

Figure 8. Mangini Ranch Phase 2 Project Trip Assignment (continued)

4.3 Existing with Project Conditions

Existing trips were reassigned to project area roadways to account for the planned abandonment of Placerville Road, north of Savannah Parkway. The reassigned traffic is detailed in **Appendix D**. Peak-hour traffic associated with the project was added. Delay and level-of-service were determined at the study intersections and arterial segments. **Figure 9** summarizes the turning movements and lane configurations for the Existing with Project Condition. **Table 16** through **Table 18** presents a summary of the level-of-service results for the study intersections and segments. Intersection and roadway geometry within the study area was based on assumptions from the W/E SPA, neighboring studies²⁷, and an evaluation the likely cumulative geometry of project area roadway (**Appendix D**). The results indicate that eight study intersections exceed the relevant level-of-service threshold, and five of those locations are called out as having a potentially significant impact. Intersections that do not achieve level-of-service thresholds are shown in a bold font, and those that have potential significant impacts are shown in a white on black style. Calculation sheets for intersection delay and level-of-service as well as freeway density and level-of-service are provided in **Appendix B**.

Note that during the AM peak period the addition of project traffic decreases the average delay at three intersections:

- # 8. East Bidwell St./Placerville Rd.
- # 9. East Bidwell St./WB U.S. 50 ramps
- #10. East Bidwell St./EB U.S. 50 ramps

Though counter-intuitive, small improvements in average delay occasionally result when the volume increases on the intersection movements with relatively low movement specific delay. Project traffic, as well as redirected traffic from abandonment of Placerville Road, adds predominantly to the northbound and southbound approaches at these intersections. Those northbound and southbound approaches on East Bidwell Street have less delay than the freeway ramps or side streets, which in turn reduces the average delay for each of these locations.

²⁷ Including: Mangini Ranch Phase 1, White Rock Ranch, and Russel Ranch. (The Enclave, Broadstone Estates, and Folsom Heights were also considered.)

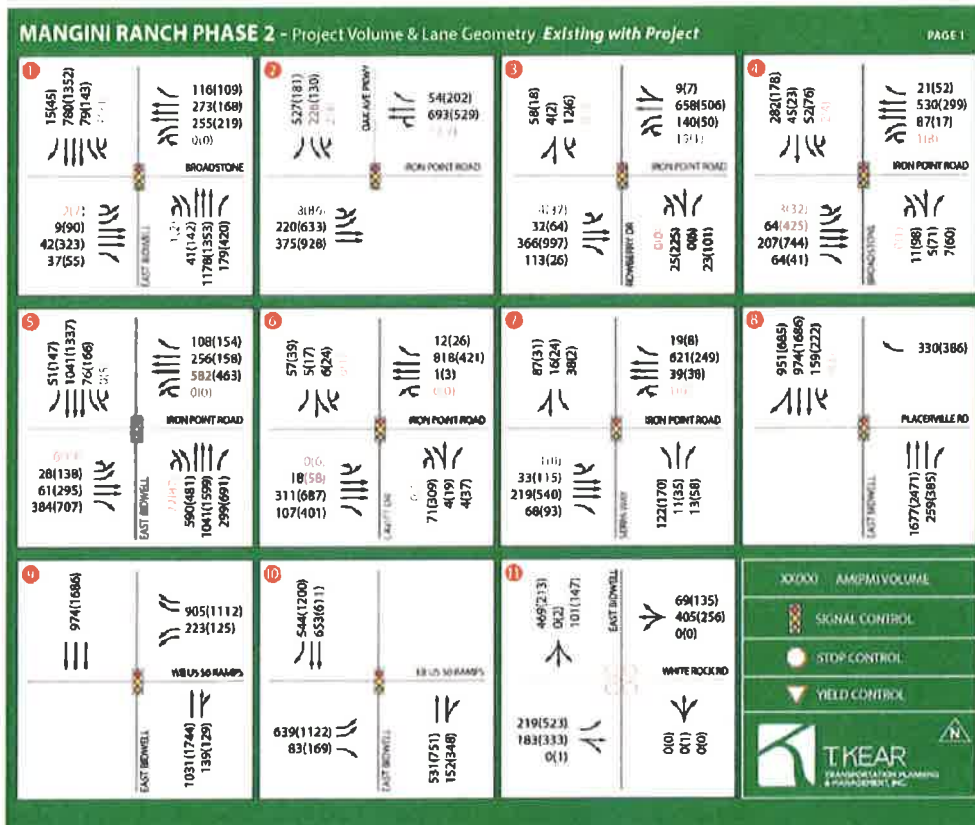


Figure 9. Existing with Project Condition Turning Movements and Lane Geometry

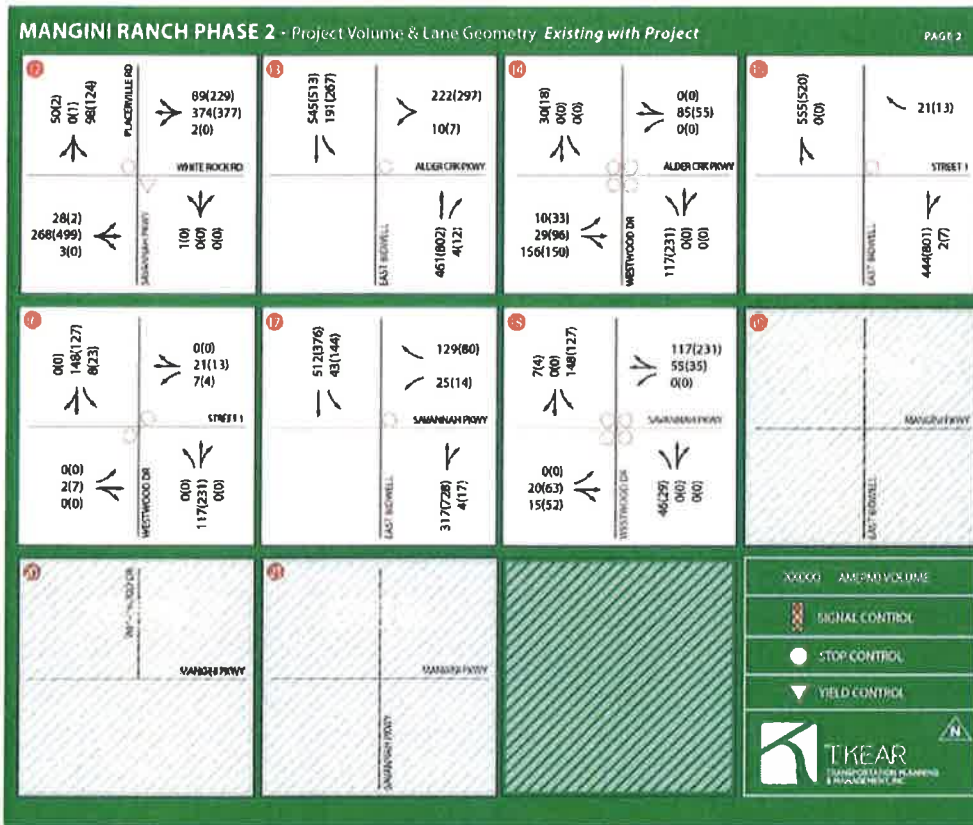


Figure 9. Existing with Project Condition Turning Movements and Lane Geometry (continued)

Table 16. Existing Intersection Delay and Level-of-Service, with and without the Project

Study Intersection	Existing 2016 with Project Condition Control	Level-of-Service Standard	Existing 2016 without Project Condition AM Delay (LOS)	Existing 2016 without Project Condition PM Delay (LOS)	Existing 2016 with Project Condition AM Delay (LOS)	Existing 2016 with Project Condition PM Delay (LOS)
1. Broadstone Pkwy./East Bidwell St.	Signal	C	20.0 (B)	23.1 (C)	20.2 (C)	23.2 (C)
2. Oak Ave./Iron Point Rd.	Signal	C	16.6 (B)	11.2 (B)	16.8 (B)	11.3 (B)
3. Rowberry Dr./Iron Point Rd.	Signal	C	13.4 (B)	16.2 (B)	13.4 (B)	16.4 (B)
4. Broadstone Pkwy./Iron Point Rd.	Signal	C	11.0 (B)	14.8 (C)	11.0 (B)	14.9 (B)
5. East Bidwell St./Iron Point Rd.	Signal	C	44.7 (D)	157.9 (F)	52.4 (D)	159.0 (F)
6. Cavitt Dr./Iron Point Rd.	Signal	C	11.6 (B)	21.7 (C)	11.6 (B)	21.7 (C)
7. Serpa Way/Iron Point Rd.	Signal	C	19.4 (B)	17.1 (B)	19.4 (B)	17.1 (B)
8. East Bidwell St./Placerville Rd.	Signal	C	11.5 (B)	12.9 (B)	11.1 (B)	13.1 (B)
9. East Bidwell St./WB U.S. 50 ramps	Signal	C	38.6 (D)	46.3 (D)	35.7 (D)	44.5 (D)
10. East Bidwell St./EB U.S. 50 ramps	Signal	C	19.7 (B)	49.1 (D)	16.5 (B)	38.3 (D)
11. East Bidwell St./White Rock Rd.	AWSC	D	46.4 (E)	45.4 (E)	53.7 (F)	54.5 (F)
12. White Rock Rd./Placerville Rd.	TWSC	D	20.8 (C) SB	50.4 (F) SB	21.9 (C) SB	57.6 (F) SB
13. East Bidwell St./Alder Creek Pkwy.	TWSC	D	n/a	n/a	54.1 (F) WBL	155.4 (F) WBL
14. Westwood Dr./Alder Creek Pkwy.	AWSC	D	n/a	n/a	9.0 (A)	11.2 (B)
15. East Bidwell St./Street 1	TWSC	D	n/a	n/a	11.4 (B) WB	15.8 (C) WB
16. Westwood Dr./Street 1	TWSC	D	n/a	n/a	11.2 (B) WBT	12.4 (B) WBT
17. East Bidwell St./Savannah Pkwy	TWSC	D	n/a	n/a	24.1 (C) WBL	57.9 (F) WBL
18. Westwood Dr./Savannah Pkwy	AWSC	D	n/a	n/a	9.4 (A)	9.9 (A)
19. East Bidwell St./Mangini Pkwy	-	D	n/a	n/a	n/a	n/a
20. Westwood Dr./Mangini Pkwy	-	D	n/a	n/a	n/a	n/a
21. Placerville Rd./Mangini Pkwy	-	D	n/a	n/a	n/a	n/a

Notes:

For TWSC intersections the worst approach (or movement for multi-lane approaches) is reported.

Bold values denote level-of-service deficiencies.

Values shown in reverse text (white on black) denote potentially significant impacts.

Table 17. Existing Arterial Segment Volume and Level-of-Service, with and without the Project

Segment (Location)	Analysis Type	Level-of-Service Standard	Existing 2016 without Project Condition Volume (LOS)	Existing 2016 with Project Condition Volume (LOS)
1. East Bidwell St. (North of White Rock Rd.)	Moderate Access Control	D	8,860 (A)	9,400 (A)
2. White Rock Rd. (West of East Bidwell St.)	High Access Control	D	10,930 (A)	11,130 (A)
3. White Rock Rd. (East of East Bidwell St.)	High Access Control	D	5,980 (A)	6,220 (A)

Table 18. Existing US 50 Density and Level-of-Service, with and without the Project

Segment	Analysis Type	Level-of-Service Standard	Existing 2016 without Project Condition AM Density (LOS)	Existing 2016 without Project Condition PM Density (LOS)	Existing 2016 with Project Condition AM Density (LOS)	Existing 2016 with Project Condition PM Density (LOS)
Eastbound						
1. EB East Bidwell St. slip off-ramp	Diverge	E	12.2 (B)	22.2 (C)	12.6 (B)	23.3 (C)
2. EB between East Bidwell St. ramps	Basic	E	9.4 (A)	14.3 (B)	9.4 (A)	14.3 (B)
3. EB East Bidwell St. loop on-ramp	Merge	E	15.2 (B)	20.7 (C)	15.2 (B)	25.4 (C)
4. EB East Bidwell St. slip on-ramp	Merge	E	16.4 (B)	23.6 (C)	16.7 (B)	28.8 (D)
Westbound						
5. WB East Bidwell St. slip off-ramp	Diverge	E	20.9 (C)	14.5 (B)	21.0 (C)	15.0 (B)
6. WB between East Bidwell St. ramps	Basic	E	13.6 (B)	7.3 (A)	13.6 (B)	7.3 (A)
7. WB East Bidwell St. loop on-ramp	Merge	E	15.5 (B)	9.3 (A)	16.3 (B)	9.8 (A)
8. WB East Bidwell St. slip on-ramp II	Merge	E	23.0 (C)	14.8 (B)	23.9 (C)	15.3 (B)

Note: Results based on PeMS data for US 50 mixed flow lanes.

5. EXISTING PLUS PLANNED AND APPROVED PROJECTS (EPPAP) CONDITION WITH AND WITHOUT PROJECT

This section presents Existing Condition traffic plus traffic from planned and approved projects that are expected to be constructed by the time the project is constructed, roughly corresponding to five years' worth of growth. This "phasing analysis" is intended to assist the City of Folsom in phasing of improvements at study intersections which by be necessary to accommodate traffic from all approved and anticipated tentative maps over the next five years in the FPASP. EPPAP Conditions are presented with and without the project. A list of planned and approved projects, with their assumed absorption, was provided in **Table 5** above. Assignment of the incremental traffic generated by the EPPAP projects through the study intersections is detailed in **Appendix D**.

5.1 EPPAP Conditions

EPPAP Conditions analysis utilizes lane configurations and signal timing plans from the Existing Conditions.

- Project area roadways (Alder Creek Parkway, Savannah Parkway, Westwood Drive, and Street 1 are assumed to be constructed with the 356 multi-family units in Mangini Phase 3, and the 111 multifamily units in The Enclave. Placerville Road, north of Savannah Parkway, is assumed to be abandoned with construction of Savannah Parkway and Westwood Drive.
- The East Bidwell Street/Mangini Parkway intersection is assumed to be constructed and signalized by the Mangini Ranch Phase 1 project. Mangini Ranch Phase 1 is conditioned to signalize the intersection before the five hundredth unit.
- The Mangini Parkway/Westwood Drive intersection is assumed to be constructed by the Mangini Ranch Phase 1 project
- The Savannah Parkway/Mangini Parkway intersection is assumed to be constructed as a T-intersection servicing White Rock Springs Ranch by the White Rock Springs Ranch project.

Figure 10 summarizes the turning movements and lane configurations for the EPPAP Conditions scenario. Note that Mangini Parkway is not envisioned to connect between East Bidwell Street and Savannah Parkway in the near term. **Table 19** through **Table 21** present a summary of level-of-service results for the study intersections and segments under EPPAP Conditions. The results indicate that nine intersections exceed the relevant level-of-service standard prior to the addition of project traffic, these locations are show in a bold font. All study segments operate acceptably. Calculation sheets for intersection delay and level-of-service as well as freeway density and level-of-service are provided in **Appendix C**.

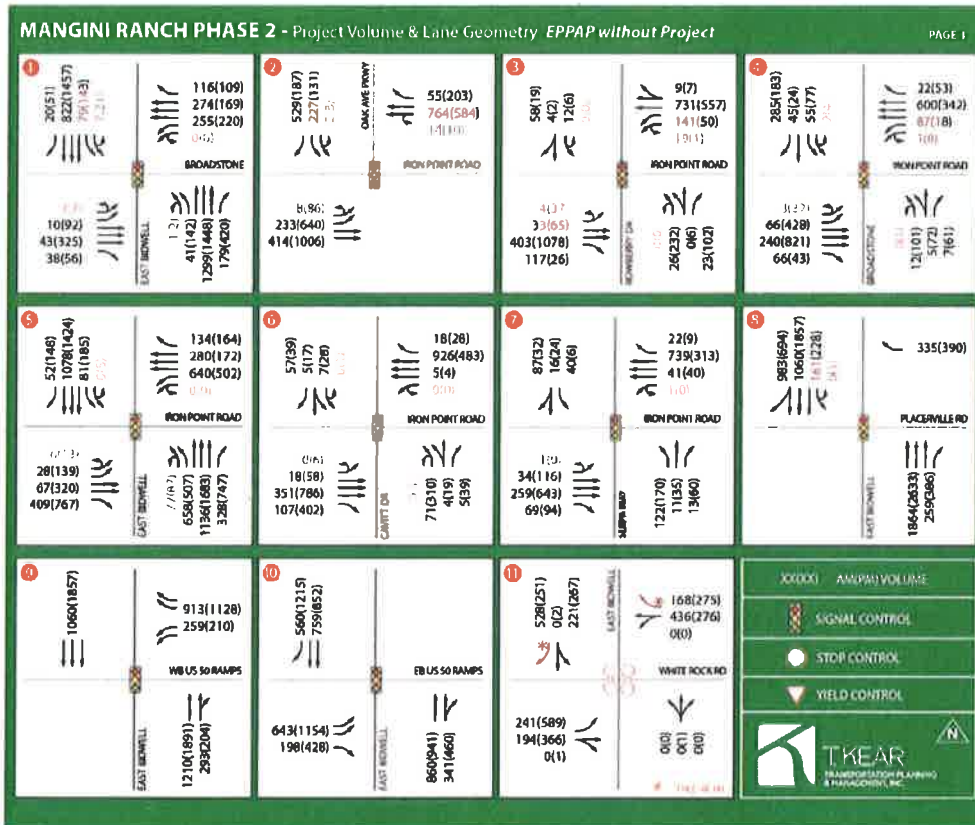


Figure 10. EPPAP Condition Turning Movements and Lane Geometry

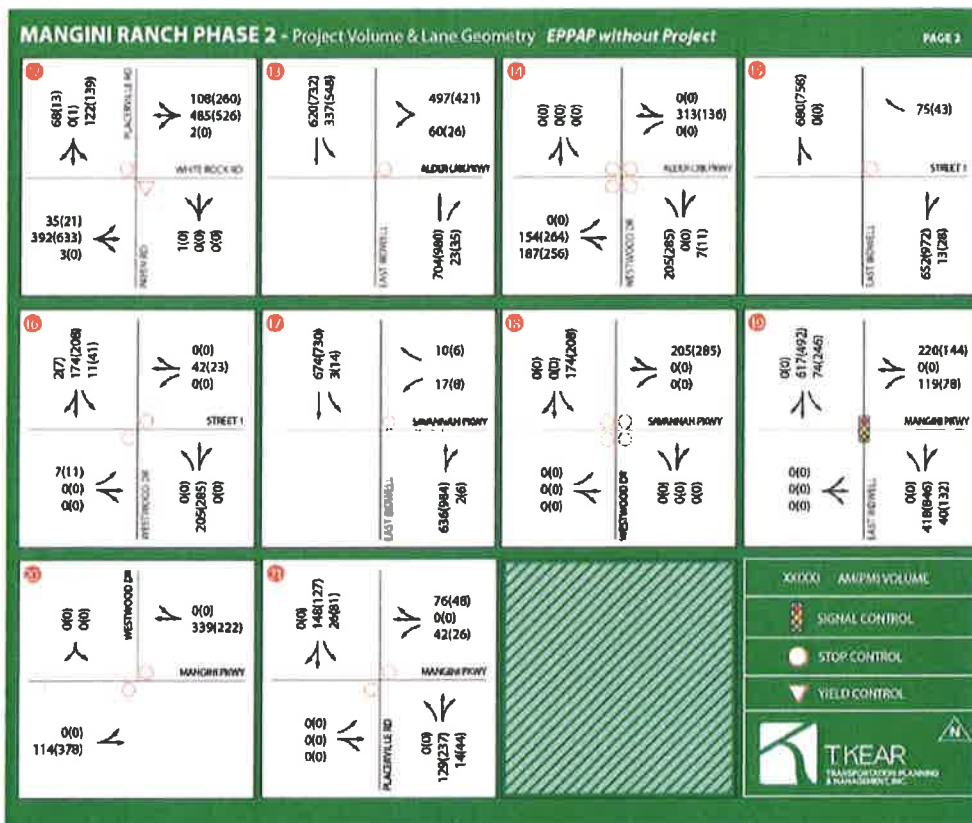


Figure 10. EPPAP Condition Turning Movements and Lane Geometry (continued)

Table 19. EPPAP Intersection Delay and Level-of-Service

Study Intersection	EPPAP without Project Condition Control	Level-of-Service Standard	EPPAP without Project Condition AM Delay (LOS)	EPPAP without Project Condition PM Delay (LOS)
1. Broadstone Pkwy./East Bidwell St.	Signal	C	20.7 (C)	23.8 (C)
2. Oak Ave./Iron Point Rd.	Signal	C	17.7 (B)	12.0 (B)
3. Rowberry Dr./Iron Point Rd.	Signal	C	13.6 (B)	17.4 (B)
4. Broadstone Pkwy./Iron Point Rd.	Signal	C	10.9 (B)	15.4 (B)
5. East Bidwell St./Iron Point Rd.	Signal	C	65.5 (E)	194.3 (F)
6. Cavitt Dr./Iron Point Rd.	Signal	C	11.9 (B)	21.9 (C)
7. Serpa Way/Iron Point Rd.	Signal	C	20.1 (C)	17.7 (B)
8. East Bidwell St./Placerville Rd.	Signal	C	15.6 (B)	13.6 (B)
9. East Bidwell St./WB U.S. 50 ramps	Signal	C	35.6 (D)	46.7 (D)
10. East Bidwell St./EB U.S. 50 ramps	Signal	C	16.1 (B)	40.7 (D)
11. East Bidwell St./White Rock Rd.	AWSC	D	56.3 (F)	93.2 (F)
12. White Rock Rd./Placerville Rd.	TWSC	D	61.3 (F) SB	>300 (F) SB
13. East Bidwell St./Alder Creek Pkwy.	AWSC	D	>300 (F) WBL	>300 (F) WBL
14. Westwood Dr./Alder Creek Pkwy.	AWSC	D	15.1 (C)	27.7 (D)
15. East Bidwell St./Street 1	TWSC	D	15.3 (C) WB	21.2 (C) WB
16. Westwood Dr./Street 1	TWSC	D	12.8 (B) WBT	15.4 (C) EBL
17. East Bidwell St./Savannah Pkwy	TWSC	D	43.4 (E) WBL	87.7 (F) WBL
18. Westwood Dr./Savannah Pkwy	AWSC	D	9.5 (A)	10.8 (B)
19. East Bidwell St./Mangini Pkwy	Signal	D	11.4 (B)	43.2 (D)
20. Westwood Dr./Mangini Pkwy	AWSC	D	9.4 (A)	10.1 (B)
21. Placerville Rd./Mangini Pkwy	TWSC	D	11.7 (B)WBL	14.9 (B) WBL

Notes: For TWSC intersections the worst approach (or movement for multi-lane approaches) is reported.

Bold values denote level-of-service deficiencies.

Table 20. EPPAP Arterial Segment Volume and Level-of-Service

Segment (Location)	Analysis Type	Level-of-Service Standard	EPPAP without Project Condition Volume (LOS)
1. East Bidwell St. (North of White Rock Rd.)	Moderate Access Control	D	12,730 (C)
2. White Rock Rd. (West of East Bidwell St.)	High Access Control	D	12,330 (B)
3. White Rock Rd. (East of East Bidwell St.)	High Access Control	D	8,410 (A)

Table 21. EPPAP US 50 Density and Level-of-Service

Segment	Analysis Type	Level-of-Service Standard	EPPAP without Project Condition AM Density (LOS)	EPPAP without Project Condition PM Density (LOS)
Eastbound				
1. EB East Bidwell St. slip off-ramp	Diverge	C	13.7 (B)	26.0 (C)
2. EB between East Bidwell St. ramps	Basic	C	9.4 (A)	14.3 (B)
3. EB East Bidwell St. loop on-ramp	Merge	C	15.4 (B)	25.6 (C)
4. EB East Bidwell St. slip on-ramp	Merge	C	19.0 (B)	29.9 (D)
Westbound				
5. WB East Bidwell slip off-ramp	Diverge	C	21.4 (C)	15.9 (B)
6. WB between East Bidwell St. ramps	Basic	C	13.6 (B)	7.3 (A)
7. WB East Bidwell St. loop on-ramp	Merge	C	17.5 (B)	10.5 (B)
8. WB East Bidwell St. slip on-ramp II	Merge	C	25.5 (C)	16.1 (B)

Note: Results based on PeMS data for US 50 mixed flow lanes.

5.2 EPPAP with Project Condition

Peak-hour traffic associated with the project was added to the EPPAP Conditions scenario traffic, then anticipated delay and level-of-service were estimated at the study intersections and US 50 study segments. Figure 11 summarizes the turning movements and lane configurations for the EPPAP with Project Condition.

Table 22 through Table 24 presents a summary of the level-of-service results for the study intersections and segments under EPPAP with Project Conditions. The results indicate that ten study intersections exceed the relevant level-of-service threshold, and seven of those locations are called out as having a potentially significant impact. Intersections that do not achieve level-of-service thresholds are shown in a bold font, and those that have potential significant impacts are shown in a white on black style. Calculation sheets for intersection delay and level-of-service as well as freeway density and level-of-service are provided in Appendix C.

Note that during the AM peak period the addition of project traffic decreases the average delay at two intersections:

8. East Bidwell St./Placerville Rd.

9. East Bidwell St./WB U.S. 50 ramps

As mentioned previously, small improvements in average delay occasionally result when the volume increases on the intersection movements with relatively low movement specific delay. Project traffic, as well as redirected traffic from abandonment of Placerville Road, adds predominantly to the northbound and southbound approaches at these intersections. Those northbound and southbound approaches on East Bidwell Street have less delay than the freeway ramps or side streets, which in turn reduces the average delay for each of these locations.

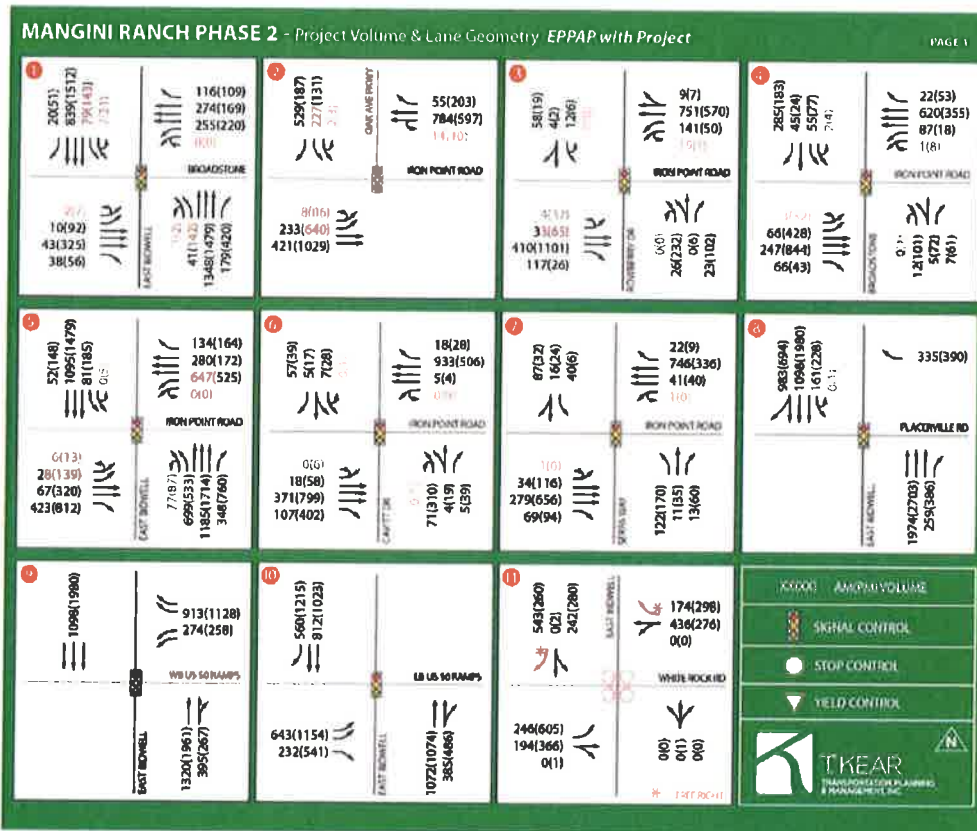


Figure 11. EPPAP with Project Condition Turning Movements and Lane Geometry

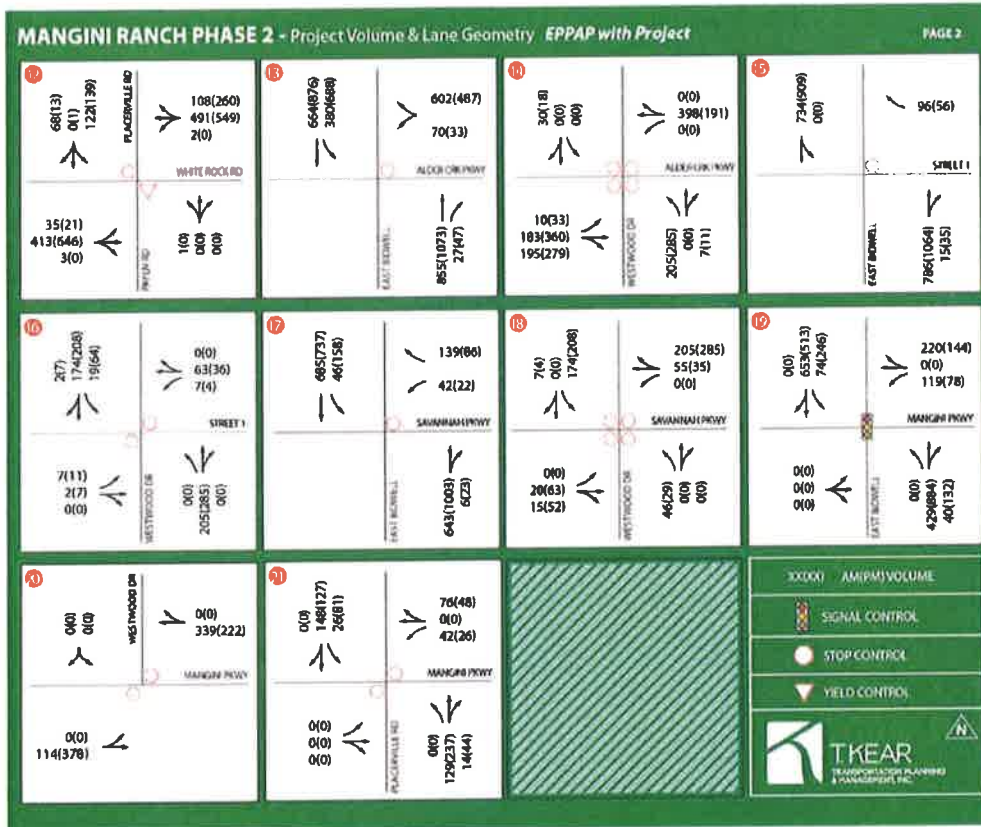


Figure 11. EPPAP with Project Condition Turning Movements and Lane Geometry (continued)

Table 22. EPPAP Intersection Delay and Level-of-Service, with and without the Project

Study Intersection	EPPAP with Project Condition Control	Level-of-Service Standard	EPPAP without Project Condition AM Delay (LOS)	EPPAP without Project Condition PM Delay (LOS)	EPPAP with Project Condition AM Delay (LOS)	EPPAP with Project Condition PM Delay (LOS)
1. Broadstone Pkwy./East Bidwell St.	Signal	C	20.7 (C)	23.8 (C)	20.9 (C)	23.9 (C)
2. Oak Ave./Iron Point Rd.	Signal	C	17.7 (B)	12.0 (B)	17.8 (B)	12.2 (B)
3. Rowberry Dr./Iron Point Rd.	Signal	C	13.6 (B)	17.4 (B)	13.6 (B)	17.6 (B)
4. Broadstone Pkwy./Iron Point Rd.	Signal	C	10.9 (B)	15.4 (B)	10.9 (B)	15.5 (B)
5. East Bidwell St./Iron Point Rd.	Signal	C	65.5 (E)	194.3 (F)	72.6 (E)	212.4 (F)
6. Cavitt Dr./Iron Point Rd.	Signal	C	11.9 (B)	21.9 (C)	11.9 (B)	22.0 (C)
7. Serpa Way/Iron Point Rd.	Signal	C	20.1 (C)	17.7 (B)	20.1 (C)	17.8 (B)
8. East Bidwell St./Placerville Rd.	Signal	C	15.6 (B)	13.6 (B)	11.5 (B)	13.7 (B)
9. East Bidwell St./WB U.S. 50 ramps	Signal	C	35.6 (D)	46.7 (D)	35.2 (D)	48.0 (D)
10. East Bidwell St./EB U.S. 50 ramps	Signal	C	16.1 (B)	40.7 (D)	16.2 (B)	47.7 (D)
11. East Bidwell St./White Rock Rd.	AWSC	D	56.3 (F)	93.2 (F)	61.1 (F)	105.5 (F)
12. White Rock Rd./Placerville Rd.	TWSC	D	61.3 (F) SB	>300 (F) SB	68.3 (F) SB	>300 (F) SB
13. East Bidwell St./Alder Creek Pkwy.	TWSC	D	>300 (F) WBL	>300 (F) WBL	>300 (F) WBL	>300 (F) WBL
14. Westwood Dr./Alder Creek Pkwy.	AWSC	D	15.1 (C)	27.7 (D)	20.3 (C)	66.7 (F)
15. East Bidwell St./Street 1	TWSC	D	15.3 (C) WB	21.2 (C) WB	19.3 (C) WB	25.8 (D) WB
16. Westwood Dr./Street 1	TWSC	D	12.8 (B) WBT	15.4 (C) EBL	13.5 (B) WBT	17.1 (C) EBL
17. East Bidwell St./Savannah Pkwy	TWSC	D	43.4 (E) WBL	87.7 (F) WBL	82.0 (F) WBL	>300 (F) WBL
18. Westwood Dr./Savannah Pkwy	AWSC	D	9.5 (A)	10.8 (B)	10.4 (B)	11.8 (B)
19. East Bidwell St./Mangini Pkwy	Signal	D	11.4 (B)	43.2 (D)	11.5 (B)	48.6 (D)
20. Westwood Dr./Mangini Pkwy	AWSC	D	9.4 (A)	10.1 (B)	9.4 (A)	10.1 (B)
21. Placerville Rd./Mangini Pkwy	TWSC	D	11.7 (B) WBL	14.9 (B) WBL	11.7 (B) WBL	14.9 (B) WBL

Notes:

For TWSC intersections the worst approach (or movement for multi-lane approaches) is reported.

Bold values denote level-of-service deficiencies.

Values shown in reverse text (white on black) denote potentially significant impacts.

Table 23. EPPAP Arterial Segment Volume and Level-of-Service, with and without the Project

Segment (Location)	Analysis Type	Level-of-Service Standard	EPPAP without Project Condition Volume (LOS)	EPPAP with Project Condition Volume (LOS)
1. East Bidwell St. (North of White Rock Rd.)	Moderate Access Control	D	12,730 (C)	13,270 (C)
2. White Rock Rd. (West of East Bidwell St.)	High Access Control	D	12,330 (B)	12,520 (B)
3. White Rock Rd. (East of East Bidwell St.)	High Access Control	D	8,410 (A)	8,650 (A)

Table 24. EPPAP US 50 Density and Level-of-Service, with and without the Project

Segment	Analysis Type	Level-of-Service Standard	EPPAP without Project Condition AM Density (LOS)	EPPAP without Project Condition PM Density (LOS)	EPPAP with Project Condition AM Density (LOS)	EPPAP with Project Condition PM Density (LOS)
Eastbound						
1. EB East Bidwell St. slip off-ramp	Diverge	E	13.7 (B)	26.0 (C)	14.3 (B)	27.1 (C)
2. EB between East Bidwell St. ramps	Basic	E	9.4 (A)	14.3 (B)	9.4 (A)	14.3 (B)
3. EB East Bidwell St. loop on-ramp	Merge	E	15.4 (B)	25.6 (C)	15.4 (B)	25.6 (C)
4. EB East Bidwell St. slip on-ramp	Merge	E	19.0 (B)	29.9 (D)	19.4 (B)	30.1 (D)
Westbound						
5. WB East Bidwell St. slip off-ramp	Diverge	E	21.4 (C)	15.9 (B)	21.6 (C)	16.4 (B)
6. WB between East Bidwell St. ramps	Basic	E	13.6 (B)	7.3 (A)	13.6 (B)	7.3 (A)
7. WB East Bidwell St. loop on-ramp	Merge	E	17.5 (B)	10.5 (B)	18.3 (B)	11.0 (B)
8. WB East Bidwell St. slip on-ramp II	Merge	E	25.5 (C)	16.1 (B)	26.3 (C)	16.6 (B)

Note: Results based on PeMS data for US 50 mixed flow lanes.

6. OTHER CONSIDERATIONS

6.1 Internal Circulation and Site Plan Review

A review of internal circulation, focused on the ultimate geometry of intersections and approaches, was conducted (**Appendix D**).

The analysis found that the level-of-service D performance standard can be achieved for all future traffic without the need for right turn pockets and/or tapers. However, there are six locations where a 60' taper or a 210' pocket (inclusive of taper) may be required at the discretion of the City Engineer, per Folsom's Roadway and Street Design Standards and Site Access Standards.

- #15 East Bidwell St/Street 1: NB right turn taper cutting into parcel Lot A.
- #16 Westwood Dr/Street 1: NB right turn taper cutting into Lot F (neighborhood park site).
- #17 East Bidwell St/Savannah Parkway: NB right turn taper cutting into Village 7.
- #18 Westwood Dr /Savannah Parkway: NB right turn taper cutting into Village 1.
- #18 Westwood Dr /Savannah Parkway: SB right turn taper cutting into Lot A.
- #18 Westwood Dr/Savannah Parkway: WB right turn pocket (150' deceleration plus 60' taper) cutting into Lot F (neighborhood park site).

6.2 Bicycle/Pedestrian/Transit Facilities

The project does not inhibit the use of bicycle, pedestrian, or transit facilities; eliminate existing bicycle, pedestrian, or transit facilities; or prevent the implementation of planned bicycle, pedestrian, or transit facilities.

Within the immediate vicinity of the project, the 2011 appendix to the 2007 Folsom Bikeway Master Plan and W/E SPA include Class 1 trails and Class 2 bike lanes:

- Class 1 trails are specified along the existing alignment of Placerville Road, and along the Alder Creek tributary open space corridor (located on the south side of villages 1, 2, and 7 within the project);
- Class 2 bike lanes will be included along East Bidwell Street, Alder Creek Parkway, Savannah Parkway, and Westwood Drive.

With the planned abandonment of Placerville Road, north of Savannah Parkway, the Class 1 trail in that alignment should be constructed. The project accommodates the proposed Class 1 trail along the Alder Creek tributary and internal roadways will accommodate proposed Class 2 bike lanes.

The FPASP and W/E SPA included planned Bus Rapid Transit (BRT) service along portions of Alder Creek Parkway, Westwood Drive, and Savannah Parkway. The project right-of-way dedication of these roads includes medians wide enough to accommodate the construction of guideway and transit stops within the median in the future.

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7. DEFICIENCIES AND RECOMMENDATIONS

This section reviews applicable mitigation from the FPASP and W/E SPA, and provides recommendations to address deficiencies under this study's four scenarios.

- Under the Existing Condition, recommendations are provided for locations that both operate deficiently, and have an impact under Existing with Project Conditions. (See Section 7.2 Existing Condition - Deficiencies and Recommendations.)
- Mitigations are provided for locations that have a project impact under Existing with Project Conditions. The project is likely to be responsible for these mitigations. (See Section 7.3 Existing with Project Condition – Deficiencies and Recommendations .)
- Recommendations are provided for the EPPAP Conditions locations that operate deficiently both with and without the project. (See Section 7.4 EPPAP without Project Condition - Deficiencies and Recommendations.)
- Mitigations are provided for the EPPAP with Project Condition at all locations that are impacted by traffic from the project and other planned and permitted projects. The project is likely to be responsible for a proportionate share of these mitigations. (See Section 7.5 EPPAP with Project Condition – Deficiencies and Recommendations.)

In total, there are 21 recommendations from this study across 7 intersections and all four scenarios. **Figure 12** on the next page provides an overview of which intersections were found to have deficiencies, and the location referred to by each of the 21 recommendations detailed in the subsections 7.2-7.5.

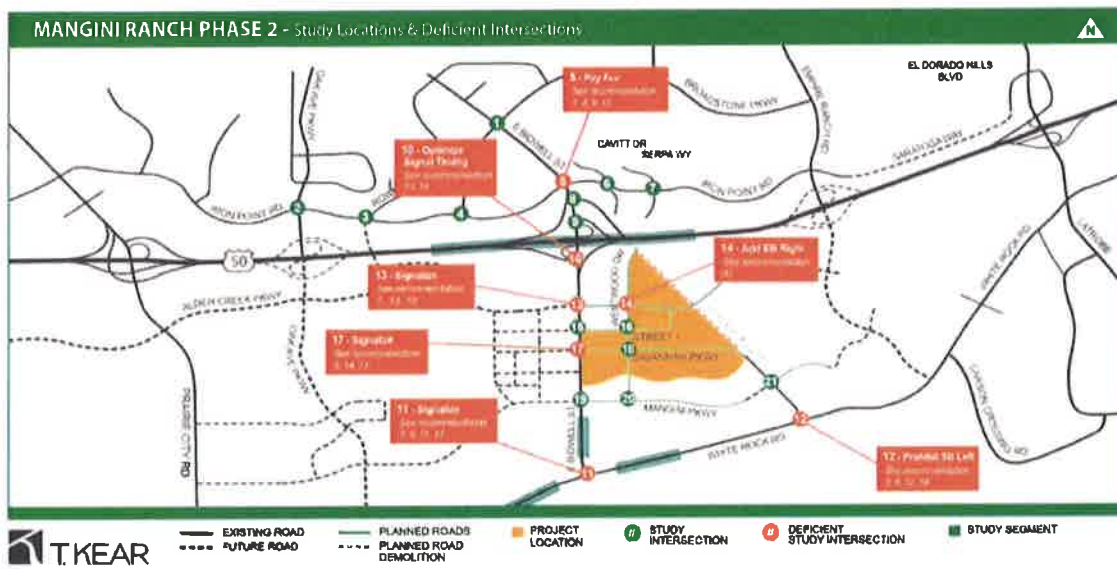


Figure 12. Study Locations, Deficiencies, And Recommendations

7.1 FPASP and W/E SPA Impacts and Mitigations

The project is a residential project undertaken pursuant to, and in conformity with the FPASP and W/E SPA per CEQA section 15182²⁸. The project is subject to all mitigations and findings adopted with the FPASP and W/E SPA. Relevant mitigation measures are herein incorporated by reference. These include:

- Applicable FPASP mitigation: 3A.14.1, 3A.15-1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1f, 3A.15-1i, 3A.15-1j, 3A.15-1l, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2a, 3A.15-2b, 3A.15-2c, 3A.15-3, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4f, 3A.15-4g, 3A.15-4i, 3A.15-4j, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, and 3A.15-4y.
- Applicable W/E SPA mitigation: 4.16.1, and 4.16.2.
- Additional FPASP mitigation listed in the W/E SPA that was not included in the FPASP CEQA Findings of Fact and Statement of Overriding Considerations: 3A.15-1e, 3A.15-1h, and 3A.15-4e.

Table 25 summarizes the requirements of each of these measures. In all but a few cases, mitigation for these measures consists of payment of fees or the project’s proportional share towards required improvements.

Table 25. Applicable FPASP and W/E SPA Mitigations

Table 25. Applicable FPASP and W/E SPA Mitigations	
Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-1: Within project boundaries, the Applicant shall construct all feasible physical improvements necessary and available to reduce the severity of the project’s significant transportation-related impacts. Outside project boundaries, the Applicant shall be responsible for the project’s fair share of feasible physical improvements necessary and available to reduce the severity of the project’s significant transportation-related impacts. Successful implementation of some of the proposed improvements will require the cooperation of third party agencies (Sacramento and El Dorado Counties, the city of Rancho Cordova, and Caltrans), over which the City of Folsom has no control. Therefore, the DEIR found this impact significant and unavoidable.</p>	<p>Payment</p>

²⁸ 14 CCR 15182.

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
FPASP Mitigation Measure 3A.15-1a: The Applicant shall pay a fair share to fund the construction of improvements to the Folsom Boulevard/ Blue Ravine Road intersection (FPASP intersection 1). With mitigation impact is less-than-significant .	Payment
FPASP Mitigation Measure 3A.15-1b: The Applicant shall pay a fair share to fund the construction of improvements at the Sibley Street/Blue Ravine Road intersection (FPASP intersection 2). With mitigation impact is less-than-significant .	Payment
FPASP Mitigation Measure 3A.15-1c: The Applicant shall fund and construct improvements to the East Bidwell Street (West)/ White Rock Road intersection (FPASP intersection 28). With mitigation impact is less-than-significant .	Payment
FPASP Mitigation Measure 3A.15-1e: Fund and construct improvements to the Hillside Drive/Easton Valley Parkway intersection (FPASP intersection 41).	Payment
FPASP Mitigation Measure 3A.15-1f: Fund and construct improvements to the Oak Avenue Parkway/Middle Road intersection (FPASP intersection 44). With mitigation impact is less-than-significant .	Payment
FPASP Mitigation Measure 3A.15-1h: Participate in fair share funding of improvements to reduce Impacts to the Hazel Avenue/Folsom Boulevard intersection (FPASP Sacramento County intersection 2).	Payment
FPASP Mitigation Measure 3A.15-1i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (FPASP Sacramento County Intersection 3). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.	Payment
FPASP Mitigation Measure 3A.15-1j: Participate in fair share funding of improvements to reduce impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (FPASP Sacramento County roadway segment 10). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.	Payment
FPASP Mitigation Measure 3A.15-1l: Participate in fair share funding of improvements to reduce impacts on the White Rock Road/Windfield Way intersection (FPASP El Dorado County intersection 3). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.	Payment

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-1o: Participate in fair share funding of improvements to reduce impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 eastbound ramps intersection (FPASP Caltrans intersection 4). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1p: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/State Route 16 intersection (FPASP Caltrans intersection 12). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (FPASP freeway segment 1). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (FPASP freeway segment 3). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (FPASP freeway segment 4). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1u: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Prairie City Road and Folsom Boulevard (FPASP freeway segment 16). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1v: Participate in fair share funding of improvements to reduce impacts on westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (FPASP freeway segment 18). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Folsom Boulevard ramp merge (FPASP freeway merge 4). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-1x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Prairie City Road diverge (FPASP freeway diverge 5). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Prairie City Road direct merge (FPASP freeway merge 6). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1z: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (FPASP freeway weave 8). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1aa: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Oak Avenue Parkway loop merge (FPASP freeway merge 9). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1dd: Participate in fair share funding of improvements to reduce impacts on U.S. 50 Westbound/ Empire Ranch Road loop ramp merge (FPASP freeway merge 23). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1ee: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Oak Avenue Parkway loop ramp merge (FPASP freeway merge 29). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1ff: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Prairie City Road loop ramp merge (FPASP freeway merge 32). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1gg: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Prairie City Road direct ramp merge (FPASP freeway merge 33). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-1hh: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Folsom Boulevard diverge (FPASP freeway diverge 34). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-1ii: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Hazel Avenue direct ramp merge (FPASP freeway merge 38). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-2a: Addresses impact 3A.15-2: increased demand for single-occupancy automobile travel in the project area. Develop commercial support services and mixed-use development concurrent with housing development, and develop and provide options for alternative transportation modes. Impact 3A.15-2 remains significant and unavoidable because single occupancy vehicle use in the project area is anticipated to increase, despite the mitigation.</p>	<p>Payment, and consideration of alternative modes, and</p>
<p>FPASP Mitigation Measure 3A.15-2b: Addresses impact 3A.15-2: increased demand for single-occupancy automobile travel in the project area. Participate in the city's Transportation System Management Fee Program. Impact 3A.15-2 remains significant and unavoidable because single occupancy vehicle use in the project area is anticipated to increase, despite the mitigation.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-2c: Addresses impact 3A.15-2: increased demand for single-occupancy automobile travel in the project area. Participate with the U.S. 50 corridor transportation management association (TMA). Impact 3A.15-2 remains significant and unavoidable because single occupancy vehicles use in the project area is anticipated to increase, despite the mitigation.</p>	<p>Participate in TMA</p>
<p>FPASP Mitigation Measure 3A.15-3: Pay full cost of identified improvements that are not funded by the city's fee program. Impact 3A.15-2 remains significant and unavoidable. If the City can fully fund the fee program through fair share contributions or external funding sources, the impact would be significant in the short term and less-than-significant level in the long term.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4a: The Applicant shall pay a fair share to fund the construction of improvements to the Sibley Street/Blue Ravine Road intersection (FPASP Folsom intersection 2). With mitigation impact is less-than-significant.</p>	<p>Payment</p>

Table 25. Applicable FPASP and W/E SPA Mitigations	
Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-4b: The Applicant shall pay a fair share to fund the construction of improvements to the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom intersection 6). Mitigation is infeasible, Impact remains significant and unavoidable.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4c: The Applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Nesmith Court intersection (FPASP Folsom intersection 7). With mitigation impact is less-than-significant.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4d: The Applicant shall pay a fair share to fund the construction of improvements to the East Bidwell Street/Iron Point Road intersection (FPASP Folsom intersection 21). Mitigation is infeasible, Impact remains significant and unavoidable.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4e: The Applicant shall pay a fair share to fund the construction of improvements to the Serpa Way/ Iron Point Road intersection (FPASP Folsom intersection 23).</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4f: The applicant shall pay a fair share to fund the construction of improvements to the Empire Ranch Road/ Iron Point Road intersection (FPASP Folsom intersection 24). With mitigation impact is less-than-significant.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4g: The Applicant shall fund and construct improvements to the Oak Avenue Parkway/ Easton Valley Parkway intersection (FPASP Folsom intersection 33). With mitigation, the impact at this future intersection is less-than-significant.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4i: Participate in fair share funding of improvements to reduce impacts on the Grant Line Road/White Rock Road intersection (FPASP Sacramento County intersection 3). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	Payment
<p>FPASP Mitigation Measure 3A.15-4j: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (FPASP Sacramento County roadway segments 5-7). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	Payment

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-4k: Participate in fair share funding of improvements to reduce impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (FPASP Sacramento County roadway segment 8). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4l: Participate in fair share funding of improvements to reduce Impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 westbound ramps (FPASP Sacramento County roadway segments 1 2-13). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4m: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Grant Line Road and Prairie City Road (FPASP Sacramento County roadway segment 22). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4n: Participate in fair share funding of improvements to reduce impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (FPASP Sacramento County roadway segment 28). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4o: Participate in fair share funding of improvements to reduce impacts on the White Rock Road/ Carson Crossing Road intersection (FPASP El Dorado County intersection 1). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4p: Participate in fair share funding of improvements to reduce impacts on the Hazel Avenue/U.S. 50 Westbound Ramps intersection (FPASP Caltrans intersection 1). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4q: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (FPASP freeway segment 1). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4r: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (FPASP freeway segment 3). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>

Table 25. Applicable FPASP and W/E SPA Mitigations

Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
<p>FPASP Mitigation Measure 3A.15-4s: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (FPASP freeway segment 5). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4t: Participate in fair share funding of improvements to reduce impacts on eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (FPASP freeway segment 6). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4u: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound/ Prairie City Road slip ramp merge (FPASP freeway merge 6). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4v: Participate in fair share funding of improvements to reduce impacts on the U.S. 50 eastbound/ Prairie City Road flyover on ramp to Oak Avenue Parkway off ramp weave (FPASP freeway weave 7). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4w: Participate in fair share funding of improvements to reduce impacts on U.S. 50 eastbound/ Oak Avenue Parkway loop ramp merge (FPASP freeway merge 8). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4x: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Empire Ranch Road loop ramp merge (FPASP freeway merge 27). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.15-4y: Participate in fair share funding of improvements to reduce impacts on U.S. 50 westbound/ Prairie City Road loop ramp merge (FPASP freeway merge 35). Impact remains significant and unavoidable because it is outside of the City's jurisdiction.</p>	<p>Payment</p>
<p>FPASP Mitigation Measure 3A.14.1: Prepare and Implement a Construction Traffic Control Plan. With mitigation impact is less-than-significant.</p>	<p>Condition required for improvement plans</p>

Table 25. Applicable FPASP and W/E SPA Mitigations	
Mitigation Required Action, and Significance of Impact	Mangini Ranch Phase 2 Requirement
W/E SPA Mitigation Measure 4.16.1 The project Applicant shall pay a fair share fee towards modifying the Iron Point Road/East Bidwell Street intersection. Mitigation is infeasible, Impact remains significant and unavoidable . (See Also FPASP Mitigation Measure 3A.15-4d.)	Payment
W/E SPA Mitigation Measure 4.16.2 Project Applicant shall pay a fair share fee towards improvements to the Scott Road/Easton Valley Parkway intersection. With mitigation impact is less-than-significant .	Payment

There are three specific mitigations from the above list that are notable, given the anticipated delay and level-of-service identified in Section 4 and Section 5 above.

- FPASP mitigation measure 3A.15-1 states that within project boundaries, the Applicant shall construct all feasible physical improvements necessary and available to reduce the severity of the project’s significant transportation-related impacts. Outside project boundaries, the Applicant shall be responsible for the project’s fair share of feasible physical improvements necessary and available to reduce the severity of the project’s significant transportation-related impacts. Successful implementation of some of the proposed improvements will require the cooperation of third party agencies (Sacramento and El Dorado Counties, the city of Rancho Cordova, and Caltrans), over which the City of Folsom has no control. Therefore, the DEIR found this impact **significant and unavoidable**.
- FPASP mitigation measure 3A.15-4d found the impact at East Bidwell Street/Iron Point Road to be **significant and unavoidable**, and states “The Applicant shall pay a fair share to fund construction of improvements to the East Bidwell Street/Iron Point Road intersection.”
- W/E SPA mitigation measure 4.16.1 states that the Applicant shall pay a fair share fee towards modifying the westbound approach to include three left-turn lanes, two thru-lanes, and one right-turn lane at the East Bidwell Street/Iron Point Road intersection. This mitigation would be physically possible but may conflict with the City’s policies on intersection design, therefore the impact remains **significant and unavoidable** and is addressed through payment of fees.

Note that “the Applicant” in the above mitigations refers to any tentative map Applicant within the W/E SPA and/or the FPASP area.

7.2 Existing Condition - Deficiencies and Recommendations

Five intersections were found to operate at a deficient level-of-service (Table 12 above), three of which have a potentially significant impact when project traffic is added. Recommendations for those three intersections are presented below. All arterial and freeway study segments operate acceptably. Table 26, in Section 7.6, details level-of-service with and without recommendations and mitigations. Calculation sheets documenting the mitigated analysis are included in Appendix F.

Intersection #5

Deficiency East Bidwell St./Iron Point Rd. AM and PM Peak-Hour

1

Operates at level-of-service D in the morning and F in the afternoon.

Recommendation 1:

Both the FPASP and W/E SPA identified mitigations to address level-of-service deficiencies at this location. However, those improvements all require four through lanes, and the resulting eight-lane arterials are not consistent with the City's policies. For FPASP projects, deficiencies at this location are addressed by payment of fees.

Note:

Deficiency 1 is not a new impact. Impacts at this location were identified in the environmental analysis for the FPASP and W/E SPA. See for example FPASP: mitigation 3A.15-4d, and W/E SPA: mitigation 4.16.1.

Intersection #11

Deficiency East Bidwell St./White Rock Rd. AM and PM Peak-Hour

2

Operates at level-of-service E during the morning and afternoon.

Recommendation 2:

Implement either (A) or (B) below:

- (A) The JPA has programmed to relocate and signalize the East Bidwell Street/White Rock Road intersection as shown in the October 2017 geometric conceptual drawing²⁹, or equivalent improvements (i.e., three southbound approach lanes, four eastbound approach lanes, and three westbound approach lanes). The JPA currently has more than seven million dollars programmed toward relocation and signalization of the East Bidwell Street/White Rock Road intersection, and is planning to begin acquiring right-of-way during the winter of 2018, and begin construction during the summer of 2018.³⁰ With implementation of this improvement, the level-of-service improves to B in the morning and afternoon. The

²⁹ Personal communication between Tom Kear and Miguel Ramirez, October 27, 2017

³⁰ Personal communication between Tom Kear and Miguel Ramirez, October 27, 2017.

Applicant's payment of the Sacramento County Transportation Development Fee satisfies Deficiency 2.

- (B) Signalize the existing East Bidwell Street/White Rock Road intersection with Mangini Ranch Phase 1 improvements: If the JPA project to relocate and signalize the East Bidwell Street/White Rock Road intersection is not anticipated to be constructed prior to a specific level-of-service or delay trigger requiring improvements, signalize the existing intersection with improvements described in condition 127 of the Mangini Ranch Phase 1 conditions of approval³¹. Mangini Ranch Phase 1 improvements at this location consist of *"Southbound on Scott Road construct a free southbound right turn lane consisting of 315 feet of deceleration length plus 50 feet storage length, excluding appropriate tapers and a 300 foot receiving /acceleration lane, excluding tapers along westbound White Rock Road. Westbound on White Rock Road, construct a free right-turn lane consisting of 315 feet of deceleration length plus 50 feet of storage length, excluding appropriate tapers, and a 300 foot receiving lane excluding appropriate tapers along northbound Scott Road."* Final improvement plans shall be approved by the City Engineer. With implementation of this improvement, the level-of-service improves to B in the morning and C in the afternoon.

Note:

This is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR³² identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR and environmental analysis for the W/E SPA assumed that this intersection would be signalized and reconstructed with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before additional lanes or signalization would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital Southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP³³. Reconstruction of this intersection is part of the Capital Southeast Connector Project. The FPASP Public Facilities Financing Plan (PFFP)³⁴ and Development

³¹ City of Folsom (2015) Resolution no 9588 – Exhibit A, City Council Meeting 06/23/2015, Agenda Item No 8a.

³² FPASP DEIR Exhibit 3A.15-61

³³ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

³⁴ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

Agreements³⁵ set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #12

Deficiency White Rock Rd./Placerville Rd. PM Peak-Hour

3

Operates at level-of-service F during the afternoon.

Recommended 3:

Reconfigure the intersection so that Placerville Road prohibiting southbound left turns from Old Placerville Road to eastbound White Rock Road by construction of a raised median on Old Placerville Road to channelize all southbound traffic onto westbound White Rock Road. With implementation of this improvement, the level-of-service improves to B in the morning and afternoon.

Note:

As with the deficiencies listed above, Deficiency 3 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR³⁶ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR³⁷ and environmental analysis for the W/E SPA assumed that this intersection would be improved with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before construction of improvements would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP³⁸. Reconstruction of this intersection as a right-in/right-out intersection is part of the Capital Southeast Connector Project. The

³⁵ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

³⁶ FPASP DEIR Exhibit 3A.15-61

³⁷ FPASP DEIR Exhibit 3A.15-61

³⁸ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

FPASP Public Facilities Financing Plan (PFFP)³⁹ and Development Agreements⁴⁰ set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction this intersection). Both part A and B of this recommendation are consistent with the adopted plans and agreements referenced in this paragraph.

7.3 Existing with Project Condition – Deficiencies and Recommendations

Five intersections were found to have project related deficiencies (Table 16 above). Three of these locations had existing deficiencies and the mitigation at those locations consists of implementing the recommendations from the Section 7.2 above. New mitigation is proposed for the remaining two intersections. All arterial and freeway study segments operate acceptably. Table 26, in Section 7.6, details level-of-service with and without recommendations and mitigations. Calculation sheets documenting the mitigated analysis are included in Appendix F.

Intersection #5

Deficiency East Bidwell St./Iron Point Rd. AM and PM Peak-Hour

4

Anticipated to operate at level-of-service D in the morning and F in the afternoon. Project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 4:

Implement Recommendation 1 above, consisting of payment of fees. The FPASP and W/E SPA found impacts at this location **significant and unavoidable**. Project related contribution to deficiencies at this location are addressed by payment of fees.

Note:

As with deficiency above, deficiency 4 is not a new impact. Impacts at this location were identified in the environmental analysis for the FPASP and W/E SPA. See for example FPASP: mitigation 3A.15-4d, and W/E SPA: mitigation 4.16.1.

Intersection #11

³⁹ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁴⁰ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

Deficiency East Bidwell St./White Rock Rd. AM and PM Peak-Hour

5

Operates at level-of-service E in the morning and afternoon. project traffic is anticipated to worsen level-of-service to F and increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 5:

Recommendation 5 is related to recommendation 2 above. Implement either (A) or (B) below:

- (A) The Capital Southeast Connector Joint Powers Authority (JPA) project has programmed to relocate and signalize the East Bidwell Street/White Rock Road intersection as shown in the October 2017 geometric conceptual drawing⁴¹, or equivalent improvements (i.e., three southbound approach lanes, four eastbound approach lanes, and three westbound approach lanes). For this With Project scenario, fair share is defined as the Mangini Ranch Phase 2 project's responsibility to the Sacramento County Transportation Development Fee. The Applicant is required to pay the Sacramento County Transportation Development Fee. With implementation of this improvement, the level-of-service improves to B in the morning and afternoon. The deficiency is reduced to **less-than-significant**.
- (B) Signalize the existing East Bidwell Street/White Rock Road intersection with Mangini Ranch Phase 1 improvements: If the JPA project to relocate and signalize the East Bidwell Street/White Rock Road intersection is not anticipated to be constructed prior to a specific level-of-service or delay trigger requiring improvements, signalize the existing intersection with improvements described in condition 127 of the Mangini Ranch Phase 1 conditions of approval⁴². Mangini Ranch Phase 1 improvements at this location consist of "Southbound on Scott Road construct a free southbound right turn lane consisting of 315 feet of deceleration length plus 50 feet storage length, excluding appropriate tapers and a 300 foot receiving /acceleration lane, excluding tapers along westbound White Rock Road. Westbound on White Rock Road, construct a free right-turn lane consisting of 315 feet of deceleration length plus 50 feet of storage length, excluding appropriate tapers, and a 300 foot receiving lane excluding appropriate tapers along northbound Scott Road." Final improvement plans shall be approved by the City Engineer. With implementation of this improvement, the level-of-service improves to B in the morning and C in the afternoon. The deficiency is reduced to **less-than-significant**.

⁴¹ Personal communication between Tom Kear and Miguel Ramirez, October 27, 2017

⁴² City of Folsom (2015) Resolution no 9588 – Exhibit A, City Council Meeting 06/23/2015, Agenda Item No 8a.

Note:

As deficiency 2 above, deficiency 5 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁴³ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁴⁴ and environmental analysis for the W/E SPA assumed that this intersection would be signalized and reconstructed with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before additional lanes or signalization would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁴⁵. Reconstruction of this intersection is part of the Capital Southeast Connector Project. The FPASP Public Facilities Financing Plan (PFFP)⁴⁶ and Development Agreements⁴⁷ set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #12

Deficiency White Rock Rd./Placerville Rd. PM Peak-Hour

6

Operates at level-of-service F, project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 6:

Implement Recommendation 3 above, consisting of prohibiting southbound left turns from Old Placerville Road to eastbound White Rock Road by construction of a raised median on Old Placerville Road to channelize all southbound traffic onto westbound White Rock Road. With implementation of this improvement, the

⁴³ FPASP DEIR Exhibit 3A.15-61

⁴⁴ FPASP DEIR Exhibit 3A.15-61

⁴⁵ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁴⁶ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁴⁷ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

level-of-service improves to B in the morning and afternoon. The deficiency is reduced to **less-than-significant**.

Note:

As with deficiency 3 above, deficiency 6 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁴⁸ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁴⁹ and environmental analysis for the W/E SPA assumed that this intersection would be improved with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before construction of improvements would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁵⁰. Reconstruction of this intersection as a right-in/right-out intersection is part of the Capital southeast Connector project. The FPASP Public Facilities Financing Plan (PFFP)⁵¹ and Development Agreements⁵² set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). Both part A and B of this recommendation are consistent with the adopted plans and agreements referenced in this paragraph.

Intersection #13

Deficiency East Bidwell St./Alder Creek Pkwy. AM and PM Peak-Hour

7

In the near term, this new TWSC intersection is assumed to be SB:1 thru, 1 left turn pocket; NB: 1 thru, 1 right turn pocket; and WB: 1 right, 1 left turn pocket. It is anticipated to operate at level-of-service F during the AM and PM peak-hour. Note that the ultimate configuration for this intersection would be a four-way 6x4 intersection expanded to include left and right turn pockets. The intersection is not anticipated to satisfy the peak-hour signal warrant during the AM peak-hour

⁴⁸ FPASP DEIR Exhibit 3A.15-61

⁴⁹ FPASP DEIR Exhibit 3A.15-61

⁵⁰ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁵¹ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁵² See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

but is anticipated to satisfy that warrant during the PM peak-hour). This deficiency is **potentially significant**.

Recommendation 7:

Signalize with the following configuration:

Reconstruct East Bidwell as a four-lane arterial between US 50 and Alder Creek Parkway.

SB Approach: 1 thru, 2 lefts with two southbound lanes. Two lanes on East Bidwell Street between the US 50 EB off ramp and Alder Creek Parkway, and a 300' SB left turn pocket expanding the intersection to facilitate the second left turn lane.

NB Approach: 1 thru, 1 shared thru-right in a 500' turn pocket.

WB Approach: 1 left in a 200' turn pocket, 1 right.

Provide a protected phase for the SB left and split phase for the WB left. Optimize timing with an actuated-uncoordinated timing plan. With implementation of this recommendation the level-of-service improves to B during both the AM and PM peak-hours, and the deficiency is reduced to **less-than-significant**.

Note:

As with the deficiencies listed above, Deficiency 7 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁵³ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development that could occur before construction of improvements would be needed. This intersection is part of the FPASP "backbone infrastructure" and both the Specific Plan Infrastructure Fee (SPIF)⁵⁴ and related Development Agreements⁵⁵ include \$2,326,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

⁵³ FPASP DEIR Exhibit 3A.15-61

⁵⁴ EPS (2015) Folsom Plan Area Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁵⁵ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

Intersection #17

Deficiency East Bidwell St./Savannah Pkwy PM Peak-Hour

8

This new TWSC intersection is planned as SB: 1 thru, 1 left turn pocket; NB: 1 thru-right: and WB: 1 shared left-right. It is anticipated to operate at level-of-service F during the PM peak-hour. The peak-hour signal warrant is satisfied. This deficiency is **potentially significant**.

Recommendation 8:

Signalize the East Bidwell Street/Savannah Parkway intersection as follows: SB approach: one thru lane, and one left-turn lane with a 100' long left-turn pocket for the left-turn lane; NB approach: one shared thru-right turn lane; WB approach: on right-turn lane, and one left-turn lane with a 60' left-turn pocket for the left-turn lane. With implementation of this improvement, the level-of-service improves to A in the morning and afternoon. The deficiency is reduced to **less-than-significant**.

Note:

As with the deficiencies listed above, Deficiency 8 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁵⁶ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development that could occur before construction of improvements would be needed. This intersection is part of the FPASP "backbone infrastructure" and both the Specific Plan Infrastructure Fee (SPIF)⁵⁷ and related Development Agreements⁵⁸ include \$1,636,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

7.4 EPPAP without Project Condition - Deficiencies and Recommendations

Seven intersections were found to operate at a deficient level-of-service (Table 19 above), six of which have a potentially significant deficiency when project traffic is added. Recommendations for those six intersections are presented below. All arterial and freeway study segments operate acceptably. Table 26, in Section 7.6, details level-of-service with and without recommendations

⁵⁶ FPASP DEIR Exhibit 3A.15-61

⁵⁷ EPS (2015) Folsom Plan Area Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁵⁸ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

and mitigations. Calculation sheets documenting the mitigated analysis are included in Appendix F.

Intersection #5

Deficiency East Bidwell St./Iron Point Rd. AM and PM Peak-Hour

9 Operates at level-of-service E in the morning and F in the afternoon.

Recommendation 9:

Implement Recommendation 1 above, consisting of payment of fees. The FPASP and W/E SPA found impacts at this location to be **significant and unavoidable**.

Note:

As with deficiencies 1 and 4 above, deficiency 9 is not a new impact. Impacts at this location were identified in the environmental analysis for the FPASP and W/E SPA. See for example FPASP: mitigation 3A.15-4d, and W/E SPA: mitigation 4.16.1.

Intersection #10

Deficiency East Bidwell St./EB US 50 ramps, PM Peak-Hour

10 Anticipated to operate at level-of-service D.

Recommendation 10:

Optimize signal timing plan using an actuated-uncoordinated 90 second cycle length. With implementation of this recommendation the level-of-service improves to B in the morning and C in the afternoon.

Note:

The FPASP DEIR⁵⁹ and environmental analysis for the W/E SPA assumed that this intersection would be expanded with the FPASP. Modifications to this intersection with traffic from multiple tentative maps is consistent with findings of prior environmental studies.

Intersection #11

Deficiency East Bidwell St./White Rock Rd. AM and PM Peak-Hour

11 Anticipated to operate at level-of-service F during the morning and afternoon.

Recommendation 11:

Implement Recommendation 2 above, consisting of either the Applicant's Sacramento County Transportation Development Fee payment toward the planned JPA project to relocate and signalize the intersection, or signalizing the existing intersection with the addition of the Mangini Ranch Phase 1 improvement conditions. With implementation of this improvement, the level-of-service improves to B in the morning and C in the afternoon, or better.

Note:

⁵⁹ FPASP DEIR Exhibit 3A.15-61

As previously discussed under deficiencies 2 and 5, this is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁶⁰ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁶¹ and environmental analysis for the W/E SPA assumed that this intersection would be signalized and reconstructed with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before additional lanes or signalization would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital Southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁶². Reconstruction of this intersection is part of the Capital Southeast Connector Project. The FPASP Public Facilities Financing Plan (PFFP)⁶³ and Development Agreements⁶⁴ set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #12

Deficiency 12 White Rock Rd./Placerville Rd. PM Peak-Hour
Operates at level-of-service F during the morning and afternoon.

Recommended 12:

Implement Recommendation 3 above, consisting of prohibiting southbound left turns from Old Placerville Road to eastbound White Rock Road by construction of a raised median on Old Placerville Road to channelize all southbound traffic onto westbound White Rock Road. With implementation of this improvement, the level-of-service improves to C in the morning and afternoon.

Note:

⁶⁰ FPASP DEIR Exhibit 3A.15-61

⁶¹ FPASP DEIR Exhibit 3A.15-61

⁶² Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁶³ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁶⁴ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

As with deficiencies 3 and 6 above, deficiency 12 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁶⁵ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁶⁶ and environmental analysis for the W/E SPA assumed that this intersection would be improved with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before construction of improvements would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital Southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁶⁷. Reconstruction of this intersection as a right-in/right-out intersection is part of the Capital Southeast Connector project. The FPASP Public Facilities Financing Plan (PFFP)⁶⁸ and Development Agreements⁶⁹ set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). Both part A and B of this recommendation are consistent with the adopted plans and agreements referenced in this paragraph.

Intersection #13

Deficiency 13 East Bidwell St./Alder Creek Pkwy. AM and PM Peak-Hour
Operates at level-of-service F during the morning and afternoon.

Recommendation 13:

Implement recommendation 7 above, consisting of signalization of the intersection and reconstruction of East Bidwell as a four-lane arterial between US 50 and Alder Creek Parkway. With this recommendation, the intersection is expected to operate at level-of-service B in the morning and C in the afternoon.

Note:

As with deficiency 7 above, deficiency 13 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection

⁶⁵ FPASP DEIR Exhibit 3A.15-61

⁶⁶ FPASP DEIR Exhibit 3A.15-61

⁶⁷ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁶⁸ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁶⁹ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

identified in both the FPASP DEIR⁷⁰ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development that could occur before construction of improvements would be needed. This intersection is considered to be part of the FPASP “backbone infrastructure” and both the Specific Plan Infrastructure Fee (SPIF)⁷¹ and related Development Agreements⁷² include \$2,326,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #17

Deficiency East Bidwell St./Savannah Pkwy AM and PM Peak-Hour

14 Operates at level-of-service E in the morning and F in the afternoon.

Recommendation 14:

implement recommendation 8 above, consisting of signaling the intersection and adding a 60’ WB left turn pocket. With implementation of this recommendation the level-of-service improves to A in the morning and afternoon.

Note:

As with deficiency 8 above, deficiency 14 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁷³ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development could occur before construction of improvements would be needed. This intersection is part of the FPASP “backbone infrastructure” and both the Specific Plan Infrastructure Fee (SPIF)⁷⁴ and related Development Agreements⁷⁵ include \$1,636,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

⁷⁰ FPASP DEIR Exhibit 3A.15-61

⁷¹ EPS (2015) Folsom Plan Are Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁷² See for example: “City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC” and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

⁷³ FPASP DEIR Exhibit 3A.15-61

⁷⁴ EPS (2015) Folsom Plan Are Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁷⁵ See for example: “City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC” and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

7.5 EPPAP with Project Condition – Deficiencies and Recommendations

Seven intersections were found to have project related impacts (Table 22 above). Six of which had deficiencies without the project traffic, and mitigation at those locations consists of implementing the recommendations from the Section 7.4 above. New mitigation is proposed for the remaining intersection. All arterial and freeway study segments operate acceptably. Table 26, in Section 7.6, details level-of-service with and without recommendations and mitigations. Calculation sheets documenting the mitigated analysis are included in Appendix F.

Intersection #5

Deficiency East Bidwell St./Iron Point Rd. AM and PM Peak-Hour

- 15 Anticipated to operate at level-of-service E in the morning and F in the afternoon, project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 15:

Implement recommendation 1 above, consisting of payment of fees. The FPASP and W/E SPA found this impact to be **significant and unavoidable**. Project related contribution to deficiencies at this location are addressed by payment of fees.

Note:

As with the deficiencies 1, 4, and 9 above. Deficiency 15 is not a new impact. Impacts at this location were identified in in the environmental analysis for the FPASP and W/E SPA. See for example FPASP: mitigation 3A.15-4d, and W/E SPA: mitigation 4.16.1.

Intersection #10

Deficiency East Bidwell St./EB US 50 ramps, PM Peak-Hour

- 16 Anticipated to operate at level-of-service F during the afternoon, project traffic is anticipated to increase the afternoon delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 16:

Implement recommendation 10 above, consisting of optimizing signal timing. With implementation of this mitigation the level-of-service improves to B in the morning and C in the afternoon, and the deficiency is reduced to **less-than-significant**.

Note:

As with deficiencies 10 above, deficiency 16 is not a new impact. The FPASP DEIR⁷⁶ and environmental analysis for the W/E SPA assumed that this intersection would be expanded with the FPASP. Modifications to this intersection with traffic from multiple tentative maps is consistent with findings of prior environmental studies.

⁷⁶ FPASP DEIR Exhibit 3A.15-61

Intersection #11

Deficiency East Bidwell St./White Rock Rd. PM Peak-Hour

17

Anticipated to operate at level-of-service F during both the morning and afternoon, project traffic is anticipated to increase the afternoon delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 17:

Implement recommendation 2, 5 above, consisting of either consisting of either the Applicant's Sacramento County Transportation Development Fee payment toward the planned JPA project to relocate and signalize the intersection, or signalizing the existing intersection with the addition of the Mangini Ranch Phase 1 improvement conditions. For this with project scenario, fair share toward the JPA project is defined as the Mangini Ranch Phase 2 projects responsibility to the Sacramento County Transportation Development Fee. With implementation of this mitigation the level-of-service improves to B in the morning and D in the afternoon or better, and the deficiency is reduced to **less-than-significant**.

Note:

As with deficiencies 2, 5, and 11 above, deficiency 17 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁷⁷ identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁷⁸ and environmental analysis for the W/E SPA assumed that this intersection would be signalized and reconstructed with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before additional lanes or signalization would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁷⁹. Reconstruction of this intersection is part of the Capital Southeast Connector project. The FPASP Public Facilities Financing Plan (PFFP)⁸⁰ and Development Agreements⁸¹ set aside \$15.2 million to be paid through the Sacramento County Transportation Development

⁷⁷ FPASP DEIR Exhibit 3A.15-61

⁷⁸ FPASP DEIR Exhibit 3A.15-61

⁷⁹ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁸⁰ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁸¹ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #12

Deficiency White Rock Rd./Placerville Rd. AM and PM Peak-Hour

18 Operates at level-of-service F during the morning and afternoon, project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 18:

Implement Recommendation 3 above, consisting of prohibiting southbound left turns from Old Placerville Road to eastbound White Rock Road by construction of a raised median on Old Placerville Road to channelize all southbound traffic onto westbound White Rock Road. With implementation of this mitigation the level-of-service improves to C in the morning and afternoon, and the deficiency is reduced to **less-than-significant**.

Note:

As with deficiencies 3, 6, and 12 above, deficiency 18 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. Mitigation Measure 3A.15-1 from the FPASP DEIR⁸² identified impacts outside of the City's jurisdiction where improvements rely on fee sharing agreements as **significant and unavoidable**. The FPASP DEIR⁸³ and environmental analysis for the W/E SPA assumed that this intersection would be improved with buildout of the FPASP. However, estimates of how much commercial or residential development could occur before construction of improvements would be needed was left for future analysis. Sacramento County approved a plan and certified EIR for the Capital southeast Connector that includes improvements to White Rock Road along the southern edge of the FPASP⁸⁴. Reconstruction of this intersection as a right-in/right-out intersection is part of the Capital Southeast Connector project. The FPASP Public Facilities Financing Plan (PFFP)⁸⁵ and Development Agreements⁸⁶

⁸² FPASP DEIR Exhibit 3A.15-61

⁸³ FPASP DEIR Exhibit 3A.15-61

⁸⁴ Capital Southeast Connector JPA (2012) Final Program Environmental Impact Report (State Clearinghouse #2010012066),

www.connectorjpa.net/uploads/8/3/3/5/83350278/capital_sec_v2_final_peir_revised_draft.pdf

⁸⁵ EPS (2014) Folsom Plan Area Specific Plan Public Facilities Financing Plan, Economic & Planning Systems, Inc, January 18, 2014.

⁸⁶ See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the

set aside \$15.2 million to be paid through the Sacramento County Transportation Development Fee as the FPASP fair share toward the Capital Southeast Connector Project (including reconstruction and signalization of this intersection). Both part A and B of this recommendation are consistent with the adopted plans and agreements referenced in this paragraph.

Intersection #13

Deficiency East Bidwell St./Alder Creek Pkwy. AM and Peak-Hour

19 Operates at level-of-service F during the morning and afternoon, and project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 19:

Implement recommendation 7 above. With implementation of this mitigation the level-of-service improves to C during both the AM and PM peak-hours, and the deficiency is reduced to **less-than-significant**.

Note:

As with the deficiency 7 above, Deficiency 19 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁸⁷ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development could occur before construction of improvements would be needed. This intersection is part of the FPASP “backbone infrastructure” and both the Specific Plan Infrastructure Fee (SPIF)⁸⁸ and related Development Agreements⁸⁹ include \$2,326,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #14

Deficiency Westwood Dr./Alder Creek Pkwy PM Peak-Hour

20 In the near term, this new intersection is assumed to be have a shared thru-right with left turn pocket on each approach, with all-way-stop-control. It is anticipated to operates at level-of-service F during the afternoon, and project traffic is

First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

⁸⁷ FPASP DEIR Exhibit 3A.15-61

⁸⁸ EPS (2015) Folsom Plan Are Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁸⁹ See for example: “City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC” and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 20:

Construct an EB right turn lane within the ultimate footprint of Alder Creek Parkway. The EB approach would have 1 left, 1 thru, and 1 right (using 200' or longer turn pockets). With implementation of this mitigation, the level-of-service improves to C during both the AM and PM peak-hours, and the deficiency is reduced to **less-than-significant**.

Note:

As with the deficiencies listed above, Deficiency 20 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁹⁰ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development could occur before construction of improvements would be needed. This intersection is part of the FPASP "backbone infrastructure" and both the Specific Plan Infrastructure Fee (SPIF)⁹¹ and related Development Agreements⁹² include \$1,956,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

Intersection #17

Deficiency East Bidwell St./Savannah Pkwy AM Peak-Hour

21 Operates at level-of-service F during the morning and afternoon, and project traffic is anticipated to increase delay by more than 5 seconds. This deficiency is **potentially significant**.

Recommendation 21

Implement recommendation 8 above, consisting of signaling the intersection and adding a 100' westbound left turn pocket. With implementation of this mitigation the level-of-service improves to A during the AM peak-hour and level-of-service B during PM peak-hour. The deficiency is reduced to **less-than-significant**.

Note:

⁹⁰ FPASP DEIR Exhibit 3A.15-61

⁹¹ EPS (2015) Folsom Plan Are Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁹² See for example: "City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC" and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

As with the deficiency 8 listed above, Deficiency 21 is not a new impact, but rather a previously identified improvement whose triggered need for implementation has been identified by this transportation impact analysis. This is a new intersection identified in both the FPASP DEIR⁹³ and environmental analysis for the W/E SPA. However, prior studies did not identify the amount of commercial or residential development could occur before construction of improvements would be needed. This intersection is part of the FPASP “backbone infrastructure” and both the Specific Plan Infrastructure Fee (SPIF)⁹⁴ and related Development Agreements⁹⁵ include \$1,636,000.00 for the improvements at this intersection. The above recommendation is consistent with the adopted plans, environmental analysis, and agreements referenced in this paragraph.

7.6 Level-of-Service Summary with Recommended Improvements

Table 26 below details mitigated level of service for both Existing and EPPAP conditions.

⁹³ FPASP DEIR Exhibit 3A.15-61

⁹⁴ EPS (2015) Folsom Plan Area Specific Plan Infrastructure Fee Nexus Study, Economic and Planning Systems, Aug 28, 2015, report EPS #142078.

⁹⁵ See for example: “City of Folsom (2014) Ordinance No. 1201 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Folsom Real Estate South, LLC” and Ordinance No. 1205 - An Uncodified Ordinance of the City of Folsom Approving the First Amended and Restated Tier 1 Development Agreement with Carpenter East, LLC, adopted June 10, 2014 by the City of Folsom.

Table 26. Delay and Level-of-Service, with and without the Project and Recommended Improvements

Study Intersection	Scenario	Control	without Project AM Delay (LOS)	without Project PM Delay (LOS)	with Project AM Delay (LOS)	with Project PM Delay (LOS)	Recommendations
Existing Condition and Existing with Project Condition							
5. East Bidwell St./Iron Point Rd. (Level-of-Service threshold: C)	Existing	Signal	44.7 (D)	157.9 (F)	52.4 (D)	159.0 (F)	1 (Pay Fees)
	Existing with Recommendations	Signal	No change in level-of-service, Pay fees per FPASP Mitigation 3A.15-4d				
11. East Bidwell St./White Rock Rd. (Level-of-Service threshold: D)	Existing	AWSC	46.4 (E)	45.4 (E)	53.7 (F)	54.5 (F)	2 (Signalize)
	Existing w/ Recommendation A	Signal	12.2 (B)	10.9 (B)	12.4 (B)	11.4 (B)	5 (Implement 2)
	Existing w/ Recommendation B	Signal	12.1 (B)	25.5 (C)	12.4 (B)	27.2 (C)	
12. White Rock Rd./Placerville Rd. (Level-of-Service threshold: D)	Existing	TWSC	20.8 (C) SB	50.4 (F) SB	21.9 (C) SB	57.6 (F) SB	3 (prohibit SB left)
	Existing with Recommendations	TWSC	13.3 (B) SB	14.7 (B) SB	13.4 (B) SB	15.2 (C) SB	6 (Implement 3)
13. East Bidwell St./Alder Creek Pkwy. (Level-of-Service threshold: D)	Existing		Intersection	Intersection	54.1 (F) WBL	155.9 (F) WBL	
	Existing with Recommendations	Signal	Does Not Exist	Does Not Exist	10.2 (B)	15.6 (B)	7 (Signalize)
17. East Bidwell St./Savannah Pkwy. (Level-of-Service threshold: D)	Existing		Intersection	Intersection	24.1 (C) WBL	57.9 (F) WBL	
	Existing with Recommendations	Signal	Does Not Exist	Does Not Exist	9.6 (A)	7.4 (A)	8 (Signalize)
EPPAP Condition and EPPAP with Project Condition							
5. East Bidwell St./Iron Point Rd. (Level-of-Service threshold: C)	EPPAP	Signal	65.5 (E)	194.3 (F)	72.6 (E)	212.4 (F)	9 (Implement 1)
	EPPAP With Recommendations	Signal	No change in level-of-service, Pay fees per FPASP Mitigation 3A.15-4d				
10. East Bidwell St./EB U.S. 50 ramps (Level-of-Service threshold: C)	EPPAP	Signal	16.1 (B)	40.7 (D)	16.2 (B)	47.7 (D)	10 (Optimize Signal)
	EPPAP With Recommendations	Signal	14.7 (B)	23.2 (C)	14.8 (B)	26.3 (C)	16 (Implement 10)
11. East Bidwell St./White Rock Rd. (Level-of-Service threshold: D)	EPPAP	AWSC	56.3 (F)	93.2 (F)	61.1 (F)	105.5 (F)	11 (Implement 2)
	Existing w/ Recommendation A	Signal	13.7 (B)	16.2 (B)	14.0 (B)	17.2 (B)	17 (Implement 2)
	Existing w/ Recommendation B	Signal	15.8 (B)	30.7 (C)	16.6 (B)	39.0 (D)	
12. White Rock Rd./Placerville Rd. (Level-of-Service threshold: D)	EPPAP	TWSC	61.3 (F) SB	>300 (F) SB	68.3 (F) SB	>300 (F) SB	12 (Implement 3)
	EPPAP With Recommendations	TWSC	17.8 (C) SB	22.4 (C) SB	18.0 (C) SB	23.6 (C) SB	18 (Implement 3)
13. East Bidwell St./Alder Creek Pkwy. (Level-of-Service threshold: D)	EPPAP	TWSC	>300 (F) WBL	>300 (F) WBL	>100 (F) WBL	>107 (F) WBL	13 (Implement 7)
	EPPAP With Recommendations	Signal	15.5 (B)	20.8 (C)	20.8 (C)	28.2 (C)	19 (Implement 7)
14. Westwood Dr./Alder Creek Pkwy. (Level-of-Service threshold: D)	EPPAP	AWSC	15.1 (C)	27.7 (D)	20.3 (C)	56.7 (F)	
	EPPAP With Recommendations	AWSC	n/a	n/a	22.0 (C)	21.3 (C)	20 (EB right pocket)
17. East Bidwell St./Savannah Pkwy. (Level-of-Service threshold: D)	EPPAP	TWSC	43.4 (E) WBL	87.7 (F) WBL	82.0 (F) WBL	>300 (F) WBL	14 (Implement 8)
	EPPAP With Recommendations	Signal	2.6 (A)	3.9 (A)	10.0 (A)	11.4 (B)	21 (Implement 8)

Notes:

For TWSC Intersections the worst approach (or movement for multi-lane approaches) is reported.

Bold values denote level-of-service deficiencies.

Values shown in reverse text (white on black) denote potentially significant impacts.

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8. CONCLUSIONS & RECOMMENDED CONDITIONS OF APPROVAL

Conclusions

The 545 dwelling units in the Mangini Ranch Phase 2 project are anticipated to generate approximately 4,800 daily trips, 385 AM peak-hour trips, and 503 PM peak-hour trips. With the proposed improvements, the project does not create any new significant deficiencies under Existing with Project Conditions or EPPAP with Project Conditions.

All arterial and freeway study segments were found to operate at acceptable levels-of-service both with and without the project under all study scenarios.

Five deficient study intersections were identified under the Existing with Project Condition, and recommendations are provided to reduce those deficiencies to a **less-than-significant** level at four of those locations. The remaining location (Intersection 5 East Bidwell Street/Iron Point Road) is addressed through FPASP mitigation 3A.14-4d and W/E SPA mitigation 4.16.1, both of which require eight lane roadways and were deemed infeasible with the adoption of a Statement of Overriding Considerations. **Table 27** summarizes improvements that should be incorporated into the conditions of approval.

Table 27. Recommended Improvements

Location	Description	Section 7.3 Recommendation
5. East Bidwell St./Iron Point Rd.	Pay Fees	4
11. East Bidwell St./White Rock Rd.	Signalize with free right turns	5
12. White Rock Rd./Placerville Rd.	Convert southbound approach into channelized right turn to westbound White Rock Road	6
13. East Bidwell St./Alder Creek Pkwy	Signalize and expand East Bidwell to a four-lane arterial north of Alder Creek Parkway.	7
17. East Bidwell St./Savannah Pkwy.	Signalize and add a westbound left turn pocket	8

Section 7 of this report detailed additional recommendations developed for the Existing Condition and EPPAP Condition without the project to address intersections that fail to maintain adequate level-of-service, prior to the addition of project traffic. Recommendations are also provided for intersections where deficiencies are worsened by the addition of project traffic and traffic from the other 2,031 homes that are assumed to be constructed in The Enclave, Mangini Ranch Phase 1, Russell Ranch, Broadstone Estates, Folsom Heights, White Rock Springs Ranch. The project should pay an appropriate share toward those improvements

Additionally, the project should be conditioned to abide by the transportation mitigations identified in the FPASP and W/E SPA. These include:

- Applicable FPASP mitigation: 3A.14.1, 3A.15-1a, 3A.15-1b, 3A.15-1c, 3A.15-1f, 3A.15-1i, 3A.15-1j, 3A.15-1l, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1u, 3A.15-1v,

3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1dd, 3A.15-1ee, 3A.15-1ff, 3A.15-1gg, 3A.15-1hh, 3A.15-1ii, 3A.15-2a, 3A.15-2b, 3A.15-2c, 3A.15-3, 3A.15-4a, 3A.15-4b, 3A.15-4c, 3A.15-4d, 3A.15-4f, 3A.15-4g, 3A.15-4i, 3A.15-4j, 3A.15-4k, 3A.15-4l, 3A.15-4m, 3A.15-4n, 3A.15-4o, 3A.15-4p, 3A.15-4q, 3A.15-4r, 3A.15-4s, 3A.15-4t, 3A.15-4u, 3A.15-4v, 3A.15-4w, 3A.15-4x, and 3A.15-4y.

- Applicable W/E SPA mitigation: 4.16.1, and 4.16.2
- Additional FPASP mitigation listed in the W/E SPA that was not included in the FPASP CEQA Findings of Fact and Statement of Overriding Considerations: 3A.15-1e, 3A.15-1h, and 3A.15-4e.

These mitigations, discussed in Section 7 of this report, primarily require payment of applicable fees. With implementation of the identified mitigation, project impacts are **less-than-significant**.

Triggers for Off-Site Road Improvements

This section identifies triggers for Mangini Ranch Phase 2 (project) off-site intersection improvements, and provides recommended language for conditions of approval. Diagrams for each improvement are provided as attachments. Off-site improvements were identified in section 7 of this report. Apart from payment of fees, there are four intersections for which off-site improvements need to be incorporated into the project conditions of approval:

- #11. East Bidwell Street/White Rock Road (implementation of the Capital southeast Connector project to relocate and signalize, or signalization of improvements included in the Mangini Phase 1 conditions of approval);
- #12. White Rock Road/Old Placerville Road (Prohibit left turn from southbound Old Placerville Road to eastbound White Rock Road);
- #13. East Bidwell Street/Alder Creek Parkway (signalization with additional approach lanes);
- #17. East Bidwell Street/Savannah Parkway (signalize intersection).

After detailing development phasing assumptions used to identify improvement triggers, recommended conditions of approval are provided. Level-of-service results and technical calculations are provided in **Appendix G**.

Network and Trip Assignment Assumptions.

The project was represented as being built in three phases. Assumptions for the without project condition and all three project phases are detailed below.

Without Project

Without the project, the following infrastructure was assumed:

- East Bidwell Street as a two-lane un-divided arterial between US 50 and White Rock Road.
- Old Placerville Road as a two-lane un-divided roadway between East Bidwell Street and White Rock Road.

- Alder Creek Parkway as a divided two-lane collector with a 38' raised median between East Bidwell Street and the future Westwood Drive.
- Alder Creek Parkway as a divided two-lane collector with a 16' raised median between the future Westwood Drive and Old Placerville Road.

The project was represented as being built in three phases.

Project Phase 1

Phase 1 Assumptions (see Figure 13)

- 231 dwelling units (DUs) in villages 1, 2, and 7 of the project.
- Savannah Parkway between East Bidwell Street and Westwood Drive, constructed as a two-lane divided road with a 12' raised median.
- Savannah Parkway, east of Westwood Drive to the proposed bridge over Alder Creek (approximately 700'), constructed as a two-lane divided road with a 38' raised median.
- Westwood Drive from Savannah Parkway to the village 1 and 2 access, constructed as a two-lane divided roadway with a 12' raised median.
- Westwood Drive, from the village 1 and 2 access to the southern edge of the Tentative Map, constructed as an undivided two-lane roadway.
- Westwood Drive between Alder Creek Parkway and Street "1", constructed as two-lane divided road with 38' raised median.
- Street "1" between East Bidwell Street and Westwood Drive, constructed as two-lane undivided roadway.

Phase 1 Trip Generation and Distribution

Trip generation and distribution assumptions for Phase 1 are shown in Table 1 below.

Table 28. Phase 1 trip generation and distribution assumptions

FPASP Parcel #			Size	ITE LU		Daily	AM	AM (Entering)	AM (Exiting)	PM	PM (Entering)	PM (Exiting)
150	Village 1	SF	88 DU	210	Rate	9.52	0.77	26%	74%	1.02	64%	36%
					Trips	838	68	18	50	90	57	32
154	Village 2	SF	74 DU	210	Rate	9.52	0.77	26%	74%	1.02	64%	36%
					Trips	704	57	15	42	75	48	27
153	Village 7	MLD	69 DU	230	Rate	5.81	0.44	19%	81%	0.52	64%	36%
					Trips	401	30	6	25	36	23	13
Total Project Trips						1,943	155	38	117	201	129	72

To/From the west on White Rock Road	5%	97	8	2	6	10	6	4
To/From the east on White Rock Road	7%	136	11	3	8	14	9	5
To/From the north on East Bidwell Street	88%	1,710	136	34	103	177	113	64

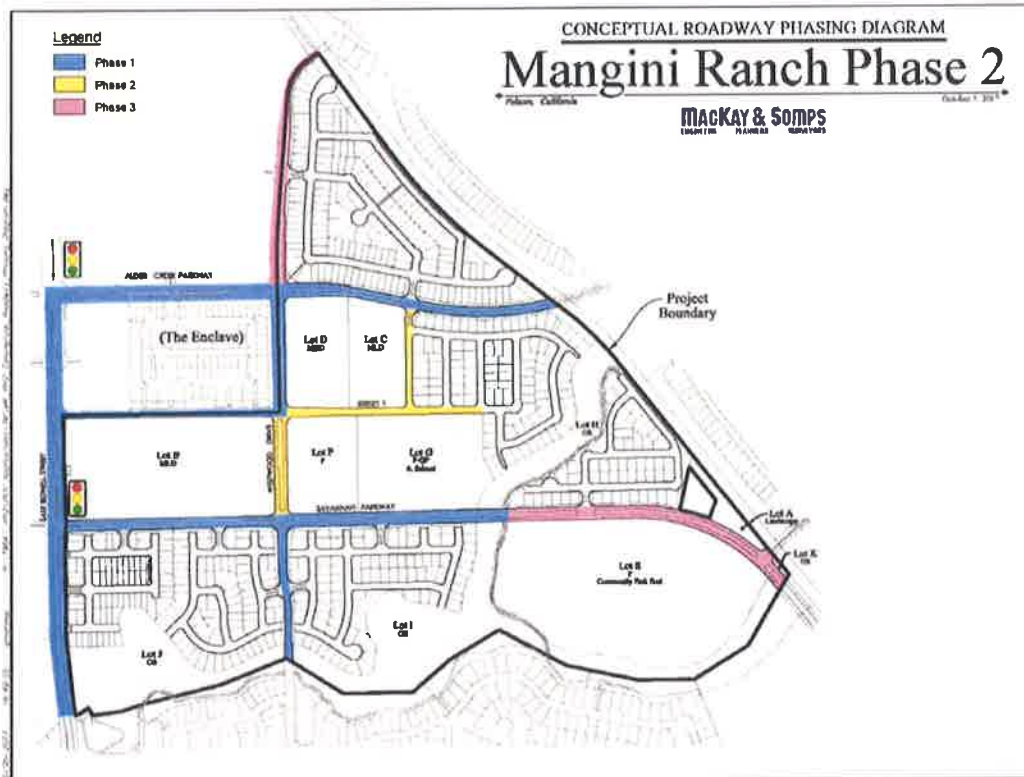


Figure 13. Conceptual Roadway Phasing

Phase 1 Trip Assignment

- Outbound to Folsom and US 50 routed west on Savannah Parkway to northbound East Bidwell Street.
- Outbound to the east on White Rock Road routed west on Savannah Parkway to southbound East Bidwell Street.
- Outbound to the west on White Rock Road routed west on Savannah Parkway to southbound East Bidwell Street.
- Inbound from Folsom and US 50 routed south on East Bidwell Street to eastbound Savannah Parkway.
- Inbound From the east on White Rock Road routed north on East Bidwell Street to eastbound Savannah Parkway.
- Inbound From the west on White Rock Road routed north on East Bidwell Street to eastbound Savannah Parkway.

Project Phase 2

Phase 2 Assumptions (see Figure 13)

- 216 dwelling units (DUs) in villages 4, 5, and 8 of the project.
- Street “AA” between Savannah Parkway and Street “1”, constructed as a two-lane divided road with a 38’ raised median.
- Street “1” between Westwood Drive and Street “AA” (north of the elementary school site), constructed as a two-lane undivided roadway.
- Street “AA” between Alder Creek Parkway and Street “1”, constructed as a two-lane undivided roadway.

Phase 2 Trip Generation and Distribution

Trip generation and distribution assumptions for Phase 2 are shown in Table 2 below.

Table 29. Phase 2 trip generation and distribution assumptions

FPASP Parcel #			Size	ITE LU		Daily	AM	AM (Entering)	AM (Exiting)	PM	PM (Entering)	PM (Exiting)
82A	Village 4	SF	72 DU	210	Rate	9.52	0.77	26%	74%	1.02	64%	36%
					Trips	685	55	14	41	73	47	26
84	Village 5	SF	108 DU	210	Rate	9.52	0.77	26%	74%	1.02	64%	36%
					Trips	1,028	83	22	62	110	71	40
82B-1	Village 8	MLD	36 DU	230	Rate	5.81	0.44	19%	81%	0.52	64%	36%
					Trips	209	16	3	13	19	12	7
Total Project Trips						1,923	154	39	115	202	129	73

To/From the west on White Rock Road	5%	96	8	2	6	10	6	4
To/From the east on White Rock Road	7%	135	11	3	8	14	9	5
To/From the north on East Bidwell Street	88%	1,692	136	34	102	178	114	64

Phase 2 Trip Assignment

- Outbound to Folsom and US 50 routed west on Alder Creek Parkway to northbound East Bidwell Street.
- Outbound to the east on White Rock Road routed west on Alder Creek Parkway to Southbound East Bidwell Street.
- Outbound to the west on White Rock Road routed west on Alder Creek Parkway to southbound East Bidwell Street.
- Inbound from Folsom and US 50 routed south on East Bidwell Street to eastbound Alder Creek Parkway.
- Inbound from the east on White Rock Road routed northwest on Old Placerville Road to westbound Alder Creek Parkway.
- Inbound from the west on White Rock Road routed north on East Bidwell Street to eastbound Alder Creek Parkway.

Project Phase 3

Phase 3 Assumptions (see Figure 13)

- 98 dwelling units (DUs) in villages 3 and 6 of the project.
- Savannah Parkway, from the proposed bridge over Alder Creek to Old Placerville Road, constructed as a two-lane divided road with a 38' raised median.
- The eastern "half segment" of Westwood Drive between Alder Creek Parkway and the village 6 access constructed as a two-lane undivided roadway.
- The "full segment" of Westwood Drive between the village 6 access and Old Placerville Road, constructed as a two-lane undivided roadway.

Note that Old Placerville Road is assumed to be closed to through traffic between Westwood Drive and Savannah Parkway once the Phase 3 road connections above are completed. This segment of Old Placerville Road, between Westwood Drive and Savannah Parkway, may serve as temporary access during construction of village 3.

Phase 3, Village 3, Trip Generation and Distribution

Trip generation and distribution assumptions for Phase 3 are shown in Table 3 below.

Table 30. Phase 3, Village 3, trip generation and distribution assumptions

FPASP Parcel #		Size	ITE LU	Daily	AM	AM (Entering)	AM (Exiting)	PM	PM (Entering)	PM (Exiting)		
83	Village 3	SF	53 DU	210	Rate	9.52	0.77	26%	74%	1.02	64%	36%
					Trips	505	41	11	30	54	35	19
Total Project Trips						505	41	11	30	54	35	19

To/From the west on White rock Road	5%	25	2	1	2	3	2	1
To/From the east on White rock Road	7%	35	3	1	2	4	2	1
To/From the north on East Bidwell Street	88%	444	36	9	27	48	30	17

Phase 3, Village 3, Trip Assignment

- Outbound to Folsom and US 50 routed west on Savannah Parkway to northbound East Bidwell Street.
- Outbound to the east on White Rock Road routed west on Savannah Parkway to southbound East Bidwell Street.
- Outbound to the west on White Rock Road routed west on Savannah Parkway to southbound East Bidwell Street.
- Inbound from Folsom and US 50 routed south on East Bidwell Street to eastbound Savannah Parkway.
- Inbound From the east on White Rock Road routed northwest on Old Placerville Road to westbound Savannah Parkway.
- Inbound From the west on White Rock Road routed north on East Bidwell Street to eastbound Savannah Parkway.

Phase 3, Village 6, Trip Generation and Distribution

Trip generation and distribution assumptions for phase 3 are shown in Table 4 below.

Table 31. Phase 3, Village 6, trip generation and distribution assumptions

FPASP Parcel #		Site	ITE LU		Daily	AM	AM (Entering)	AM (Exiting)	PM	PM (Entering)	PM (Exiting)	
84	Village 6	SF	45 DU	210	Rate Trips	9.52 428	0.77 35	26% 9	74% 26	1.02 46	64% 29	36% 17
Total Project Trips						428	35	9	26	46	29	17

To/From the west on White rock Road	5%	21	2	-	1	2	1	1
To/From the east on White rock Road	7%	30	2	1	2	3	2	1
To/From the north on East Bidwell Street	88%	377	30	8	23	40	26	15

Phase 3, Village 6, Trip Assignment

- Outbound to Folsom and US 50 routed west on Alder Creek Parkway to northbound East Bidwell Street.
- Outbound to the east on White Rock Road routed south on Westwood Drive to westbound Savannah Parkway.
- Outbound to the west on White Rock Road routed west on Alder Creek Parkway to southbound East Bidwell Street.
- Inbound from Folsom and US 50 routed south on East Bidwell Street to eastbound Alder Creek Parkway.
- Inbound From the east on White Rock Road routed northwest on Old Placerville Road to westbound Savannah Parkway and northbound Westwood Drive.
- Inbound From the west on White Rock Road routed north on East Bidwell Street to eastbound Alder Creek Parkway.

Phase 3 Reassignment of Existing Trips, Phase 1 Project Trips, and Phase 2 Project Trips

Phase 2 and 3 inbound trips from the east on White Rock Road were reassigned from northbound East Bidwell Street to northwest on Old Placerville Road and west on Savannah Parkway. When the southbound left turn from Old Placerville Road to eastbound White Rock Road is prohibited, existing southbound left turns are reassigned to westbound Alder Creek Parkway and southbound East Bidwell Street.

Recommended Conditions of Approval

Calculation sheets and tables summarizing the level-of-service and signal warrant analysis results located in **Appendix G**. Findings for each of the four study intersections are reported below, organized by the number of dwelling units that trigger the improvements to be conditioned. **Figure 14** provides an overview of the East Bidwell Street corridor lane configuration between the US 50 eastbound ramps and the southern edge of the tentative map.

Zero Dwelling Units

Condition 1: East Bidwell Street/Savannah Parkway (Figure 15)

Prior to issuance of the first occupancy permit, the Owner/Applicant shall be responsible for configuring the East Bidwell Street/Savannah Parkway intersection as follows:

- Southbound approach: one thru lane, and one left-turn lane with a 100' long left-turn pocket for the left-turn lane.
- Northbound approach: one shared thru-right turn lane.
- Westbound approach: one shared left-right turn lane, and a striped out 60' left turn pocket
- Control: Two-way-stop-control (TWSC), with full access.

Between "Street 1" and the southern boundary of the Tentative Map, East Bidwell Street shall be constructed as a two-lane arterial on the eastern "half segment" of its ultimate configuration. This two-lane segment shall have a striped 2' wide striped median south of "Street 1", consistent with the California Manual on Uniform Traffic Control Devices⁹⁶ (MUTCD) Figure 3A-107 (CA), or similar standard. The southbound left turn pocket shall be developed in accordance with the Highway Design Manual⁹⁷ (HDM) figure 405.2A, or similar standard. Savannah Parkway shall have a 12' raised median. Final improvement plans shall be approved by the City Engineer.

⁹⁶ Caltrans (2014) California Manual on Uniform Traffic Control Devices – 2014 Edition (Revision 2), California Department of Transportation, April 7, 2017.

⁹⁷ Caltrans (2012) Highway Design Manual – Chapter 400, California Department of Transportation, May 7, 2012.

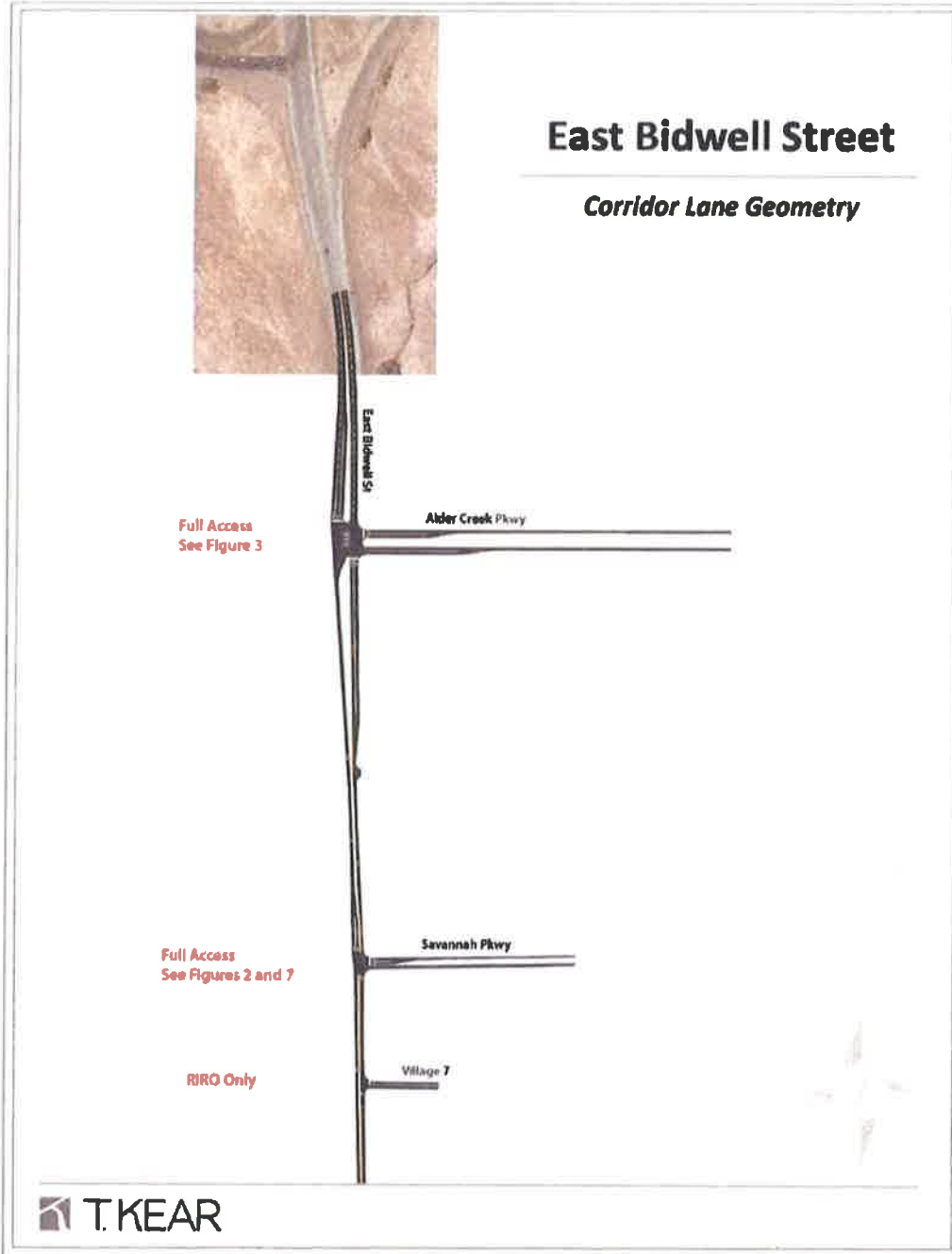


Figure 14. East Bidwell Street Corridor Lane Geometry

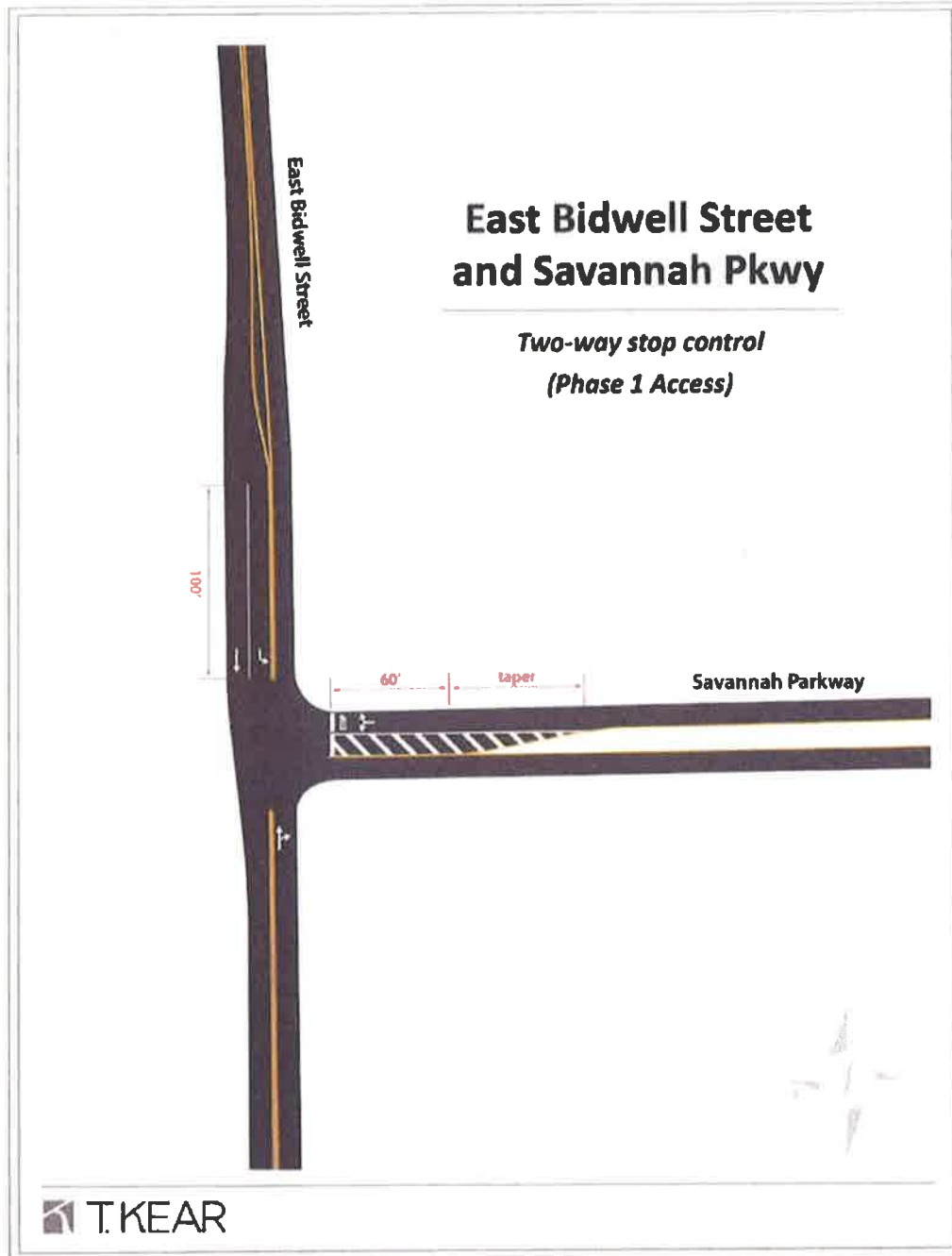


Figure 15. East Bidwell Street/Savannah Parkway TWSC

236 Dwelling Units

Condition 2: East Bidwell Street/Alder Creek Parkway (Figure 16)

Prior to the 236th occupancy permit the Owner/Applicant shall be responsible for expanding and signalizing the East Bidwell Street/Alder Creek Parkway intersection:

- Southbound approach: one thru lane, and two left-turn lanes, with a 300' long single-lane left turn pocket for one of the left turning lanes.
- Northbound approach: one thru lane and one shared thru-right lane with a 500' long right turn pocket for the shared thru-right lane.
- Westbound approach: one right-turn lane and one left-turn lane, with a 200' left-turn pocket for the left-turn lane.
- Eastbound departure: two receiving lanes shall be provided. the second receiving lane can be dropped after 300'
- Control: Signalize with a protected southbound left-turn, westbound split phasing, and westbound right-turn overlap. Prohibit U-turns.

East Bidwell Street shall be constructed as a four-lane divided arterial between Alder Creek Parkway and the US 50 interchange, with a 38' raised median at Alder Creek Parkway that tapers back to match the existing four-lane arterial segment at the eastbound US 50 slip onramp. East Bidwell Street shall be constructed as a two-lane divided arterial between Alder Creek Parkway and Street "1", with a 38' raised median at Alder Creek Parkway that tapers back to match the two-lane half segment described in Condition 1 above. Alder Creek Parkway between East Bidwell Street and Westwood Drive shall be constructed as a two-lane divided roadway with a 38' raised median. Final improvement plans shall be approved by the City Engineer.

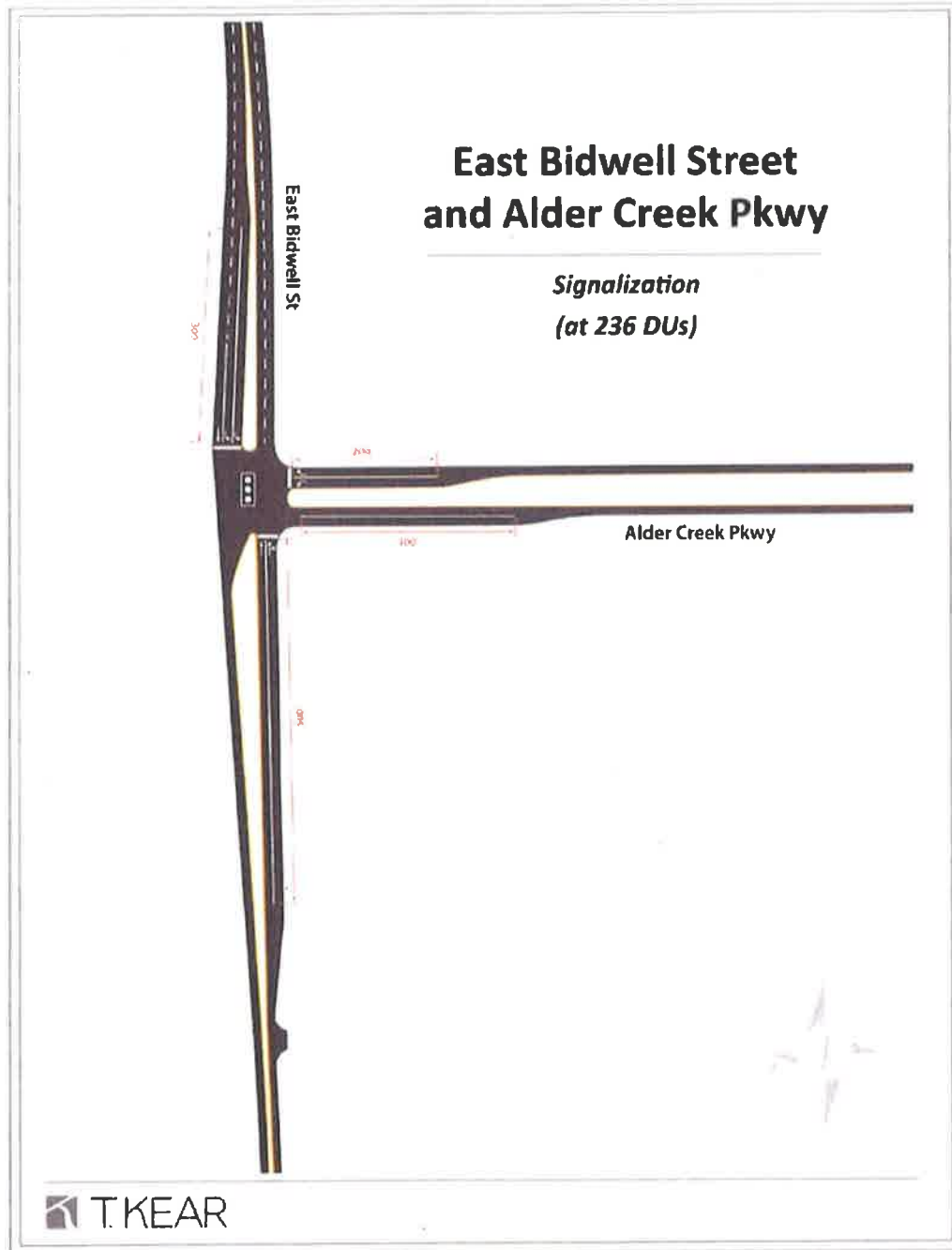


Figure 16. East Bidwell Street/Alder Creek Parkway

281 Dwelling Units

Condition 3: East Bidwell St/White Rock Rd (Figure 17 and Figure 18)

Prior to issuance of the 281st occupancy permit the Owner/Applicant shall be responsible for either (A) or (B) below:

- (C) The Capital Southeast Connector Joint Powers Authority (JPA) project proposes to relocate and signalize the East Bidwell Street/White Rock Road intersection: If the proposed JPA project at this location is fully funded and construction is underway by the time the 281st occupancy permit is issued, the project shall pay the Sacramento County Transportation Development Fees, toward the JPA project.
- (D) Signalize the existing East Bidwell Street/White Rock Road intersection with Mangini Ranch Phase 1 improvements: If the JPA project to relocate and signalize the East Bidwell Street/White Rock Road intersection is not fully funded and under construction prior to issuances of the 281st occupancy permit, the Owner/Applicant shall be responsible to signalize the existing intersection with improvements described in condition 127 of the Mangini Ranch Phase 1 conditions of approval⁹⁸. Mangini Ranch Phase 1 improvements at this location consist of *"Southbound on Scott Road construct a free southbound right turn lane consisting of 315 feet of deceleration length plus 50 feet storage length, excluding appropriate tapers and a 300 foot receiving /acceleration lane, excluding tapers along westbound White Rock Road. Westbound on White Rock Road, construct a free right-turn lane consisting of 315 feet of deceleration length plus 50 feet of storage length, excluding appropriate tapers, and a 300 foot receiving lane excluding appropriate tapers along northbound Scott Road."* Final improvement plans shall be approved by the City Engineer.

The JPA currently has more than seven million dollars programed toward relocation and signalization of the East Bidwell Street/White Rock Road intersection, and is planning to begin acquiring right-of-way during the winter of 2018, and begin construction during the summer of 2019.⁹⁹ The projected absorption Schedule for the Mangini Ranch Phase 2 project estimates that the 281 dwelling units will not be constructed until sometime in the second quarter of 2020¹⁰⁰. Item A above is the preferred improvement, Option B would be a throwaway improvement.

⁹⁸ City of Folsom (2015) Resolution no 9588 – Exhibit A, City Council Meeting 06/23/2015, Agenda Item No 8a.

⁹⁹ Personal communication between Tom Kear and Miguel Ramirez, October 27, 2017.

¹⁰⁰ Personal communication between Tom Kear and Larry Ito, November 10, 2017.

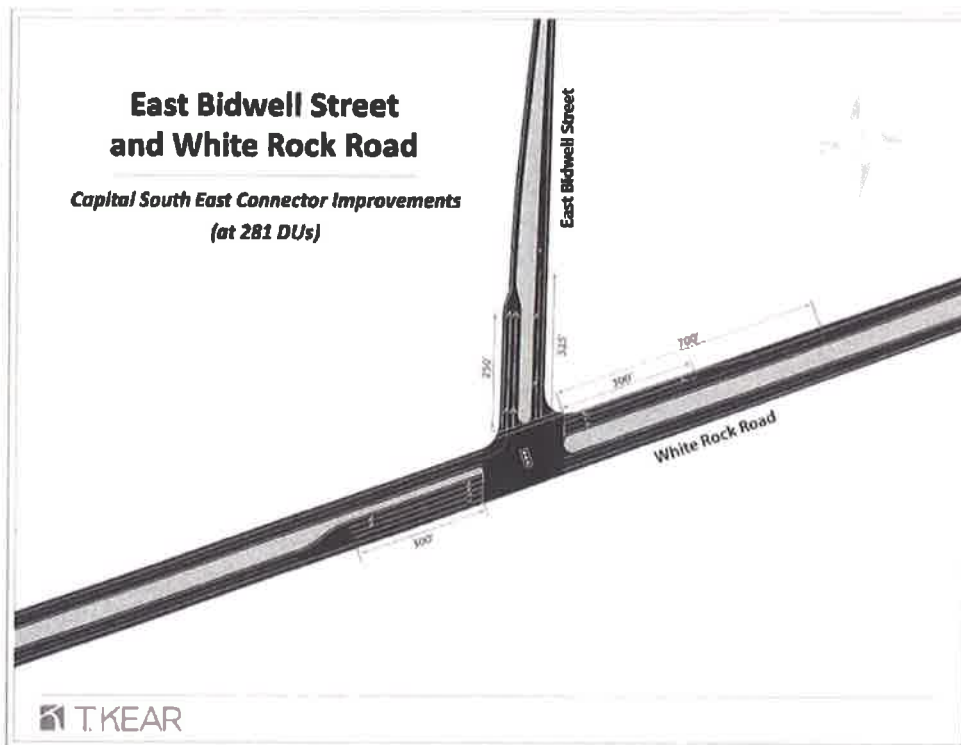


Figure 17. East Bidwell Street/Alder Creek Parkway (Item A: Planned Capital Southeast Connector Improvement)

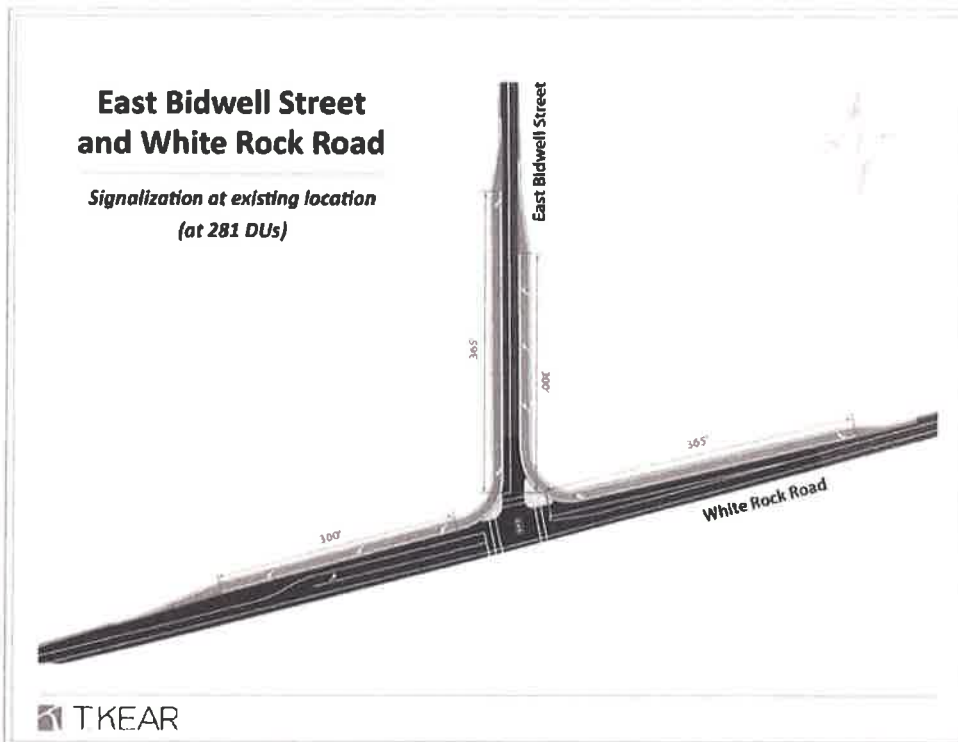


Figure 18. East Bidwell Street/Alder Creek Parkway (Item B: Signalize at Existing Location)

496 Dwelling Units

Condition 4: White Rock Road/Old Placerville Road (Figure 19)

Prior to the 496th occupancy permit the Owner/Applicant shall be responsible for prohibiting southbound left turns from Old Placerville Road to eastbound White Rock Road by construction of a raised median on Old Placerville Road to channelize all southbound traffic onto westbound White Rock Road. Final improvement plans shall be approved by the City Engineer.

Condition 5: East Bidwell Street/Savannah Parkway (Figure 20)

Prior to the 496th occupancy permit and concurrent with implementation of Condition 4 above, the Owner/Applicant shall signalize the East Bidwell Street/Savannah Parkway intersection as follows:

- Southbound approach: one thru lane, and one left-turn lane with a 100' long left-turn pocket for the left-turn lane.
- Northbound approach: one shared thru-right turn lane.
- Westbound approach: one right-turn lane, and one left-turn lane with a 60' left-turn pocket for the left-turn lane.
- Control: Signal control with split phasing.

Between "Street 1" and the southern boundary of the Tentative Map, East Bidwell Street shall be constructed as a two-lane arterial on the eastern "half segment" of its ultimate configuration. This two-lane segment shall have a striped 2' wide median south of "Street 1", consistent with the California Manual on Uniform Traffic Control Devices¹⁰¹ (MUTCD) Figure 3A-107 (CA), or similar standard. The southbound left-turn pocket shall be developed in accordance with the Highway Design Manual¹⁰² (HDM) figure 405.2A, or similar standard. Savannah Parkway shall have a 12' raised median. Final improvement plans shall be approved by the City Engineer.

¹⁰¹ Caltrans (2014) California Manual on Uniform Traffic Control Devices – 2014 Edition (Revision 2), California Department of Transportation, April 7, 2017.

¹⁰² Caltrans (2012) Highway Design Manual – Chapter 400, California Department of Transportation, May 7, 2012.

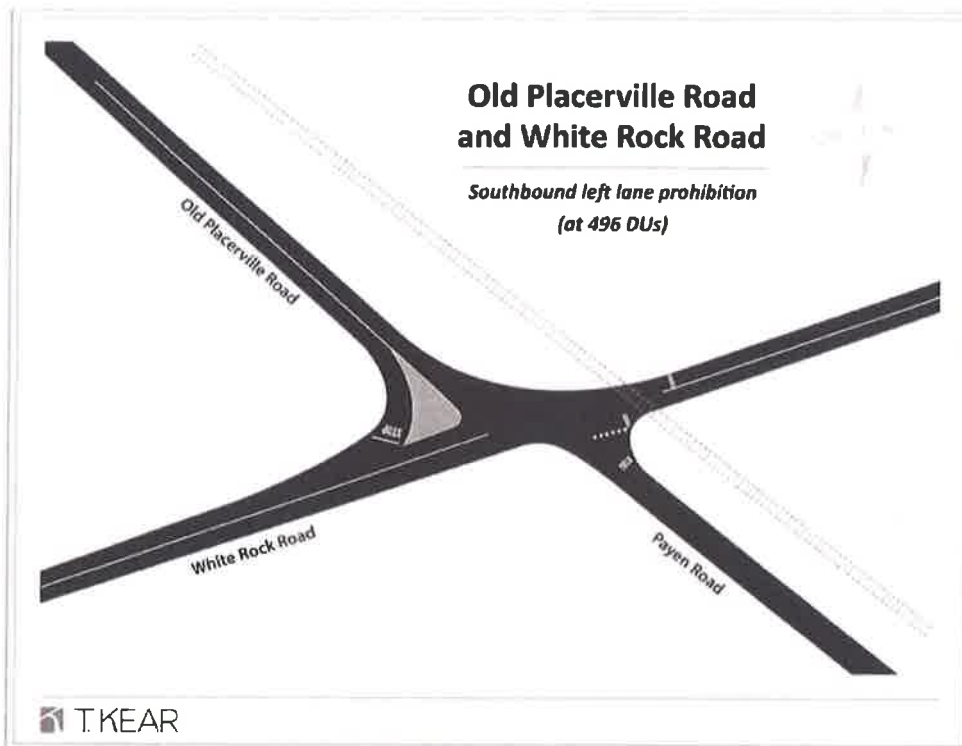


Figure 19. White Rock Road/Old Placerville road

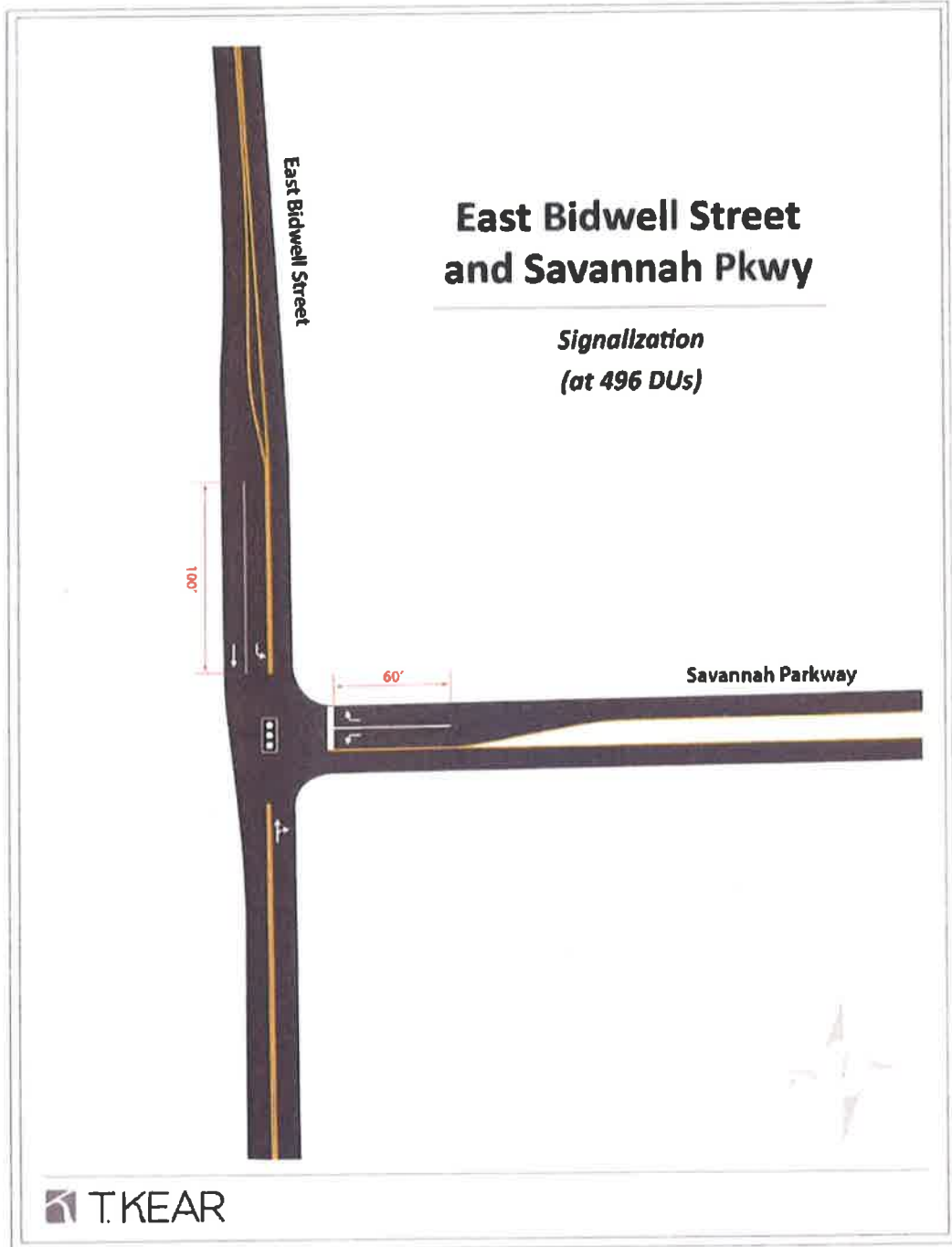


Figure 20. East Bidwell Street/Savannah Parkway (Signalized)

Attachment 10

**Access and Circulation Analysis
Dated May 12, 2020**

To: Rick Jordan
 From: Matt Weir, P.E., T.E., PTOE
 Re: **Access Evaluation**
Mangini Ranch (MR) Phase 2 – Lot 10 (Rockcross)
 Date: May 12, 2020

Per your request, we have prepared this access evaluation specific to Lot 10 (Rockcross) of the above referenced project. The assumptions upon which this evaluation was prepared were identified by the City of Folsom¹ and the project team². The following is a summary of these assumptions:

- I. Land Use/Trip Generation
 - o 118 single-family detached units
 - Highest peak-hour volume³:
 - 75-trips IN (PM)
 - 67-trips OUT (AM)
- II. Access Conditions
 - o Scenario 1 – Existing Conditions with Enclave, without Village 7
 - East Bidwell St: No direct access
 - Old Ranch Way:
 - Right-In/Right-Out, Left-In at East Bidwell St
 - Full Access at Manning Way
 - Savannah Pkwy:
 - Full Access (Side-Street Stop Control) at East Bidwell St*
 - o Construct E Bidwell St median along Project frontage to provide southbound left-turn into Savannah Pkwy
 - Full Access at Harris Way
 - Temporary U-Turn at Shale Rock Way
 - o Scenario 2 – Existing Conditions with Enclave, with Village 7
 - East Bidwell St: *same as interim*
 - Old Ranch Way: *same as interim*
 - Savannah Pkwy:
 - Full Access (Side-Street Stop Control) at East Bidwell St*
 - o *E Bidwell St southbound left-turn into Savannah Pkwy completed by others (Village 7)*
 - Full Access at Harris Way
 - Construct eastern extension of Savannah Pkwy from Village 7 boundary to eastern project boundary (including Share Rock Way intersection)

* Traffic signal not warranted until final maps for ~500 Phase 2 single-family units are submitted. The addition of this project (Lot 10, Rockcross) brings the current total to only ~300 units. Until such time that a traffic signal is triggered, a southbound median acceleration lane is required to assist in facilitating a two-stage outbound left-turn from Savannah Pkwy onto southbound E Bidwell St.

¹ Teleconferences with Steve Krahn, City of Folsom, April 16 and May 5, 2020.

² Teleconference with Rick Jordan and Jennifer Lane, April 22, 2020.

³ *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers (ITE).

A previously completed traffic study⁴ is understood to form the basis of the ultimate East Bidwell Street corridor and the subject intersections' locations and geometrics. This prior effort is included by reference allowing this access evaluation to focus exclusively on ingress and egress for Lot 10 (Rockcross).

Accordingly, in addition to the assumptions summarized on Page 1 above, the following considerations were also incorporated as part of this evaluation:

- Project Site Land Use
 - Table 15 (Project Trip Generation) of the prior traffic study⁴ contemplated the Specific Plan land use for the project site (153-units)
- Southbound Left-Turn Access from East Bidwell St
 - Figure ES-1 (Preliminary Site Plan) of the prior traffic study⁴ assumed direct access from East Bidwell St via a median break providing Right-In/Right-Out/Left-In access approximate mid-block between Old Ranch Way and Savannah Pkwy
 - Currently proposed project shifts the East Bidwell St median break north to Old Ranch Way, creating the access conditions described on Page 1 above.

Lastly it was necessary to approximate the peak-hour turning movements at the Lot 10 (Rockcross) driveways and arterial street intersections to allow for an evaluation and recommendation of treatments. The driveway trips were developed as summarized below:

- Global Trip Assignment
 - Per Figure 7 (Project Trip Distribution) of the prior traffic study⁴
 - 88% of the trips originate from or are destined for points north
 - 12% trips originating from or destined for points south
- Approximate Peak-Hour Intersection Volumes
 - Old Ranch Way
 - Ingress
 - Southbound Left: $88\% * 50\%^+ * 75 = 33$ trips
 - Northbound Right: $12\% * 25\%^{**} * 75 = 3$ trips
 - Egress
 - Westbound Right: $88\% * 50\%^+ * 67 = 30$ trips
 - Savannah Pkwy
 - Ingress
 - Southbound Left: $88\% * 50\%^+ * 75 = 33$ trips
 - Northbound Right: $12\% * 75\%^{**} * 75 = 7$ trips
 - Egress
 - Westbound Right: $88\% * 50\%^{**} * 67 = 30$ trips
 - Westbound Left: $12\% * 100\%^{***} * 67 = 9$ trips

⁺ Assumes half of the southbound entering and half of the northbound exiting traffic uses the Savannah Pkwy intersection and half uses Old Ranch Way.

^{**} Assumes 75% of the northbound entering traffic turns right at the Savannah Pkwy intersection and 25% continues north to use Old Ranch Way.

^{***} Assumes 100% of the southbound exiting traffic uses the Savannah Pkwy intersection

Based on our coordination with the City and project team, and review of the prior study⁴ and related project documentation, we offer the following recommendations for Lot 10 (Rockcross):

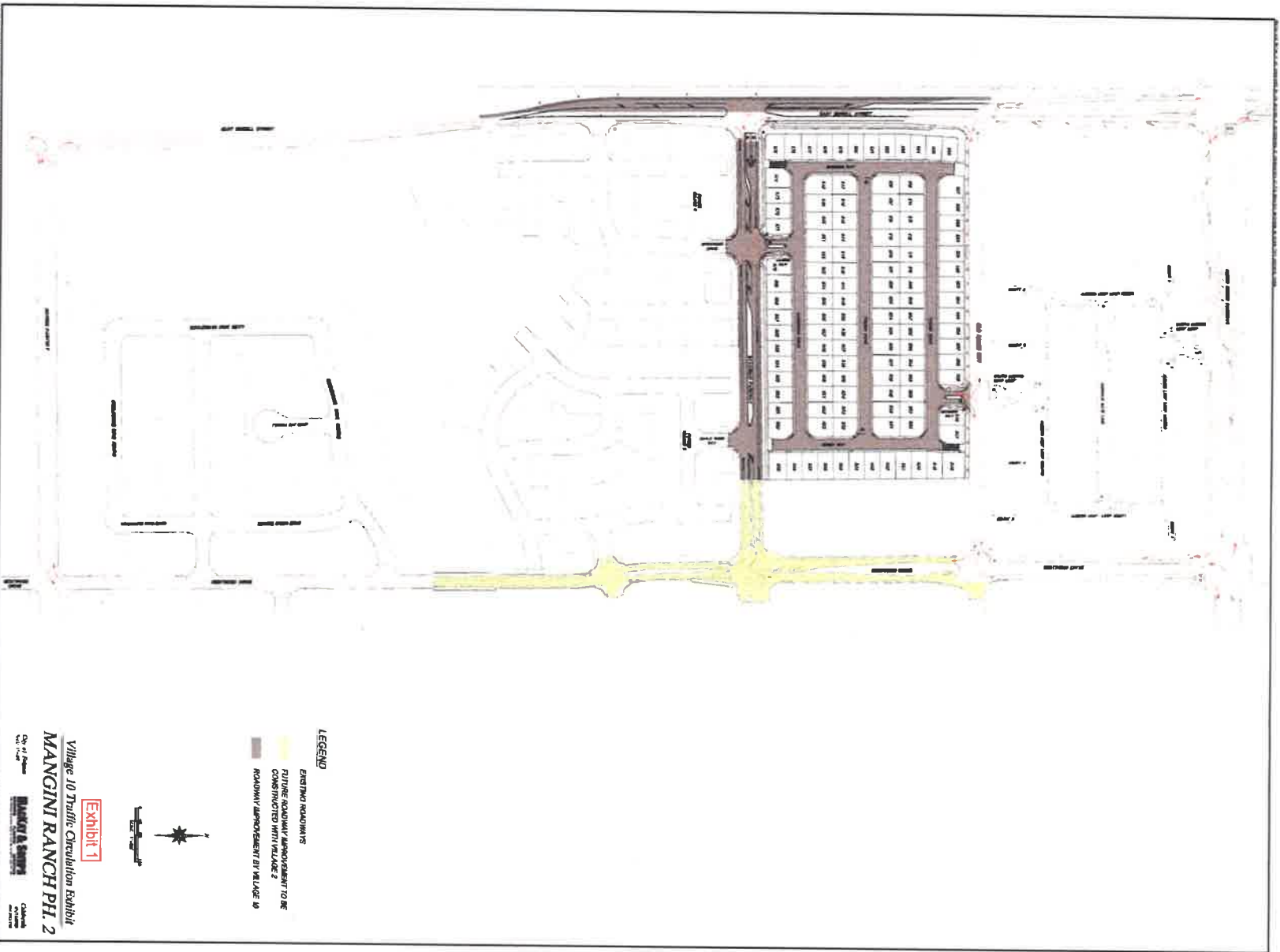
- Right-turn entering volumes from East Bidwell Street are relatively low (fewer than 10 peak-hour trips). Accordingly, the project alone does not trigger the need for right-turn auxiliary lanes. The lane configurations specified in the prior study⁴ are considered to be adequate.

⁴ Final Mangini Ranch Phase 2 Transportation Impact Study, T. Kear Transportation Planning & Management, Inc., December 1, 2017.

- Left-turn entering volumes from East Bidwell Street, while understood to be a component of the prior study's volumes, represent just a portion of the anticipated peak-hour demand. As noted, the prior study contemplated a larger project for this site (153 vs. 118 units). As such, the proposed project is not anticipated to create conditions that require mitigations/treatments beyond those already documented in the prior study.
 - However, the shift of the southbound left-turn from East Bidwell Street to Old Ranch Way does represent the only access modification from the prior study. The reasonably anticipated resulting split of access between Old Ranch Way and Savannah Pkwy (resulting from deconcentrating the access) is anticipated to improve operations in the immediate study area.
- To the extent possible, the southbound median left-turn pocket to Savannah Pkwy (noted on Page 1 above as a requirement for the Project to construct under the Scenario 1) should be constructed to provide adequate deceleration distance. Incorporation of adequate deceleration distance will help to ensure safe operations by allowing these slowing vehicles to exit the #1 southbound East Bidwell Street through lane. Although queue storage is anticipated to be minimal, this left-turn pocket should total at least 315-feet (255-foot deceleration plus 60-foot bay taper), representing an assumed entry speed of 40-mph which includes a 10-mph speed reduction from the adjacent through lane⁵.
- Until such time that a traffic signal is triggered at the E Bidwell St intersection with Savannah Pkwy, a southbound median acceleration lane is required to assist in facilitating a two-stage outbound left-turn from Savannah Pkwy onto southbound E Bidwell St. The length of this lane, which is understood to be a temporary improvement that is repurposed with the ultimate corridor improvements, should total approximately 250-feet.
- The anticipated mix of volumes entering and exiting the project site from the full access driveways (Harris Way and Manning Way) located along Savannah Pkwy and Old Ranch Way are anticipated to result in acceptable operations at these two locations.
 - The eastbound Savannah Pkwy left-turn into the project site at Harris Way will be formed back-to-back with the westbound left-turn at the future East Bidwell Street traffic signal. Additional analyses completed as part of this study, conditions reflecting the addition of the fourth intersection leg and adding this project's traffic to the prior study's⁴ "Mitigated EPPAP with Project" conditions, reveal that approximately 100-feet of queuing is anticipated for both the westbound left and westbound right lanes. Similar queuing is anticipated when the westbound right is converted to a westbound shared through/right lane in the future. This minimal queuing is important as it defines the westbound left-turn storage requirement, confirms the unobstructed operation of the upstream Harris Way driveway intersection, and confirms that the shared westbound through/right configuration will work acceptably (no exclusive westbound right-turn lane is required).
- General comments:
 - Adequate corner sight-distance should be provided at all project driveway intersections.
 - Physical medians and related signing should be provided at the East Bidwell Street intersection with Old Ranch Way to physically restrict outbound left-turns.
 - Overall project area circulation is depicted in Exhibit 1. The implementation of this project, as well as Village 7 and Westwood Drive, complete the circulation system in the immediate project area.

Attachment: Exhibit 1 – Village 10 Traffic Circulation Exhibit

⁵ Section 405.2(d), Caltrans' *Highway Design Manual*, Caltrans, March 20, 2020.



Village 10 Traffic Circulation Exhibit
MANGINI RANCH PH. 2
 Exhibit 1
 Prepared by: **Black & Veatch**
 1000 North 17th Street, Suite 1000, Denver, CO 80202
 Date: 10/1/2010
 Project: Mangini Ranch PH. 2
 Sheet: 10 of 10
 PRELIMINARY - Subject to Revision

Attachment 11

Environmental Noise Analysis
Dated April 24, 2020

Environmental Noise Analysis

Rockcross at Folsom Ranch Residential Development

Folsom, California

BAC Job # 2020-039

Prepared For:

East Carpenter Improvement Company, LLC.

4370 Town Center Blvd., Ste. 100
El Dorado Hills, CA 95762

Prepared By:

Bollard Acoustical Consultants, Inc.



Paul Bollard, President

April 24, 2020



Introduction

The proposed Rockcross at Folsom Ranch Development (project) site is located within the Folsom South of U.S. Highway 50 Specific Plan. The specific component of the overall Rockcross at Folsom Ranch project analyzed in this study is the proposed development of single-family residential lots in Phase 2 of the Mangini Ranch development. The proposed lots are located on the east side of East Bidwell Street, north of Mangini Parkway and South of Old Ranch Way, as indicated on Figure 1. The proposed site plan is shown on Figure 2.

East Bidwell Street, Savannah Parkway and Old Ranch Way are considered to be potentially significant noise sources which may affect the design of the residential project. In addition, the land to the immediate east of the project site is designated for a future police/fire station. As a result, Bollard Acoustical Consultants, Inc. (BAC) was retained by the project applicant to prepare this acoustical analysis. Specifically, this analysis was prepared to determine whether local traffic noise of future operations at the police/fire station would cause noise levels at the project site to exceed acceptable limits as described in the Noise Element of the City of Folsom General Plan. In addition, this analysis was prepared to evaluate compliance with the Folsom South of U.S. Highway 50 Specific Plan EIR Noise Mitigation Measures.

Noise Fundamentals and Terminology

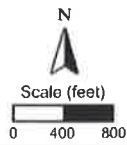
Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and thus are called sound. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Figure 3 shows common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.



Legend

 Project Border (Approximate)



Rockcross at Folsom Ranch
Folsom, California

Project Vicinity

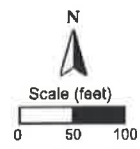
Figure 1





Legend

- Recommended 7 Foot Solid Noise Barrier (Relative to Pad Elevation)
- Proposed 6 Foot Solid Noise Barriers
- Recommended Window Upgrades: STC 32 (Upper Floors)
- Recommended Window Upgrades: STC 32 (All Floors)



Rockcross at Folsom Ranch
Folsom, California

Site Plan

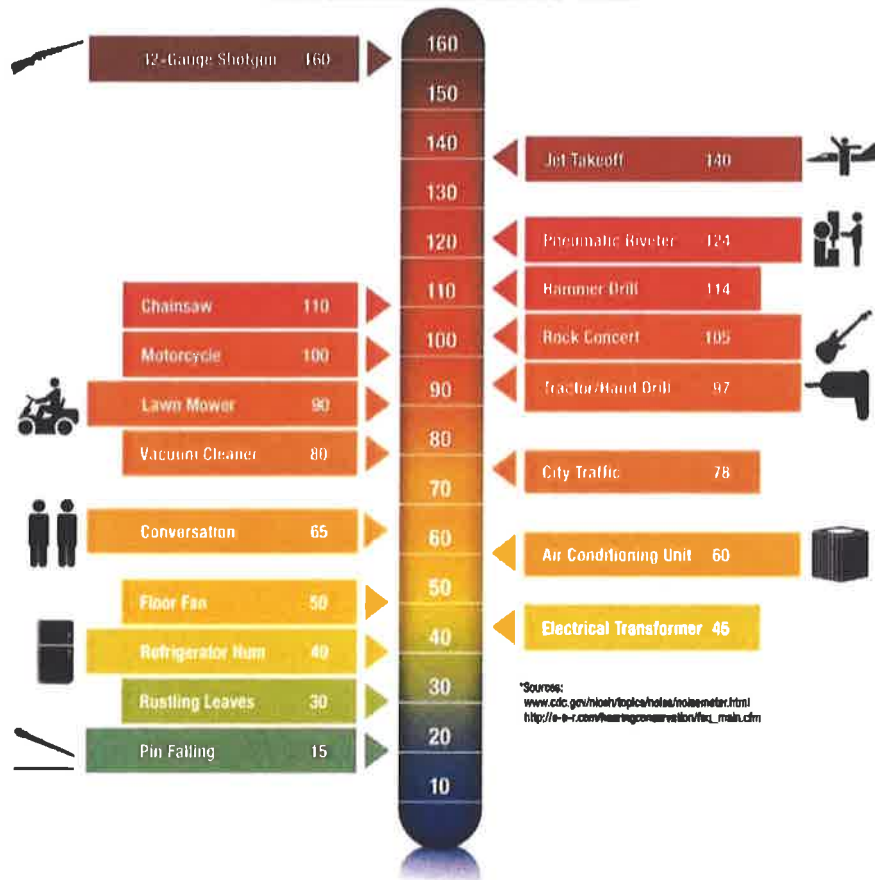
Figure 2



Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} -based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources
Decibel Scale (dBA)*



Criteria for Acceptable Noise Exposure

City of Folsom General Plan - Transportation Noise Sources

The City of Folsom General Plan Noise Element establishes an exterior noise level standard of 60 dB L_{dn} at outdoor activity areas of residential land uses exposed to transportation noise sources (i.e., traffic). The intent of this standard is to provide an acceptable exterior noise environment for outdoor activities. For single-family residential uses, such as the proposed project, these limits are normally applied at backyard areas.

The City of Folsom utilizes an interior noise level standard of 45 dB L_{dn} or less within noise-sensitive project dwellings. The intent of this interior noise limit is to provide a suitable environment for indoor communication and sleep.

Folsom South of U.S. Highway 50 Specific Plan Noise Mitigation Measures

The noise mitigation measures shown below have been incorporated into the Folsom South of U.S. Highway 50 Specific Plan in order to mitigate identified environmental impacts. The noise-related mitigation measures which are applicable to the development of single-family residential land uses within the Mangini Ranch development are reproduced below. Following each mitigation measure is a brief discussion as to the applicability of the mitigation measure to the Mangini Ranch Residential Development.

MM 3A.11-1 Implement Noise-Reducing Construction Practices, Prepare and Implement a Noise Control Plan, and Monitor and Record Construction Noise near Sensitive Receptors.

To reduce impacts associated with noise generated during project-related construction activities, the project applicant(s) and their primary contractors for engineering design and construction of all project phases shall ensure that the following requirements are implemented at each work site in any year of project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below:

- Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays.
- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- All motorized construction equipment shall be shut down when not in use to prevent idling.
- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).
- Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators) as planned phases are built out and future noise sensitive receptors are located within close proximity to future construction activities.
- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 850 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.
- To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8 to 10 dB (EPA 1971).
- When future noise sensitive uses are within close proximity to prolonged construction noise, noise-attenuating buffers such as structures, truck trailers, or soil piles shall be located between noise sources and future residences to shield sensitive receptors from construction noise.
- The primary contractor shall prepare and implement a construction noise management plan. This plan shall identify specific measures to ensure compliance with the noise control measures specified above. The noise control plan shall be submitted to the City of Folsom before any noise-generating construction activity begins. Construction shall not commence until the construction noise management plan is approved by the City of Folsom. Mitigation for the two off-site roadway connections into El Dorado County must be coordinated by the project applicant(s) of the applicable project phase with El Dorado County, since the roadway extensions are outside of the City of Folsom's jurisdictional boundaries.

Mitigation Measure 3A.11-1 will be implemented during project construction.

MM 3A.11-3 Implement Measures to Prevent Exposure of Sensitive Receptors to Groundborne Noise or Vibration from Project Generated Construction Activities.

- To the extent feasible, blasting activities shall not be conducted within 275 feet of existing or future sensitive receptors.
- To the extent feasible, bulldozing activities shall not be conducted within 50 feet of existing or future sensitive receptors.
- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the State of California.
- A blasting plan, including estimates of vibration levels at the residence closest to the blast, shall be submitted to the enforcement agency for review and approval prior to the commencement of the first blast.
- Each blast shall be monitored and documented for groundborne noise and vibration levels at the nearest sensitive land use and associated recorded submitted to the enforcement agency.

Mitigation Measure 3A.11-3 will be implemented during project construction.

MM 3A.11-4 Implement Measures to Prevent Exposure of Sensitive Receptors to Increases in Noise from Project-Generated Operational Traffic on Off-Site and On-Site Roadways.

To meet applicable noise standards as set forth in the appropriate General Plan or Code (e.g., City of Folsom, County of Sacramento, and County of El Dorado) and to reduce increases in traffic-generated noise levels at noise-sensitive uses, the project applicant(s) of all project phases shall implement the following:

- Obtain the services of a consultant (such as a licensed engineer or licensed architect) to develop noise-attenuation measures for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms) that will produce a minimum composite Sound Transmission Class (STC) rating for buildings of 30 or greater, individually computed for the walls and the floor/ceiling construction of buildings, for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms).
- Prior to submittal of tentative subdivision maps and improvement plans, the project applicant(s) shall conduct a site-specific acoustical analysis to determine predicted roadway noise impacts attributable to the project, taking into account site-specific conditions (e.g., site design, location of structures, building characteristics). The acoustical analysis shall evaluate stationary- and mobile-source noise attributable to the proposed use or uses and impacts on nearby noise-sensitive land uses, in accordance with adopted City noise standards. Feasible measures shall be identified to reduce project-related noise impacts. These measures may include, but are not limited to, the following:

- limiting noise-generating operational activities associated with proposed commercial land uses, including truck deliveries;
- constructing exterior sound walls;
- constructing barrier walls and/or berms with vegetation;
- using "quiet pavement" (e.g., rubberized asphalt) construction methods on local roadways; and,
- using increased noise-attenuation measures in building construction (e.g., dual-pane, sound-rated windows; exterior wall insulation).

Pursuant to this mitigation measure, this report includes an analysis of traffic noise impacts at proposed single-family residential lots within the Mangini Ranch development resulting from local traffic. As determined by this analysis, which is presented later in this report, future traffic noise levels generated by local traffic are predicted to exceed the City of Folsom exterior noise standards at the nearest proposed residential lots the roadway. As a result, this analysis prescribes specific noise control measures as required to achieve satisfaction with the City's exterior and interior noise level standards applicable to new residential developments.

MM 3A.11-5 Implement Measures to Reduce Noise from Project-Generated Stationary Sources.

The project applicant(s) for any particular discretionary development project shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources that would be located within 600 feet of any noise-sensitive receptor:

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 7:00 a.m. to 6:00 p.m.). All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications.
- External mechanical equipment associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating generators within equipment rooms or enclosures that incorporate noise-reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.
- Parking lots shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of parking lot noise can be achieved by locating parking lots as far away as feasible from noise sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.

- Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.

This Phase of the Mangini Ranch development does not proposed commercial uses. As a result, this study focuses on the evaluation of traffic noise impacts upon the proposed single-family residential lots within the Mangini Ranch Phase 2 development.

Evaluation of Future Traffic Noise Levels at Proposed Single-Family Residences within Mangini Ranch

Traffic Noise Prediction Methodology

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to predict future traffic noise levels at the project site. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free flowing traffic conditions, and is considered to be accurate within 1.5 dB in most situations.

Traffic Noise Prediction Model Calibration

The FHWA Model provides reasonably accurate traffic noise predictions under "ideal" roadway conditions. Ideal conditions are generally considered to be long straight roadway segments with uniform vehicle speeds, a flat roadway surface, good pavement conditions, a statistically large volume of traffic, and an unimpeded view of the roadway from the receiver location. Bollard Acoustical Consultants, Inc. conducted a calibration of the FHWA Model through traffic noise level measurements and concurrent traffic counts to determine if offsets were warranted for the prediction of future East Bidwell Street traffic noise. Because the construction of Savannah Parkway and Old Ranch Way was not completed at the time this analysis was prepared, no measurements of those roadways were possible. As a result, the model was used without calibration for the prediction of future traffic noise levels for those roadways.

The East Bidwell Street calibration process was performed in the immediate project vicinity on February 19, 2020. The detailed results of the calibration process are provided in Appendix B. The FHWA Model was found to reasonably predict traffic noise levels at the measurement site (within 0.3 dB). As a result, no calibration adjustment was applied to the FHWA Model for the prediction of future East Bidwell Street traffic noise levels at the project site.

Predicted Future Exterior Traffic Noise Levels

The FHWA Model was used with future traffic data contained in the Folsom South of Highway 50 Specific Plan EIR to predict future traffic noise levels at the proposed residential backyards and building facades located closest to East Bidwell Street. According to the project site plans and grading plans provided by the project engineer, the project site is elevated somewhat relative to East Bidwell Street. A cross section of East Bidwell Street illustrating the relationship between the roadway, barrier, and pad elevations is provided as Appendix B.

The predicted worst-case, future traffic noise levels at the lots proposed nearest to East Bidwell and Savannah Parkway are summarized below in Table 1. Detailed listings of the FHWA Model inputs and predicted future traffic noise levels at the project site are provided in Appendix D. Noise barrier insertion loss calculations are provided in Appendix E.

Table 1 Predicted Future Traffic Noise Levels¹ Rockcross at Folsom Ranch – City of Folsom, California			
Lot Description	Distance From Roadway Centerline (feet)²	Predicted Exterior Traffic Noise Level, L_{dn} (dB)	
		w/o Barrier	With Barrier³
Lots adjacent to East Bidwell Street	90	68	60
Lots adjacent to Savannah Parkway & Old Ranch Way	65	64	<60
Notes: ¹ A complete listing of FHWA Model inputs and results are provided in Appendix D. ² Distances scaled from the centerline of the roadways to the nearest residential backyards. ³ A 7-foot tall barrier would be required along East Bidwell whereas the barriers proposed adjacent to Savannah Parkway and Old Ranch Way would be 6 feet in height.			

Analysis

Outdoor Activity Areas (Backyards)

The Table 1 data indicate that, with the inclusion of 7-foot tall noise barriers along East Bidwell and 6-foot tall barriers as proposed along Savannah Parkway and Old Ranch Way (all barriers specified relative to backyard elevation), future traffic noise levels within the outdoor activity areas of the residences nearest to those roadways would be satisfactory relative to the 60 dB L_{dn} exterior noise level standard applied by City of Folsom to the outdoor activity areas of new residential developments. As a result, additional consideration of noise mitigation measures would not be warranted.

Interior Areas

Standard residential construction (wood or stucco siding, Sound Transmission Class (STC) 27 windows, door weather-stripping, exterior wall insulation, composition plywood roof) typically results in a minimum exterior-to-interior noise level reduction (NLR) of 25 dB with windows closed, and approximately 15 dB with windows open. Therefore, provided exterior noise levels at the building facades nearest to the project roadways do not exceed 70 dB L_{dn} , no further consideration of interior noise mitigation measures would be warranted.

After construction of the proposed barrier along East Bidwell Street, the exterior noise environment at the residences proposed closest to the roadway is predicted to be approximately 60 dB L_{dn} or less at first-floor facades. After consideration of the 25 dB NLR provided by standard residential building construction, future East Bidwell Street traffic noise levels are predicted to be 35 dB L_{dn} within the nearest first-floor living spaces. Therefore, standard construction practices would be adequate for the first-floor facades nearest to East Bidwell Street.

Due to reduced ground absorption of sound at elevated positions, second-floor traffic noise levels are predicted to be approximately 3 dB higher than first-floor levels. In addition, second-floor facades would not be shielded by the proposed noise barriers. As a result, second-floor traffic noise exposure of the residences proposed adjacent to East Bidwell Street would be approximately 70-71 dB L_{dn} . To achieve compliance with the City's 45 dB L_{dn} interior noise level requirement within second-floor rooms, a building facade noise level reduction of 25-26 dB would be required of the second-floor exterior wall construction. To ensure satisfaction with the City's 45 dB L_{dn} interior noise standard, further consideration of interior noise mitigation would be warranted. For lots located nearest to East Bidwell Street, the north-, west-, and south-facing upper-floor building facades should maintain minimum window assembly STC ratings of 32. Figure 2 illustrates the lots requiring improved building construction.

Noise Generation of Future Police/Fire Station

The property to the immediate east of the project site has been designated for a future police/fire station. Noise from such operations are exempt from the provisions of the City of Folsom noise standards as that noise (i.e. sirens, vehicles responding to calls, etc.) falls under the category of emergency operations. Nonetheless, the operation of that future facility could result in periodic periods of elevated noise levels at the Rockcross at Folsom Ranch development. However, because no site plans have been developed which indicate the locations of the various on-site operations, it is infeasible to predict the potential noise effects on the Rockcross development. Nonetheless, BAC recommends that the east facing windows of Lots 3-14 should provide a minimum STC rating of 32. In addition, disclosure statements should be provided to all prospective residents of this development notifying them of the plans for a future police/fire station at that location, and indicating that the operations of such facilities periodically result in elevated noise levels.

Noise Generated During Project Construction

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 2, ranging from 70 to 90 dB at a distance of 50 feet. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

It should be noted that there are no existing residences or other noise-sensitive land uses in the immediate project vicinity, so construction noise impacts at offsite locations are predicted to be insignificant. As residences are constructed within the project development, noise from ongoing construction-related activities will be audible at completed residences, but is not expected to be significant provided construction activities are limited to daytime hours.

Table 2
Typical Construction Equipment Noise

Equipment Description	Maximum Noise Level at 50 feet, dBA
Auger drill rig	85
Backhoe	80
Bar bender	80
Boring jack power unit	80
Chain saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete batch plant	83
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flatbed truck	84
Front end loader	80
Generator (25 kilovoltamperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Hydra break ram	90
Jackhammer	85
Mounted impact hammer (hoe ram)	90
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85
Scraper	85
Soil mix drill rig	80
Tractor	84
Vacuum street sweeper	80
Vibratory concrete mixer	80
Welder/Torch	73

Source: Federal Highway Administration (2006)

Conclusions

The Rockcross at Folsom Ranch Residential Development project site will be exposed to future traffic noise levels that are satisfactory relative to the City of Folsom 60 dB L_{dn} exterior noise level standard. This assessment takes into consideration the significant screening of traffic noise that will be provided by the proposed noise barrier along East Bidwell Street. However, the following specific noise mitigation measures are recommended to ensure compliance with the City's noise standards:

- For the first-row of homes located along East Bidwell Street, the north-, west-, and south-facing upper-floor building facades should maintain minimum window assembly STC ratings of 32. Figure 2 illustrates the facades requiring improved STC rated windows.
- Mechanical ventilation (air conditioning) should be provided for all residences in this development to allow the occupants to close doors and windows as desired to achieve compliance with the applicable interior noise level criteria.
- The proposed noise barrier along East Bidwell Street shall be constructed to a minimum height of 7 feet relative to backyard elevations at the locations shown on Figure 2.
- The proposed noise barriers along Savannah Parkway and Old Ranch Way shall be constructed to a height of 6 feet relative to backyard elevations.
- The east-facing window assemblies of Lots 3-14 should provide a minimum STC rating of 32. Figure 2 illustrates the facades requiring improved STC rated windows.
- Disclosure statements should be provided to all prospective residents of this development notifying them of the plans for a future police/fire station at that location, and indicating that the operations of such facilities periodically result in elevated noise levels.
- Future plans for the police/fire station should be analyzed once they become available to determine if a solid noise barrier would be required along the western boundary of those future uses.

These conclusions are based on the traffic assumptions cited in Appendix D, on the project site plans and grading plans, and on noise reduction data for standard residential dwellings. Deviations from the Appendix E data, or the project site/grading plans, could cause future traffic noise levels to differ from those predicted in this analysis. In addition, Bollard Acoustical Consultants, Inc. is not responsible for degradation in acoustic performance of the residential construction due to poor construction practices, failure to comply with applicable building code requirements, or for failure to adhere to the minimum building practices cited in this report.

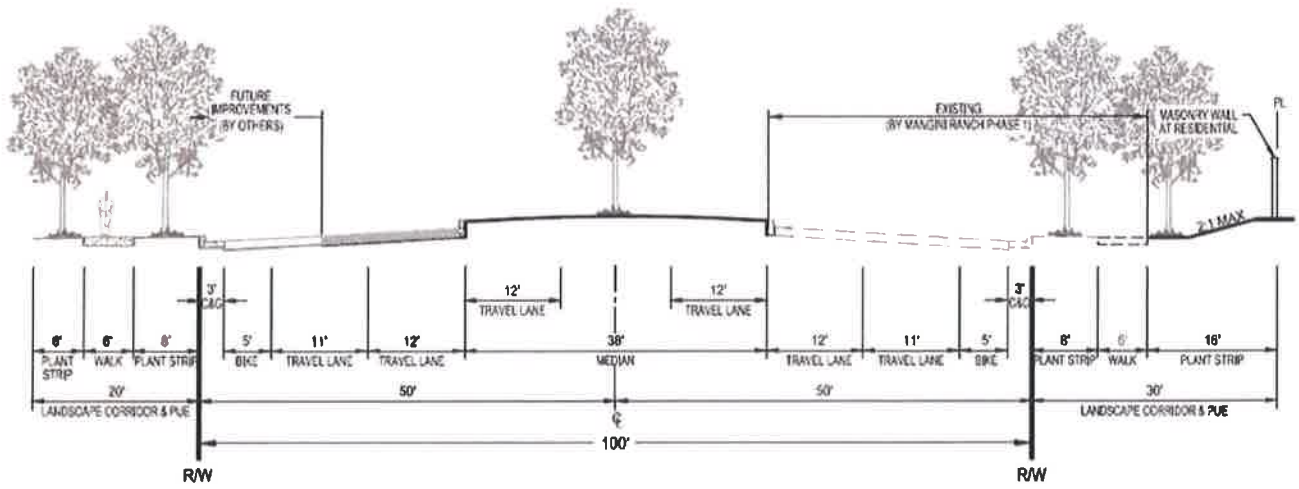
This concludes BAC's traffic noise assessment for the proposed Rockcross at Folsom Ranch Residential Development. Please contact BAC at (916) 663-0500 or Paulb@bacnoise.com with any questions regarding this assessment.

Appendix A Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
IIC	Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
STC	Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.



Appendix B



Appendix C
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Calibration Worksheet

Project Information:

Job Number: 2020-039
Project Name: Rockcress at Folsom Ranch
Roadway Tested: East Bidwell Street
Test Location: Site 1
Test Date: February 19, 2020

Weather Conditions:

Temperature (Fahrenheit): 59
Relative Humidity: 46%
Wind Speed and Direction: WNW 3mph
Cloud Cover: Clear

Sound Level Meter:

Sound Level Meter: LDL Model Lxt (BAC #3)
Calibrator: LDL Model CAL200
Meter Calibrated: Immediately before
Meter Settings: A-weighted, slow response

Microphone:

Microphone Location: On project site
Distance to Centerline (feet): 75
Microphone Height: 5 feet above ground
Intervening Ground (Hard or Soft): **Soft**
Elevation Relative to Road (feet): 5

Roadway Condition:

Pavement Type: Asphalt
Pavement Condition: Good
Number of Lanes: 2
Posted Maximum Speed (mph): 45

Test Parameters:

Test Time: 11:05 AM
Test Duration (minutes): 15
Observed Number Automobiles: 152
Observed Number Medium Trucks: 7
Observed Number Heavy Trucks: 6
Observed Average Speed (mph): 45

Model Calibration:

Measured Average Level (L_{eq}): 64.8
Level Predicted by FHWA Model: 64.5
Difference: -0.3 dB

Conclusions:

Modeled versus measured traffic noise levels indicate close agreement. No calibration offset warranted for the prediction of future East Bidwell Street traffic noise levels at the project site.

**Appendix D-1
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet**

Project Information:

Job Number: 2020-039
Project Name: Rockcross at Folsom Ranch
Roadway Name: East Bidwell Street - North of Mangini Parkway

Traffic Data:

Year: Future
Average Daily Traffic Volume: 29,300
Percent Daytime Traffic: 83
Percent Nighttime Traffic: 17
Percent Medium Trucks (2 axle): 2
Percent Heavy Trucks (3+ axle): 1
Assumed Vehicle Speed (mph): 45
Intervening Ground Type (hard/soft): **Soft**

Traffic Noise Levels:

					-----L _{dn} , dB-----		
Location	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
1	Lots nearest to East Bidwell Street	90	0	67	59	60	68

Traffic Noise Contours (No Calibration Offset):

L _{dn} Contour, dB	Distance from Centerline, (ft)
75	33
70	70
65	152
60	327

Notes: 1. Distances scaled from the future centerline of East Bidwell Street to backyard of nearest proposed residences on lots 94-105.

**Appendix D-2
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet**

Project Information:

Job Number: 2020-039
Project Name: Rockcross at Folsom Ranch
Roadway Name: Savannah Parkway & Old Dairy Way

Traffic Data:

Year: Future
Average Daily Traffic Volume: 15,000
Percent Daytime Traffic: 83
Percent Nighttime Traffic: 17
Percent Medium Trucks (2 axle): 2
Percent Heavy Trucks (3+ axle): 1
Assumed Vehicle Speed (mph): 30
Intervening Ground Type (hard/soft): **Soft**

Traffic Noise Levels:

Location	Description	Distance	Offset (dB)	-----L _{dn} , dB-----			Total
				Autos	Medium Trucks	Heavy Trucks	
1	Lots nearest to East Bidwell Street	65	0	61	55	59	64

Traffic Noise Contours (No Calibration Offset):

L _{dn} Contour, dB	Distance from Centerline, (ft)
75	12
70	26
65	55
60	119

Notes: 1. Distances scaled from the future centerlines of these roads to backyards of nearest proposed residences. Although specific future traffic volumes for Savannah Parkway and Old Dairy Way were not available, the project traffic engineer confirmed that future volumes would not exceed 15,000 daily vehicles on these roadways. As a result, the modelled values represent worst-case noise predicitions.

Attachment 12
Site Photographs









Attachment 13

Applicant's Inclusionary Housing Letter
Dated June 4, 2019