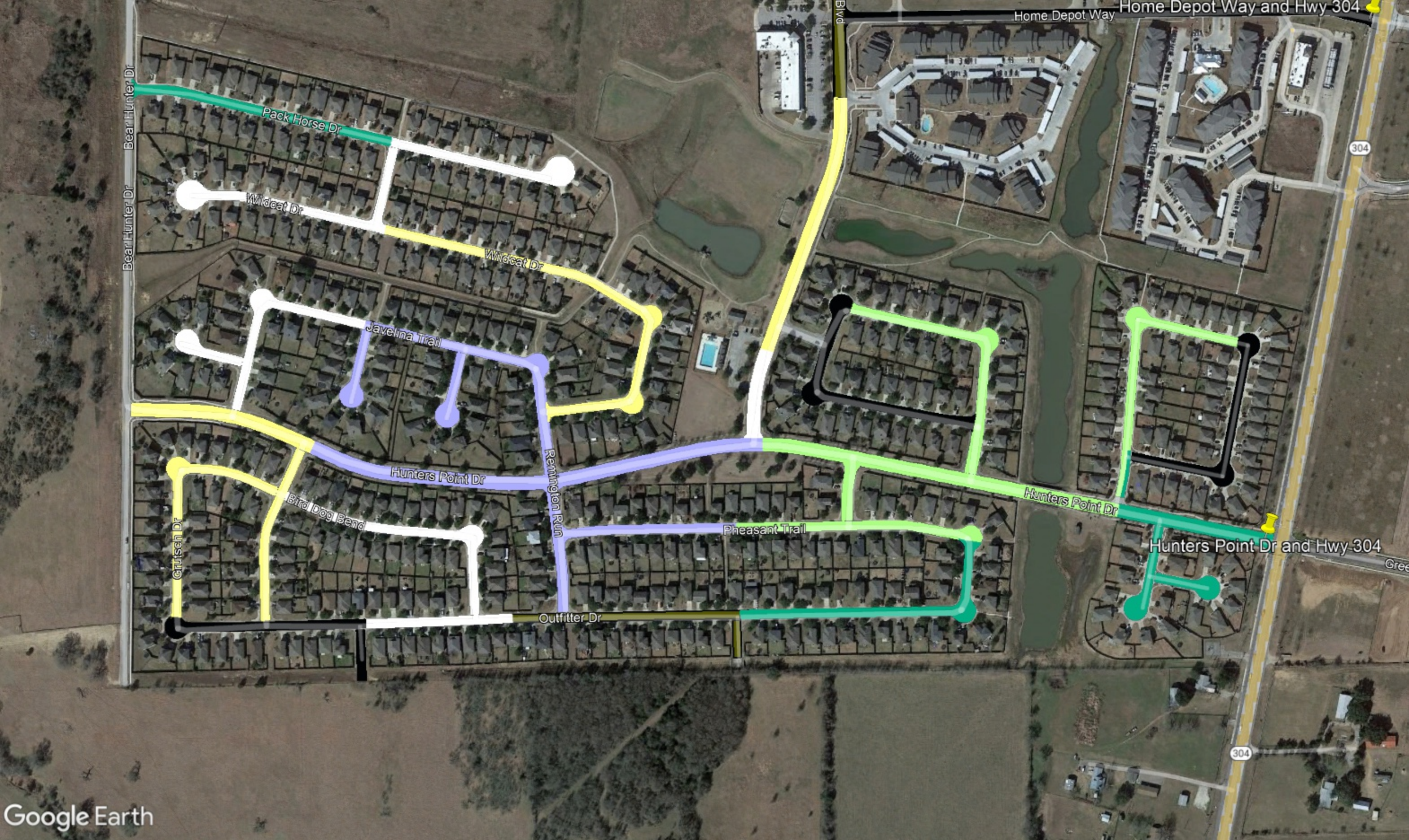
Home Depot Way and Hwy 304

304

Agnes Street

304

Google Earth



Bear Hunter Dr

Pack Horse Dr

Wildcat Dr

Wildcat Dr

Javelina Trail

Hunters Point Dr

Bird Dog Bend

Grutsch Dr

Remington Run

Pheasant Trail

Outfitter Dr

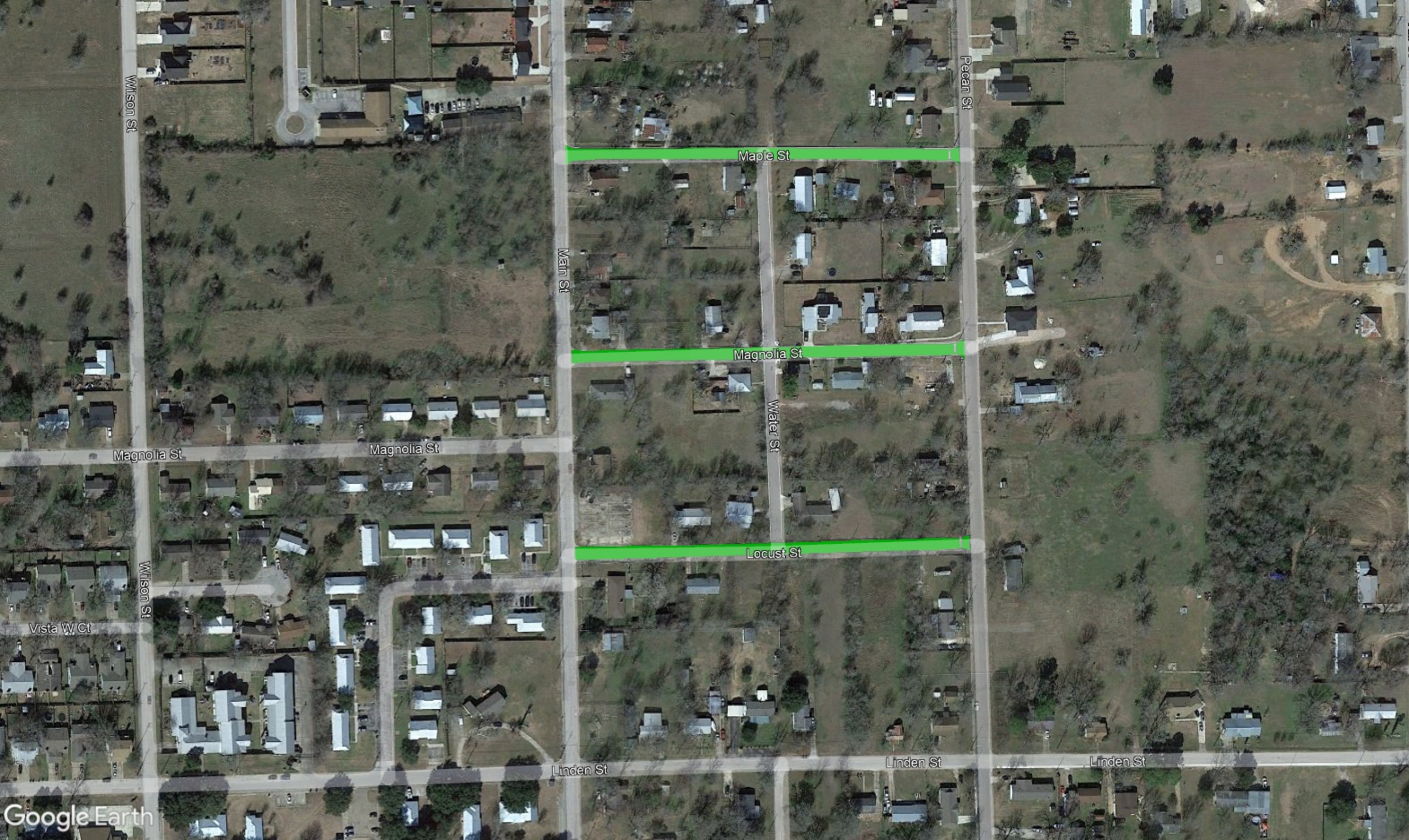
Home Depot Way

Home Depot Way and Hwy 304

304

Hunters Point Dr and Hwy 304

304



Wilson St

Maple St

Pecan St

Main St

Magnolia St

Water St

Magnolia St

Magnolia St

Locust St

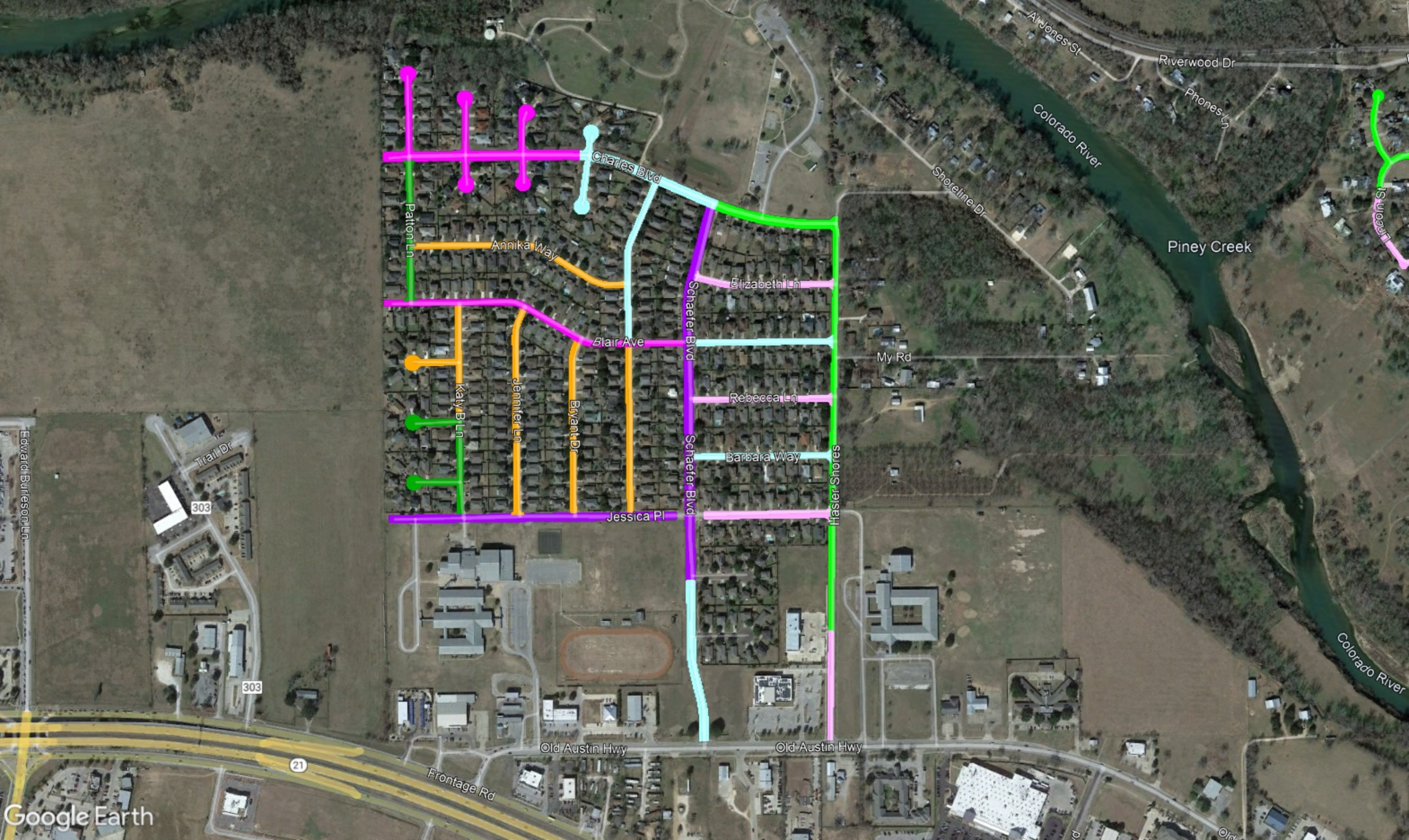
Vista W Ct

Wilson St

Linden St

Linden St

Linden St



Edward Burrison Ln

Trail Dr

303

303

21

Frontage Rd

Old Austin Hwy

Old Austin Hwy

Al Jones St

Riverwood Dr

Phones Ln

Colorado River

Shoreline Dr

Piney Creek

Stinson St

Charles Blvd

Annika Way

Patton Ln

Elizabeth Ln

Blair Ave

Katy B Ln

Jennifer Ln

Bryan Dr

Rebecca Ln

Barbara Way

Jessica Pl

Master Shores

My Rd

Colorado River

