

Appendix B
Detailed Screening Information

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Appendix B. Alternative Screening

B.1 Level 1 Environmental Fatal Flaw Screening

The Technical Advisory Team (TAT) conducted Level 1 Environmental Fatal Flaw Screening at their meeting on August 17, 2010. The evaluation involved Section 4(f) and 6(f) resources (historic properties, recreational properties and wildlife refuges), as well as environmental justice issues. **Table B-1** summarizes the findings of that meeting for five facility types, as well as for the No Action Alternative (existing US 50 cross section). The facility types are briefly described as follows:

- No Action – No changes are made to US 50, except routine maintenance.
- Facility Type 1 – US 50 remains a four-lane expressway, though flyover ramps are added at some intersections.
- Facility Type 2 – US 50 is widened to a six-lane expressway with signalized intersections.
- Facility Type 3 – US 50 is converted to a four-lane freeway with grade-separated interchanges.
- Facility Type 4 – No changes are made to US 50, but local improvements are built.
- Facility Type 5 – US 50 is converted to a six-lane freeway with grade-separated interchanges.

A search for historic properties along the US 50 corridor returned no results, although thorough site investigations have not been performed for this corridor. The Pueblo Area Council of Governments (PACOG) *Long Range Transportation Plan* shows US 50 as an existing on-street bicycle route. Bicycle connectivity is not affected by the No Action Alternative and can be maintained under any of the facility types, by providing a detached mixed-use path, for example. There are no wildlife refuges near the study corridor. Therefore, the No Action Alternative is not expected to have an impact on any Section 4(f) or 6(f) resources in a way that would constitute a fatal flaw. Block groups with greater-than-average concentrations of minorities and low-income families (compared to Pueblo County as a whole) were found on either side of US 50 east of Pueblo Blvd. However, the No Action Alternative would not affect these communities. As a result, the No Action Alternative was retained for analysis at Level 2.

Facility Type 1 would make improvements to the Main McCulloch Blvd., Purcell Blvd., and Pueblo Blvd. intersections. (**Section B.2** provides more details of these components.) It does not affect the minority and low-income populations to the east, nor does it affect any Section 4(f) or 6(f) properties.

Facility Type 2 would widen US 50 to six lanes, which can largely be accommodated by the existing US 50 right-of-way (ROW) or an unplatted Pueblo West buffer. Therefore, Facility Type 2 does not affect Section 4(f) or 6(f) properties or environmental justice communities.

Facility Type 3 could require ROW acquisition for grade-separated interchanges at Wills Blvd. and Baltimore Ave., but the affected properties would be commercial rather than residences of environmental justice communities. The Colorado Department of Transportation (CDOT) has already acquired some ROW for interchanges at the intersections to the west. The TAT did not find any fatal flaws with Facility Type 3.

Table B-1. Detail of Level 1 Screening Results

Facility Type and Components	Any Fatal Flaws Related to		Disposition
	Section 4(f) or 6(f) Resources?	Environmental Justice?	
No Action	No	No	Retain
1 - Four-Lane Expressway with Flyover Ramps	No	No	Retain
2 - Six-Lane Expressway	No	No	Retain
3 - Four-Lane Freeway	No	No	Retain
4 - Combined Local Improvements:			Retain
• Pueblo Blvd. Extension	No	No	
• Upgrades to Platteville Blvd.	No	No	
• Eagleridge Blvd. Extension	No	No	
• Industrial Blvd. Extension	No	No	
• Spaulding Ave. Extension: Purcell Blvd. to Pueblo Blvd.	No	No	
• Spaulding Ave. Extension: 11 th St. to 31 st St.	Unknown	Unknown	
• Tuxedo Blvd. Extension	No	No	
• West Pueblo Connector: Joe Martinez Blvd. Extension	No	No	
• West Pueblo Connector: Upgrades to 24 th St. and Tuxedo Blvd.	Unknown	Unknown	
• West Pueblo Connector: 18 th St. to Santa Fe Ave.	Unknown	Unknown	
5 - Six-Lane Freeway	No	No	Retain

The study team examined Facility Type 4 components individually.

The Pueblo Blvd. Extension passes through a block group with a greater-than-average minority population. However, this is a large block group with most existing development removed from the proposed Pueblo Blvd. Extension alignment. Minority populations do not live near the Pueblo Blvd. Extension, and therefore, would not be affected by it. Likewise, minority populations would not see a disproportionate impact from the improvements to Platteville Blvd. and the extension of Eagleridge Blvd. west to the Pueblo Blvd. Extension.

The Industrial Blvd. Extension passes through an undeveloped area with no Section 4(f) or 6(f) resources or environmental justice populations.

The Spaulding Ave. alignment between Purcell Blvd. and Pueblo Blvd. passes through the Honor Farm, a park owned by the City of Pueblo. However, the Honor Farm Master Plan indicates that this area will be sold to



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private developers as the City acquires equivalent areas of inholdings in the Honor Farm. Therefore, this part of the Spaulding Ave. Extension does not have an impact on Section 4(f) or 6(f) resources.

The Spaulding Ave. Extension between 11th St. and 31st St., as well as the Tuxedo Blvd. Extension, are contained within a Census block with greater-than-average minority and low-income populations. However, the portion of the Spaulding Ave. Extension that passes through the most developed area has already been constructed. Therefore, the potential for disproportionate impacts exists if say, for example, increased traffic volumes lead to more noise. The remaining portions of Spaulding Ave. and all of the Tuxedo Blvd. Extension traverse undeveloped areas. Because traffic volumes on the developed portions of Spaulding Ave. are not expected to increase much as a result of completing the extension, the TAT decided that environmental justice issues would likely not become a fatal flaw of either of these roads.

The Joe Martinez Blvd. Extension, part of the West Pueblo Connector, passes through the Honor Farm Park. However, because ROW for its alignment was reserved in the Honor Farm Master Plan, it will not create a Section 4(f) or 6(f) issue. Tuxedo Blvd. and 24th St. pass through the same neighborhood, Hyde Park, as the Spaulding Ave. Extension between 11th St. and 31st St. Widening existing two-lane portions of 24th St. to four lanes would require minimal ROW acquisition. Tuxedo Blvd. is currently wide enough to have four travel lanes with a center left-turn lane. The TAT acknowledged that Hyde Park would experience greater noise from more traffic; however, they believed this would be offset by the benefit of improved access to other parts of Pueblo. The TAT decided although there was potential for environmental justice concerns, these issues did not constitute a fatal flaw regarding environmental justice.

Between 18th St. and Santa Fe Ave., the West Pueblo Connector largely follows an alignment through the Burlington Northern Santa Fe (BNSF) railroad yard. There are many historic properties in the Downtown Pueblo area, which are protected under Section 4(f). However, because no final alignment has been established for the West Pueblo Connector here, the study team was unable to determine if there might be a use of these properties. The area also includes Census block groups with greater-than-average minority and low-income residences. However, these properties would not likely need to be acquired for ROW. The TAT also felt that noise impacts could be mitigated through noise walls. As such, they did not believe Section 4(f) or 6(f) resources or environmental justice issues would be fatal flaws of this section of the West Pueblo Connector.

Table B-1 indicates that Facility Types 1 through 5 all passed Level 1 Environmental Fatal Flaw Screening and advanced to Level 2 analysis and evaluation.

B.2 Level 2 Purpose and Need Screening

Level 2 analysis and evaluation considered the Purpose and Need to reduce congestion and improve mobility. Because the intersections are the capacity bottlenecks along the US 50 corridor, Level 2 Purpose and Need Screening focused on the levels of service at the various signalized and unsignalized intersections along the corridor. The TAT decided that intersections where peak hour demands were at or above capacity (LOS E or F) did not meet the Purpose and Need to reduce congestion and improve mobility.

Initially, Level 2 screening focused on facility types as a consistent program of corridor-wide improvements. However, as Level 2 screening progressed, the TAT recognized that some of the networks assumed for each facility type failed to meet the Purpose and Need only in isolated locations. By substituting different intersection

options (See **Chapter 2, Section 2.6** for the full list), these facility types could be made to meet the Purpose and Need. Because the isolated intersection options would have negligible impact on regional travel patterns, the study team decided to differentiate the use of different intersection options as scenarios of a facility type with an alphabetical suffix. For example, Scenarios 3A and 3C both have the same demand associated with US 50 being a four-lane freeway, but Scenario 3A assumes four diamond interchanges while Scenario 3C assumes four Single-Point Urban Interchanges (SPUIs).

In addition to examining the above five facility types, the study team also considered some combinations of facility types as a sensitivity analysis. These two additional scenarios are:

- Scenario 6 – US 50 becomes a six-lane expressway with improved intersections (Facility Type 2), plus the Pueblo Blvd. Extension
- Scenario 7 – Scenario 6, plus the West Pueblo Connector

This section summarizes the results of Level 2 Purpose and Need Screening. First, **Table B-2** provides an overall summary of Level 2 evaluation. Then there is a section for each facility type or numbered scenario, which may have subsections for each lettered scenario. For every scenario, a map shows the associated improvements and the AM and PM peak hour LOS along US 50. Because Facility Type 4, Scenario 6, and Scenario 7 involve local improvements off US 50, the LOS for those intersections are also provided. There is also a text description of each scenario. Finally, at the end of the discussion of each facility type or numbered scenario, there is a table of daily volumes on US 50 and other routes at screenline crossings. A screenline is essentially a line drawn on a map through related parallel roads. The two screenlines the study team considered were one just east of Purcell Blvd. and a second one just east of Pueblo Blvd.

Table B-2 has a row for each scenario, which is identified in the first column. The next seven columns show what intersection option was assumed at each location for that scenario, and whether that intersection option meets the Purpose and Need criterion. Intersection options not meeting the Purpose and Need are shaded red. The LOS at Wills Blvd. was not calculated for Facility Type 3 scenarios. However, examining the turning movement volumes at Wills Blvd. and Baltimore Ave. showed that Baltimore Ave. has more traffic. Therefore, any intersection that meets the Purpose and Need at Baltimore Ave. will also do so at Wills Blvd. The final four columns of **Table B-2** show what local improvements are included with each scenario. Other local improvements include:

- The Industrial Blvd. Extension
- Both segments of the Spaulding Ave. Extension
- The Tuxedo Blvd. Extension

Table B-2 shows that Facility Types 3 and 5, and Scenario 7, would meet the Purpose and Need criteria and advanced to Level 3 Environmental Comparative Analysis. **Chapter 2, Section 2.11**, of the *US 50 West PEL Study* discusses specific intersection options passing Level 2 evaluation.



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Table B-2. Summary of Level 2 Screening Results

Facility Type and Scenario	Swallows Rd.	West McCulloch Blvd.	Main McCulloch Blvd.	Purcell Blvd.	Pueblo Blvd. (SH 45)	Wills Blvd.	Baltimore Ave.	Pueblo Blvd. Extension	Platteville Blvd. Widening and Eagleridge Blvd. Extension	West Pueblo Connector	Other Local Improvements		
No Action	4 In unsig	4 In unsig	4 In sig	4 In sig	4 In sig	4 In sig	4/6 In sig	-	-	-	-		
1	4 In sig	4 In sig	4 In sig + fly	4 In sig + fly	4 In sig + fly	4 In sig	4/6 In sig	-	-	-	-		
2	6 In sig	6 In sig	6 In sig	6 In sig	6 In sig	6 In sig	6 In sig	-	-	-	-		
3A	4 In sig	4 In sig	diamond	diamond	diamond	N/C	TUDI	-	-	-	-		
3B			dia + fly	dia + fly	dia + fly		dia + fly						
3C			SPUI	SPUI	SPUI - exit 50		SPUI						
3D			diamond	diamond			TUDI						
3E	diamond	diamond (unsig)	diamond	diamond	SPUI - exit 50								
4A	4 In unsig	4 In unsig	4 In sig	4 In sig	4 In sig	4 In sig	4/6 In sig	to I-25	Y	Y	Y		
4B					diamond								
4C					dia + fly								
4D					SPUI - exit 50								
4E					SPUI - exit 45								
4F					Parclo								
5	4 In sig	4 In sig	6 In diamond	6 In diamond	SPUI - exit 50	Braided TUDIs		-	-	-	-		
6A	4 In sig	4 In sig	6 In diamond	6 In diamond	Parclo - loops to 45	6 In sig	6 In sig	to Platteville	Y	-	-		
6B					Parclo - loops from 45								
6C					SPUI - exit 45								
6D					DDI - exit 50							DDI - exit 45	
6E					GS Round							GS Round	GS Round
6F					6 In 2-leg CFI							6 In 2-leg CFI	6 In 2-leg CFI
6G					6 In 4-leg CFI							6 In 4-leg CFI	6 In 4-leg CFI
7A	4 In sig	4 In sig	4/6 In sig	6 In diamond	Parclo	6 In sig	6 In sig	to Platteville	Y	Y	-		
7B			6 In diamond										

Legend:
 indicates intersection operates at LOS E or F and, therefore, does not meet the Purpose and Need
 NC Indicates not calculated.

Abbreviations:

unsig	unsignalized intersection	TUDI	Tight Urban Diamond Interchange	SPUI	Single Point Urban Interchange	Parclo	Partial Cloverleaf Interchange	DDI	Diverging Diamond Interchange (grade-separated)
sig	signalized intersection	dia	Diamond Interchange	• Scenarios		• Scenarios		• Scenarios	
fly	flyover ramp	CFI	Continuous Flow Intersection (at-grade with left turning traffic crossing oncoming traffic)	• Ramps exiting US 50 – Scenarios 3C, 3D, 3E, 4D, 5A, and 5B	• Ramps exiting Pueblo Blvd. (SH 45) – Scenarios 4E and 6D	• Loop ramps on to Pueblo Blvd. – Scenarios 6A, 7A, and 7B	• Loop ramps exiting Pueblo Blvd. – Scenario 6B	• Ramps exiting US 50 – at Purcell Blvd.	• Ramps exiting Pueblo Blvd. (SH 45)



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B.2.1 2035 No Action

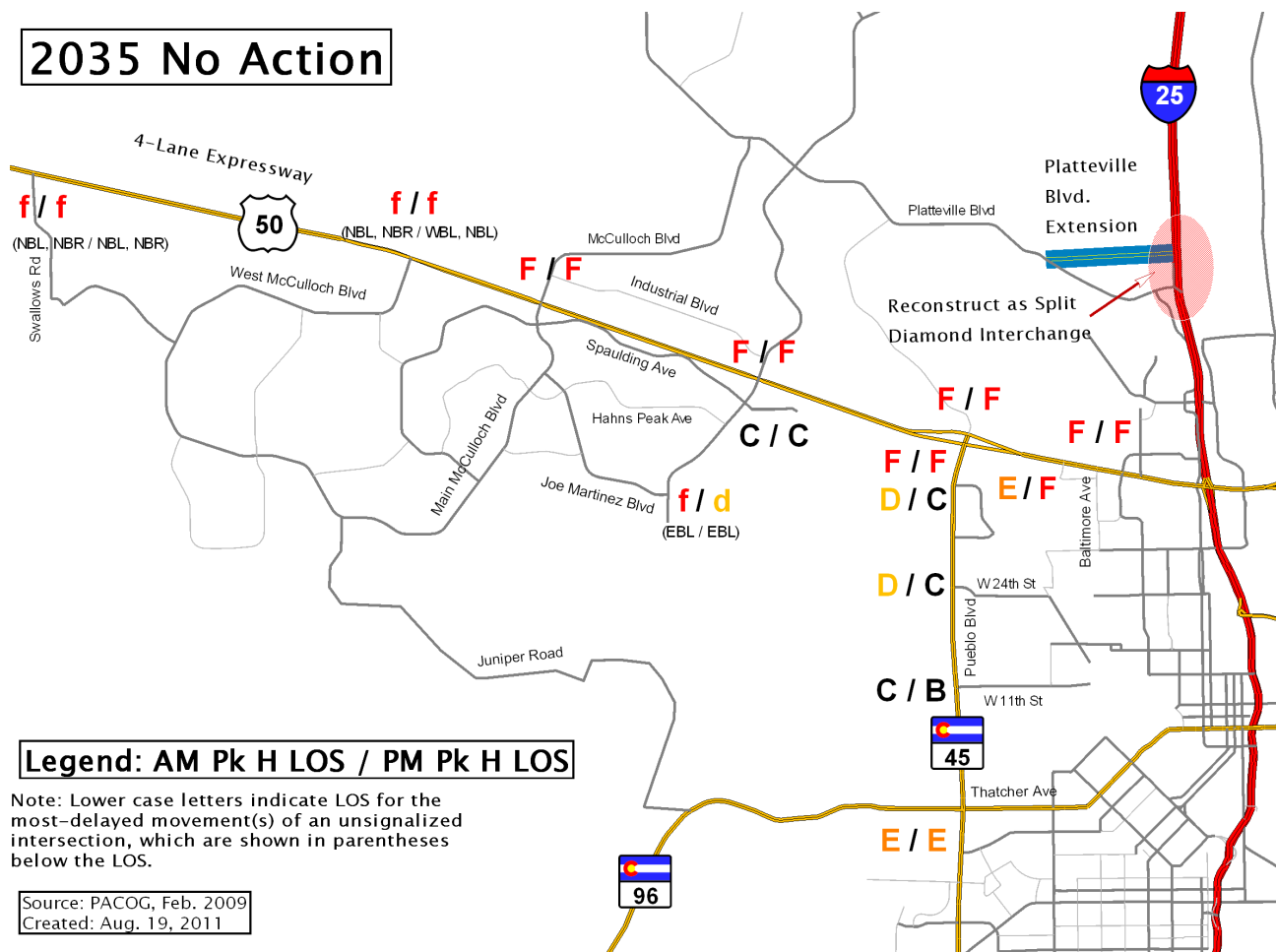


Figure B-1. No Action Schematic and Levels of Service

As shown in **Figure B-1**, the No Action Alternative includes the existing and committed regional network:

- US 50A
 - 4 lanes west of Baltimore Ave.
 - 6 lanes Baltimore Ave. to Morris Ave. / Fortino Blvd.
 - 3 EB / 4 WB Lanes Morris Ave. / Fortino Blvd. to Club Manor Dr.
 - 8 lanes Club Manor Dr. to Elizabeth St.
 - 6 lanes Elizabeth St. to I-25
- Four-lane Platteville Blvd. Extension from Pueblo city limits to I-25, including Dillon/Eden Split Diamond

Table B-3 shows the current and 2035 No Action daily screenline volumes.

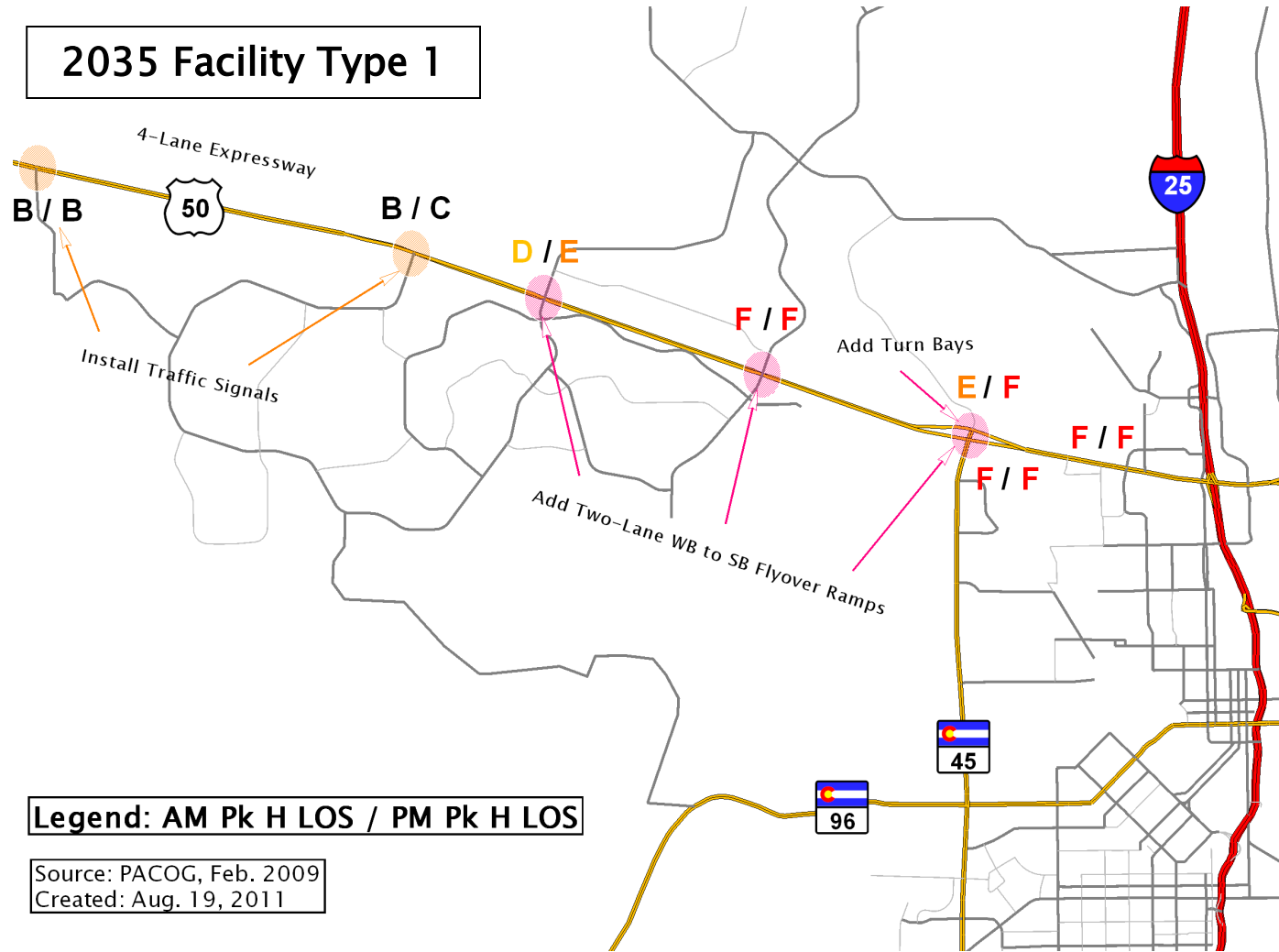
Table B-3. Current and 2035 No Action Daily Screenline Volumes

Roadway	Direction	2005 Count	2035 No Action	Percent Change from 2005
East of Purcell Blvd.				
Platteville Blvd.	Two Way	3,000	12,200	+307%
US 50	EB	22,000	43,000	+95%
	WB	22,000	43,000	+95%
	Two Way	44,000	86,000	+95%
Juniper Rd.	EB	560	5,200	+829%
	WB	420	4,800	+1043%
	Two Way	980	9,900	+910%
Screenline Total	Two Way	48,000	108,000	+125%
US 50 Percent of Screenline	Two Way	92%	80%	-12%
East of Pueblo Blvd. (SH 45)				
Platteville Blvd. (West of Elizabeth St.)	Two Way	N/A	9,510	N/A
Dillon Dr. (West of Elizabeth St.)	Two Way	2,500	7,170	+187%
US 50	EB	21,000	41,000	+95%
	WB	21,000	40,000	+90%
	Two Way	42,000	80,000	+90%
24th St.	EB	2,900	6,800	+134%
	WB	3,200	7,000	+119%
	Two Way	6,100	13,900	+128%
18th St.	Two Way	N/A	640	N/A
11th St.	EB	2,900	5,600	+93%
	WB	2,700	5,000	+85%
	Two Way	5,600	10,500	+88%
SH 96 (Thatcher Ave.)	EB	7,500	13,000	+73%
	WB	7,200	12,000	+67%
	Two Way	14,700	25,000	+70%
Screenline Total	Two Way	71,000	147,000	+107%
US 50 Percent of Screenline	Two Way	59%	54%	-5%



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B.2.2 2035 Facility Type 1 - Four-Lane Expressway



Legend: AM Pk H LOS / PM Pk H LOS

Source: PACOG, Feb. 2009
Created: Aug. 19, 2011

Figure B-2. Facility Type 1 Schematic and Levels of Service

As shown in **Figure B-2**, the network for Facility Type 1 includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Two-Lane WB-to-SB Flyover Ramps at Main McCulloch Blvd., Purcell Blvd., and Pueblo Blvd. (SH 45)
- Additional NB and SB Left Turn Lanes at Pueblo Blvd. and US 50 WB
- Additional SB Left and EB Right Turn Lanes at Pueblo Blvd. and US 50 EB

Table B-4 shows the 2035 Facility Type 1 daily screenline volumes.

Table B-4. 2035 Facility Type 1 Daily Screenline Volumes

Roadway	Direction	2035 Facility Type 1	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	12,000	-2%
US 50	EB	43,000	0%
	WB	43,000	0%
	Two Way	87,000	+1%
Juniper Rd.	EB	5,100	-2%
	WB	4,700	-2%
	Two Way	9,700	-2%
Screenline Total	Two Way	109,000	+1%
US 50 Percent of Screenline	Two Way	80%	+0%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	9,400	-1%
Dillon Dr. (West of Elizabeth)	Two Way	7,200	+0%
US 50	EB	40,000	-2%
	WB	39,000	-3%
	Two Way	79,000	-1%
24th St.	EB	7,000	+3%
	WB	7,000	0%
	Two Way	14,000	+1%
18th St.	Two Way	630	-2%
11th St.	EB	5,700	+2%
	WB	5,100	+2%
	Two Way	10,800	+3%
SH 96 (Thatcher Ave.)	EB	13,000	0%
	WB	12,000	0%
	Two Way	25,000	0%
Screenline Total	Two Way	146,000	-1%
US 50 Percent of Screenline	Two Way	54%	-0%



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B.2.3 2035 Facility Type 2 - Six-Lane Expressway

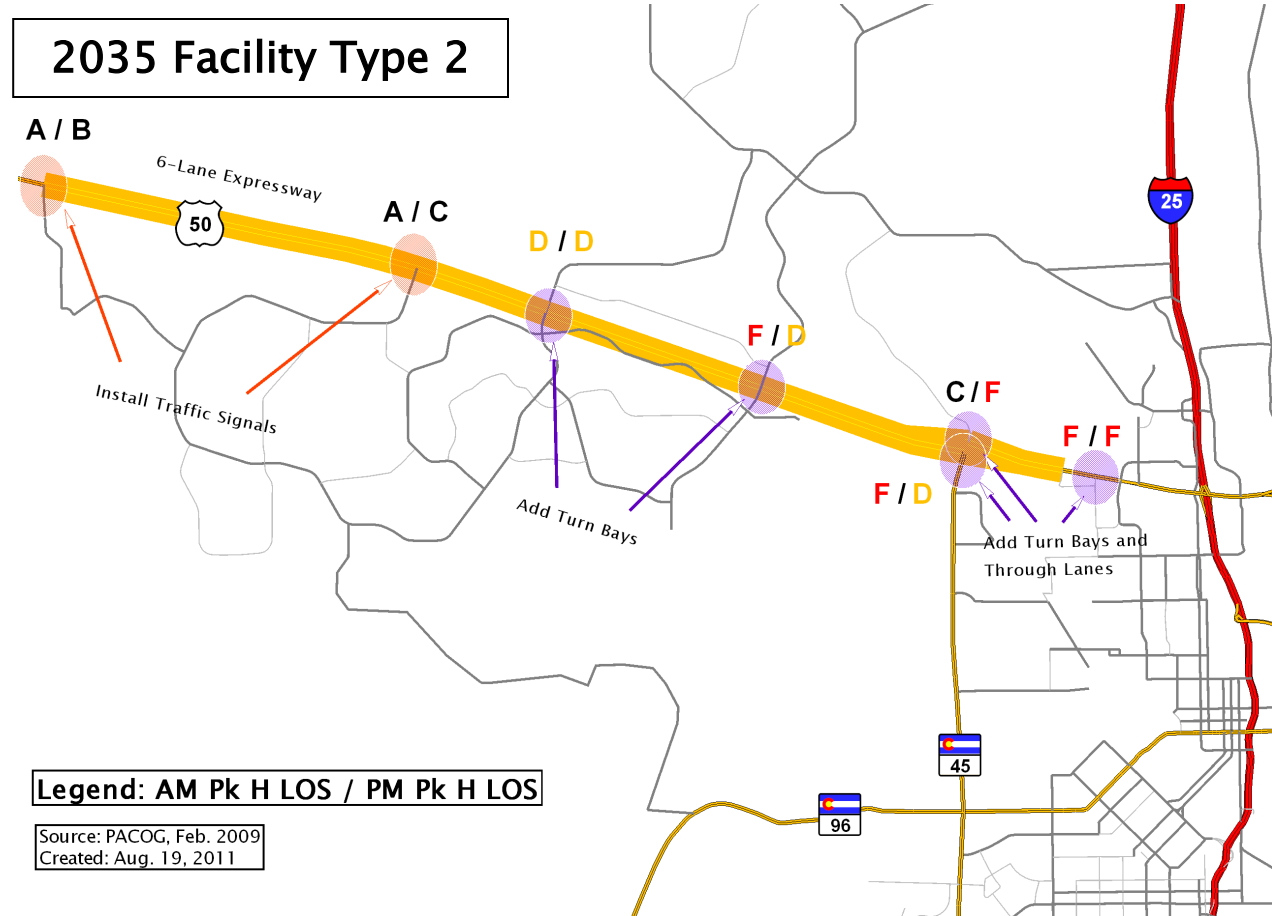


Figure B-3. Facility Type 2 Schematic and Levels of Service

As shown in Figure B-3, Facility Type 2 includes additional turn bays and through lanes at selected locations:

- Main McCulloch Blvd.
 - Add NB right and SB left
 - Add WB left and SB receiving lane
- Purcell Blvd.
 - Add NB right and SB left
 - Add NB through lane
 - Add EB and WB left with NB and SB receiving lanes
- EB US 50 at Pueblo Blvd. (SH 45)
 - Add EB right
 - Add two SB lefts
 - Add NB through lane
- WB US 50 at Pueblo Blvd. (SH 45)
 - Add WB left
 - Add two NB lefts

- Add SB right
- Add NB and SB through lanes
- Baltimore Ave.
 - Add NB and SB through lanes to Baltimore Ave.
 - Add EB and WB left turn lanes
 - Add two NB and SB left turn lanes

Table B-5 shows the 2035 Facility Type 2 daily screenline volumes.

Table B-5. 2035 Facility Type 2 Daily Screenline Volumes

Roadway	Direction	2035 Facility Type 2 Six-Lane Expressway	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	11,600	-5%
US 50	EB	47,000	+9%
	WB	46,000	+7%
	Two Way	93,000	+8%
Juniper Rd.	EB	3,600	-31%
	WB	3,300	-31%
	Two Way	6,900	-30%
Screenline Total	Two Way	112,000	+4%
US 50 Percent of Screenline	Two Way	83%	+3%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	9,400	-1%
Dillon Dr. (West of Elizabeth)	Two Way	7,100	-1%
US 50	EB	47,000	+15%
	WB	46,000	+15%
	Two Way	93,000	+16%
24th St.	EB	6,500	-4%
	WB	7,000	0%
	Two Way	13,400	-4%
18th St.	Two Way	600	N/A
11th St.	EB	5,200	-7%
	WB	5,000	0%
	Two Way	10,200	-3%
SH 96 (Thatcher Ave.)	EB	12,000	-8%
	WB	12,000	0%
	Two Way	24,000	-4%
Screenline Total	Two Way	158,000	+7%
US 50 Percent of Screenline	Two Way	59%	+4%



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B.2.4 Facility Type 3 - Four-Lane Freeway

2035 Scenario 3A - Four-Lane Freeway: West of Main McCulloch Blvd. to Railroad - Diamond Interchanges

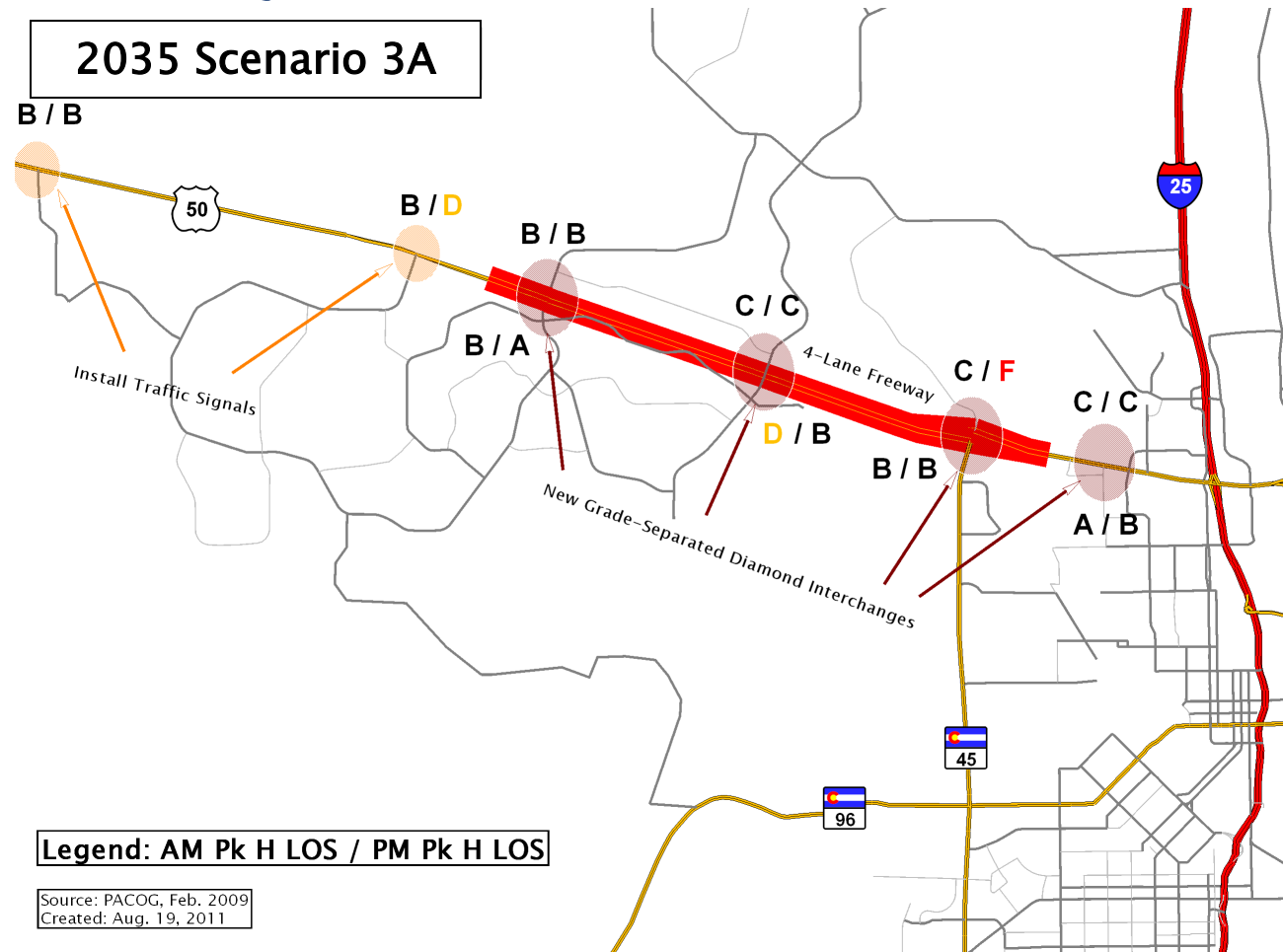


Figure B-4. Scenario 3A Schematic and Levels of Service

As shown in **Figure B-4**, Scenario 3A includes:

- Four-lane freeway from west of Main McCulloch Blvd. to BNSF crossing
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
 - Pueblo Blvd.
 - Baltimore Ave.
- New traffic signals at Swallows Rd. and West McCulloch Blvd.

2035 Scenario 3B - Four-Lane Freeway: West of Main McCulloch Blvd. to Railroad - Diamond Interchanges with Westbound-to-Southbound Flyover Ramps

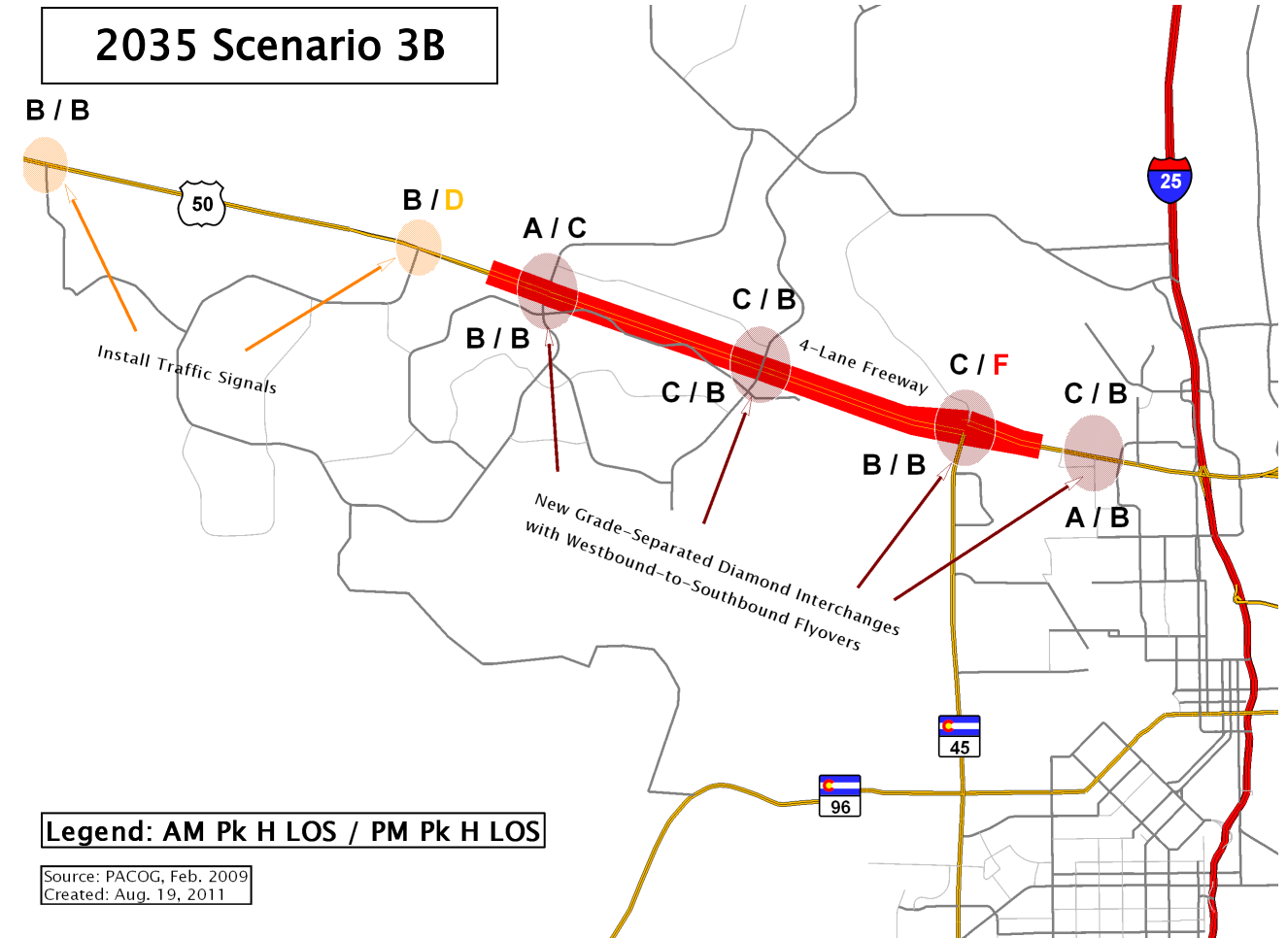


Figure B-5. Scenario 3B Schematic and Levels of Service

As shown in **Figure B-5**, Scenario 3B includes:

- Four-lane freeway from west of Main McCulloch Blvd. to BNSF crossing
- New grade-separated diamond interchanges with WB-to-SB flyovers at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
 - Pueblo Blvd. (SH 45)
 - Baltimore Ave.
- New traffic signals at Swallows Rd. and West McCulloch Blvd.



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2035 Scenario 3C – Four-Lane Freeway: West of Main McCulloch Blvd. to Railroad – SPUIs

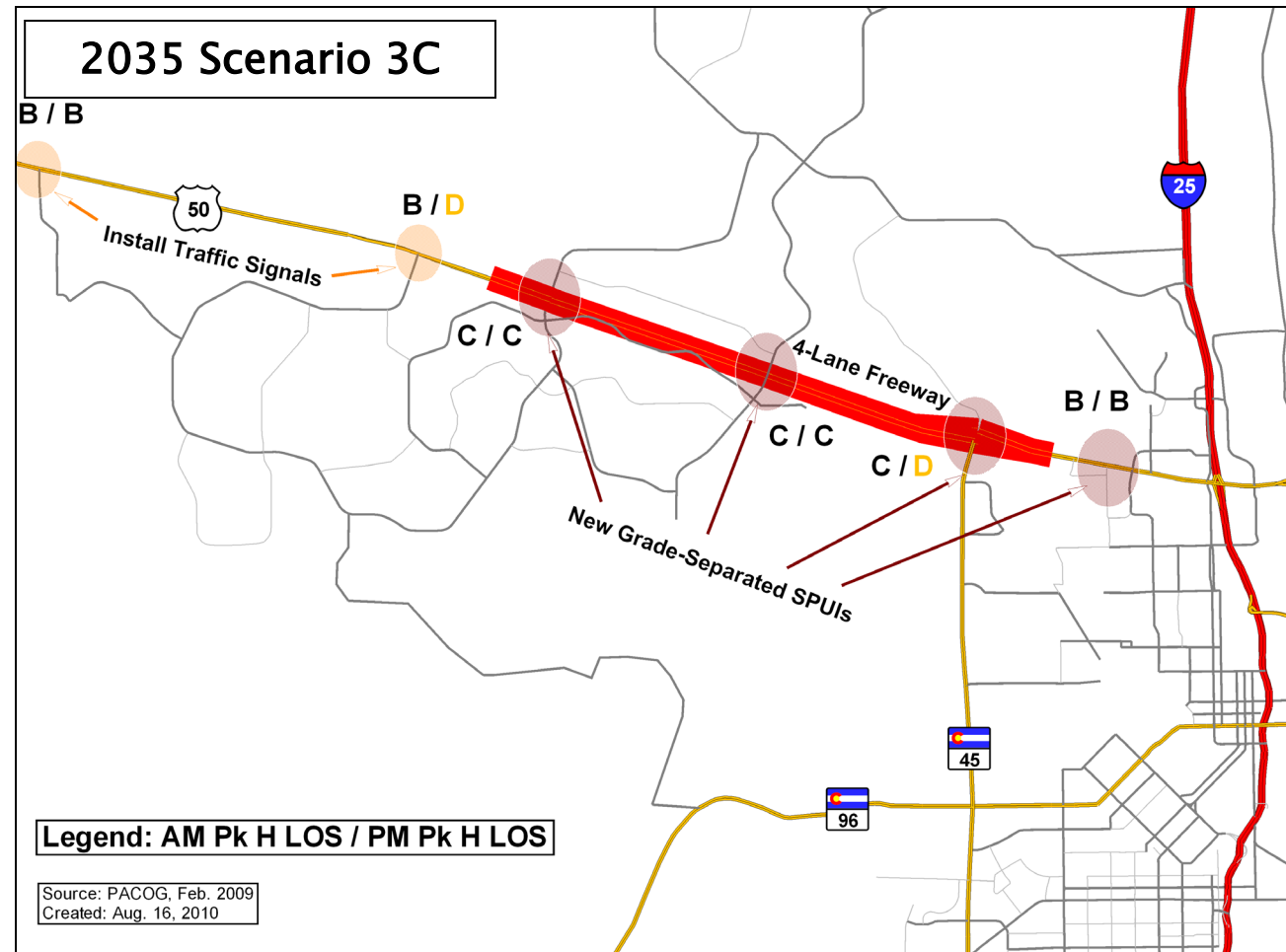


Figure B-6. Scenario 3C Schematic and Levels of Service

As shown in **Figure B-6**, Scenario 3C includes:

- Four-lane freeway from west of Main McCulloch Blvd. to BNSF crossing
- New grade-separated single-point urban interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
 - Pueblo Blvd. (SH 45)
 - Baltimore Ave.
- New traffic signals at Swallows Rd. and West McCulloch Blvd.

2035 Scenario 3D – Four-Lane Freeway: West of Main McCulloch Blvd. to Railroad – Diamond Interchanges and SPUI

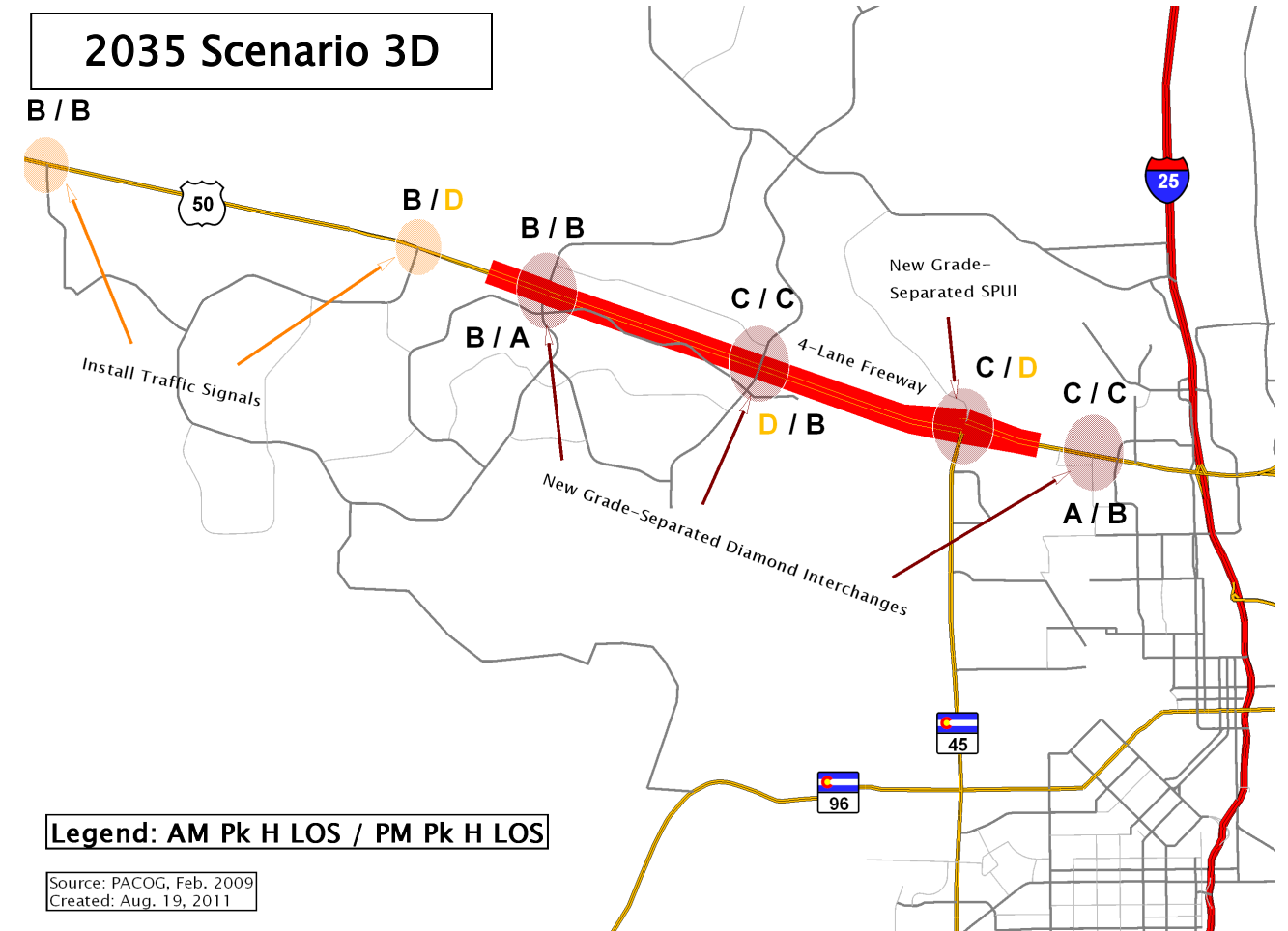


Figure B-7. Scenario 3D Schematic and Levels of Service

As shown in **Figure B-7**, Scenario 3D includes:

- Four-lane freeway from west of Main McCulloch Blvd. to BNSF crossing
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
 - Baltimore Ave.
- New grade-separated single-point urban interchange at US 50 and Pueblo Blvd. (SH 45)
- New traffic signals at Swallows Rd. and West McCulloch Blvd.

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2035 Scenario 3E - Four-Lane Freeway: Swallows Rd. to Railroad - Diamond Interchanges and SPUI

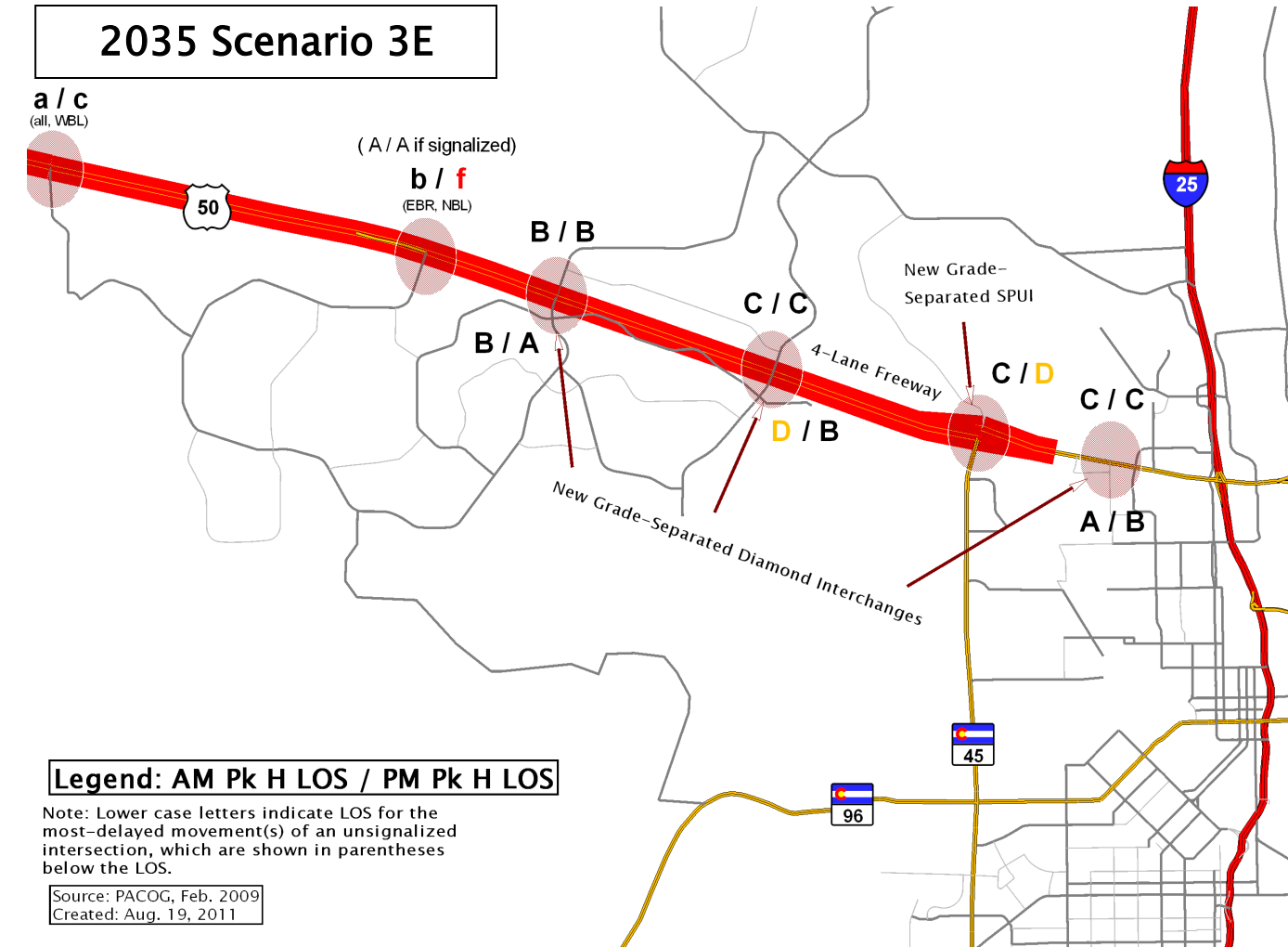


Figure B-8. Scenario 3E Schematic and Levels of Service

As shown in **Figure B-8**, Scenario 3E includes:

- Four-lane freeway from west of Main McCulloch Blvd. to BNSF crossing
- New grade-separated diamond interchanges at US 50 and
 - Swallows Rd.
 - West McCulloch Blvd.
 - Main McCulloch Blvd.
 - Purcell Blvd.
 - Baltimore Ave.
- New grade-separated SPUI at US 50 and Pueblo Blvd. (SH 45)

2035 Facility Type 3 Travel Patterns

Table B-6 shows the 2035 Facility Type 3 daily screenline volumes.

Table B-6. 2035 Facility Type 3 Daily Screenline Volumes

Roadway	Direction	2035 Facility Type 3 Four-Lane Freeway	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	12,000	-2%
US 50	EB	46,000	+7%
	WB	46,000	+7%
	Two Way	92,000	+7%
Juniper Rd.	EB	3,000	-42%
	WB	3,000	-38%
	Two Way	6,000	-39%
Screenline Total	Two Way	110,000	+2%
US 50 Percent of Screenline	Two Way	84%	+4%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	9,200	-3%
Dillon Dr. (West of Elizabeth)	Two Way	6,990	-3%
US 50	EB	47,000	+15%
	WB	46,000	+15%
	Two Way	93,000	+16%
24th St.	EB	5,700	-16%
	WB	5,500	-21%
	Two Way	11,200	-19%
18th St.	Two Way	630	-2%
11th St.	EB	5,300	-5%
	WB	5,000	0%
	Two Way	10,300	-2%
SH 96 (Thatcher Ave.)	EB	12,000	-8%
	WB	11,000	-8%
	Two Way	23,000	-8%
Screenline Total	Two Way	154,000	+5%
US 50 Percent of Screenline	Two Way	60%	+6%

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B.2.5 Facility Type 4 - Combined Local Improvements

2035 Scenario 4A - Combined Local Improvements - At-Grade Intersections

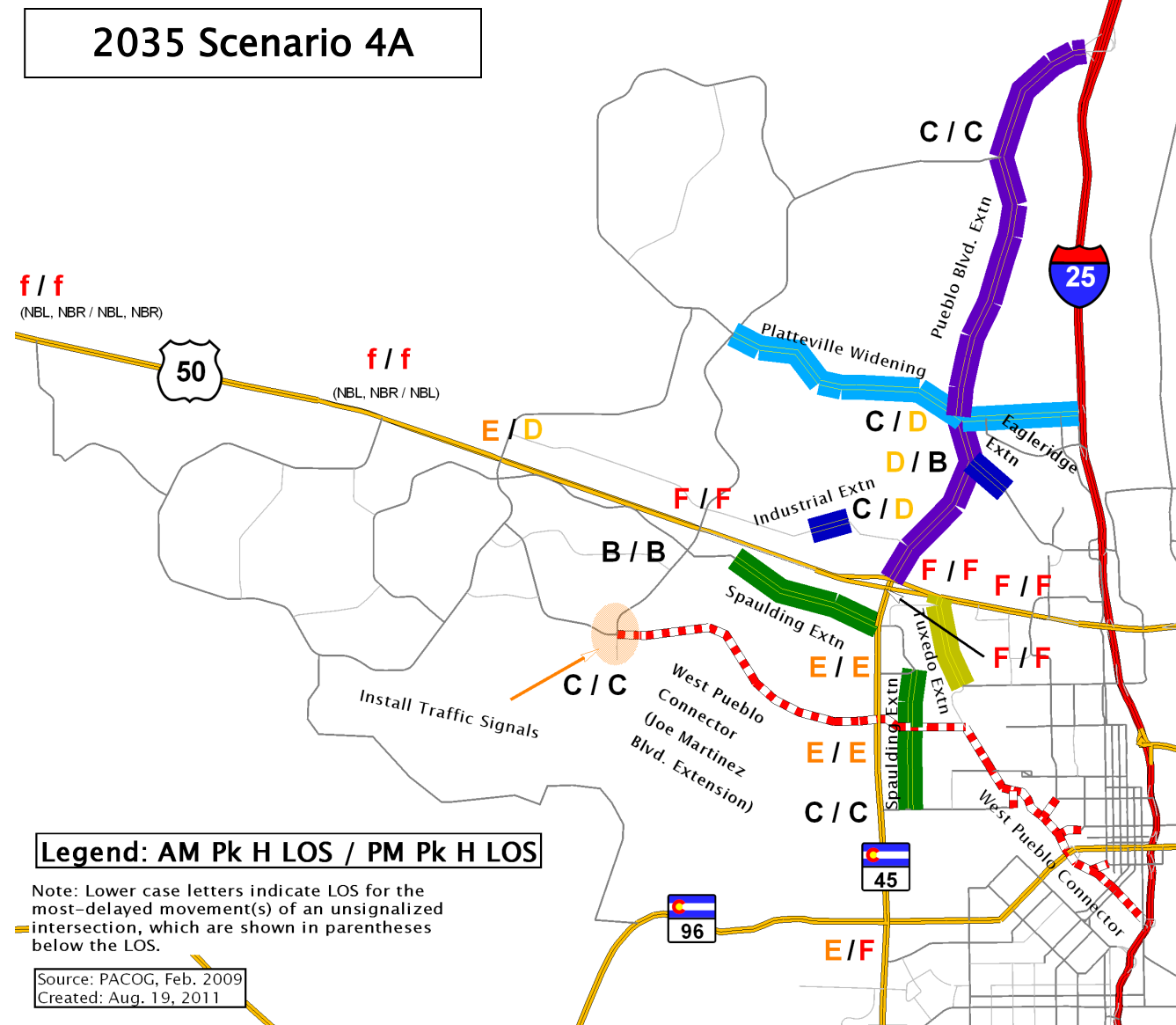


Figure B-9. Scenario 4A Schematic and Levels of Service

As shown in Figure B-9, Scenario 4A includes:

- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing

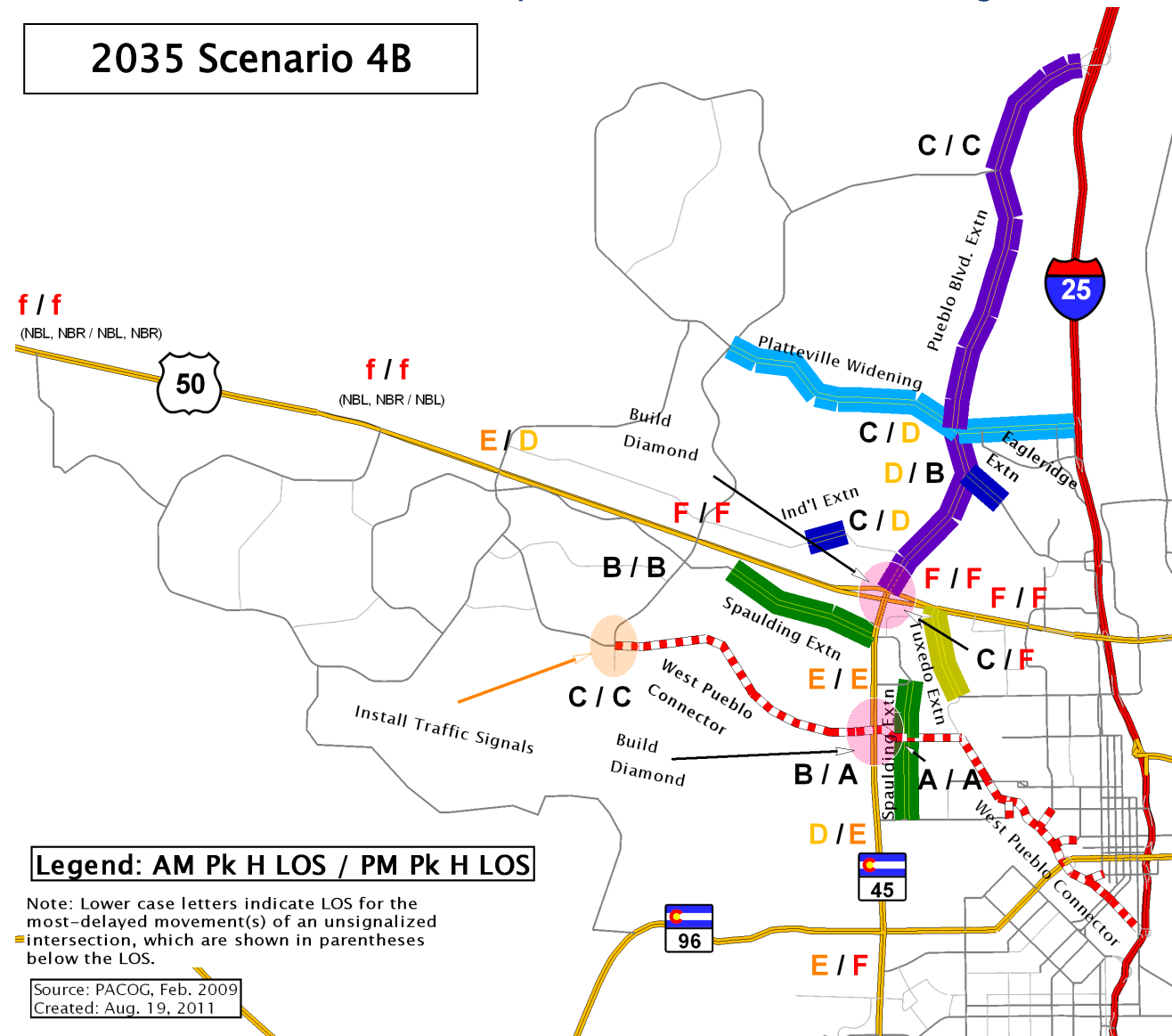
- Widen to four lanes from Purcell Blvd. to Dillon Dr.
- Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension:
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 4B - Combined Local Improvements - Diamond Interchanges

2035 Scenario 4B



- Four-lane Pueblo Blvd. Extension from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension:
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.
- New grade-separated diamond interchanges at Pueblo Blvd. (SH 45) and:
 - US 50
 - West Pueblo Connector (Joe Martinez Blvd. Extension/24th St.)

Figure B-10. Scenario 4B Schematic and Levels of Service

As shown in **Figure B-10**, Scenario 4B includes:

- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 4C - Combined Local Improvements - Diamond Interchanges with Flyover Ramps

2035 Scenario 4C

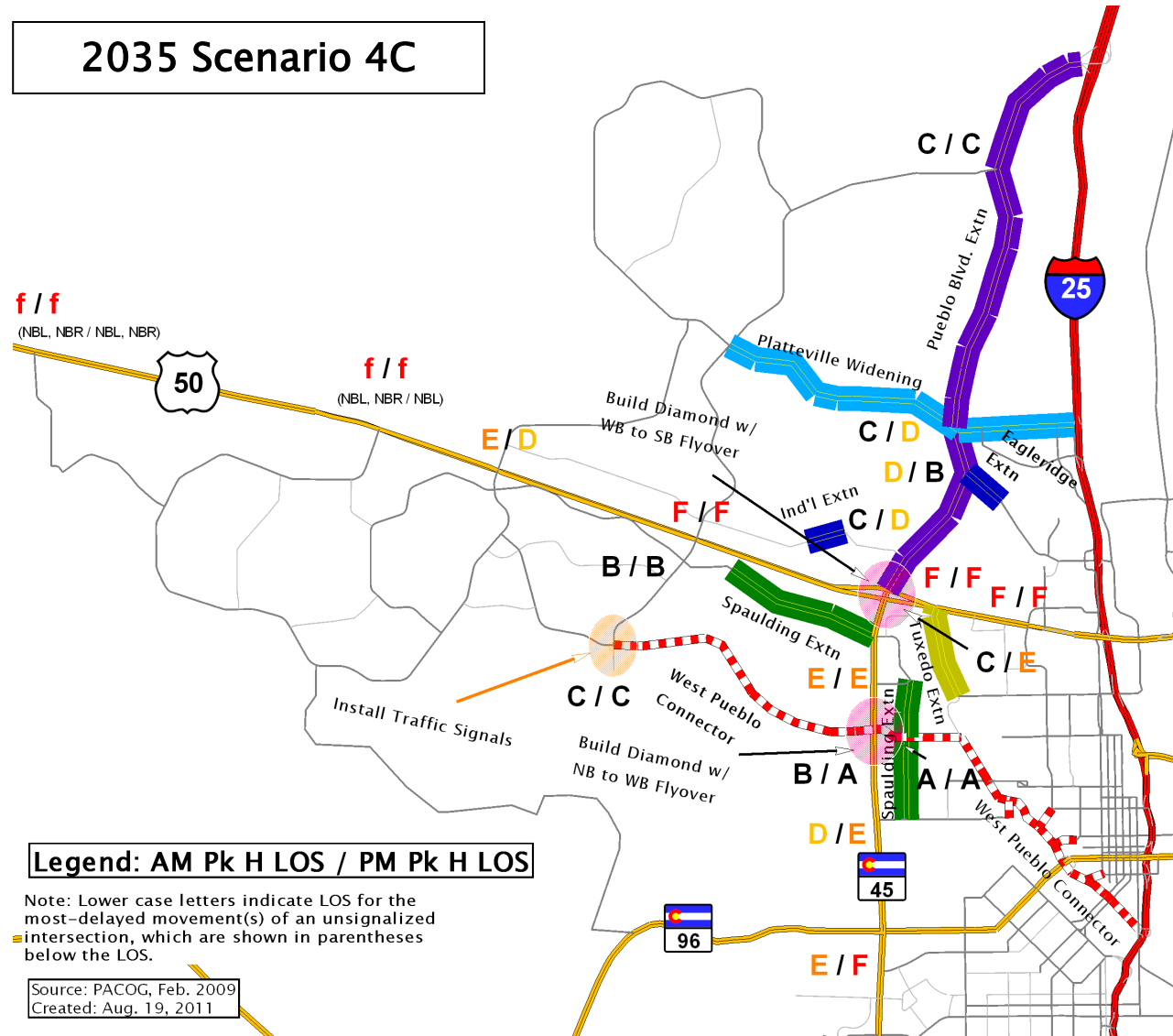


Figure B-11. Scenario 4C Schematic and Levels of Service

As shown in Figure B-11, Scenario 4C includes:

- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25

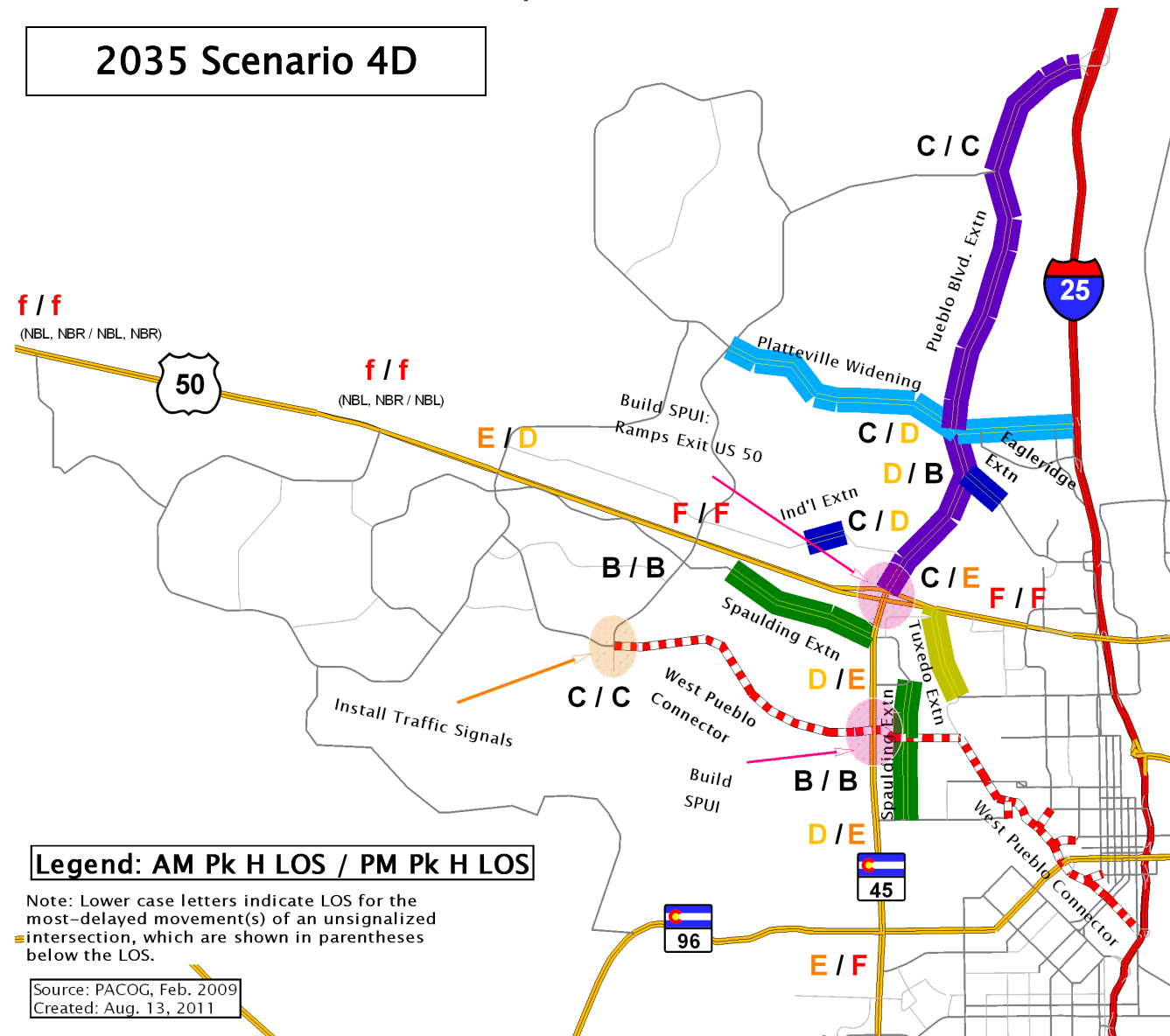
- Four-lane Pueblo Blvd. Extension from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension:
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.
- New grade-separated diamond interchanges with flyover ramps at Pueblo Blvd. (SH 45) and:
 - US 50 (WB-to-SB flyover ramp)
 - West Pueblo Connector (NB-to-WB flyover ramp)



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 4D - Combined Local Improvements - SPUIs

2035 Scenario 4D



- Four-lane Pueblo Blvd. Extension from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension:
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.
- New grade-separated SPUIs at Pueblo Blvd. (SH 45) and:
 - US 50 (exiting from US 50)
 - West Pueblo Connector (Joe Martinez Blvd. Extension/24th St.)

Figure B-12. Scenario 4D Schematic and Levels of Service

As shown in Figure B-12, Scenario 4D includes:

- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 4E – Combined Local Improvements – SPUI exits Pueblo Blvd. at US 50 – Diamond Interchange at Pueblo Blvd. (SH 45) and West Pueblo Connector

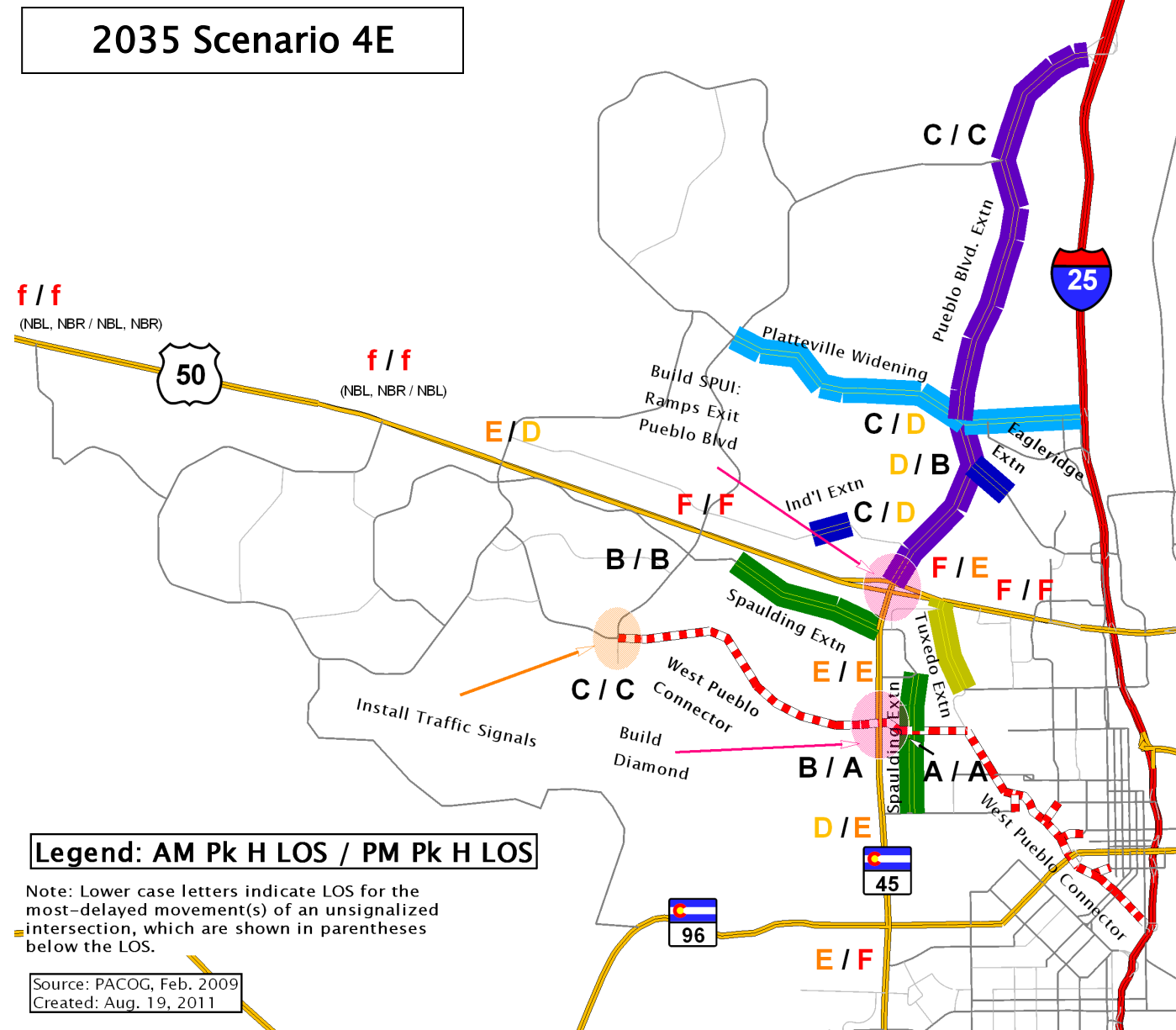


Figure B-13. Scenario 4E Schematic and Levels of Service

As shown in **Figure B-13**, Scenario 4E includes:

- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension. from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension:
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.
- New grade-separated SPUI exiting Pueblo Blvd. at US 50
- New grade-separated diamond interchange exiting Pueblo Blvd. (SH 45) at West Pueblo Connector (Joe Martinez Blvd. Extension/24th St.)

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 4F – Combined Local Improvements – Partial Cloverleaf (Parclo)
Interchange at Pueblo Blvd. and US 50 – Diamond Interchange at Pueblo Blvd. (SH 45) and
West Pueblo Connector

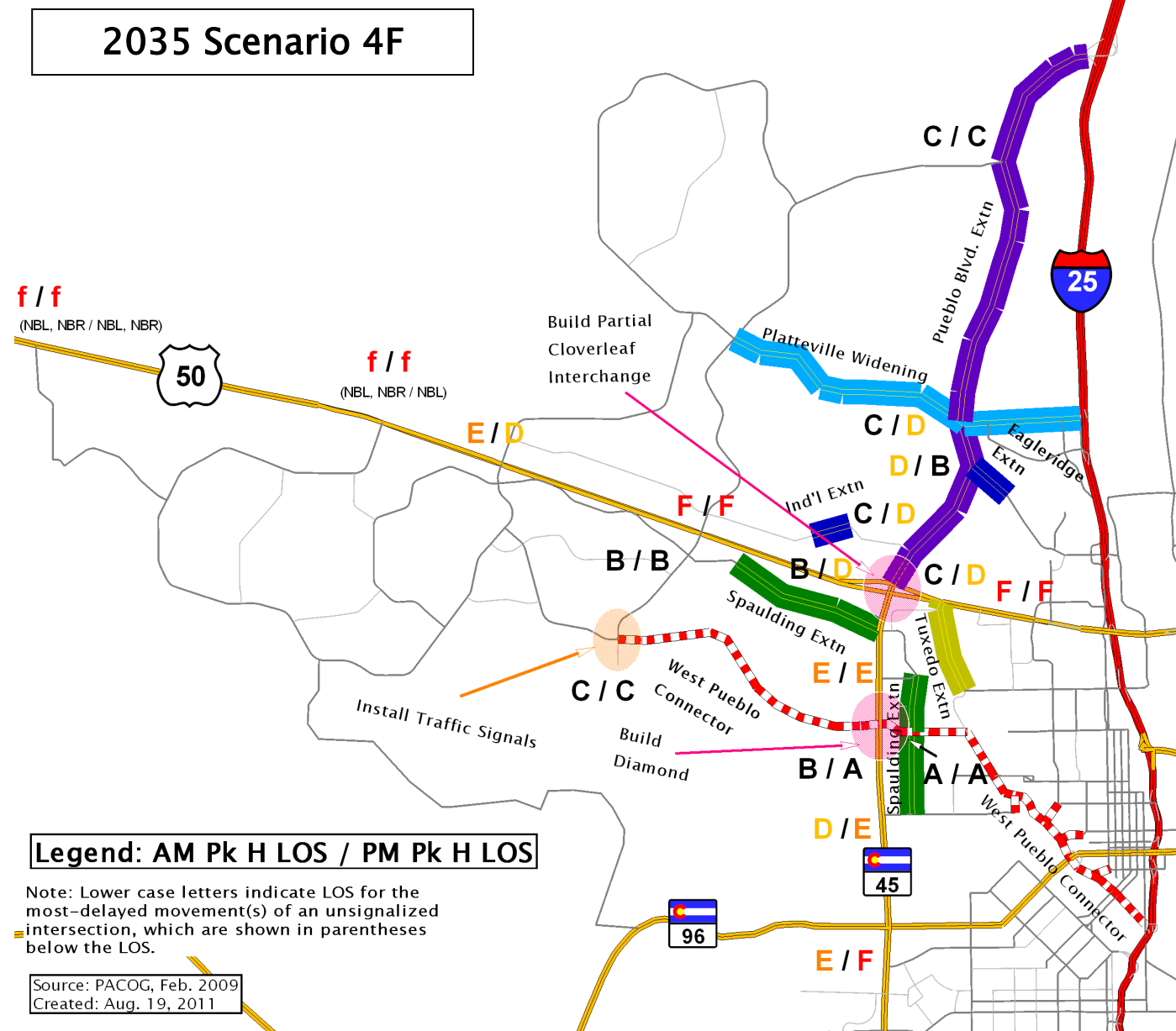


Figure B-14. Scenario 4F Schematic and Levels of Service

As shown in **Figure B-14**, Scenario 4F includes:

- Platteville Blvd. improvements (as above)
- Four-lane Pueblo Blvd. Extension from US 50 to I-25 (including current Purcell Blvd. alignment)
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- Two-lane Industrial Blvd. Extension to Wildhorse Rd.
- Four-lane Spaulding Ave. Extension (as above)
 - Through Honor Farm to Pueblo Blvd.
 - 31st St. to 11th St.
- Two-lane Tuxedo Blvd. Extension
- Reduced delays at 29th St. rail crossing from R2C2 rail relocation
- Four-lane West Pueblo Connector
- New traffic signals at:
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and:
 - ◆ Wildhorse Rd.
 - ◆ Eagleridge Blvd. Extension
 - ◆ Platteville Blvd.
 - ◆ Purcell Blvd.
- New grade-separated partial cloverleaf (Parclo) interchange at Pueblo Blvd. and US 50:
 - Pueblo Blvd. through movements are grade separated
 - Loop on-ramps in northwest and southeast quadrants
 - Two signalized intersections on US 50 at ramp terminals
- New grade-separated diamond interchange exiting Pueblo Blvd. (SH 45) at West Pueblo Connector (Joe Martinez Blvd. Extension/24th St.)



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Facility Type 4 Travel Patterns

Table B-7 shows the 2035 Facility Type 4 daily screenline volumes and the Pueblo Blvd. Extension volumes.

Table B-7. 2035 Facility Type 4 Daily Screenline Volumes and Pueblo Blvd. Extension Volumes

Roadway	Direction	2035 Facility Type 4 Combined Local Improvements	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	26,000	+113%
Industrial Blvd.	Two Way	7,100	N/A
US 50	EB	33,000	-23%
	WB	32,000	-26%
	Two Way	65,000	-24%
Spaulding Ave.	EB	2,500	N/A
	WB	2,300	N/A
	Two Way	4,800	N/A
Joe Martinez Blvd.	EB	5,400	N/A
	WB	4,900	N/A
	Two Way	10,300	N/A
Juniper Rd.	EB	1,600	-69%
	WB	1,400	-71%
	Two Way	2,900	-71%
Screenline Total	Two Way	116,000	+7%
US 50 Percent of Screenline	Two Way	56%	-24%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	13,000	+37%
Dillon Dr. (West of Elizabeth)	Two Way	4,400	-39%
Eagleridge Blvd. Extn.	Two Way	17,000	N/A
US 50	EB	27,000	-34%
	WB	28,000	-30%
	Two Way	55,000	-31%
Spaulding Ave.	Two Way	24,000	N/C

Roadway	Direction	2035 Facility Type 4 Combined Local Improvements	Percent Change from No Action
24th St.	EB	9,000	+32%
	WB	11,000	+57%
	Two Way	20,000	+44%
18th St.	Two Way	630	-2%
11th St.	EB	5,200	-7%
	WB	4,900	-2%
	Two Way	10,100	-4%
SH 96 (Thatcher Ave).	EB	12,000	-8%
	WB	11,000	-8%
	Two Way	23,000	-8%
Screenline Total	Two Way	150,000	+2%
US 50 Percent of Screenline	Two Way	37%	-18%
Pueblo Blvd. Extension			
South of I-25	Two Way	14,000	N/A
South of Purcell	Two Way	38,000	N/A
Eagleridge Extn. to Platteville	Two Way	55,000	N/A
Wildhorse to Eagleridge Extn.	Two Way	46,000	N/A
US 50 to Wildhorse	NB	37,000	N/A
	SB	31,000	N/A
	Two Way	68,000	N/A



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

B.2.6 2035 Facility Type 5 – Six-Lane Freeway: West of Main McCulloch Blvd. to Baltimore Ave. – Diamond Interchanges and SPUI

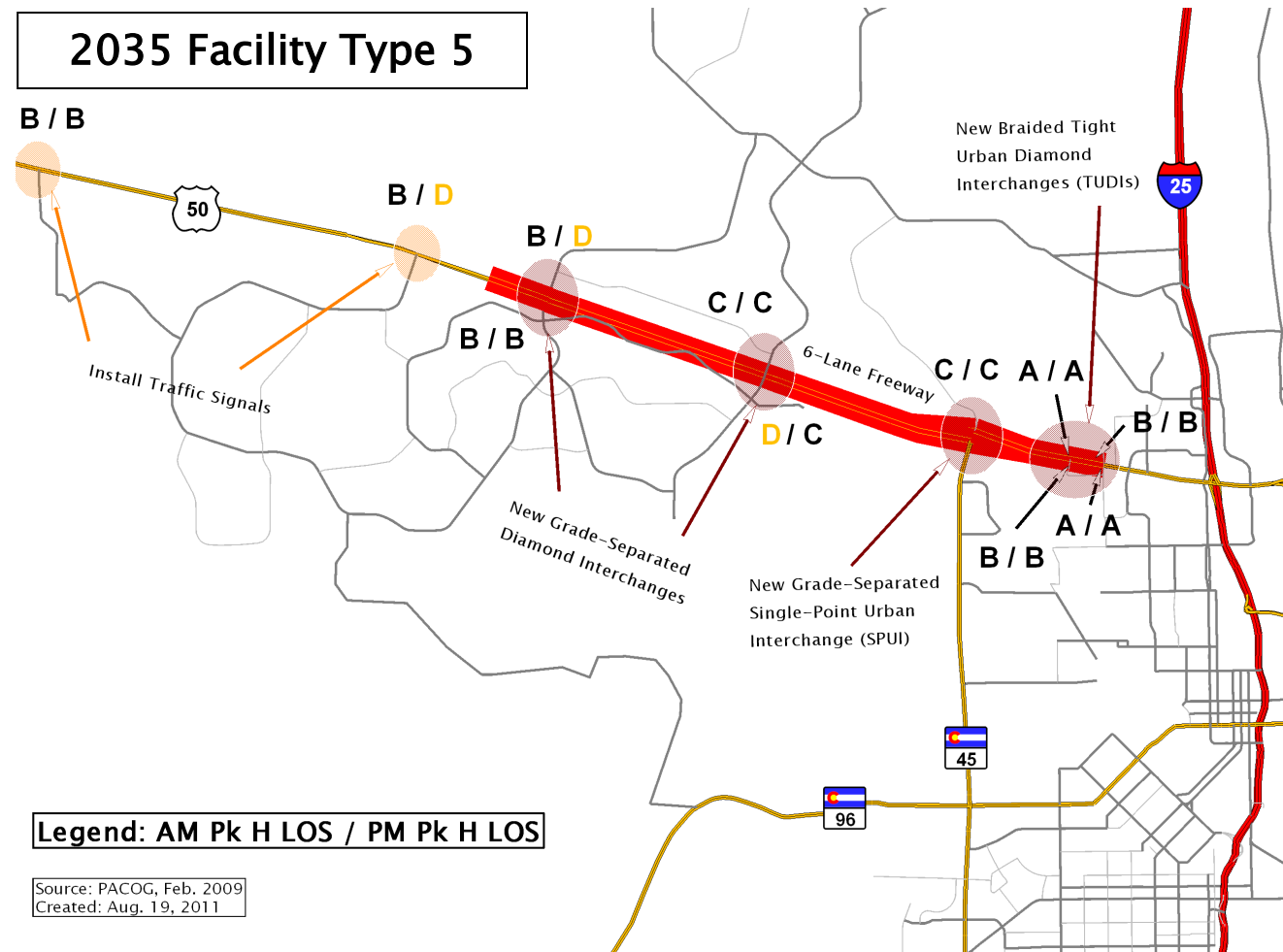


Figure B-15. Facility Type 5 Schematic and Levels of Service

As shown in **Figure B-15**, the network for Facility Type 5 includes:

- Six-lane freeway from west of Main McCulloch Blvd. to Baltimore Ave.
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
- New SPUI at US 50 and Pueblo Blvd. (SH 45) – Ramps Exit US 50
- New grade-separated, braided tight urban diamond interchanges (TUDIs) at Wills Blvd. and Baltimore Ave.
- New traffic signals at Swallows Rd. and West McCulloch Blvd.

Table B-8 shows the 2035 Facility Type 5 daily screenline volumes.

Table B-8. 2035 Facility Type 5 Daily Screenline Volumes

Roadway	Direction	2035 Facility Type 5 Six-Lane Freeway	Percent Change from No Action	Percent Change from Four-Lane Freeway
East of Purcell Blvd.				
Platteville Blvd.	Two Way	12,000	-2%	0%
US 50	EB	46,000	+7%	0%
	WB	46,000	+7%	0%
	Two Way	92,000	+7%	0%
Juniper Rd.	EB	2,600	-50%	-13%
	WB	2,600	-46%	-13%
	Two Way	5,200	-47%	-13%
Screenline Total	Two Way	109,000	+1%	-1%
US 50 Percent of Screenline	Two Way	84%	+5%	+1%
East of Pueblo Blvd. (SH 45)				
Platteville Blvd. (West of Elizabeth)	Two Way	8,700	-9%	-5%
Dillon Dr. (West of Elizabeth)	Two Way	6,500	-9%	-7%
US 50	EB	45,000	+10%	-4%
	WB	45,000	+13%	-2%
	Two Way	90,000	+13%	-3%
24th St.	EB	5,600	-18%	-2%
	WB	5,400	-23%	-2%
	Two Way	11,000	-21%	-2%
18th St.	Two Way	630	-2%	0%
11th St.	EB	5,300	-5%	0%
	WB	5,000	0%	0%
	Two Way	10,300	-2%	0%
SH 96 (Thatcher Ave.)	EB	12,000	-8%	0%
	WB	11,000	-8%	0%
	Two Way	23,000	-8%	0%
Screenline Total	Two Way	150,000	+2%	-3%
US 50 Percent of Screenline	Two Way	60%	+6%	-0%

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

B.2.7 Scenario 6 – Six-Lane Expressway and Pueblo Blvd. Extension

2035 Scenario 6A – Six-Lane Freeway: West of Main McCulloch Blvd. to West of Pueblo Blvd. and Pueblo Blvd. Extension to Platteville Blvd.

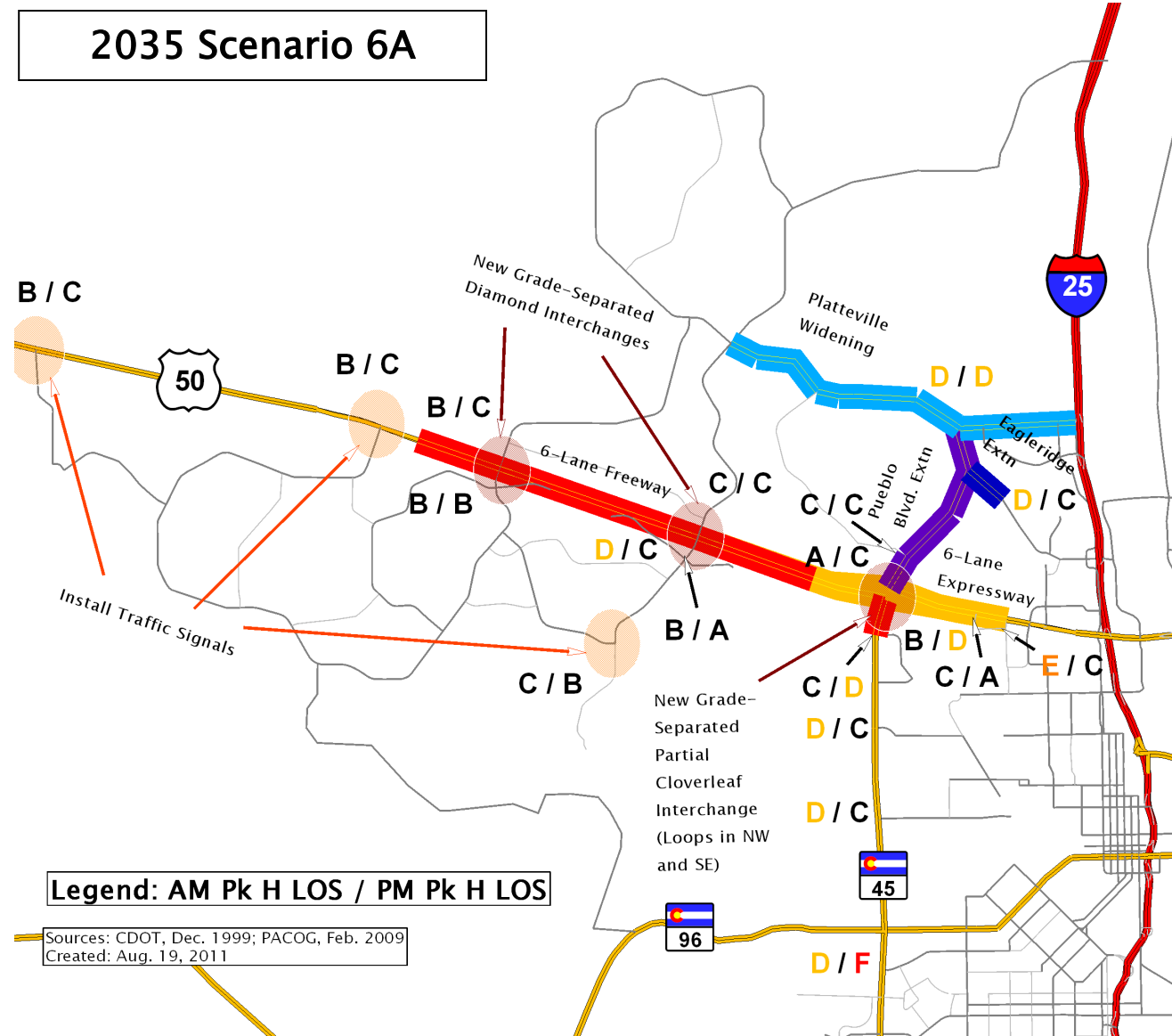


Figure B-16. Scenario 6A Schematic and Levels of Service

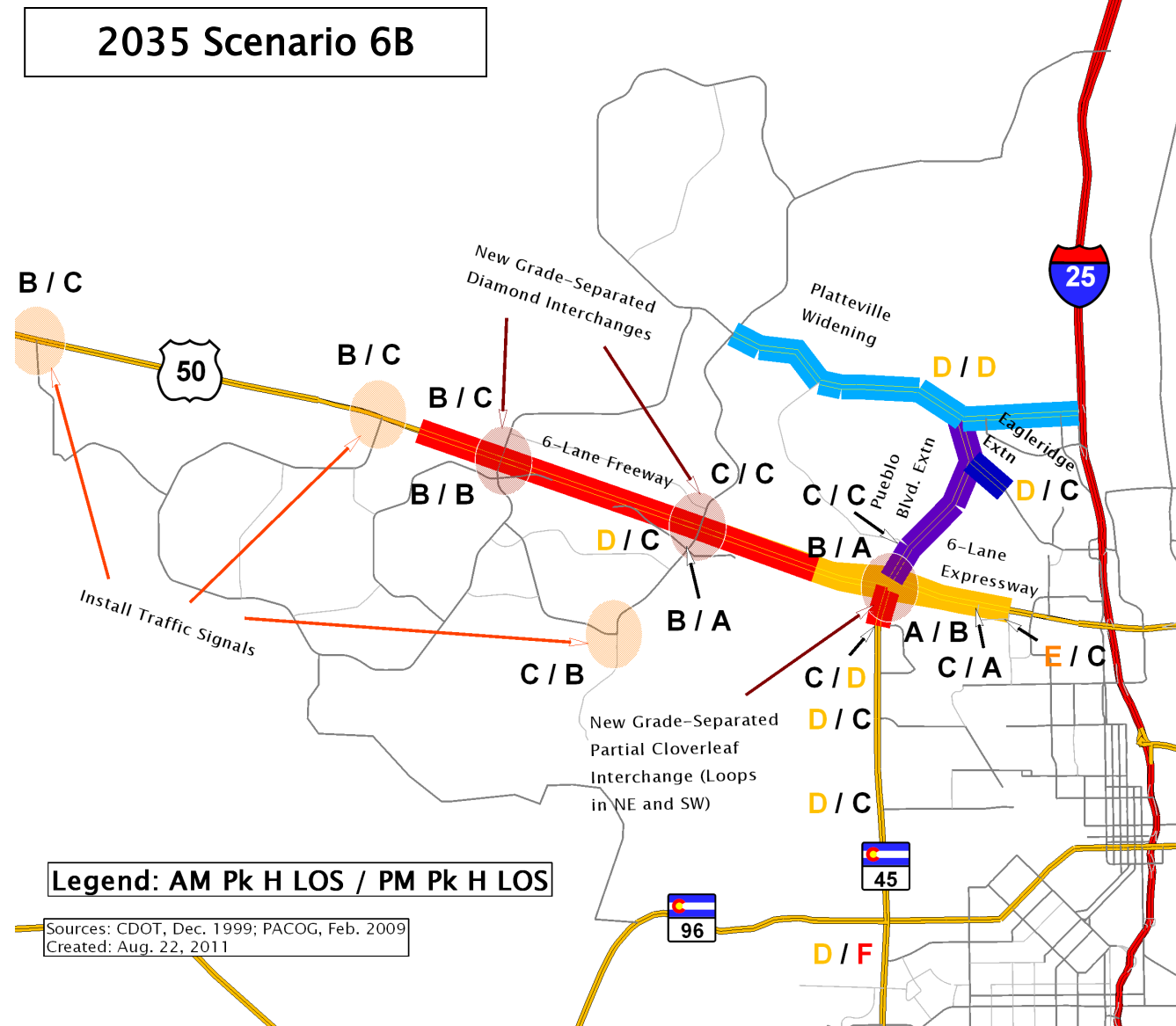
As shown on **Figure B-16**, Scenario 6A includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Six-lane freeway from west of Main McCulloch Blvd. to west of Pueblo Blvd.
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
- Six-lane expressway from west of Pueblo Blvd. to Baltimore Ave.
- New grade-separated Parclo interchange at Pueblo Blvd. and US 50:
 - Pueblo Blvd. through movements are grade separated
 - Loop on-ramps in NW and SE quadrants
 - Two signalized intersections on US 50 at ramp terminals
- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension from US 50 to Platteville Blvd.
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- New traffic signals at Pueblo Blvd. Extension and:
 - Wildhorse Rd.
 - Eagleridge Blvd. Extension
 - Platteville Blvd.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6B – Six-Lane Freeway: West of Main McCulloch Blvd. to West of Pueblo Blvd. and Pueblo Blvd. Extension to Platteville Blvd.



As shown in **Figure B-17**, Scenario 6B includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Six-lane freeway from west of Main McCulloch Blvd. to west of Pueblo Blvd.
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
- Six-lane expressway from west of Pueblo Blvd. to Baltimore Ave.
- New grade-separated Parclo interchange at Pueblo Blvd. and US 50
 - Pueblo Blvd. through movements are grade separated
 - Loop off-ramps in NE and SW quadrants
 - Two signalized intersections on US 50 at ramp terminals
- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension from US 50 to Platteville Blvd.
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- New traffic signals at Pueblo Blvd. Extension and:
 - Wildhorse Rd.
 - Eagleridge Blvd. Extension
 - Platteville Blvd.

Figure B-17. Scenario 6B Schematic and Levels of Service



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6C – Six-Lane Freeway: West of Main McCulloch Blvd. to West of Pueblo Blvd. and Pueblo Blvd. Extension to Platteville Blvd.

2035 Scenario 6C

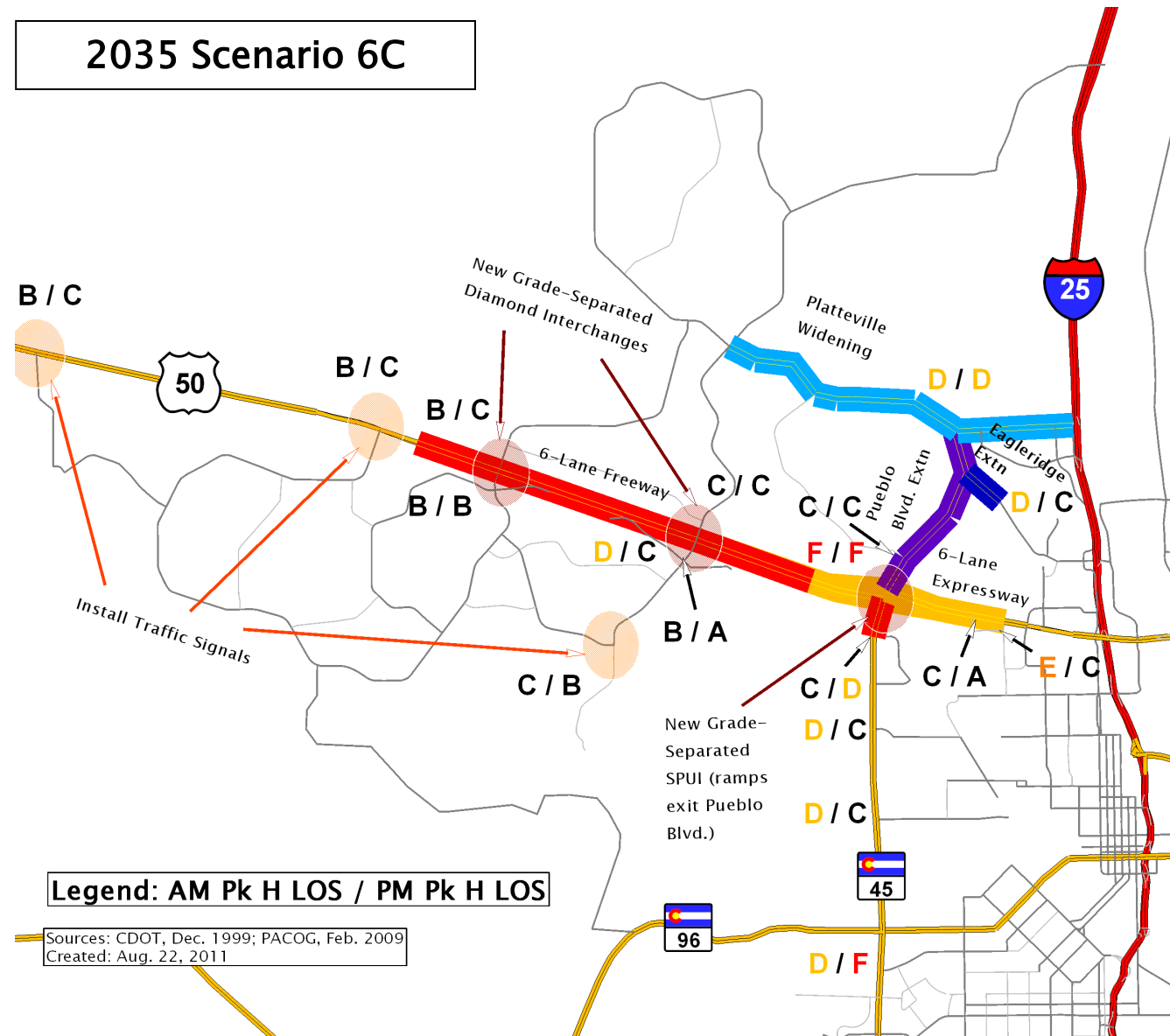


Figure B-18. Scenario 6C Schematic and Levels of Service

As shown in Figure B-18, Scenario 6C includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Six-lane freeway from West of Main McCulloch Blvd. to West of Pueblo Blvd.
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
- Six-lane expressway from west of Pueblo Blvd. to Baltimore Ave.
- New grade-separated SPUI at Pueblo Blvd. and US 50:
 - Pueblo Blvd. through movements are grade separated
 - Signalized intersection on US 50 at ramp terminals
- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension from US 50 to Platteville Blvd.
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- New traffic signals at Pueblo Blvd. Extension and:
 - Wildhorse Rd.
 - Eagleridge Blvd. Extension
 - Platteville Blvd.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6D – Six-Lane Freeway: West of Main McCulloch Blvd. to West of Pueblo Blvd. and Pueblo Blvd. Extension to Platteville Blvd.

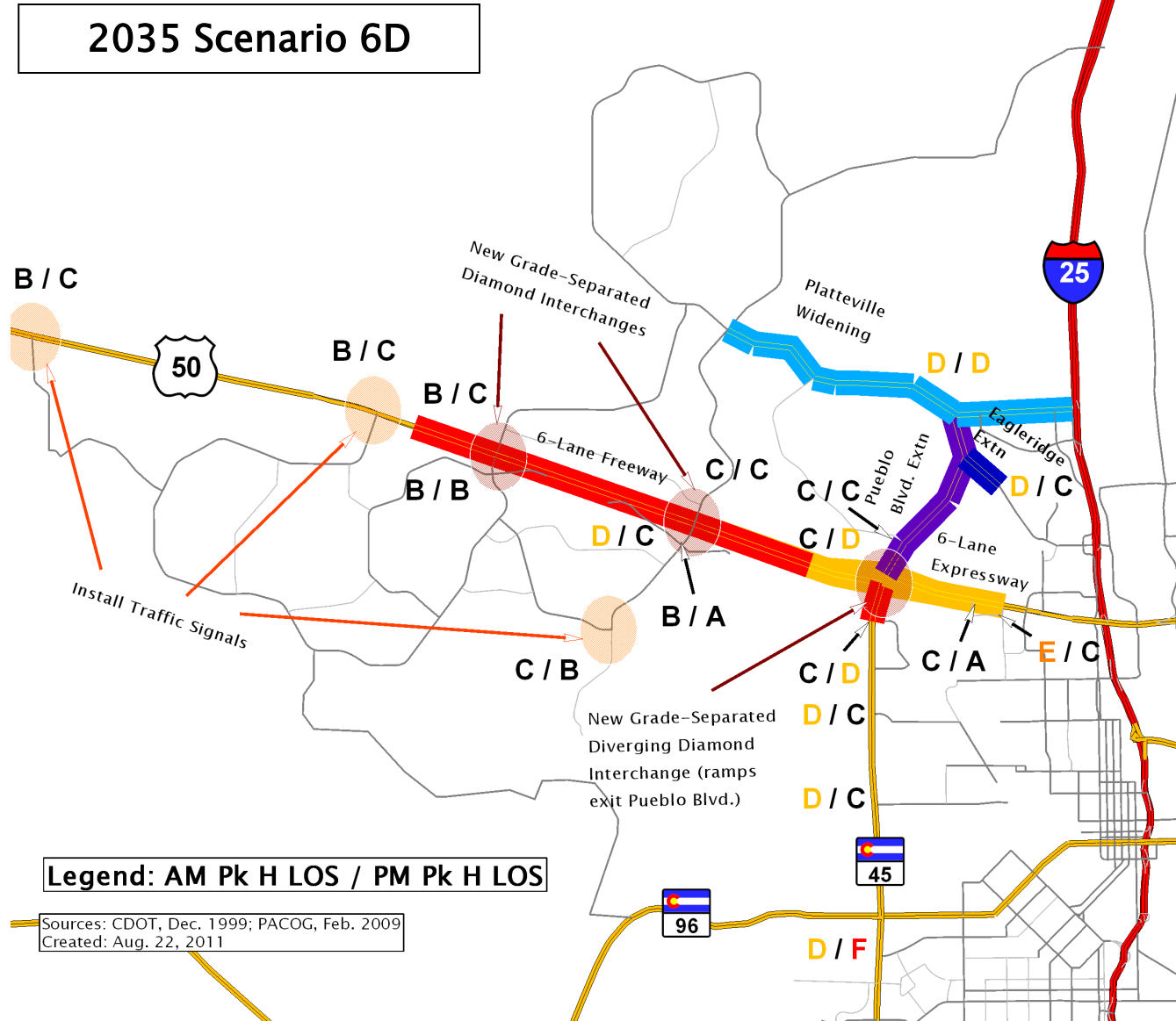


Figure B-19. Scenario 6D Schematic and Levels of Service

As shown in **Figure B-19**, Scenario 6D includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Six-lane freeway from west of Main McCulloch Blvd. to west of Pueblo Blvd.
- New grade-separated diamond interchanges at US 50 and
 - Main McCulloch Blvd.
 - Purcell Blvd.
- Six-lane expressway from west of Pueblo Blvd. to Baltimore Ave.
- New grade-separated diverging diamond interchanges at Pueblo Blvd. and US 50:
 - Pueblo Blvd. through movements are grade separated
 - Signalized intersection where US 50 EB and WB traffic cross over
- Platteville Blvd. improvements:
 - Upgrade to principal arterial from Purcell Blvd. to I-25
 - Install grade separation at BNSF crossing
 - Widen to four lanes from Purcell Blvd. to Dillon Dr.
 - Widen to six lanes from Dillon Dr. to I-25
- Four-lane Pueblo Blvd. Extension from US 50 to Platteville Blvd.
- Four-lane Eagleridge Blvd. Extension to Pueblo Blvd.
- New traffic signals at Pueblo Blvd. Extension and:
 - Wildhorse Rd.
 - Eagleridge Blvd. Extension
 - Platteville Blvd.

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6E – Six-Lane Freeway: West of Main McCulloch Blvd. to West of Pueblo Blvd. and Pueblo Blvd. Extension to Platteville Blvd.

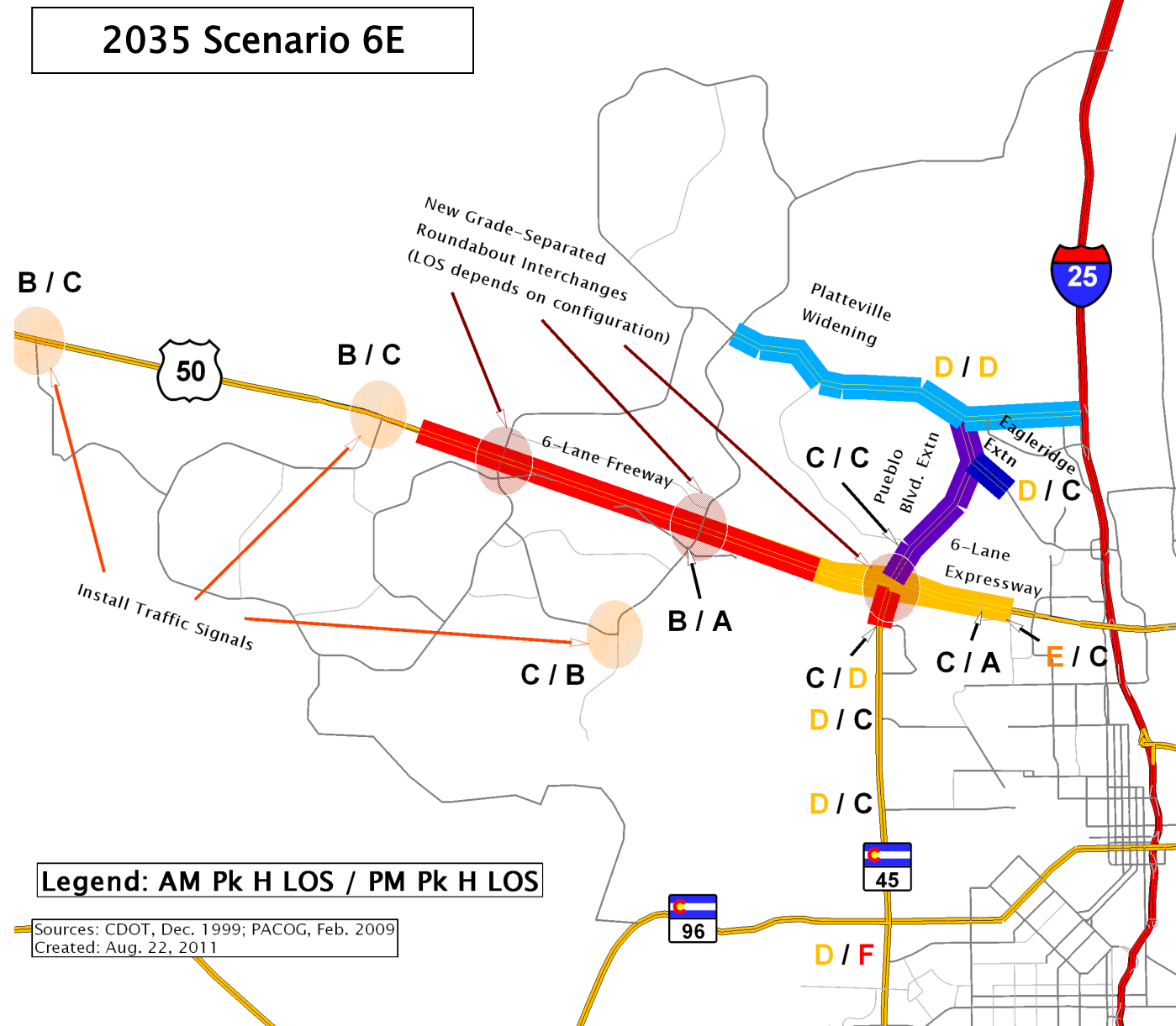


Figure B-20. Scenario 6E Schematic and Levels of Service

Figure B-20 shows the schematic and levels of service for Scenario 6E.

Capacity Analysis of Grade-Separated Roundabouts

Table B-9 shows the range of hourly capacity of roundabout intersections. The actual capacity depends on the relative fractions of entering and circulating traffic. The TAT felt that one- and two-lane roundabouts would be appropriate for the Pueblo area; however, they felt that three- and more lane roundabouts would be a safety hazard. The study team then compared peak hour turning movements for various configurations against the highest capacity for a two-lane roundabout. The configurations examined included both two-level roundabout interchanges, where US 50 or crossing road through movements are grade-separated, and three-level roundabout interchanges, where through movements for both US 50 and the crossing road are grade-separated. This comparison is shown in Table B-10, where volumes greater than capacity are shown by red cells.

Table B-10 assumes that bypass lanes are provided for all right turns.

Table B-9. Circulating Traffic Capacity of Roundabouts

Size	Capacity (veh/h)	
1 lane	1,200	to 1,800
2 lanes	2,400	to 3,400

Note: Capacity range based on zero circulating volume to only circulating volume.

Table B-10. 2035 Scenario 6 Circulating Volumes (veh/h) at Three Intersections

Intersection and Movements Separated	AM Peak Hour	PM Peak Hour
Main McCulloch Blvd. – US 50 Grade Separated	3,910	3,140
Main McCulloch Blvd. – All Through Movements Grade Separated	1,140	1,390
Purcell Blvd. – US 50 Grade Separated	3,340	3,600
Purcell Blvd. – All Through Movements Grade Separated	1,720	2,360
Pueblo Blvd. (SH 45) – US 50 Grade Separated	5,900	9,790
Pueblo Blvd. (SH 45) – Pueblo Blvd. Grade Separated	6,440	6,590
Pueblo Blvd. (SH 45) – All Through Movements Grade Separated	1,600	1,990

Legend:

Indicates demand in excess of two-lane roundabout capacity (3,400 vehicles per hour)

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6F - Six-Lane Expressway with Two-Leg Continuous Flow Intersections and Pueblo Blvd. Extension to Platteville Blvd.

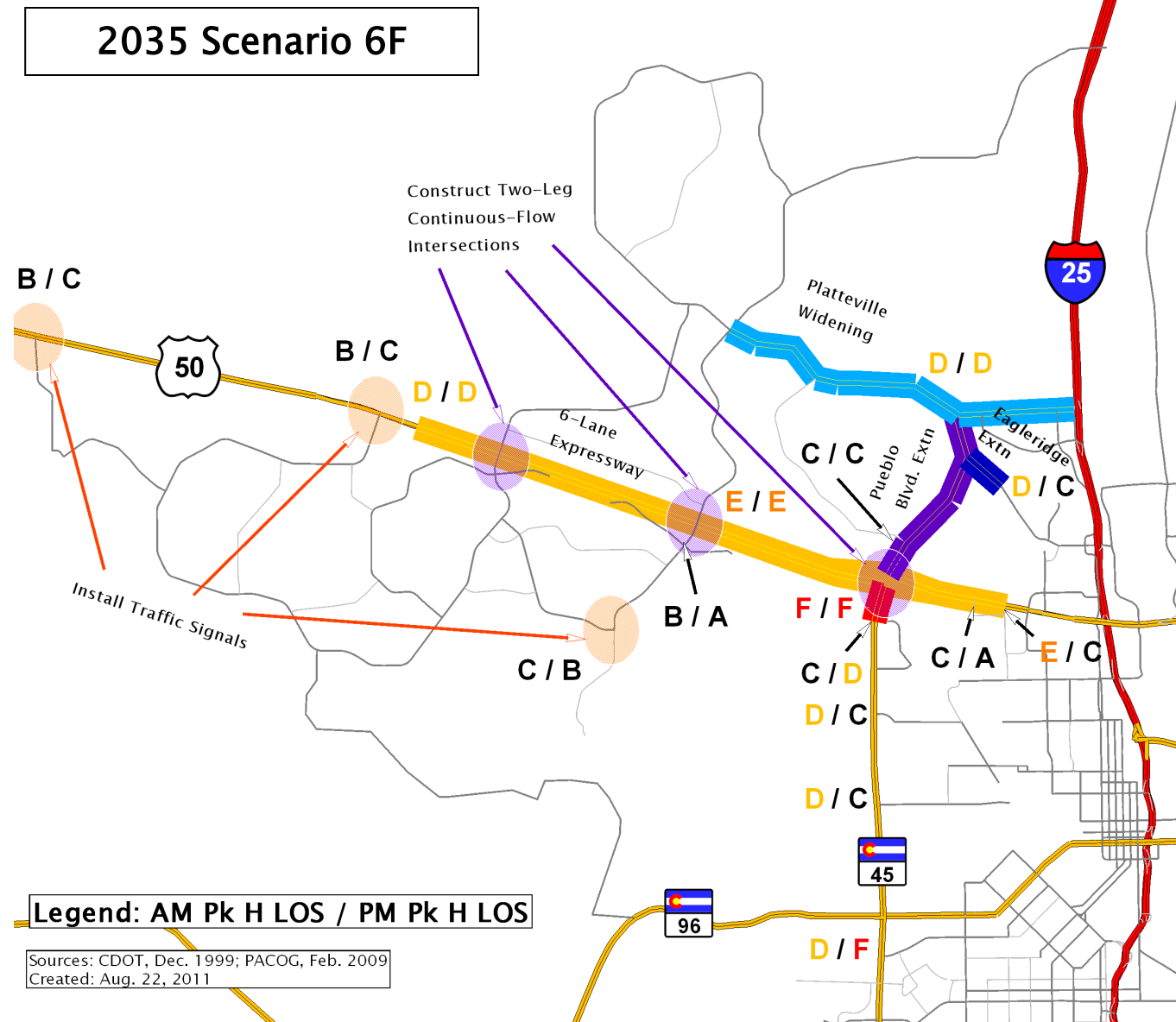


Figure B-21. Scenario 6F Schematic and Levels of Service

Figure B-21 shows the Scenario 6F schematic and levels of service. Figure B-22 provides a simulation of a two-leg continuous flow intersection.

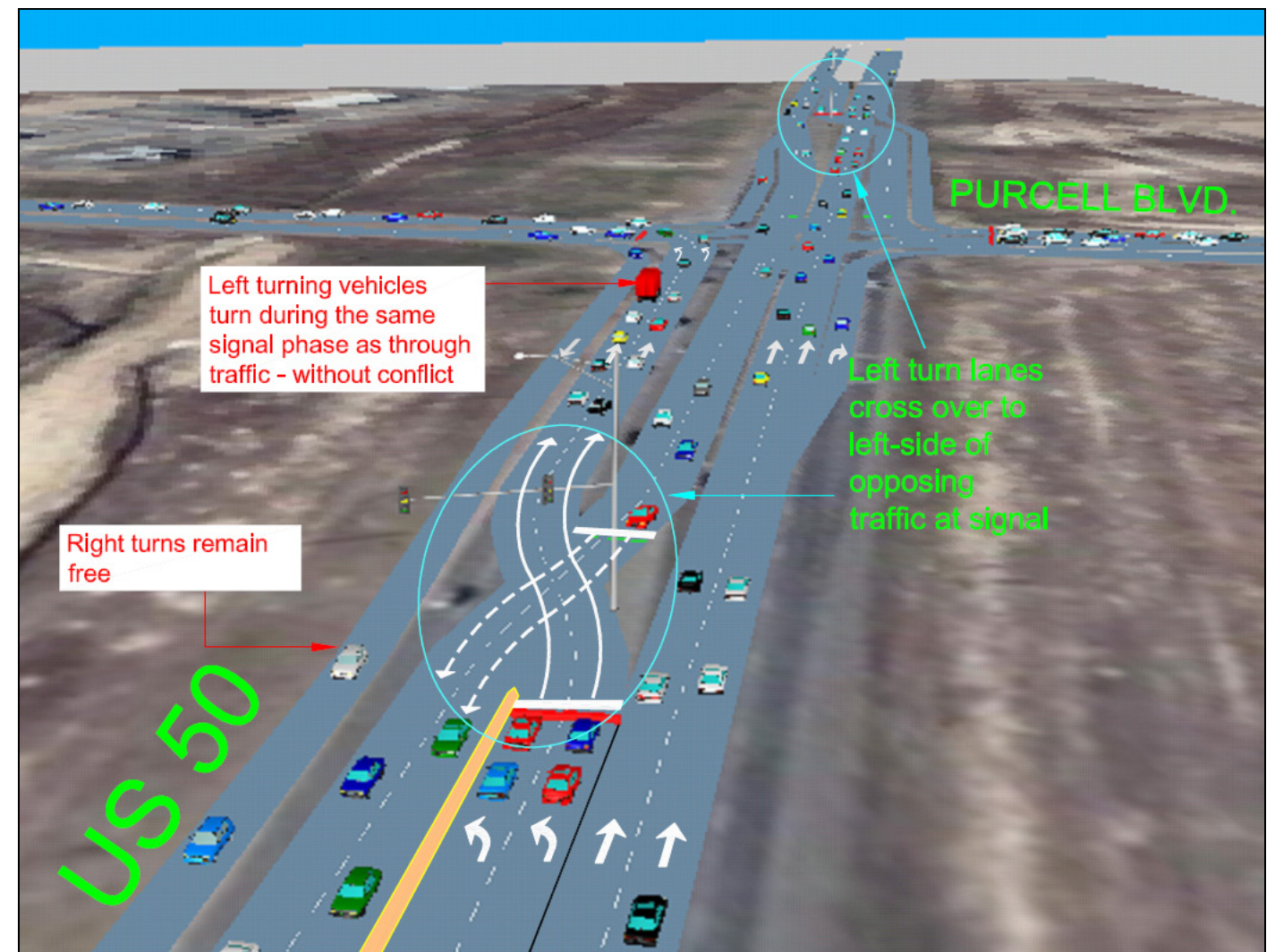


Figure B-22. Simulation of a Two-Leg Continuous Flow Intersection

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 6G - Six-Lane Expressway with Two- and Four-Leg Continuous Flow Intersections and Pueblo Blvd. Extension to Platteville Blvd.

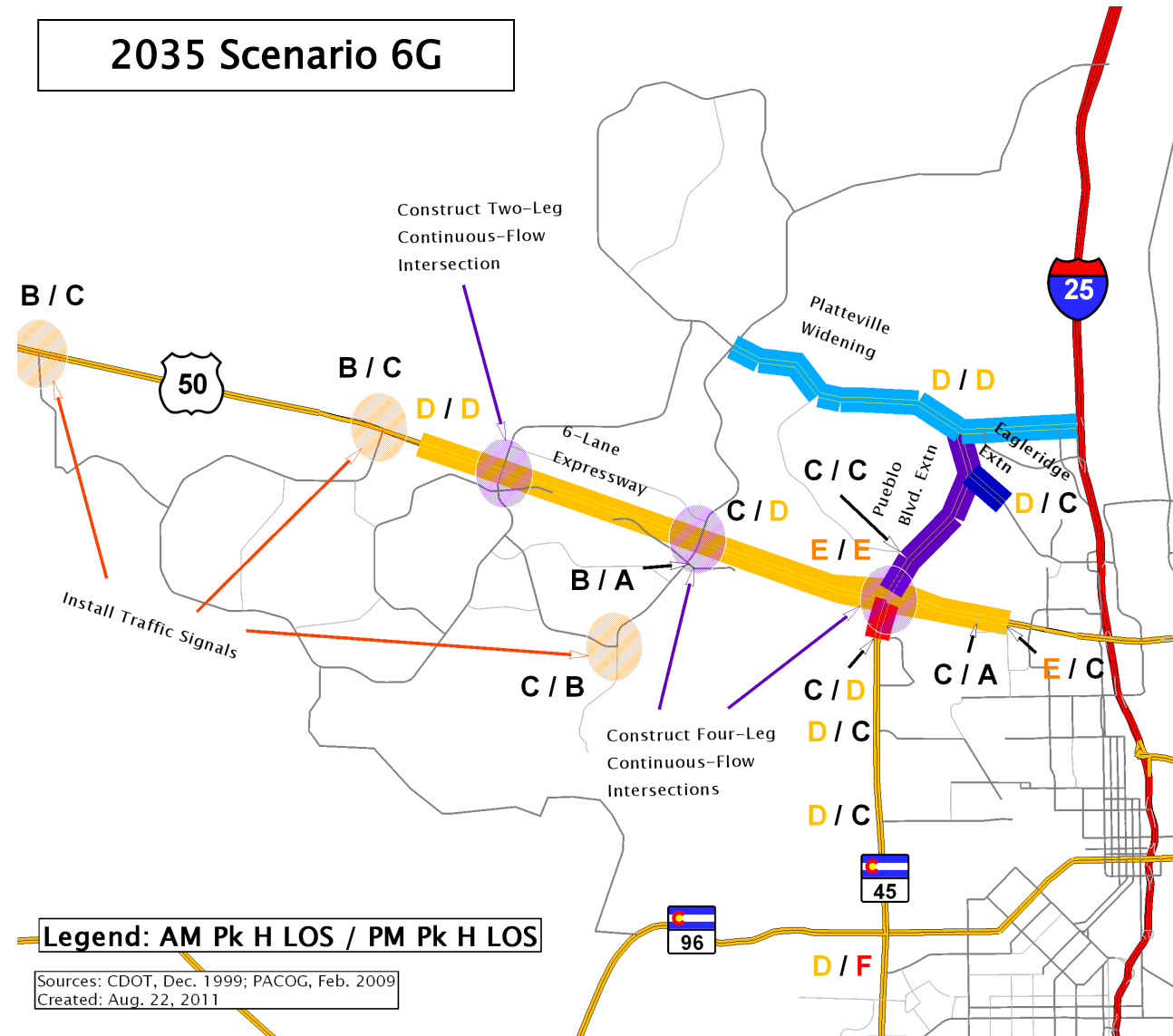


Figure B-23. Scenario 6G Schematic and Levels of Service

As shown in Figure B-23, Scenario 6G includes:

- New traffic signals at Swallows Rd. and West McCulloch Blvd.
- Six-lane expressway from West of Main McCulloch Blvd. to Baltimore Ave.
- Continuous flow intersections at Main McCulloch Blvd., Purcell Blvd, and Pueblo Blvd.
 - At grade
 - Left turning traffic crosses oncoming traffic in advance of signal
 - Left turning traffic completes turn to side street during same phase as main through traffic

2035 Scenario 6 Traffic Patterns

Table B-11 shows the 2035 Scenario 6 daily screenline volumes and Pueblo Blvd. Extension volumes.

Table B-11. 2035 Scenario 6 Daily Screenline Volumes and Pueblo Blvd. Extension Volumes

Roadway	Direction	2035 Scenario 6 Six-Lane Freeway and Pueblo Blvd. Extn	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	32,000	+162%
US 50	EB	44,000	+2%
	WB	44,000	+2%
	Two Way	88,000	+2%
Juniper Rd.	EB	1,400	-73%
	WB	2,400	-50%
	Two Way	3,700	-63%
Screenline Total	Two Way	124,000	+15%
US 50 Percent of Screenline	Two Way	71%	-9%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	15,000	+58%
Dillon Dr. (West of Elizabeth)	Two Way	3,600	-50%
Eagleridge Blvd. Extn.	Two Way	14,000	N/A
US 50	EB	34,000	-17%
	WB	34,000	-15%
	Two Way	68,000	-15%
24th St.	EB	6,000	-12%
	WB	6,400	-9%
	Two Way	12,300	-12%
18th St.	Two Way	630	-2%
11th St.	EB	5,400	-4%
	WB	5,200	+4%
	Two Way	10,600	+1%
SH 96 (Thatcher Ave.)	EB	12,000	-8%
	WB	12,000	0%
	Two Way	23,000	-8%
Screenline Total	Two Way	133,000	-10%
US 50 Percent of Screenline	Two Way	51%	-3%
Pueblo Blvd. Extension			
Eagleridge Extn. to Platteville	Two Way	58,000	N/A
Wildhorse to Eagleridge Extn.	Two Way	47,000	N/A
US 50 to Wildhorse	NB	34,000	N/A
	SB	28,000	N/A
	Two Way	61,000	N/A

50 US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

B.2.8 Scenario 7 – Six-Lane Expressway with Pueblo Blvd. Extension and West Pueblo Connector

2035 Scenario 7A – Signalized Intersections at US 50 and Main McCulloch Blvd. and at Pueblo Blvd. (SH 45) and West Pueblo Connector

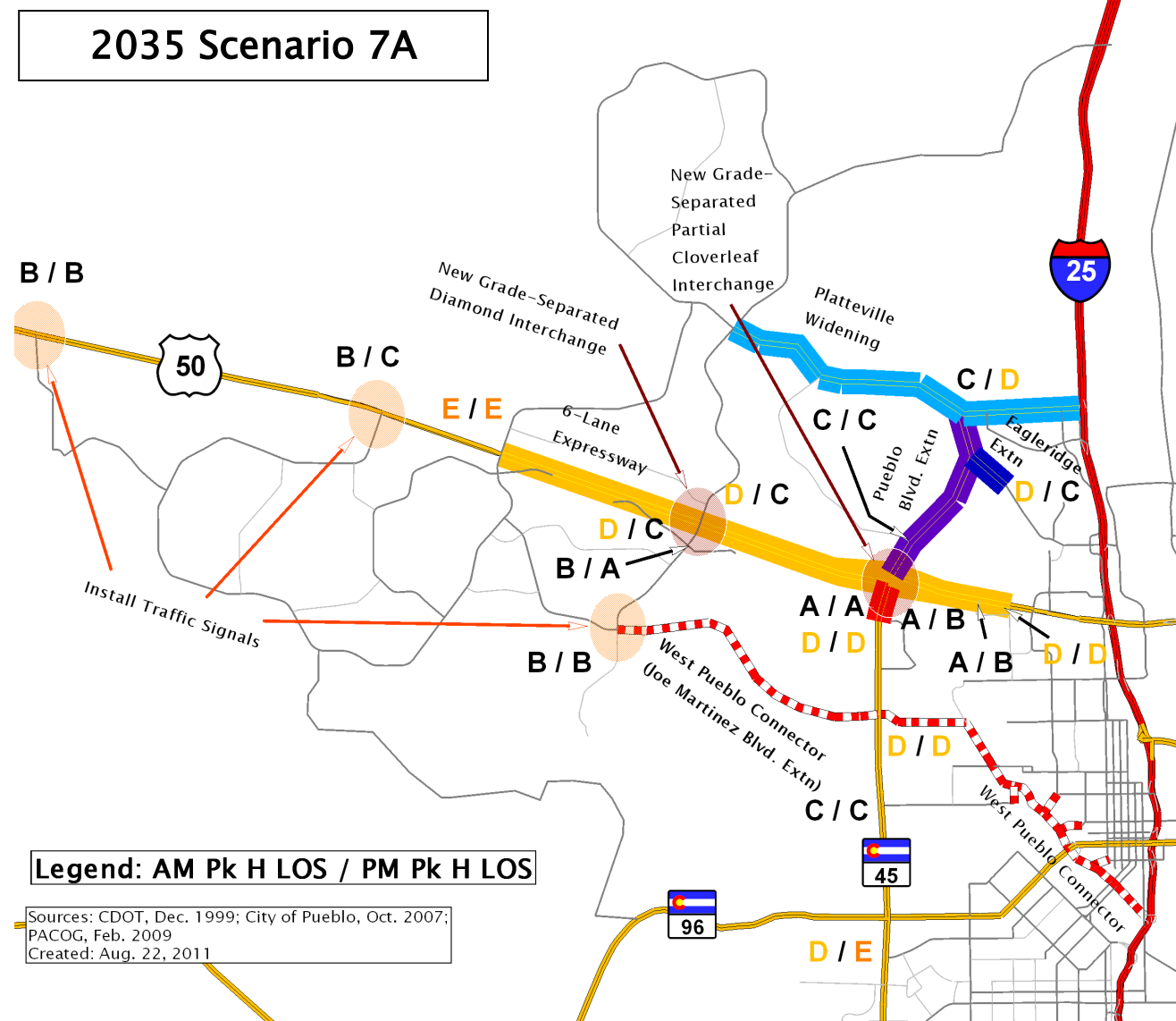


Figure B-24. Scenario 7A Schematic and Levels of Service

As shown in **Figure B-24**, Scenario 7A includes:

- New traffic signals at:
 - US 50 and Swallows Rd.
 - US 50 and West McCulloch Blvd.
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and Wildhorse Rd.
 - Pueblo Blvd. Extension and Eagleridge Blvd. Extension
 - Pueblo Blvd. Extension and Platteville Blvd.
- New grade-separated diamond interchange at US 50 and Purcell Blvd.
- New grade-separated Parclo interchange at Pueblo Blvd. and US 50
 - Pueblo Blvd. through movements are grade separated
 - Loop on-ramps in northwest and southeast quadrants
 - Two signalized intersections on US 50 at ramp terminals



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 7B – Diamond Interchanges at US 50 and Main McCulloch Blvd. and at Pueblo Blvd. (SH 45) and West Pueblo Connector

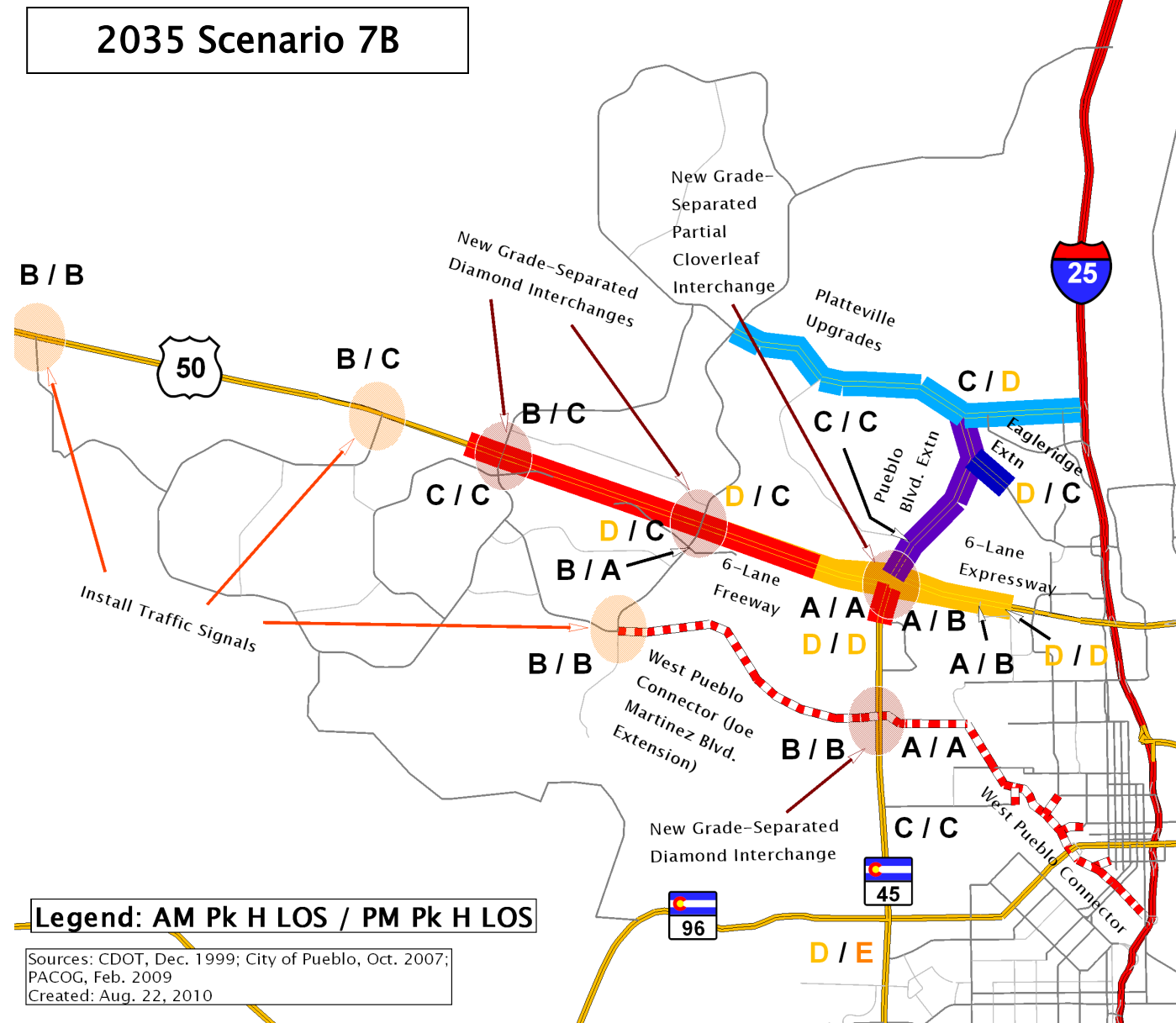


Figure B-25. Scenario 7B Schematic and Levels of Service

As shown in **Figure B-25**, Scenario 7B includes:

- New traffic signals at:
 - US 50 and Swallows Rd.
 - US 50 and West McCulloch Blvd.
 - Purcell Blvd. and Joe Martinez Blvd.
 - Pueblo Blvd. Extension and Wildhorse Rd.
 - Pueblo Blvd. Extension and Eagleridge Blvd. Extension
 - Pueblo Blvd. Extension and Platteville Blvd.
- New grade-separated diamond interchanges at:
 - US 50 and Main McCulloch Blvd.
 - US 50 and Purcell Blvd.
 - Pueblo Blvd. (SH 45) and West Pueblo Connector
- New grade-separated Parclo interchange at Pueblo Blvd. and US 50
 - Pueblo Blvd. through movements are grade separated
 - Loop on-ramps in northwest and southeast quadrants
 - Two signalized intersections on US 50 at ramp terminals



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

2035 Scenario 7 Traffic Patterns

Table B-12 shows 2035 Scenario 7 daily screenline volumes and Pueblo Blvd. Extension volumes.

Table B-12. 2035 Scenario 7 Daily Screenline Volumes and Pueblo Blvd. Extension Volumes

Roadway	Direction	2035 Scenario 7 Six-Lane Freeway Pueblo Blvd. Extn. and West Pueblo Connector	Percent Change from No Action
East of Purcell Blvd.			
Platteville Blvd.	Two Way	31,000	+154%
US 50	EB	41,000	-5%
	WB	40,000	-7%
	Two Way	81,000	-6%
Joe Martinez Blvd. Extn.	EB	5,000	N/A
	WB	5,200	N/A
	Two Way	10,200	N/A
Juniper Rd.	EB	700	-87%
	WB	660	-86%
	Two Way	1,360	-86%
Screenline Total	Two Way	124,000	+15%
US 50 Percent of Screenline	Two Way	65%	-14%
East of Pueblo Blvd. (SH 45)			
Platteville Blvd. (West of Elizabeth)	Two Way	15,000	+58%
Dillon Dr. (West of Elizabeth)	Two Way	3,400	-53%
Eagleridge Blvd. Extn.	Two Way	13,000	N/A
US 50	EB	32,000	-22%
	WB	33,000	-18%
	Two Way	65,000	-19%
24th St.	EB	11,000	+62%
	WB	12,000	+71%
	Two Way	23,000	+65%
18th St.	Two Way	630	-2%

Roadway	Direction	2035 Scenario 7 Six-Lane Freeway Pueblo Blvd. Extn. and West Pueblo Connector	Percent Change from No Action
11th St.	EB	4,900	-13%
	WB	4,700	-6%
	Two Way	9,600	-9%
SH 96 (Thatcher Ave.)	EB	12,000	-8%
	WB	11,000	-8%
	Two Way	22,000	-12%
Screenline Total	Two Way	139,000	-5%
US 50 Percent of Screenline	Two Way	47%	-8%
Pueblo Blvd. Extension			
Eagleridge Extn. to Platteville	Two Way	59,000	N/A
Wildhorse to Eagleridge Extn.	Two Way	47,000	N/A
US 50 to Wildhorse	NB	34,000	N/A
	SB	28,000	N/A
	Two Way	61,000	N/A



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

B.3 Level 3 Comparative Analysis of Intersection Options

The TAT conducted Level 3 Comparative Analysis of Intersection Options during their meeting on June 2, 2011, using the following materials. The materials are grouped by intersection, and for each intersection consist of a comparative table and a series of maps.

The table shows intersection options as rows, with transportation-related outcomes in one column, environmental and community impacts in another, financing and construction issues in a third column, and the study team's recommendation in the final column. Individual impacts are coded with colors and symbols. Those impacts corresponding to the least impact among intersection options or the best measure of effectiveness (for example, the least construction cost) are shown in green with a plus sign. Impacts corresponding to the greatest impact among intersection options or the least attractive measure of effectiveness are shown in blue with a minus sign.

The first map is a context map, which shows the intersection and vicinity, with current zoning; environmental features such as streams, wetlands, and floodplains; hazardous materials sites; and utilities. Each intersection option has a map, which overlays the context map with the roadway and construction footprint. The roadway footprint corresponds to the toe of slope beyond the roadway surface. The impact analysis assumed a 20-foot construction footprint beyond the roadway footprint to allow for barrier placement, materials storage, and construction vehicle movement, for example.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Swallows Rd.

Legend:

– = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Cost and phasing</i>	
SI-1 Signalized Intersection	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Green time can be reserved for low volume movements + Local access: No change from existing conditions √ Pedestrian and bicycle access: Access similar to or improved from current conditions – signal assigns priority to pedestrians and bicyclists crossing US 50 √ Safety: 9 conflict points including 3 crossings - same as existing √ Driver expectation: Familiar to drivers – near ubiquitous application	+ Land use: No additional right-of-way (ROW) required √ Future land use compatibility: May be compatible with adjacent Rural Ranch use and conservation easements + Parcels: No additional ROW required + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas	+ Cost: Range of typical costs for this option is \$200,000 to \$250,000 – least of all intersection options – Phasing: Must be built in a single phase	+ Select as the preferred alternative + No ROW impacts + Least visual impact + Least cost
SF-1 Signalized Intersection with Flyover Ramp	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Grade separating a high-volume turning movement allows more signal green time to given to other movements – Local access: Flyover ramp would also pass over the northern intersection of Greenhorn View Dr. with Swallows Rd., eliminating that access from westbound US 50. Alternate access would be available about 2,500 feet to the south at the southern intersection of Greenhorn View Dr.. √ Pedestrian and bicycle access: Access similar to or improved from current conditions + Safety: 7 conflict points including 1 crossings;- 2 fewer conflict points than existing – least of all intersection options √ Driver expectation: Few applications in Colorado but driving experience would be similar to diamond interchange with flyover	√ Land use: Approximately 9 to 10 acres of ROW required outside existing CDOT ROW – Future land use compatibility: Incompatible with future land use – requires construction on conservation easement √ Parcels: Impacts on 5 undeveloped parcels (4 zoned PUD or Rural Land Use Plan; 1 zoned agricultural) √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas	√ Cost: Range of typical costs for this option is \$5M to \$5.5M + Phasing: May be built in phases	– Discontinue from further consideration – Inconsistent with future land use – Highest ROW impacts – More circuitous access
DI-1 Diamond Interchange	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: No delay to through movements on US 50 Local access: √ Realignment of access north of US 50 about 1,800 feet east Swallows Rd. – Closure of access north of US 50 about 1,000 feet west of Swallows Rd. – alternate access available 1,800 feet east of Swallows Rd. √ Pedestrian and bicycle access: Access similar to or improved from current conditions – Safety: 20 conflict points including 6 crossings - 11 more conflict points than existing – most crossing conflict points of all intersection options √ Driver expectation: Familiar to drivers – used at several interchanges along I-25 in Pueblo	– Land use: Approximately 13 to 14 acres of ROW required outside existing CDOT ROW – Future land use compatibility: Incompatible with future land use – requires construction on conservation easement √ Parcels: Impacts on 7 undeveloped parcels (3 zoned PUD or Rural Land Use Plan; 4 zoned agricultural) √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas	√ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases	– Discontinue from further consideration – Inconsistent with future land use – Highest ROW impacts – Access closure – Highest cost

Resources not differentiating among intersection options:

Streams, wetlands and floodplain – All intersection options avoid impacts on Turkey Creek
 Historic properties – None were recorded
 Community/business cohesion – Immediate vicinity of intersection is largely undeveloped or agricultural
 Utilities – None found in vicinity of intersection
 T & E species – No habitat
 Hazardous materials – No sites



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

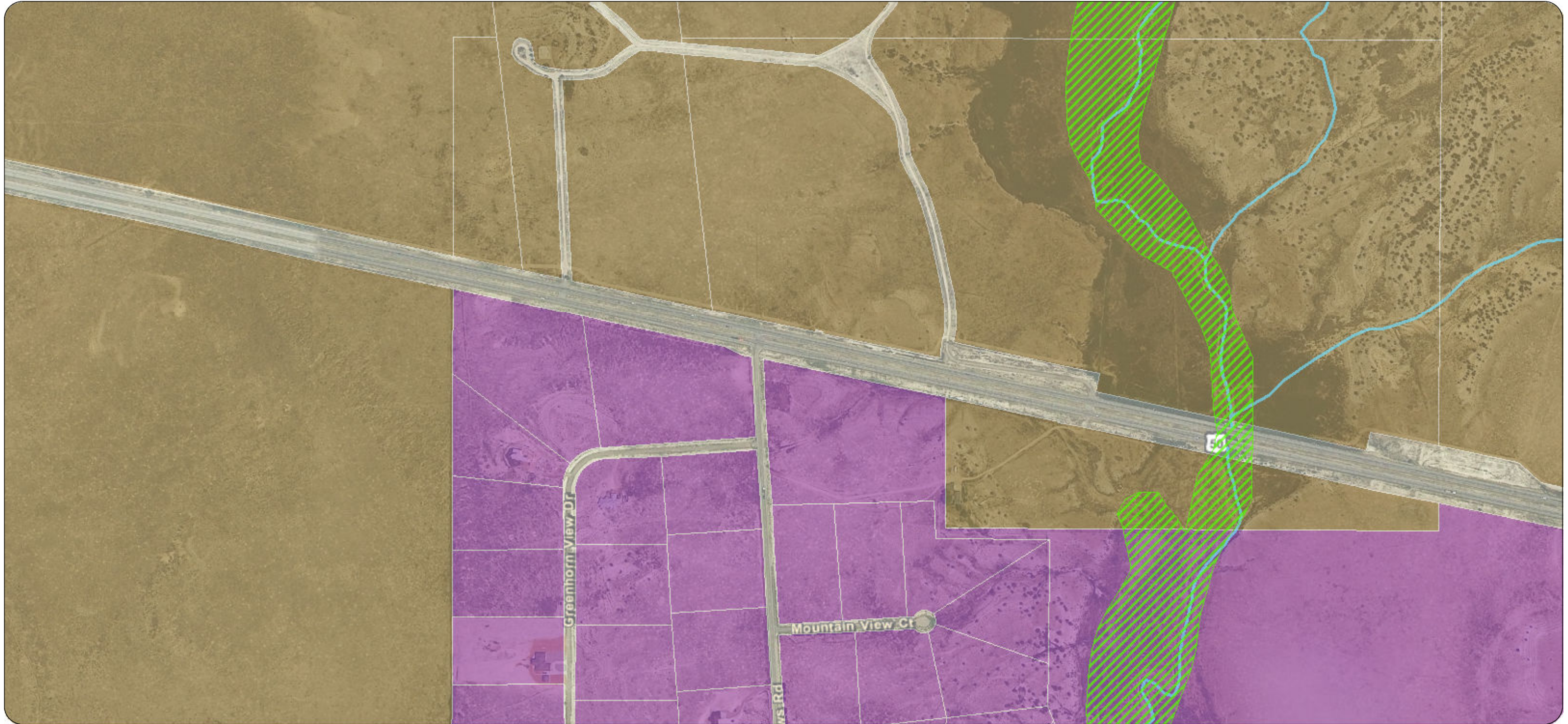
PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Cost and phasing</i>	
DF-1 Diamond Interchange with Flyover	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: No delay to any movements – fully grade-separated and access controlled Local access: – Flyover ramp would also pass over the northern intersection of Greenhorn View Dr. with Swallows Rd., eliminating that access from westbound US 50. Alternate access would be available about 2,500 feet to the south at the southern intersection of Greenhorn View Dr.. + Realignment of access north of US 50 about 1,800 feet east of Swallows Rd. – Closure of access north of US 50 about 1,000 feet west of Swallows Rd. – alternate access available 1,800 feet east of Swallows Rd. – Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 20 conflict points including 5 crossings – 11 more conflict points than existing – same number of total conflict points as Diamond Interchange √ Driver expectation: Familiar to drivers – exists in Denver metropolitan area	– Land use: Approximately 13 to 14 acres of ROW required outside existing CDOT ROW – Future land use compatibility: Incompatible with future land use – requires construction on conservation easement – Parcels: Impacts on 10 undeveloped parcels (6 zoned PUD or Rural Land Use Plan; 4 zoned agricultural) – Visual: Greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas	– Cost: Range of typical costs for this option is \$30M to \$35M – greatest of all intersection options + Phasing: May be built in phases	– Discontinue from further consideration – Inconsistent with future land use – Greatest visual impact – Greatest impact on pedestrian and bicycle access – Greatest number of parcels impacted – Greatest cost – Highest ROW impacts – Access closure
SP-1 Single-Point Urban Interchange	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: No delay to US 50 through movements – Single traffic signal (or regulatory signs) for intersection of ramps and cross street Local access: √ Realignment of Greenhorn View Dr. north intersection to about 250 feet south of existing location √ Realignment of access north of US 50 about 1,800 feet east of Swallows Rd. – Closure of access north of US 50 about 1,000 feet west of Swallows Rd. – alternate access available 1,800 feet east of Swallows Rd. √ Pedestrian and bicycle access: Access similar to or improved from current conditions + Safety: 7 conflict points including 1 crossings; - 2 fewer conflict points than existing – least of all intersection options √ Driver expectation: Familiar to drivers – existing interchange at I-25 and US 50	– Land use: Approximately 14 to 15 acres of ROW required outside existing CDOT ROW – Future land use compatibility: Incompatible with future land use – requires construction on conservation easement Parcels: – Total take of 1 undeveloped parcel zoned PUD or Rural Land Use Plan √ Impacts on 6 undeveloped parcels (3 zoned PUD or Rural Land Use Plan; 3 zoned agricultural) √ Visual: Intermediate potential for visual impact – Noise: Potential to increase noise levels	√ Cost: Range of typical costs for this option is \$25M to \$30M – Phasing: Difficult to build in phases	– Discontinue from further consideration – Inconsistent with future land use – Greatest noise impact – Parcel takes – Greatest acreage of ROW impacts – Difficulty phasing – High cost – Access closure

Resources not differentiating among intersection options:

Streams, wetlands and floodplain – All intersection options avoid impacts on Turkey Creek
 Historic properties – None were recorded
 Community/business cohesion – Immediate vicinity of intersection is largely undeveloped or agricultural
 Utilities – None found in vicinity of intersection
 T & E species – No habitat
 Hazardous materials – No sites



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Swallows Road Context Map

Roadway Design

- Lane Configuration
- Roadway and Construction Footprint

Waterways

- Floodplain
- Generalized Wetland
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Business
- Residential
- PUD/Rural Land Use Plan

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

JFS & A
J.F. SATO AND ASSOCIATES

DOT
DEPARTMENT OF TRANSPORTATION

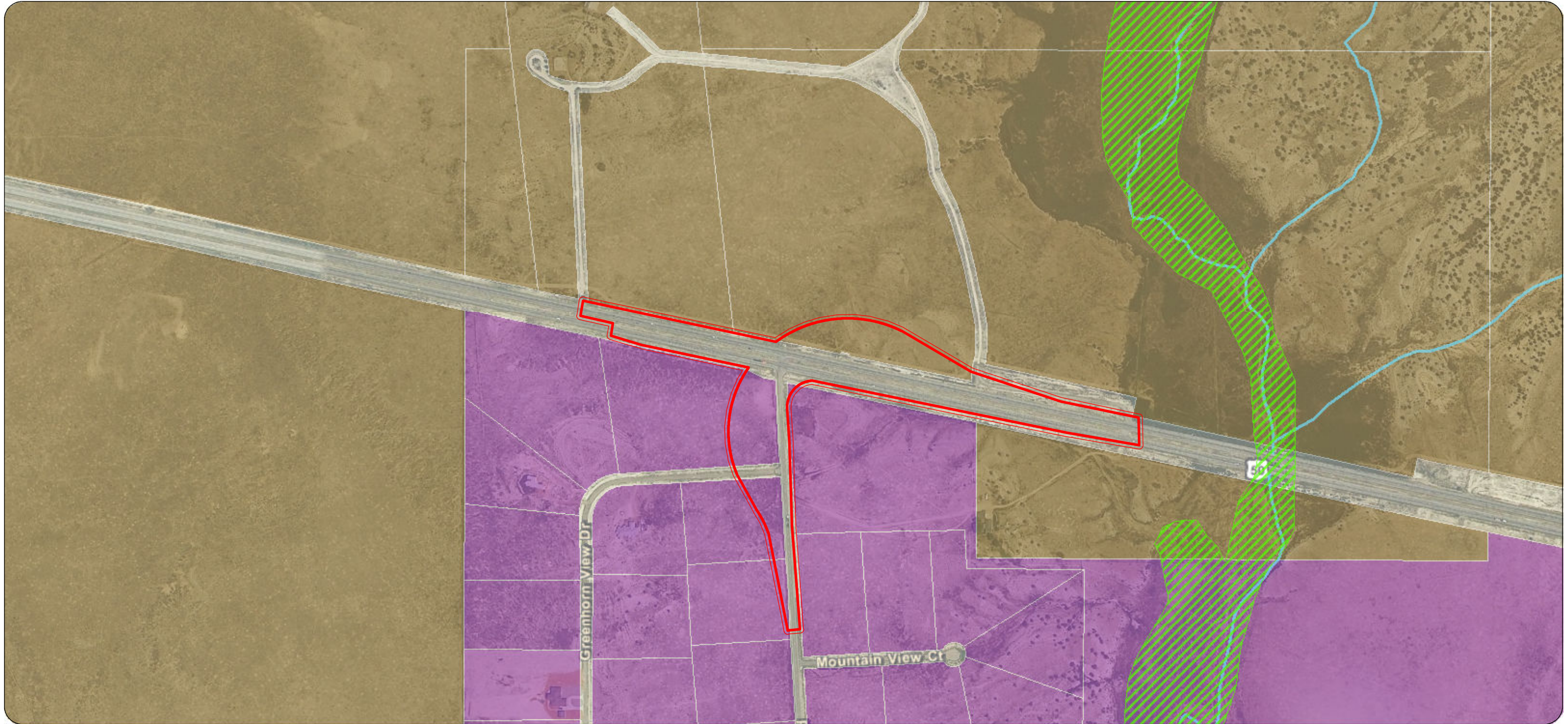
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Swallows Road

Signalized Intersection with Flyover (SF-1)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/RULP

HazMat

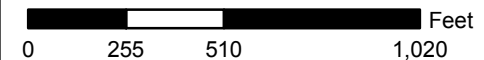
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- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

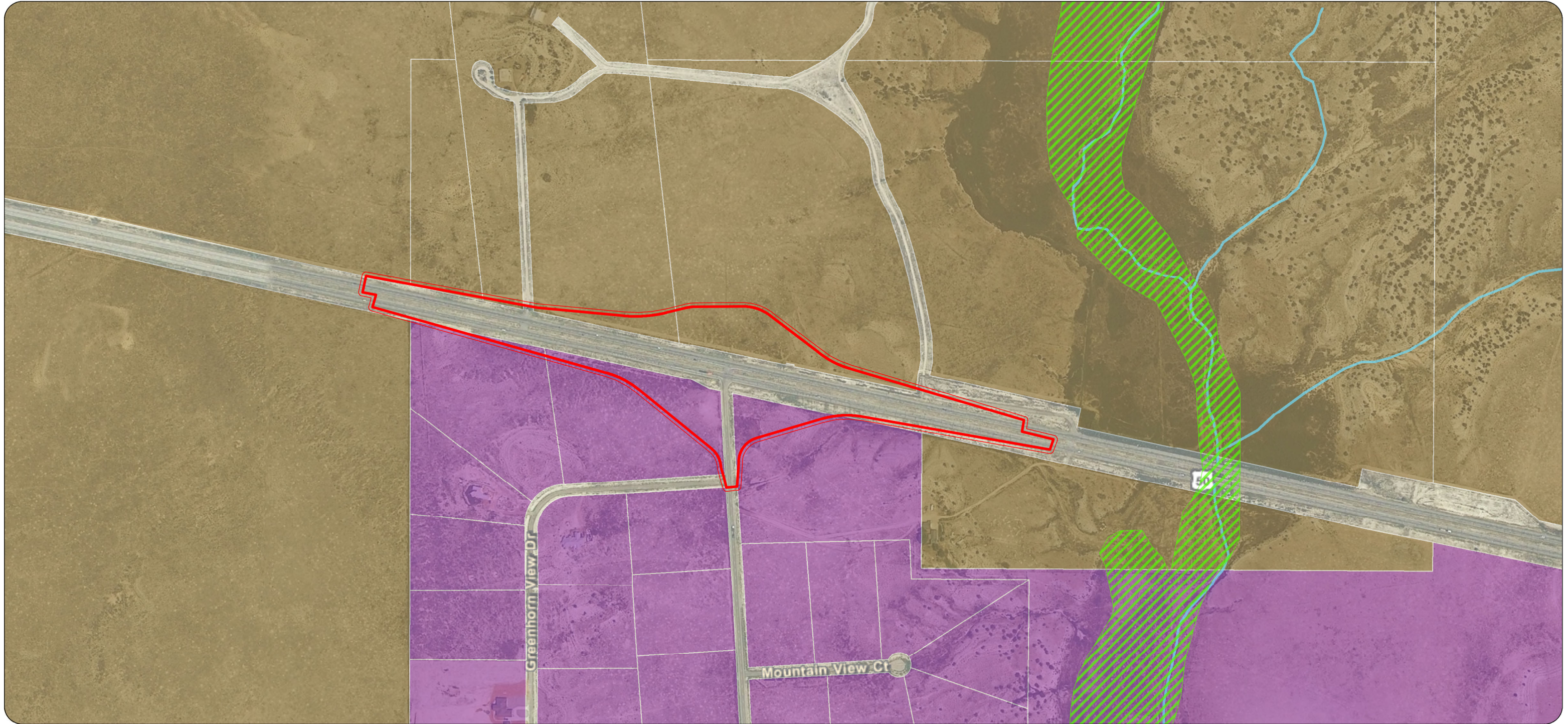


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Swallows Road

Diamond Interchange (DI-1)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/RULP

HazMat

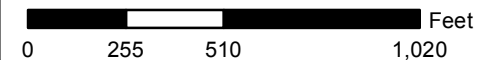
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

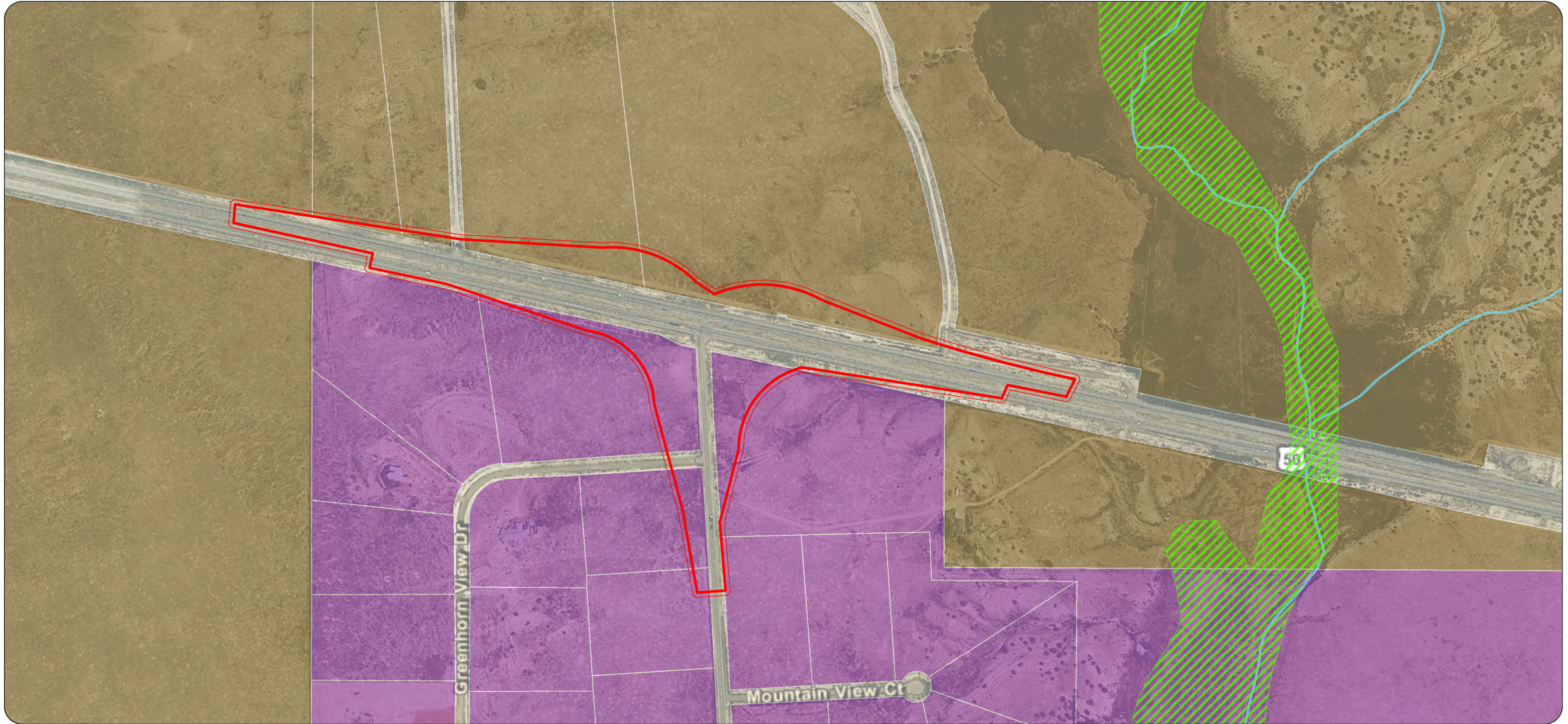


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



**Swallows Road
Diamond Interchange
with Flyover (DF-1)**

Roadway Design	Zoning	HazMat	Utilities
Roadway Footprint Construction Footprint Waterways Floodplain Streams	Agricultural Industrial Public Use Office Business Residential PUD/RULP	Underground Storage Tank Leak Underground Storage Tanks RCRA Generator Sites	Sanitary Sewer Gas Underground Fiber Electric Transmission

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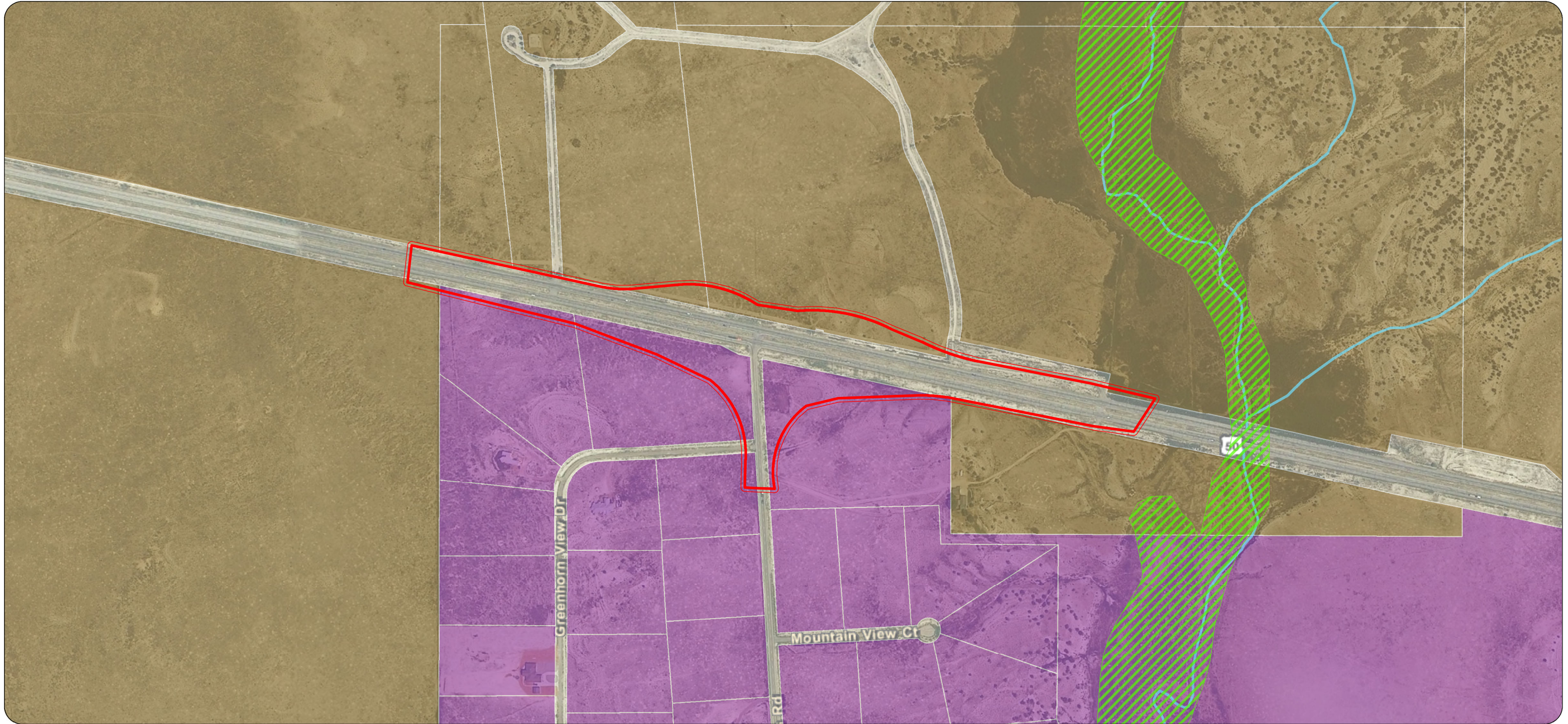
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Swallows Road

Single Point Urban Interchange (SP-1)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/RULP

HazMat

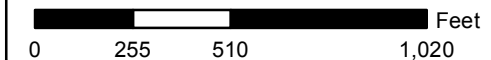
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & West McCulloch Blvd.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
SI-2 Signalized Intersection	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS √ Turning movement benefits: Green time can be reserved for low-volume movements + Local access: No change from existing conditions √ Pedestrian and bicycle access: Access similar to or improved from current conditions – signal assigns priority to pedestrians and bicyclists crossing US 50 √ Safety: 9 conflict points including 3 crossings - same as existing √ Driver expectation: Familiar to drivers – near ubiquitous application 	<ul style="list-style-type: none"> + Land use: No additional right-of-way (ROW) required + Parcels: No additional right-of-way (ROW) required √ Future land use compatibility: May be compatible with adjacent Country Ranch use and conservation easements. No future growth north of US 50. + Streams: No impacts + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas 	<ul style="list-style-type: none"> + Cost: Range of typical costs for this option is \$200,000 to \$250,000 – least of all intersection options - Phasing: Must be built in a single phase 	<ul style="list-style-type: none"> + Identify as preferred alternative + No street or access closures + Avoids land use or ROW impacts + Least visual impact + Least cost
SF-2 Signalized Intersection with Flyover Ramp	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Grade separating a high-volume turning movement allows more signal green time to be given to other movements - Local access: Access to Calle de Estavan and McCulloch Place West closed, eliminating access to 5 undeveloped agricultural parcels; alternate access may be constructed through undeveloped parcels √ Pedestrian and bicycle access: Access similar to or improved from current conditions – signal assigns priority to pedestrians and bicyclists crossing US 50 + Safety: 7 conflict points including 1 crossings;- 2 fewer conflict points than existing – least of all intersection options √ Driver expectation: Few applications in Colorado but driving experience would be similar to diamond interchange with flyover 	<ul style="list-style-type: none"> √ Land use: 7 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 1 developed residential parcel (zoned agricultural) √ Impacts on 2 developed residential parcels (zoned agricultural) and 1 undeveloped agricultural parcel - Future land use compatibility: Incompatible with future land use – requires construction on conservation easement √ Streams: Approximately 200 ft. of stream impact on a local drainage √ Visual: Intermediate potential for visual impact √ Noise: Possible increase or decrease in noise levels 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$5M to \$5.5M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration - Property take to a residential parcel - Access closures - Incompatible with future land use – requires construction on conservation easement
DI-2 Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to through movements on major roadway (US 50 or Pueblo Blvd.) + Local access: No change from existing conditions √ Pedestrian and bicycle access: Access similar to or improved from current conditions - Safety: 20 conflict points including 6 crossings - 11 more conflict points than existing – most crossing conflict points of all intersection options √ Driver expectation: Familiar to drivers – used at several interchanges along I-25 in Pueblo 	<ul style="list-style-type: none"> √ Land use: 10 to 15 acres required beyond existing CDOT ROW √ Parcels: Impacts on 2 undeveloped agricultural parcels - Future land use compatibility: Incompatible with future land use – requires construction on conservation easement - Streams: Approximately 400 ft. of stream impact on a local drainage √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration + No street closures + No access impacts - Incompatible with future land use – requires construction on conservation easement - Greatest stream impacts

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Wetlands and floodplain – None in vicinity of intersection
 Utilities – All options have potential to disturb underground gas lines currently parallel to US 50 eastbound lanes.
 T & E species – No habitat
 Hazardous materials – No sites

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
DF-2 Diamond Interchange with Flyover	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: No delay to high-volume turning movement given flyover - Local access: - Access to Calle de Estavan and McCulloch Place West closed, eliminating access to one undeveloped agricultural parcel not acquired; alternate access may be constructed through undeveloped parcels - Access to Calle de Camelia and McCulloch Place East closed; alternate access available through Calle Allegre and Calle del Sud - Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 20 conflict points including 5 crossings – 11 more conflict points than existing – same number of total conflict points as Diamond Interchange √ Driver expectation: Familiar to drivers – exists in Denver metropolitan area	√ Land use: 8 acres required beyond existing CDOT ROW Parcels: - Total take of 3 developed and residential parcels (all zoned agricultural) and 4 undeveloped agricultural parcels √ Impacts on 1 developed residential parcel (zoned agricultural) and 4 undeveloped agricultural parcels - Future land use compatibility: Incompatible with future land use – requires construction on conservation easement √ Streams: Approximately 300 ft. of stream impact on a local drainage - Visual: Greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas	- Cost: Range of typical costs for this option is \$30M to \$35M – greatest of all intersection options + Phasing: May be built in phases from signalized intersection with flyover ramp	- Discontinue from further consideration - Street closures - Greatest number of parcel takes - Incompatible with future land use – requires construction on conservation easement - Greatest visual impact - Among highest cost
SP-2 Single-Point Urban Interchange	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Single traffic signal for intersection of ramps and cross street + Local access: No change from existing conditions √ Pedestrian and bicycle access: Access similar to or improved from current conditions + Safety: 7 conflict points including 1 crossings;- 2 fewer conflict points than existing – least of all intersection options √ Driver expectation: Familiar to drivers – existing interchange at I-25 and US 50	- Land use: 15 to 20 acres required beyond existing CDOT ROW √ Parcels: Impacts on 2 undeveloped agricultural parcels - Future land use compatibility: Incompatible with future land use – requires construction on conservation easement √ Streams: Approximately 100 ft. of stream impact on a local drainage √ Visual: Intermediate potential for visual impact - Noise: Potential to increase noise levels	√ Cost: Range of typical costs for this option is \$25M to \$30M - Phasing: Difficult to build in phases	- Discontinue from further consideration - Considerable additional ROW requirement - Incompatible with future land use – requires construction on conservation easement - Greatest noise impact - Difficult to build in phases - Among the highest cost

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Wetlands and floodplain – None in vicinity of intersection
 Utilities – All options have potential to disturb underground gas lines currently parallel to US 50 eastbound lanes.
 T & E species – No habitat
 Hazardous materials – No sites

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



West McCulloch

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

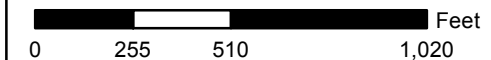
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

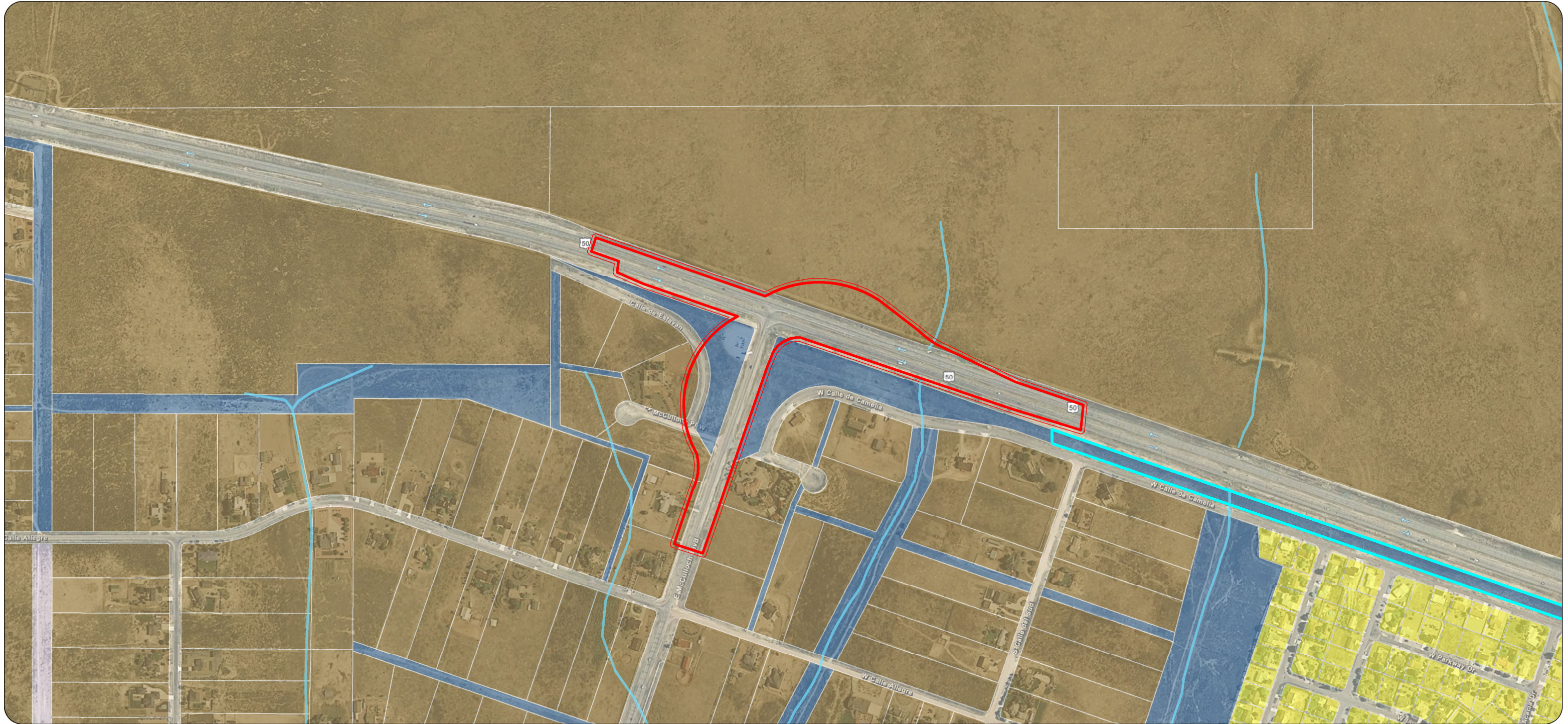


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



West McCulloch

Signalized Intersection with Flyover (SF-2)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

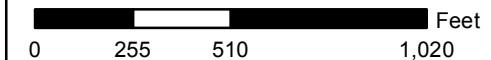
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

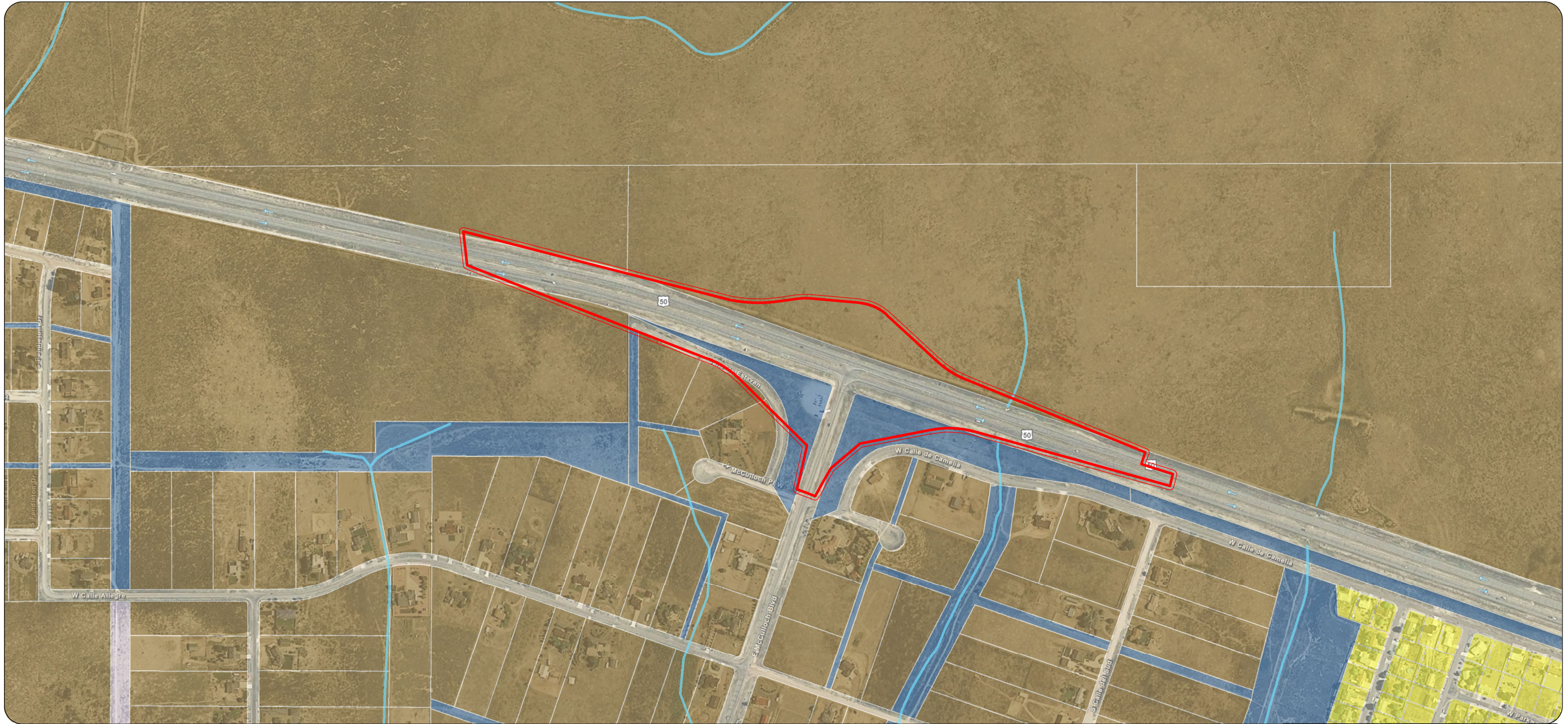


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



West McCulloch

Diamond Interchange (DI-2)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



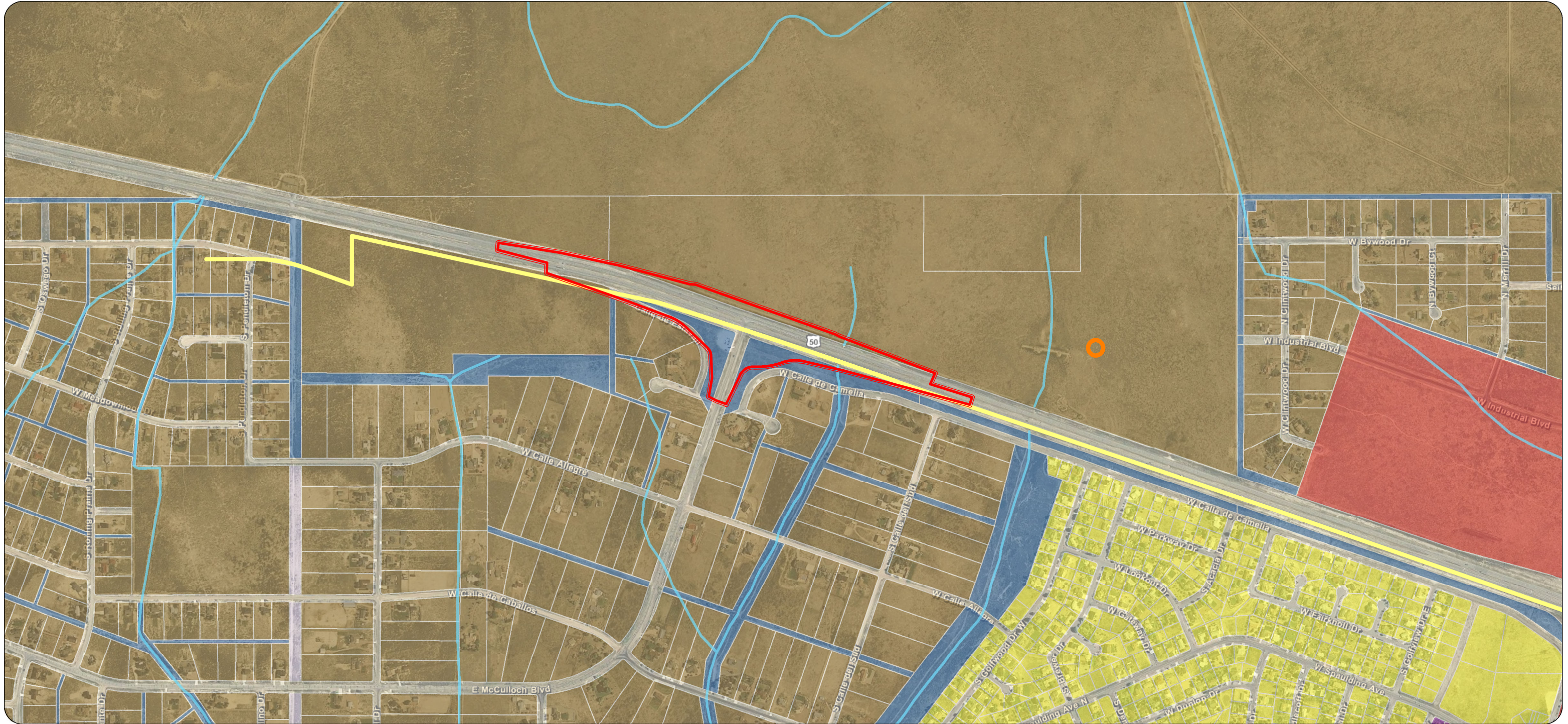
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 255 510 1,020 Feet





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



West McCulloch
Diamond Interchange with Flyover (DF-2)

Roadway Design	Zoning	HazMat	Utilities
Roadway Footprint	Agricultural	Underground Storage Tank Leak	Sanitary Sewer
Construction Footprint	Industrial	Underground Storage Tanks	Gas
Waterways	Public Use	RCRA Generator Sites	Underground Fiber
Floodplain			Electric Transmission
Streams			
	Office		
	Business		
	Residential		
	PUD/RULP		

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

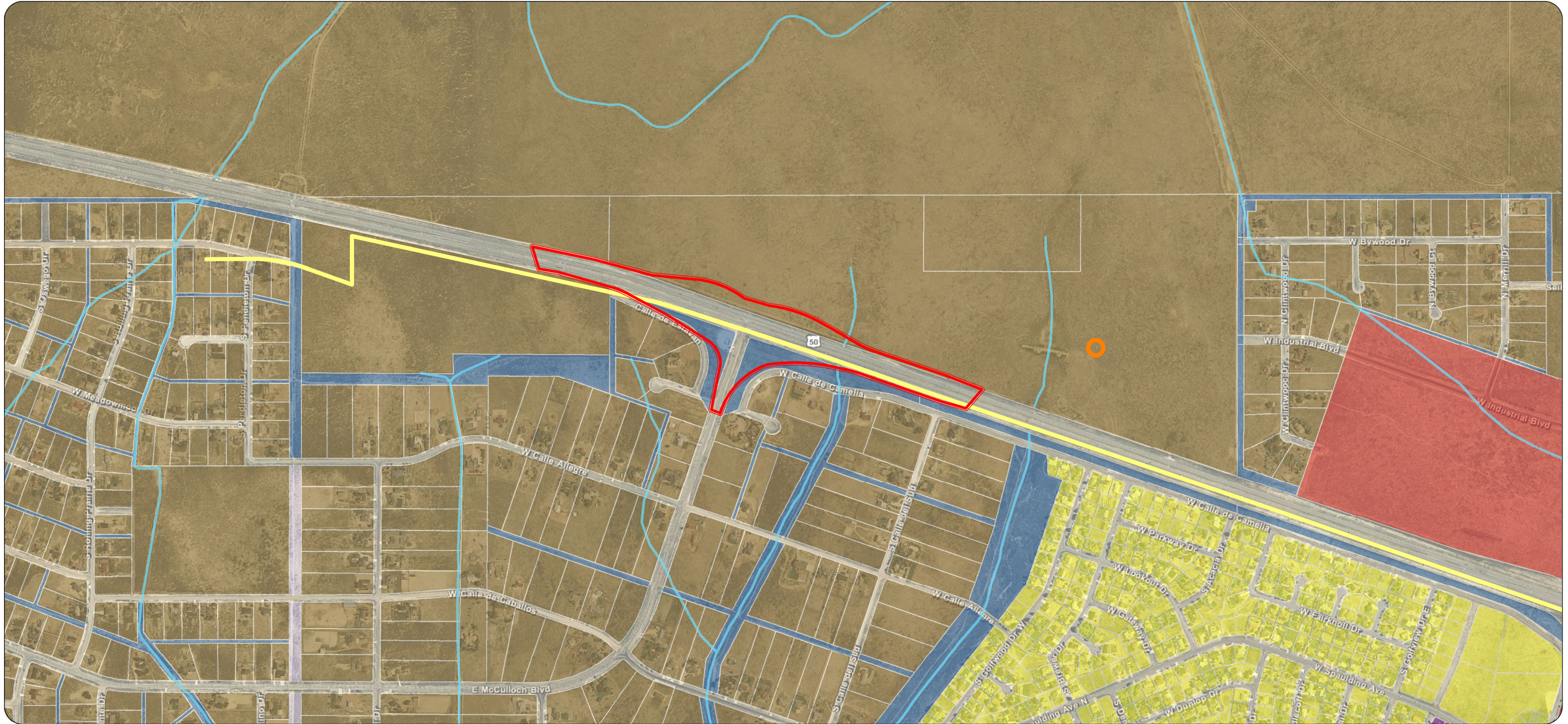
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 410 820 1,640 Feet

N



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



West McCulloch
Single Point Urban Interchange (SP-2)

<p>Roadway Design</p> <ul style="list-style-type: none"> Roadway Footprint Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> Floodplain Streams 	<p>Zoning</p> <ul style="list-style-type: none"> Agricultural Industrial Public Use Office Business Residential PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> Underground Storage Tank Leak Underground Storage Tanks RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> Sanitary Sewer Gas Underground Fiber Electric Transmission
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JFS
J.E. SATO AND ASSOCIATES

DOT
DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Main McCulloch Blvd.

Legend:

– = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
DI-3 Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to through movements on US 50 + Local access: This option would not disrupt local access roads that intersect Main McCulloch Blvd. √ Pedestrian and bicycle access: Access reduced from current conditions – Safety: 30 conflict points (including 10 crossings); 2 fewer conflict points than existing – greatest number of crossing points √ Driver expectation: Familiar to drivers – used at several interchanges along I-25 in Pueblo 	<ul style="list-style-type: none"> + Land use: Requires approximately 0.5 acres outside CDOT right-of-way (ROW), including lands zoned for business and public use √ Parcels: Minor impacts on 3 undeveloped parcels outside the CDOT ROW + Future land use compatibility: Consistent with arterial commercial future mixed uses and local road network + Community/business cohesion: Compatible with the existing and planned land uses and local road network √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: The footprint would avoid sites at this intersection – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. Avoids crossing the underground fiber optic line. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases 	<ul style="list-style-type: none"> + Retain for further analysis + No access impacts + Compatible with future planning + Generally avoids land use and parcel impacts
DF-3 Diamond Interchange with Flyover	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to high-volume turning movement given flyover – Local access: Access closures in southwest quadrant to 2 parcels (Taco Bell and Qwik Stop) √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 28 conflict points (including 8 crossings); 4 fewer conflict points than existing √ Driver expectation: Familiar to drivers with applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 4 acres outside CDOT ROW, including lands zoned for business and public use. √ Parcels: Minor impacts on 6 parcels (3 developed and 3 undeveloped) + Future land use compatibility: Consistent with arterial commercial future mixed uses and local road network + Community/business cohesion: Compatible with the existing and planned land uses and local road network – Visual: Among the greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas – Hazardous materials: Flyover ramp footprint may include an underground storage tank – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$30M to \$35M + Phasing: May be built in phases 	<ul style="list-style-type: none"> – Discontinue from further consideration – Requires more ROW than Diamond Interchange without Flyover – Among the greatest potential for visual impact – Access closures in southwest quadrant – Potential conflict with hazardous materials – Potential conflict with utilities

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Streams, wetlands and floodplain – None in vicinity of intersection
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

– = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>
SP-3 Single-Point Urban Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Single traffic signal for intersection of ramps and cross street + Local access: This option would not disrupt local access roads that intersect Main McCulloch Blvd. √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 24 conflict points (including 8 crossings); 8 fewer conflict points than existing √ Driver expectation: Familiar to drivers – existing interchange at I-25 and US 50 	<ul style="list-style-type: none"> √ Land use: Requires approximately 3 acres outside CDOT ROW, including lands zoned for business and public use. √ Parcels: Minor impacts on 4 business parcels (3 undeveloped and 1 developed) + Future land use compatibility: Consistent with arterial commercial future mixed uses and local road network + Community/business cohesion: Compatible with the existing and planned land uses √ Visual: Intermediate potential for visual impact – Noise: Potential to increase noise levels with US 50 on structure + Hazardous materials: No impacts – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$25M to \$30M – Phasing: Cannot be built in phases 	<ul style="list-style-type: none"> – Discontinue from further consideration <ul style="list-style-type: none"> – Increases noise levels – Cannot be built in phases – Potential conflict with hazardous materials √ Minor impacts on parcels – Potential conflict with utilities
PC-3 Partial Cloverleaf	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: High-volume left turn movements accommodated with loop ramps rather than at signalized intersections – Local access: This option would result in closure of a section of East Dunlap Dr. and two connecting local roads that provide access to business parcels in the southeast quadrant of the intersection √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including two crossings); 14 fewer conflict points than existing √ Driver expectation: Many applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 7 acres outside CDOT ROW, including lands zoned for business and public use. – Parcels: <ul style="list-style-type: none"> – Total takes of four (developed) parcels – Impacts on 6 parcels (2 developed and 4 undeveloped) – Future land use compatibility: Inconsistent with arterial commercial future mixed uses because the frontage access disruption on East Dunlap Dr. would reduce the long-term compatibility of this option with future arterial development in the southeast quadrant. – Community/business cohesion: Disrupt the land use viability at the southeast quadrant of the main entrance to Pueblo West, due to the access closures and impacts on local businesses fronting on East Dunlap Dr.. √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: No impacts – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$35M to \$40M + Phasing: May be built in phases 	<ul style="list-style-type: none"> – Discontinue from further consideration <ul style="list-style-type: none"> – Major impacts on developed parcels – Access closures to the southeast quadrant – Considered inconsistent with future planning due to access closures – Reduction in community/business cohesion due to access closures and impacts on developed parcels – Potential for hazardous material conflict

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Streams, wetlands and floodplain – None in vicinity of intersection
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

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 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
PF-3 Partial Cloverleaf with Flyovers	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for high-volume left turning movements – Local access: This option would result in up to 10 street and access closures within the southwest, southeast, and northeast quadrants of the intersection. Access to the southwest and southeast quadrants at the main entrance to Pueblo West would be affected by closures to East Dunlap Dr., West Calle de Camelia, Spaulding Ave., and three connecting local roads that provide access to business parcels in the southeast quadrant of the intersection. There would also be access closures to the entrance to businesses in the northwest quadrant of the intersection. – Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least conflict points of all intersection options √ Driver expectation: Applications elsewhere in Colorado	– Land use: Requires approximately 25 to 30 acres outside CDOT ROW, including lands zoned for business and public use. – Parcels: – 17 total property takes – Impacts on 9 other parcels – Future land use compatibility: Inconsistent with arterial commercial future mixed uses due to the loss of frontage access in the southwest, southeast and northeast quadrants. – Community/business cohesion: A loss of land use viability at the main entrance to Pueblo West, due to the access closures and impact on the business community and investments made at the three developed quadrants of the intersection (NE, SW and SE). – Visual: Greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas – Hazardous Materials: Flyover ramp footprint may include an underground storage tank and two underground storage tanks with leaks at the Main McCulloch and Spaulding Ave. intersection – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line.	√ Cost: Range of typical costs for this option is \$40M to \$45M + Phasing: May be built in phases	– Discontinue from further consideration – Greatest land use impacts – Greatest number of access closures involving 3 interchange quadrants – Among the greatest visual impact – Considered inconsistent with future planning due to access closures – Loss of land use viability at the entrance of Pueblo West – Potential for hazardous material conflict
FS-3 Four-Level Stack Interchange	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for all turning movements – Local access: This option would result in up to 9 street and access closures within the southwest, southeast and northeast quadrants of the intersection. Access to the southwest and southeast quadrants at the main entrance to Pueblo West would be affected by closures to East Dunlap Dr., West Calle de Camelia, Spaulding Ave., and 3 connecting local roads that provide access to business parcels in the southeast quadrant of the intersection. There would also be access closures to the west entrance off of North McCulloch Blvd. and the east entrance off North Aspen Skyway to the businesses in the northwest quadrant of the intersection. – Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least conflict points of all intersection options √ Driver expectation: Applications elsewhere in Colorado	√ Land use: Requires approximately 15 to 20 acres outside CDOT ROW, including lands zoned for business and public use. – Parcels: – 9 total property takes (8 developed) – Impacts on 5 other parcels (2 developed) – Future land use compatibility: Inconsistent with arterial commercial future mixed uses due to the loss of frontage access in the southwest, southeast and northeast quadrants. – Community/business cohesion: A loss of land use viability at the main entrance to Pueblo West, due to the access closures and impact on the business community and investments made at the 3 developed quadrants of the intersection (NE, SW and SE). – Visual: Greatest potential for visual impact; highest level of visual contrast to setting and viewers due to high profile √ Noise: Possible increase and decrease in noise levels at various areas – Hazardous materials: Flyover ramp footprint may include an underground storage tank and two underground storage tanks with leaks at the Main McCulloch and Spaulding Ave. intersection – Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line.	– Cost: Range of typical costs for this option is \$65M to \$75M – highest cost + Phasing: May be built in phases	– Discontinue from further consideration – Greatest visual impacts – Highest cost – Access closures involving 3 interchange quadrants – Considered inconsistent with future planning due to access closures – Loss of land use viability at the entrance of Pueblo West – Potential for hazardous material conflict

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Streams, wetlands and floodplain – None in vicinity of intersection
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
TR-3 Three-Level Roundabout	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated - no signals – through movements bypass roundabout - Local access: This option would result in 5 street and access closures within the southwest, southeast and northeast quadrants at the main entrance to Pueblo West would be affected by closures to East Dunlap Dr. and 2 local roads that provided access to business parcels in the southeast quadrant of the intersection. Additionally, the main access to Wal-Mart in the northeast quadrant would be closed. - Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least conflict points of all intersection options - Driver expectation: May be unfamiliar – no current application in Colorado – one in Louisiana 	<ul style="list-style-type: none"> √ Land use: Requires approximately 10 to 15 acres outside CDOT ROW, including lands zoned for business and public use. - Parcels: <ul style="list-style-type: none"> - 12 total business property takes - Impacts on 6 other business properties - Future land use compatibility: Inconsistent with arterial commercial future mixed uses due to the loss of frontage access in the southwest, southeast and northeast quadrants. - Community/business cohesion: A loss of land use viability at the main entrance to Pueblo West, due to the access closures and impact on the business community and investments made at the 3 developed quadrants of the intersection (NE, SW and SE). - Visual: Greatest potential for visual impact - Noise: Potential to increase noise levels - Hazardous materials: Flyover ramp footprint may include an underground storage tank and 2 underground storage tanks with leaks at the Main McCulloch and Spaulding Ave. intersection - Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$45M to \$55M - Phasing: Difficult to build in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Access closures in 3 quadrants - Major impacts on land use - Among highest cost - Considered inconsistent with future planning due to access closures - Loss of land use viability at the entrance of Pueblo West - Potential for hazardous material conflict - Lack of flexibility for implementation
CT-3 Two-Leg Continuous Flow Intersection	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS √ Turning movement benefits: Main road left turns share green phase through movements + Local access: This option would not disrupt local access roads that intersect Main McCulloch Blvd. √ Pedestrian and bicycle access: Access similar to or improved from current conditions - Safety: 30 conflict points (including 14 crossings); 2 fewer conflict points than existing; greatest number of crossing points √ Driver expectation: New concept – one in use in Loveland 	<ul style="list-style-type: none"> + Land use: Avoids land use impacts + Parcels: No impacts on parcels + Future land use compatibility: Compatible with arterial commercial future mixed uses + Community/business cohesion: Supports existing and future community/business cohesion. + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: No impacts on hazardous material sites - Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line. 		<ul style="list-style-type: none"> + Cost: Range of typical costs for this option is \$3M to \$5M – least cost of all intersection options + Phasing: May be built in phases 	<ul style="list-style-type: none"> + Retain for further analysis <ul style="list-style-type: none"> + No parcel takes + Least visual impacts + Least cost + Compatible with future planning

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Streams, wetlands and floodplain – None in vicinity of intersection
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

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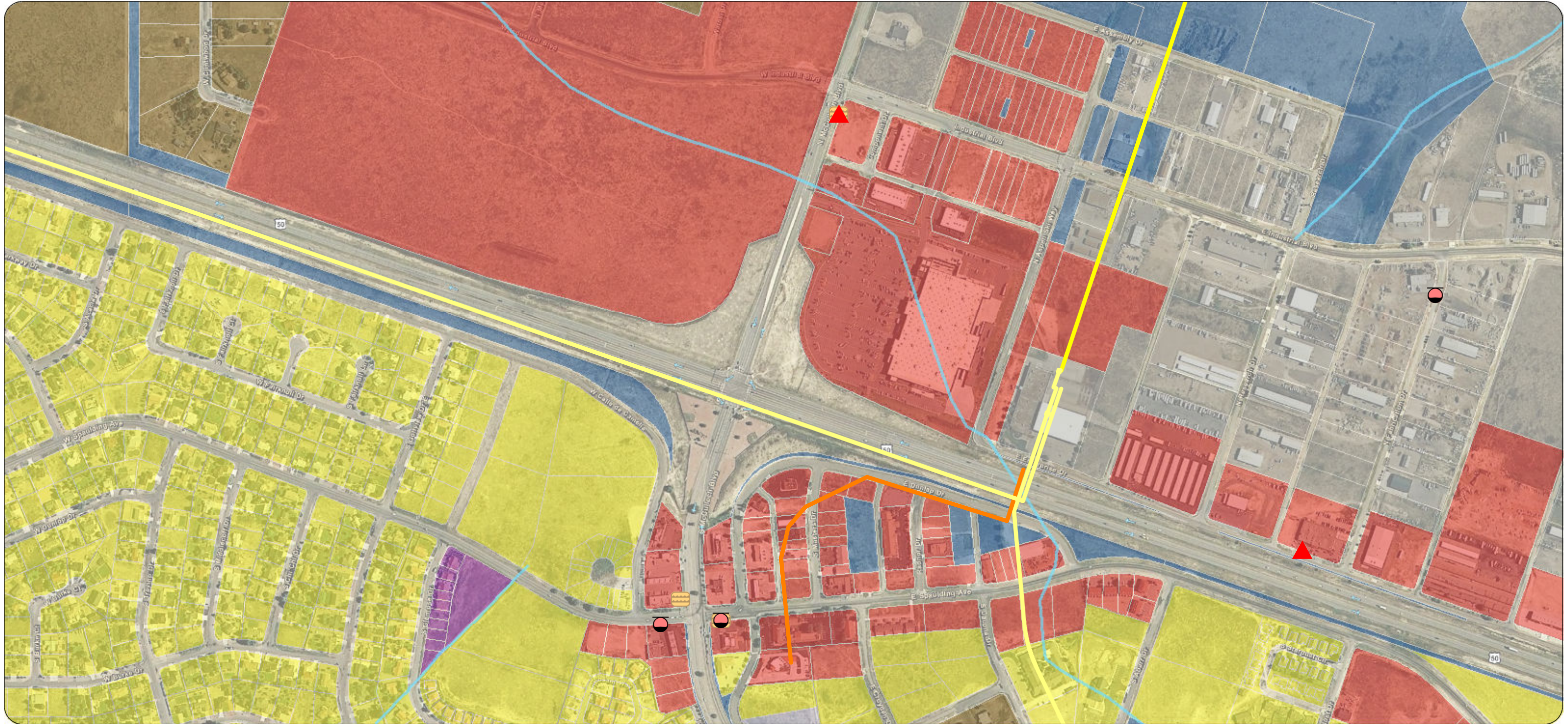
PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>
CF-3 Four-Leg Continuous Flow Intersection	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns share a green phase with corresponding through movements + Local access: This option would not disrupt local access roads that intersect Main McCulloch Blvd. √ Pedestrian and bicycle access: Access similar to or improved from current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: New concept – no current application in Colorado	+ Land use: Requires approximately 0.5 to 1 acre outside CDOT ROW, including lands zoned for business use. - Parcels: - Impacts on three business parcels (2 developed and 1 undeveloped) - Future land use compatibility: Compatible with arterial commercial future mixed uses - Community/business cohesion: Supports existing and future community/business cohesion. - Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: No impacts on hazardous material sites - Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line.	√ Cost: Range of typical costs for this option is \$5M to \$10M + Phasing: May be built in phases	- Discontinue from further consideration - Limited improvement to traffic operations (from Two-Leg CFI) does not justify increased cost or parcel impacts
DD-3 Diverging Diamond Interchange	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns are free or yield-controlled movements to and from ramps; accommodates large left turning volumes - Local access: This option has two access closures √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including two crossings); 14 fewer conflict points than existing √ Driver expectation: May be unfamiliar to drivers. New concept – none in Colorado yet (one planned for Grand Junction). Used successfully in Missouri and Utah. Could be designed so that drivers would not notice the lane shift in opposite direction.	√ Land use: Requires approximately 1 to 1.5 acres outside CDOT ROW, including lands zoned for business and public use. - Parcels: - One total take (Taco Bell) - Impacts on 7 properties (5 developed and 2 undeveloped) + Future land use compatibility: Compatible with arterial commercial future mixed uses + Community/business cohesion: Supports existing and future community/business cohesion. √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas - Hazardous materials: Ramp footprint may include an underground storage tank - Utilities: Potential conflicts with gas line located in eastbound US 50 ROW through the interchange footprint. It also crosses an underground fiber optic line.	√ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases from a conventional diamond interchange	- Discontinue from further consideration - Access closures to 2 parcels - Potential for hazardous material conflict - Limited improvement to traffic operations (from conventional Diamond Interchange) does not justify increased cost - Moderate land use impacts

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 Streams, wetlands and floodplain – None in vicinity of intersection
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

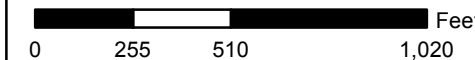
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

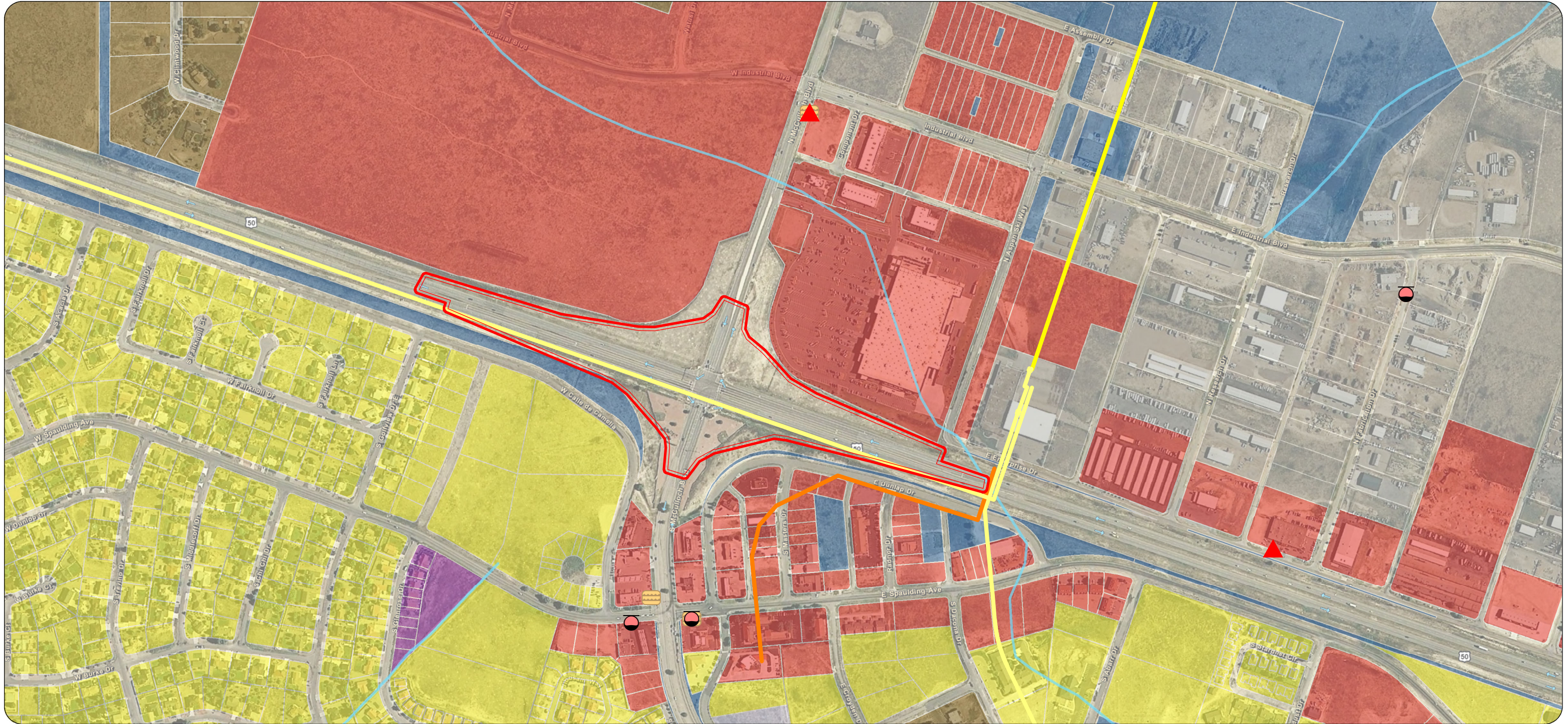


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Diamond Interchange (DI-7)

Roadway Design	Zoning	HazMat	Utilities
Roadway Footprint	Agricultural	Underground Storage Tank Leak	Sanitary Sewer
Construction Footprint	Industrial	Underground Storage Tanks	Gas
Waterways	Public Use	RCRA Generator Sites	Underground Fiber
Floodplain			Electric Transmission
Streams			
	Office		
	Business		
	Residential		
	PUD/RULP		

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

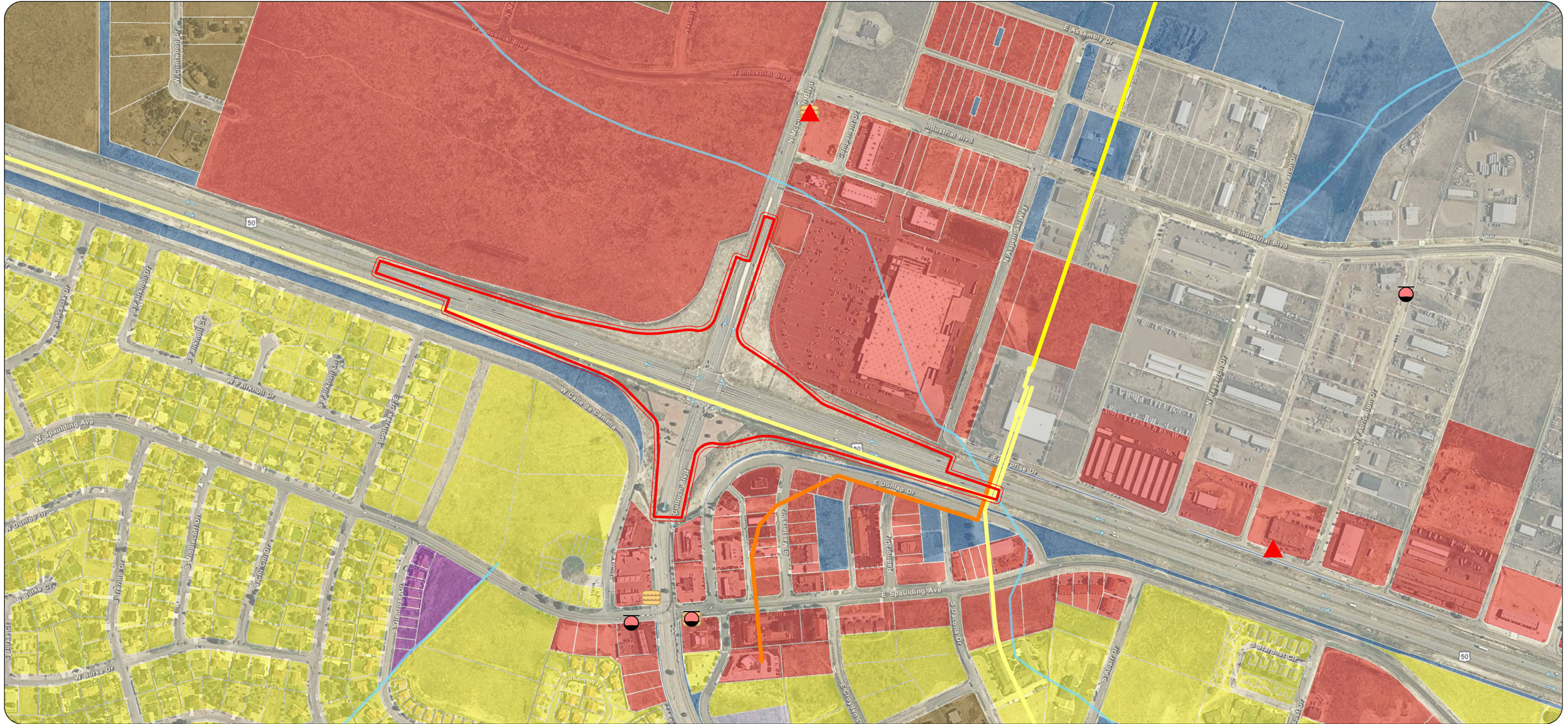
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 255 510 1,020 Feet

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Diamond Interchange with Flyover (DF-7)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

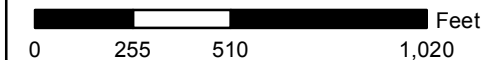
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

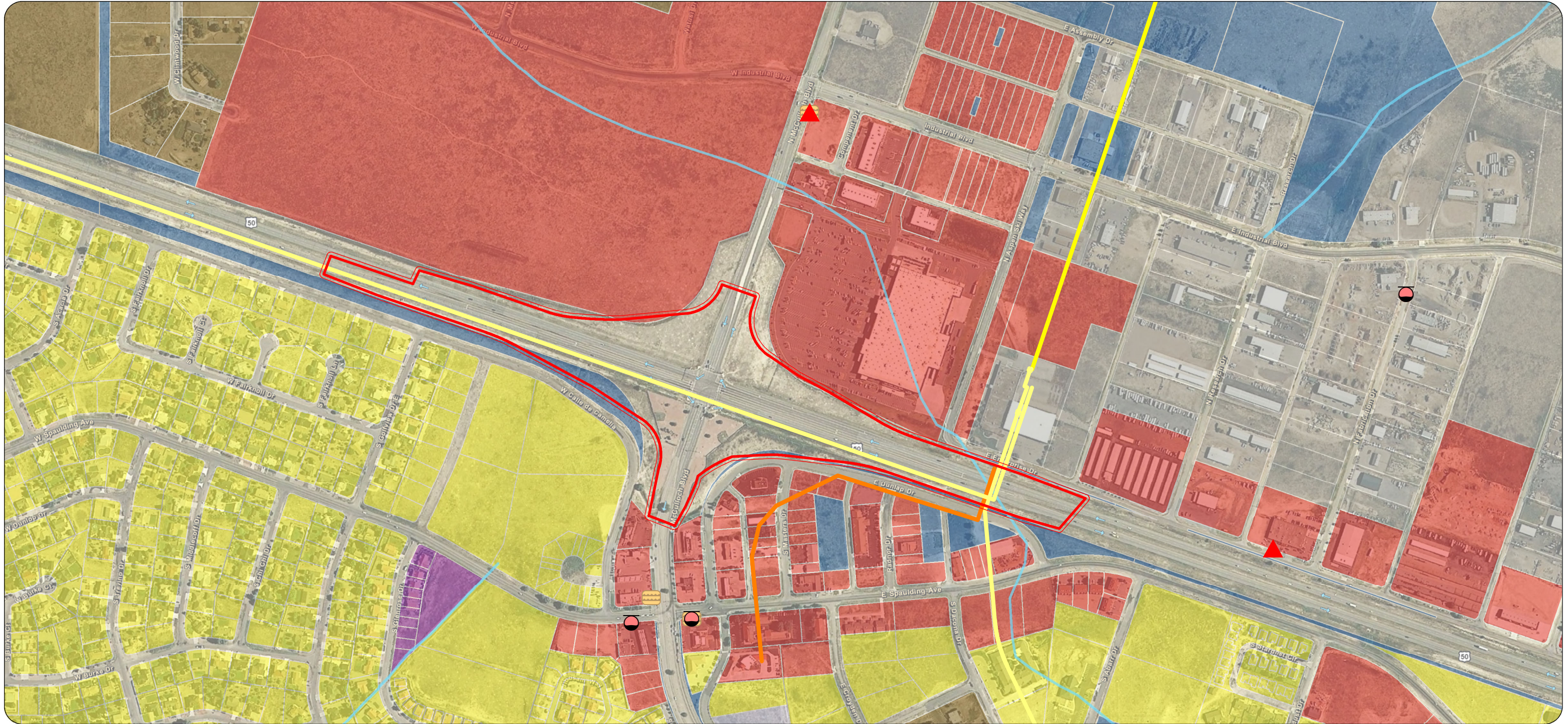


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Single-Point Urban Interchange (SP-3)

<p>Roadway Design</p> <ul style="list-style-type: none"> ▬ Roadway Footprint ▬ Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> ▨ Floodplain ▬ Streams 	<p>Zoning</p> <ul style="list-style-type: none"> ■ Agricultural ■ Industrial ■ Public Use ■ Office ■ Business ■ Residential ■ PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> ● Underground Storage Tank Leak ■ Underground Storage Tanks ▲ RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> ▬ Sanitary Sewer ▬ Gas ▬ Underground Fiber - - - Electric Transmission
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J.F. SATO AND ASSOCIATES

DEPARTMENT OF TRANSPORTATION

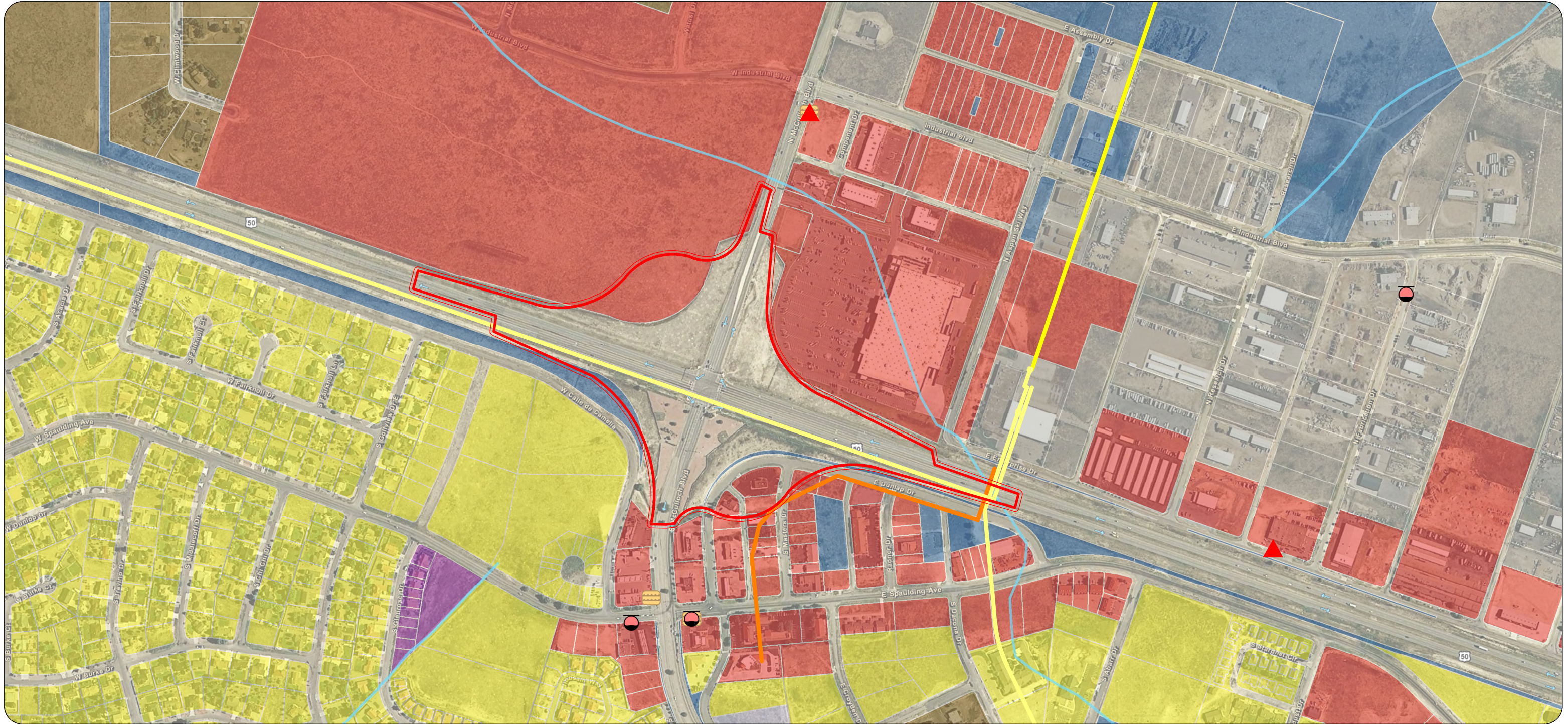
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 255 510 1,020 Feet

N



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Partial Cloverleaf (PC-3)

- Roadway Design**
- Roadway Footprint
 - Construction Footprint
- Waterways**
- Floodplain
 - Streams

- Zoning**
- Agricultural
 - Industrial
 - Public Use
 - Office
 - Business
 - Residential
 - PUD/RULP

- HazMat**
- Underground Storage Tank Leak
 - Underground Storage Tanks
 - RCRA Generator Sites

- Utilities**
- Sanitary Sewer
 - Gas
 - Underground Fiber
 - Electric Transmission

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

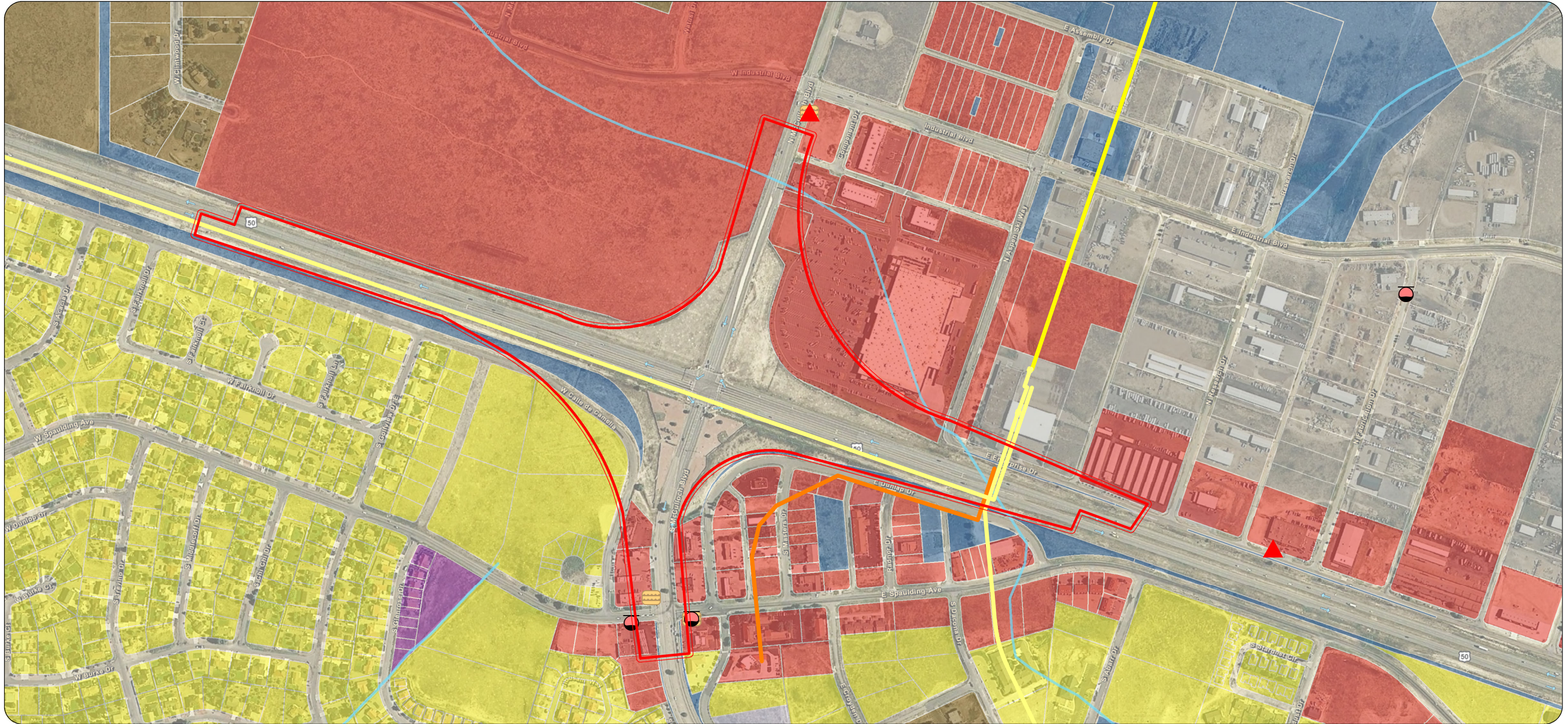
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0 255 510 1,020 Feet

N



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Partial Cloverleaf
with Flyovers (PF-3)

<p>Roadway Design</p> <ul style="list-style-type: none"> ▬ Roadway Footprint ▬ Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> ▨ Floodplain ▬ Streams 	<p>Zoning</p> <ul style="list-style-type: none"> ■ Agricultural ■ Industrial ■ Public Use ■ Office ■ Business ■ Residential ■ PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> ● Underground Storage Tank Leak ■ Underground Storage Tanks ▲ RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> ▬ Sanitary Sewer ▬ Gas ▬ Underground Fiber - - - Electric Transmission
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J.F. SATO AND ASSOCIATES

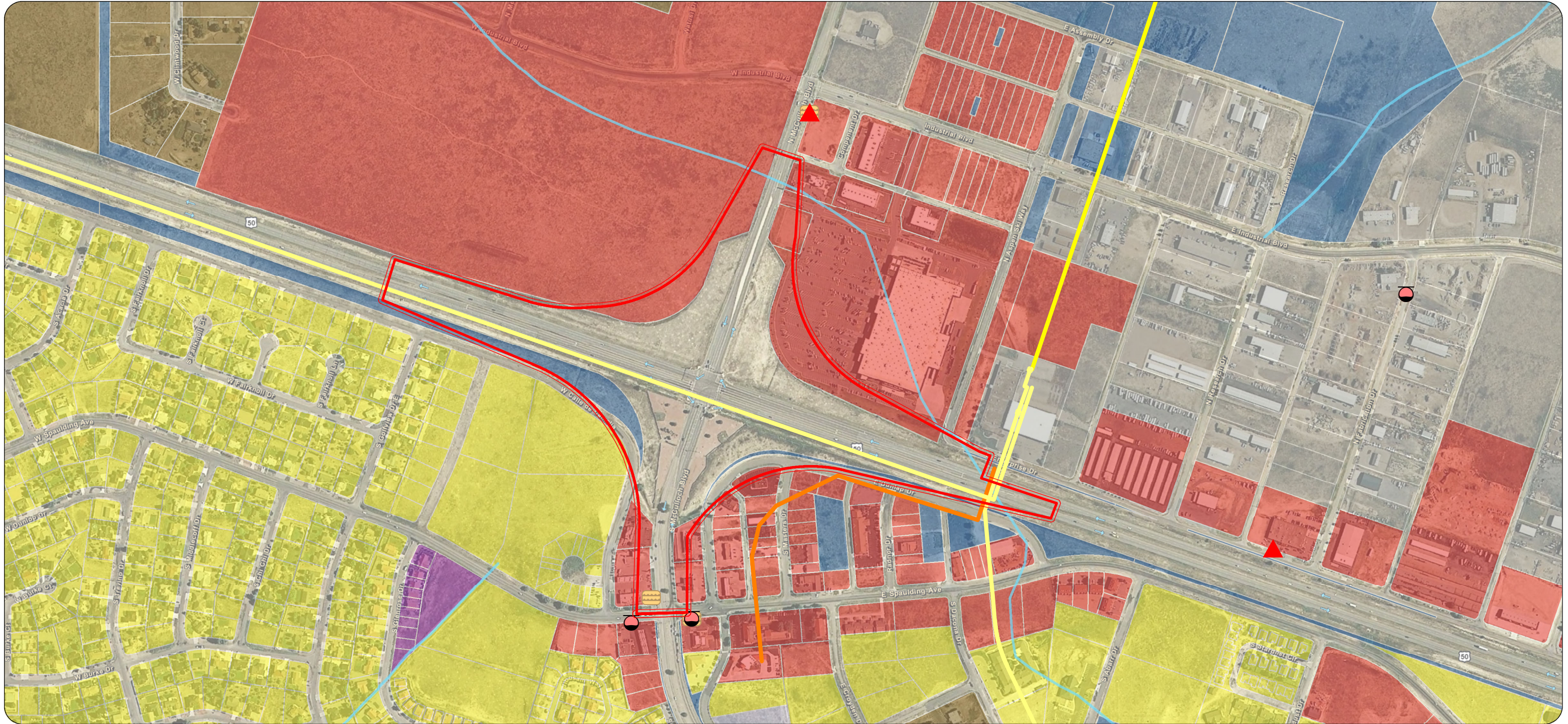
DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

Feet



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Four-Level Stack Interchange (FS-3)

Roadway Design

Roadway Footprint
 Construction Footprint

Waterways

Floodplain
 Streams

Zoning

Agricultural
 Industrial
 Public Use

Office
 Business
 Residential
 PUD/RULP

HazMat

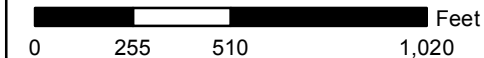
Underground Storage Tank Leak
 Underground Storage Tanks
 RCRA Generator Sites

Utilities

Sanitary Sewer
 Gas
 Underground Fiber
 Electric Transmission

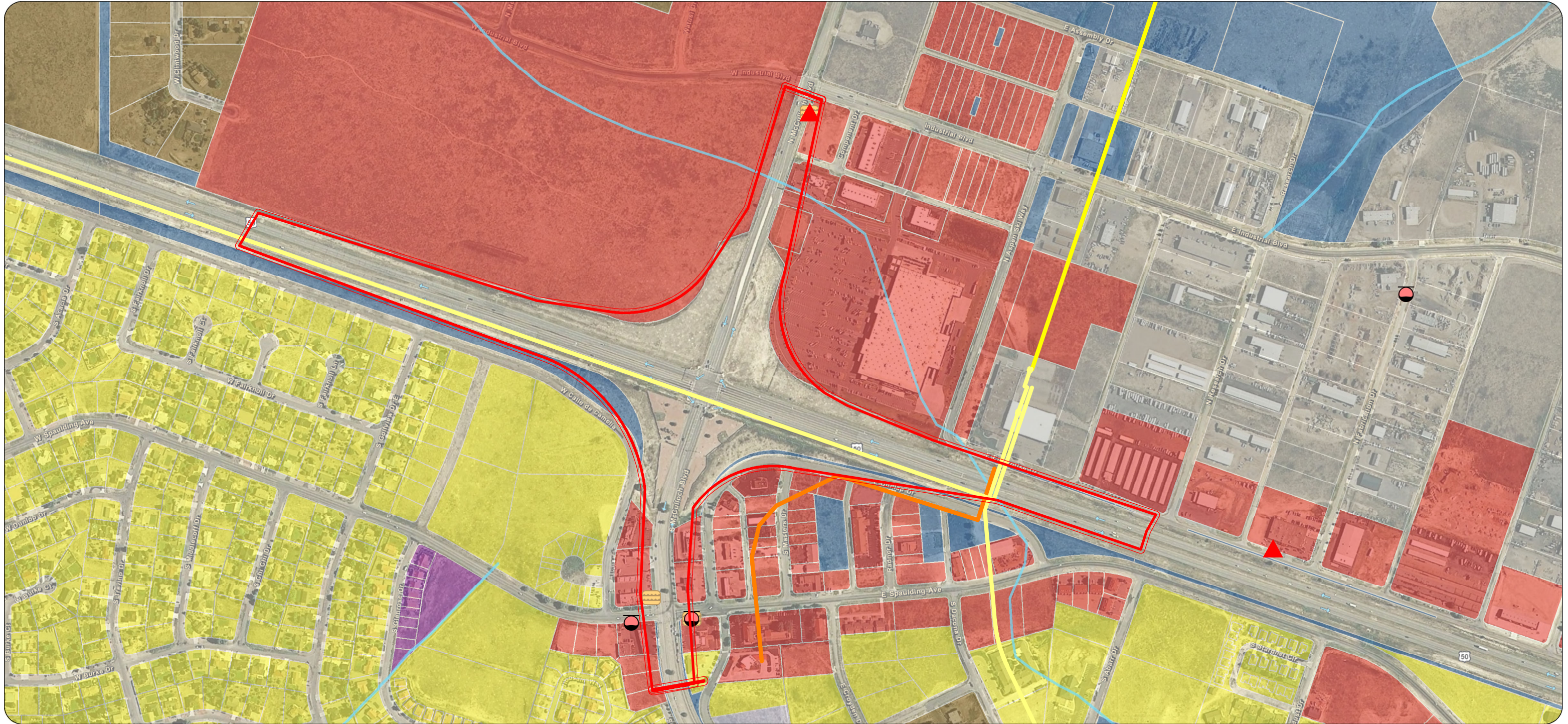


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Three-Level Roundabout (TR-3)

Roadway Design

— Roadway Footprint
— Construction Footprint

Waterways

▨ Floodplain
— Streams

Zoning

■ Agricultural
■ Industrial
■ Public Use

■ Office
■ Business
■ Residential
■ PUD/RULP

HazMat

○ Underground Storage Tank Leak
○ Underground Storage Tanks
▲ RCRA Generator Sites

Utilities

— Sanitary Sewer
— Gas
— Underground Fiber
- - - Electric Transmission



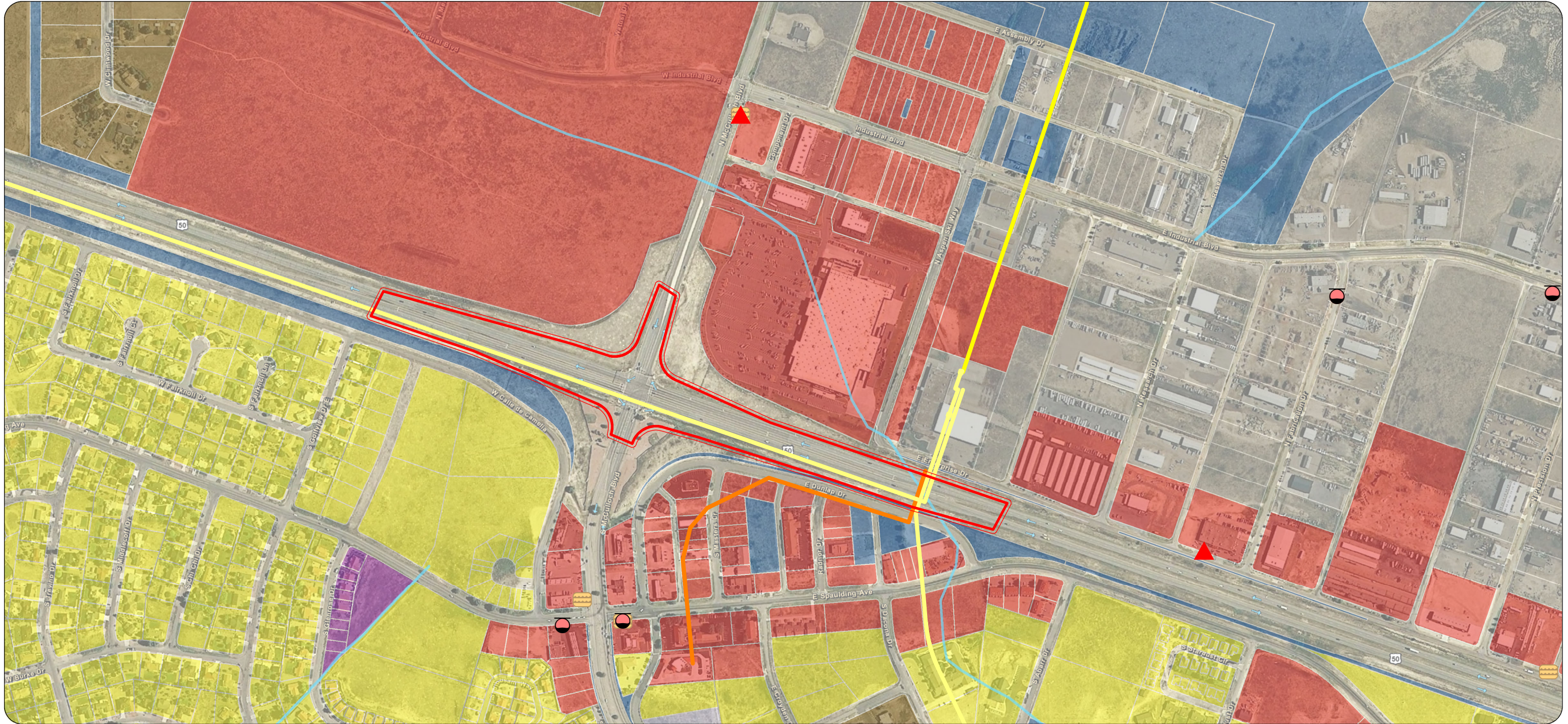
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Two-Leg Continuous Flow Intersection (CT-3)

<p>Roadway Design</p> <ul style="list-style-type: none"> Roadway Footprint Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> Floodplain Streams 	<p>Zoning</p> <ul style="list-style-type: none"> Agricultural Industrial Public Use 	<ul style="list-style-type: none"> Office Business Residential PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> Underground Storage Tank Leak Underground Storage Tanks RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> Sanitary Sewer Gas Underground Fiber Electric Transmission
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J.F. SATO AND ASSOCIATES

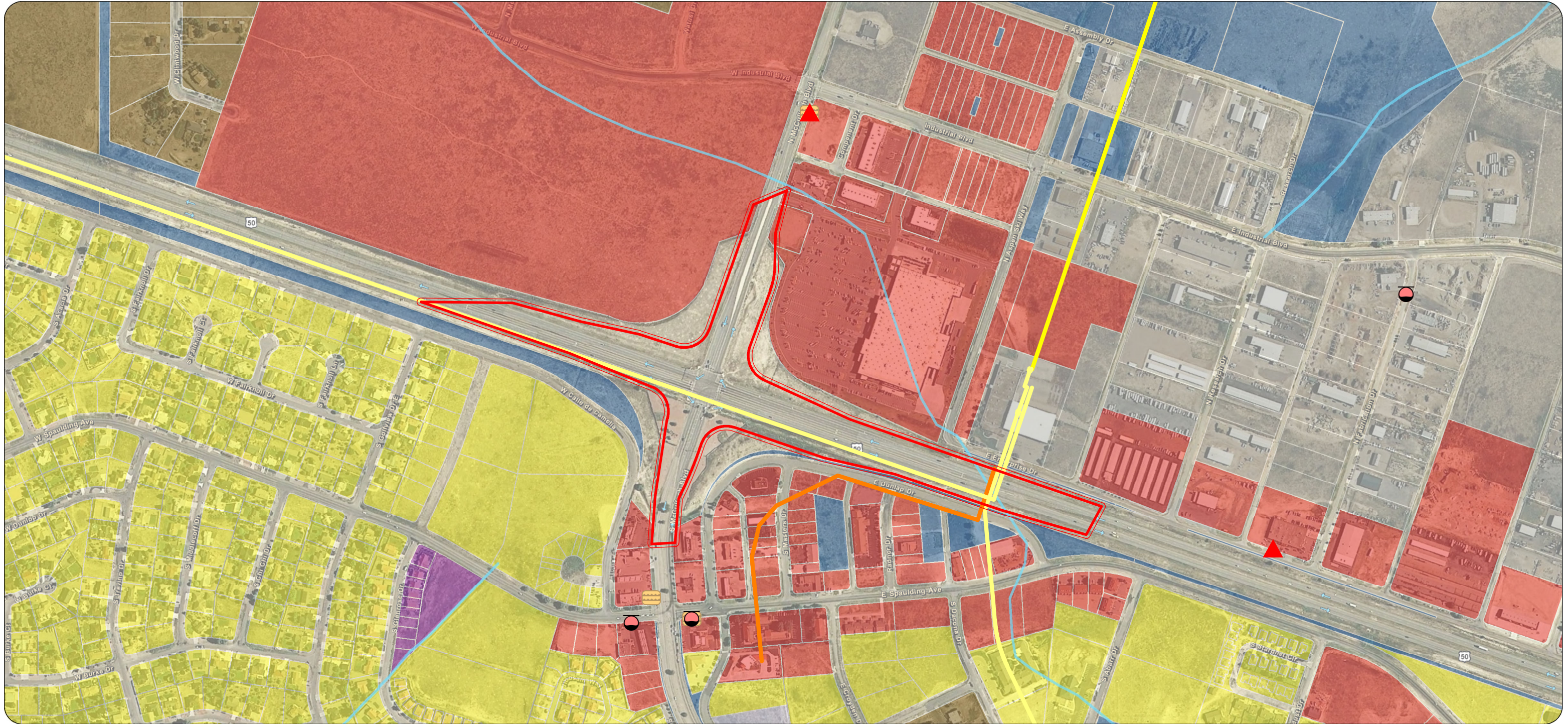
DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Four-Leg Continuous Intersection (CF-3)

Roadway Design

Roadway Footprint

Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/RULP

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Sanitary Sewer

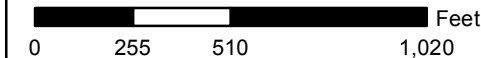
Gas

Underground Fiber

Electric Transmission

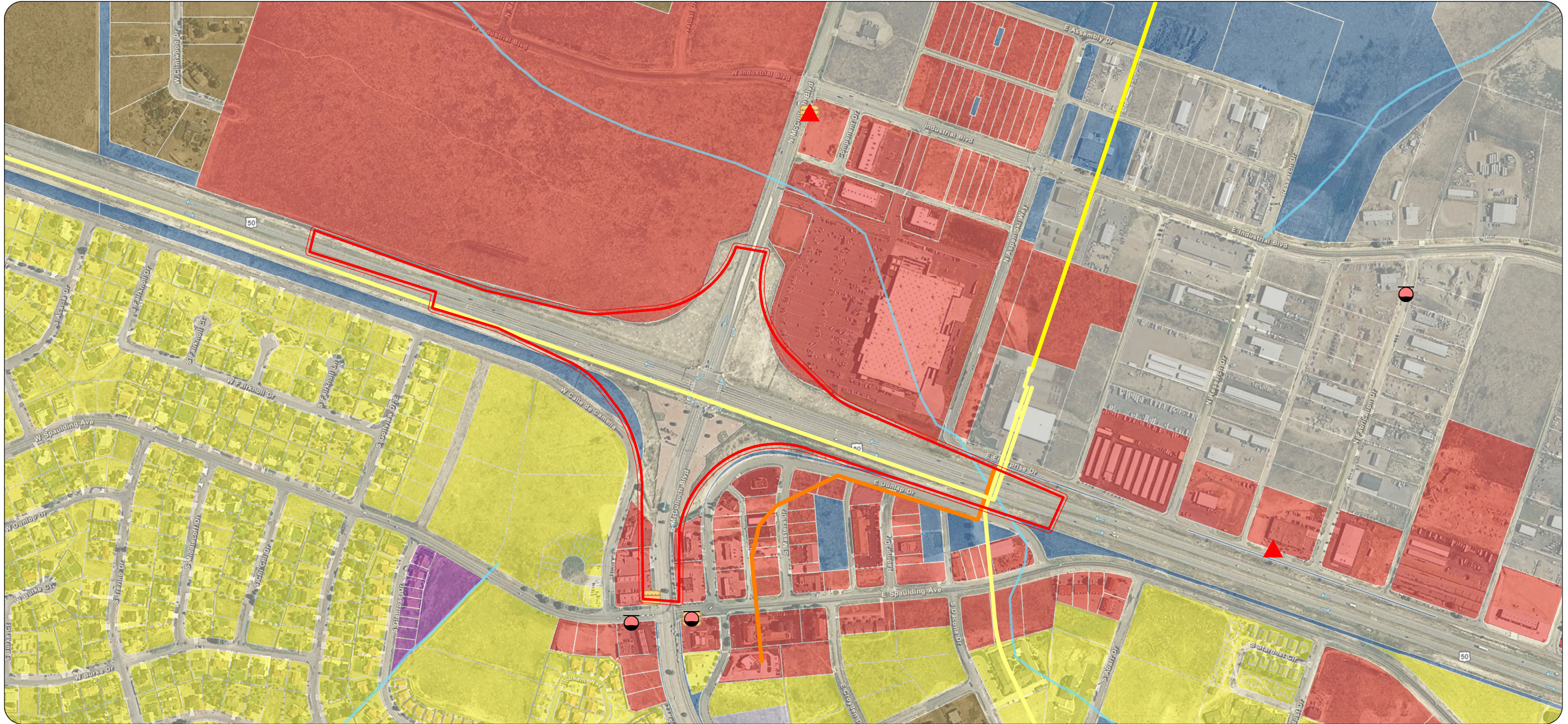


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch

Diverging Diamond Interchange (DD-7)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

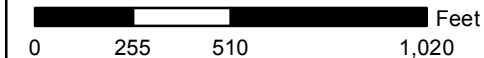
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Purcell Blvd.

Legend:

– = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
DI-4 Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS √ Turning movement benefits: No delay to through movements on major roadway (US 50 or Pueblo Blvd.) + Local access: No access impacts; all turning movements remain as existing √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 30 conflict points (including 10 crossings) – 2 fewer conflict points than existing; greatest number of crossing points √ Driver expectation: Many applications elsewhere in Colorado – several on I-25 in Pueblo 	<ul style="list-style-type: none"> + Land use: Requires approximately 0.5 to 1 acre outside CDOT right-of-way (ROW), including lands zoned for business and public use + Parcels: No impacts on developed parcels, minor impacts on 3 undeveloped parcels √ Future land use compatibility: Compatible with the planned Arterial Commercial Future Mixed Uses for the US 50 corridor between Purcell Blvd. and Main McCulloch Blvd. √ Community/business cohesion: Compatible with the existing and planned land uses and local road network √ Streams: Approximately 680 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: No impacts 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases 	<ul style="list-style-type: none"> + Retain for further analysis + Minimizes impacts on land uses + Avoids any developed parcels + No access impacts + Compatible with future planning + Familiar interchange type + Phasing flexibility
DF-4 Diamond Interchange with Flyover	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to high-volume turning movement given flyover – Local access: Access closure in southwest quadrant to E. Kimble Dr. (Wendy's); longer alternate access available √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 28 conflict points (including eight crossings); 4 fewer conflict points than existing √ Driver expectation: Familiar to drivers with applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 2 acres outside CDOT ROW, including lands zoned for business and public use √ Parcels: Impacts on 4 parcels (2 developed parcels and 2 undeveloped parcels) √ Future land use compatibility: Compatible with the planned Arterial Commercial Future Mixed Uses for the US 50 corridor between Purcell Blvd. and Main McCulloch Blvd. √ Community/business cohesion: Compatible with the existing and planned land uses and local road network √ Streams: Approximately 600 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. – Visual: Among the greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: In close proximity to 1 underground storage tank in the northeast quadrant and 1 in the northwest quadrant and 1 underground storage tank leak in southeast quadrant. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$30M to \$35M + Phasing: May be built in phases 	<ul style="list-style-type: none"> – Discontinue from further consideration – More land use impacts than the Diamond Interchange – Among the greatest for visual impact – Access closure to southwest quadrant

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
SP-4 Single-Point Urban Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Single traffic signal for intersection of ramps and cross street - Local access: Access closure in southeast quadrant - primary access to a driveway √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 24 conflict points – including eight crossing – eight fewer conflict points than existing √ Driver Expectation: Familiar to drivers – existing interchange at I-25 and US 50 	<ul style="list-style-type: none"> + Land use: Requires approximately 0.5 to 1 acre outside CDOT ROW, including lands zoned for business and public use + Parcels: Minor impacts on 2 undeveloped parcels √ Future land use compatibility: Compatible with the planned Arterial Commercial Future Mixed Uses for the US 50 corridor between Purcell Blvd. and Main McCulloch Blvd. √ Community/business cohesion: Compatible with the existing and planned land uses and local road network √ Streams: Approximately 500 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. √ Visual: Intermediate potential for visual impact - Noise: Potential to increase noise levels with US 50 on structure √ Hazardous materials: Close proximity to 1 underground storage tank in the northwest quadrant. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$25M - \$30M - Phasing: Can not be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Access closure to southeast quadrant - Potential to increase noise - Lack of phasing flexibility
PC-4 Partial Cloverleaf	<ul style="list-style-type: none"> + LOS: Greatly Exceeds Purpose & Need LOS √ Turning movement benefits: High-volume left turn movements accommodated with loop ramps rather than at signalized intersections Local access: <ul style="list-style-type: none"> - Access closure in southwest quadrant to E. Kimble Dr.; and access closure in southeast quadrant to a driveway. √ Access modifications in northwest quadrant to Hailey Lane (Right-in/Right-out) √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including 2 crossings); 14 fewer conflict points than existing √ Driver expectation: Many applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 9 acres outside CDOT ROW; impact on lands zoned for mixed residential, multi-residential, business, agricultural, and public use Parcels: <ul style="list-style-type: none"> - Two total takes of developed parcels - Two total takes of undeveloped parcels √ Impact on 2 additional undeveloped parcels - Future land use compatibility: Inconsistent with planned Arterial Commercial Future Mixed Uses due to access impacts - Community/business cohesion: The loss of access would reduce community/business cohesion √ Streams: Approximately 860 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: Potential conflict with 1 underground storage tank in the northeast quadrant and in close proximity to 1 underground storage tank in the northwest quadrant. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$35M to \$40M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Access closures to southeast, southwest and northwest quadrants - Considered inconsistent with future planning due to access closures - Reduction in community/business cohesion - Moderate land use impacts

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
PF-4 Partial Cloverleaf with Flyovers	+ LOS: Greatly Exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated; no signals / directional ramps allow high-speed (45 mph) travel for high-volume left turning movements - Local access: Four access closures: - Southwest quadrant – Kimble Dr. to Wendy's - Southeast quadrant – Driveway - Northwest quadrant – Hailey Lane to Walgreens - Northeast quadrant – N. Market Plaza to Safeway and McDonalds - Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado	- Land use: Requires approximately 30 to 35 acres outside CDOT ROW; impact on lands zoned for mixed residential, multi-residential, business, and public use Parcels: - 10 total takes of developed parcels - 4 total takes of undeveloped parcels √ Impacts on 2 undeveloped parcels and on 3 developed parcels - Future land use compatibility: Incompatible with planned Arterial Commercial Future Mixed Uses due to the extensive loss of access all quadrants - Community/business cohesion: The loss of access and developed commercial parcels would eliminate community/business cohesion at this intersection - Streams: Approximately 1,260 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. - Visual: Among the greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: Potential conflicts with 2 underground storage tanks in the northeast quadrant and 1 underground storage tank in the northwest quadrant. Potential conflict with 1 underground storage tank leak in the southeast quadrant.		√ Cost: Range of typical costs for this option is \$40M to \$45M + Phasing: May be built in phases	- Discontinue from further consideration - Greatest land use impacts and considerable parcels takes - Among the greatest visual impact - Access closure in the all four quadrants - Incompatible with future planning due to extensive loss of access - Elimination of community/business cohesion - Among the highest cost

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Disposition and Rationale	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>			Feasibility and Cost <i>Criteria: Construction cost and phasing</i>
FS-4 Four-Level Stack Interchange	<ul style="list-style-type: none"> + LOS: Greatly Exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated; no signals / directional ramps allow high-speed (45 mph) / travel for all turning movements - Local access: 6 access closures including: <ul style="list-style-type: none"> - Southwest quadrant – E. Kimble Dr. and S. Tiffany Dr. - Southeast quadrant – E. Mallon Dr. and driveway - Northwest quadrant – Hailey Lane - Northeast quadrant – N. Market Plaza These access closures would effectively eliminate access to commercial development in the northwest quadrant and greatly reduce access to commercial development in the other quadrants at this intersection. Closure of East Mallon Dr. would also reduce access to residential properties in the southeast quadrant area. - Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 7 acres outside CDOT ROW; impact on lands zoned for business and public use Parcels: <ul style="list-style-type: none"> - 11 total takes of developed parcels - 4 total takes of undeveloped parcels √ Impacts on 5 undeveloped parcels and 1 developed parcel - Future land use compatibility: Incompatible with planned Arterial Commercial Future Mixed Uses due to the extensive loss of access all quadrants - Community/business cohesion: The loss of access and developed commercial parcels would eliminate community/business cohesion at this intersection - Streams: Approximately 1,500 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. - Visual: Greatest potential for visual impact – highest level of visual contrast to setting and viewers due to high profile √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: Potential conflict for 1 underground storage tank in the northeast quadrant and in close proximity to 1 underground storage tank in the northwest quadrant Potential conflict with 1 underground storage tank leak in the southeast quadrant. 		<ul style="list-style-type: none"> - Cost: Range of typical costs for this option is \$65M to \$75M – highest cost √ Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Greatest number of developed parcel takes - Greatest number of access closures in all quadrants - Greatest stream impacts - Greatest visual impact - Highest cost - Incompatible with future planning due to extensive loss of access - Elimination of community/business cohesion

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
TR-4 Three-Level Roundabout	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated; no signals / through movements bypass roundabout - Local access: 5 access closures - similar to Four-Level Stack Interchange access impacts, with the same consequences to local businesses and residents. - Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: May be unfamiliar – no current application in Colorado	√ Land use: Requires approximately 10 to 15 acres outside CDOT ROW; impact on lands zoned for mixed residential, multi-residential, business, and public use Parcels: - 4 total takes of developed parcels √ Impacts on 4 developed parcels - Future land use compatibility: Incompatible with planned Arterial Commercial Future Mixed Uses due to the loss of frontage access in all quadrants. - Community/business cohesion: The loss of access in the southwest, northwest and northeast quadrants of this interchange would reduce community/business cohesion √ Streams: Approximately 840 ft. of stream impact on a local tributary to Williams Creek. - Visual: Among the greatest potential for visual impact - Noise: Potential to increase noise levels with US 50 on structure √ Hazardous materials: Potential conflict for 1 underground storage tank in the northeast quadrant and in close proximity to 1 underground storage tank in the northwest quadrant Potential conflict with 1 underground storage tank leak in the southeast quadrant.		√ Cost: Range of typical costs for this option is \$45M to \$55M - Phasing: Difficult to build in phases	- Discontinue from further consideration - Greatest number of access closures in all quadrants - Greatest stream impacts - Among the greatest visual impact - Difficult to build in phases - Among the highest cost - Incompatible with future planning due to extensive loss of access - Elimination of community/business cohesion - Potential to increase noise - Moderate land use impacts

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
CF-4 Four-Leg Continuous Flow Intersection	√ LOS: Meets Purpose & Need LOS √ Turning movement benefits: Left turns share a green phase with corresponding through movements √ Local access: Four access modifications: √ Southwest quadrant – E. Kimble Dr.: ¾ movement (No eastbound to northbound) √ Southeast quadrant – Driveway across from Kimble: Right-in/Right-out – Northwest quadrant – Hailey Lane: access from northbound from Purcell eliminated – Northeast quadrant – N. Market Plaza: access from northbound Purcell eliminated √ Pedestrian and bicycle access: Access similar to or improved from current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: May be unfamiliar – no current application in Colorado	+ Land use: Requires approximately 0.5 to 1 acre outside CDOT ROW; impact on lands zoned for business and public use Parcels: – 2 total takes of developed parcels – 2 total takes of undeveloped parcels √ Impact on 2 undeveloped parcels – Future land use compatibility: Inconsistent with planned Arterial Commercial Future Mixed Uses – Community/business cohesion: Disruption to existing and planned land uses and local road network + Streams: Approximately 250 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: Potential conflict for 1 underground storage tank in the northeast quadrant and potential conflict with 1 underground storage tank leak in the southeast quadrant.		+ Cost: Range of typical costs for this option is \$5M to \$10M – least cost + Phasing: May be built in phases	+ Retain for further analysis + Least visual impact + Least cost + Among the least land use impacts + Minimizes stream impacts – Consistent with future planning – Generally compatible with community/business cohesion + Phasing flexibility - The ROW used for this layout can be used for future Diamond Interchange if the demand exceeds the capacity of Four-Leg CFI

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

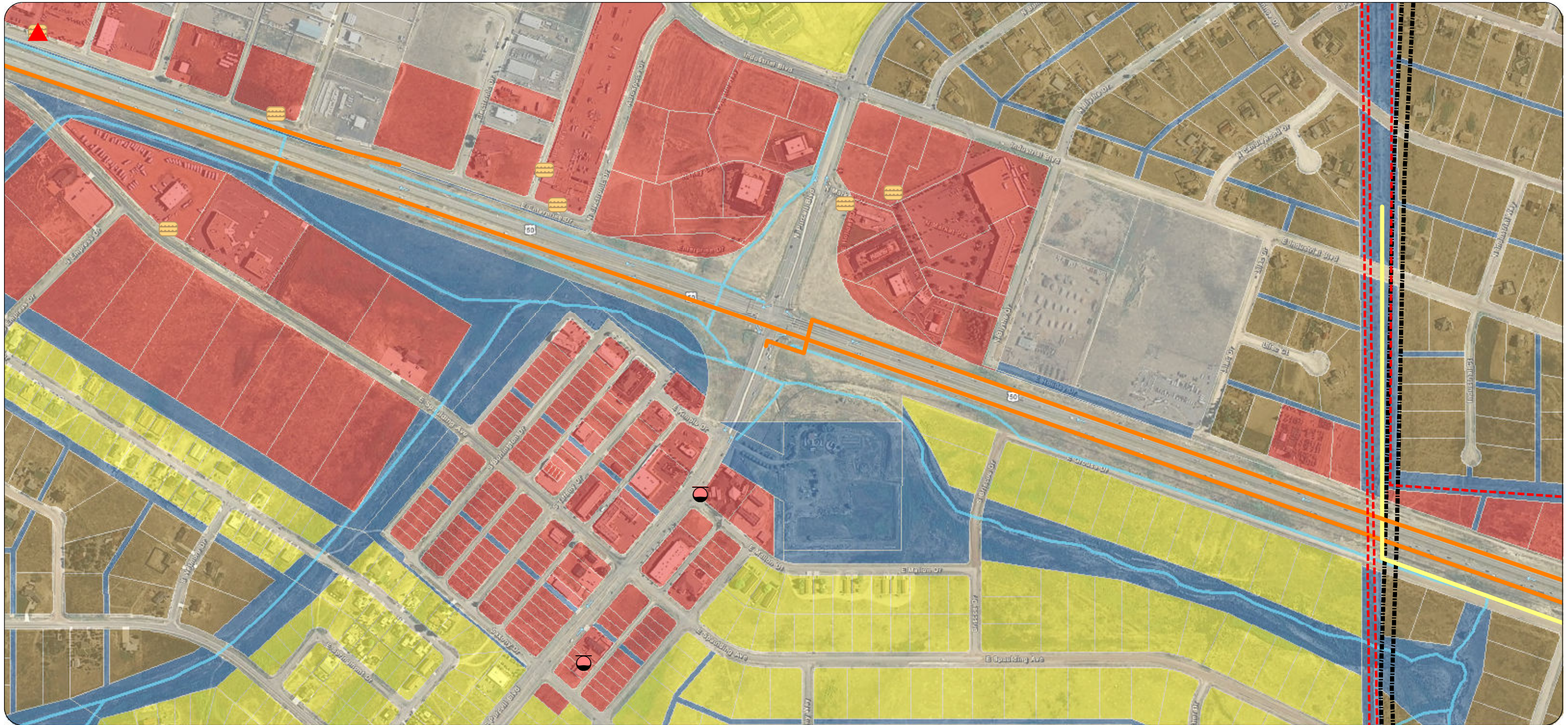
PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, TES species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
DD-4 Diverging Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns are free or yield-controlled movements to and from ramps / accommodates large left turning volumes - Local access: Four access closures including: <ul style="list-style-type: none"> - Southwest quadrant - Kimble Dr. (west side of Purcell) – alternate access would be Spaulding Ave. to Tiffany Dr. - Southeast quadrant - a driveway (east side of Purcell) – No alternate access exists - Southeast quadrant - business access (Alternate access from Mallon Dr.) - Northwest quadrant - Hailey Lane – access from northbound Purcell eliminated √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including 2 crossings); 14 fewer conflict points than existing √ Driver expectation: May be unfamiliar to drivers. Reversed travel directions may be disorienting; none in Colorado 	<ul style="list-style-type: none"> √ Land use: Requires approximately 4 acres outside CDOT ROW; impact on lands zoned for business and public use √ Parcels: Impacts on 2 developed parcels and 7 undeveloped parcels - Future land use compatibility: Incompatible with arterial commercial future mixed uses due to the loss of access - Community/business cohesion: The loss of access in the southwest, southeast and northwest would greatly reduce community cohesion √ Streams: 650 ft. of stream impact on a local drainage ditch flowing to Wild Horse Dry Creek. √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: Potential conflict for 1 underground storage tank in the northeast quadrant and in close proximity to 1 underground storage tank in the northwest quadrant Potential conflict with 1 underground storage tank leak in the southeast quadrant. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases from a conventional diamond interchange 	<ul style="list-style-type: none"> - Discontinue from further consideration - Access closures in all four quadrants - Incompatible with future planning due to access closures - Greatly reduces community/business cohesion

Resources not differentiating among intersection options:
 Historic properties – None were recorded
 General wetlands – All options had no wetland impacts
 Floodplain – None in vicinity of this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Context Map

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

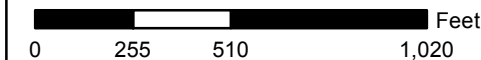
Underground Fiber

Electric Transmission

Water Transmission

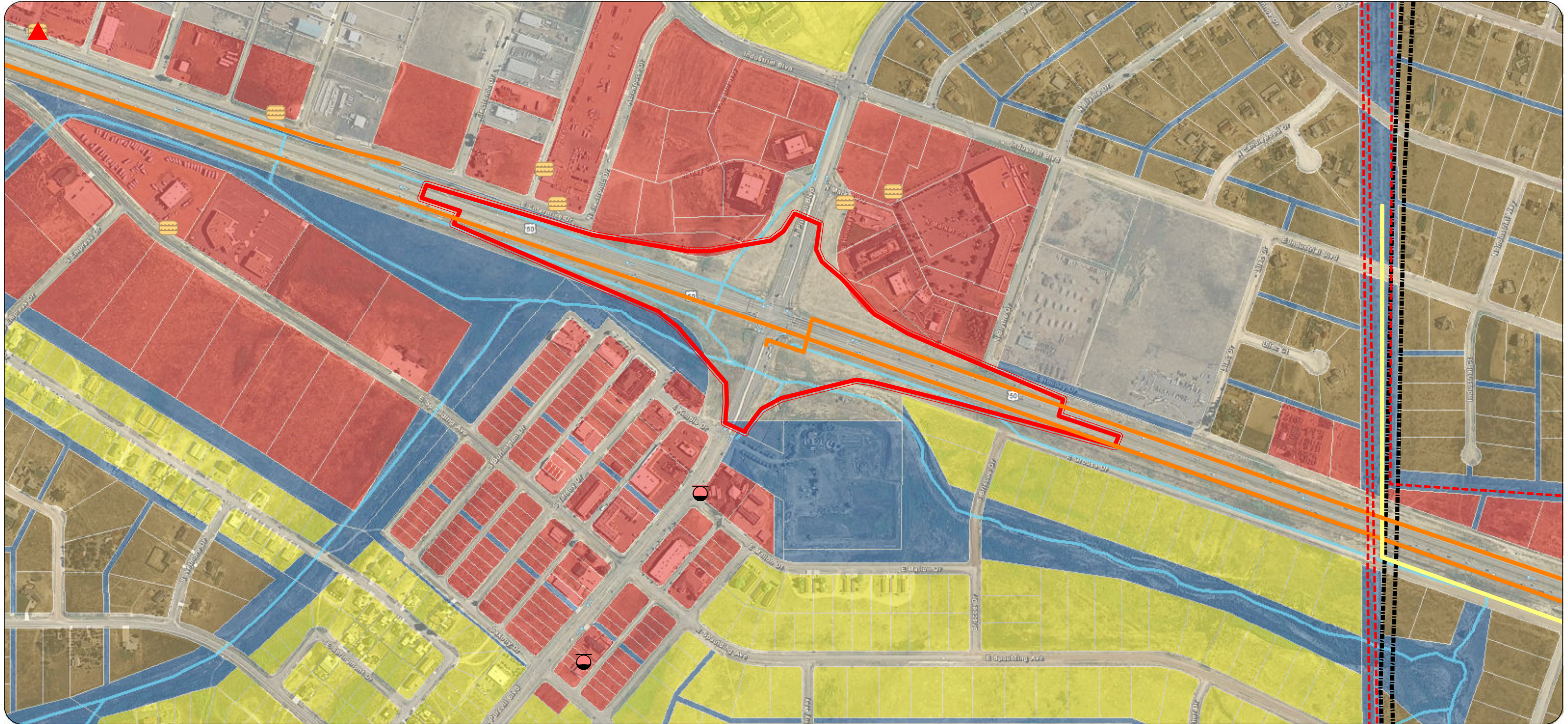


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard
Diamond (DI-4)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p> <p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> Underground Storage Tank Leak</p> <p> Underground Storage Tanks</p> <p> RCRA Generator Sites</p>	<p>Utilities</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p> <p> Water Transmission</p>
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DOT DEPARTMENT OF TRANSPORTATION

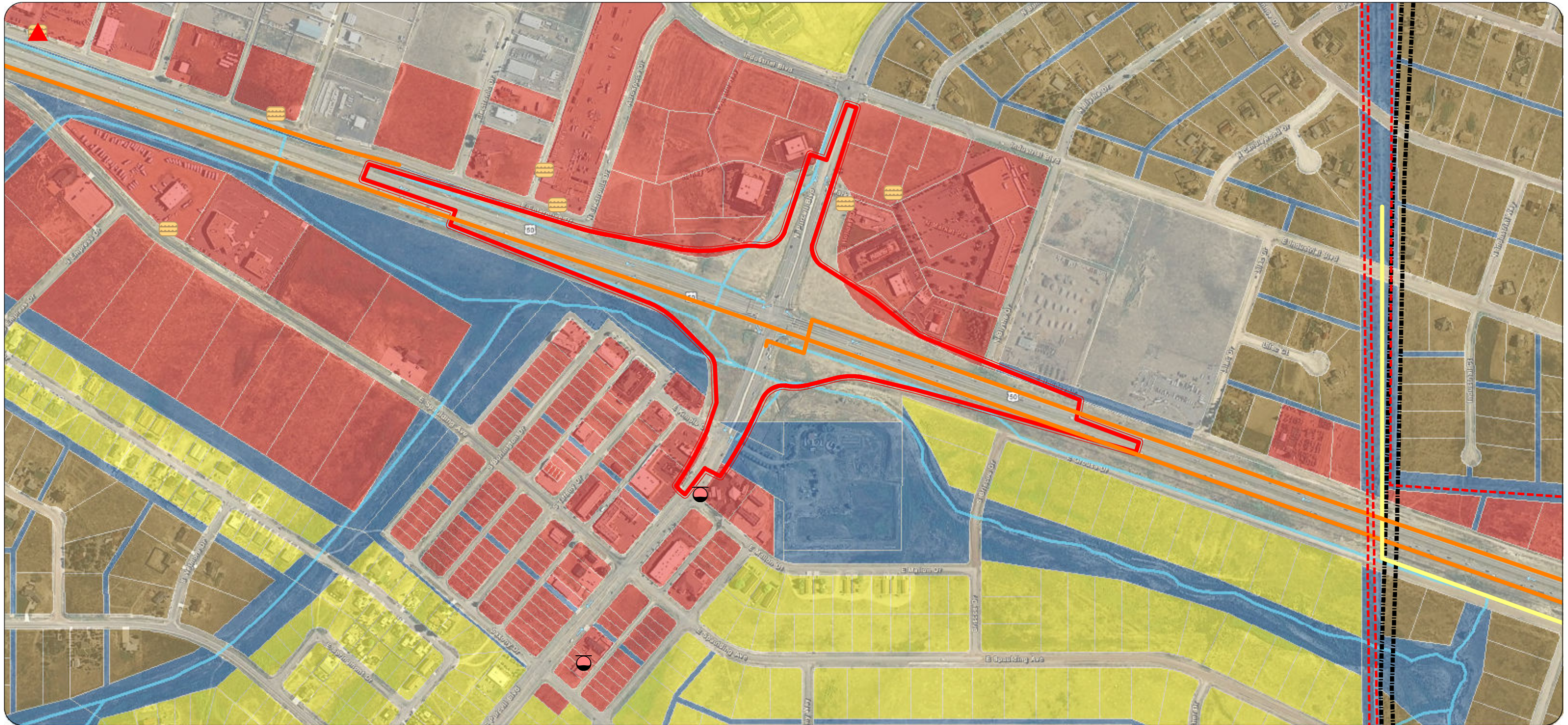
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Diamond w/ Flyovers (DF-4)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

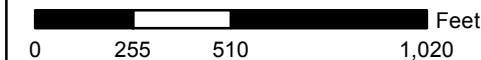
Underground Fiber

Electric Transmission

Water Transmission

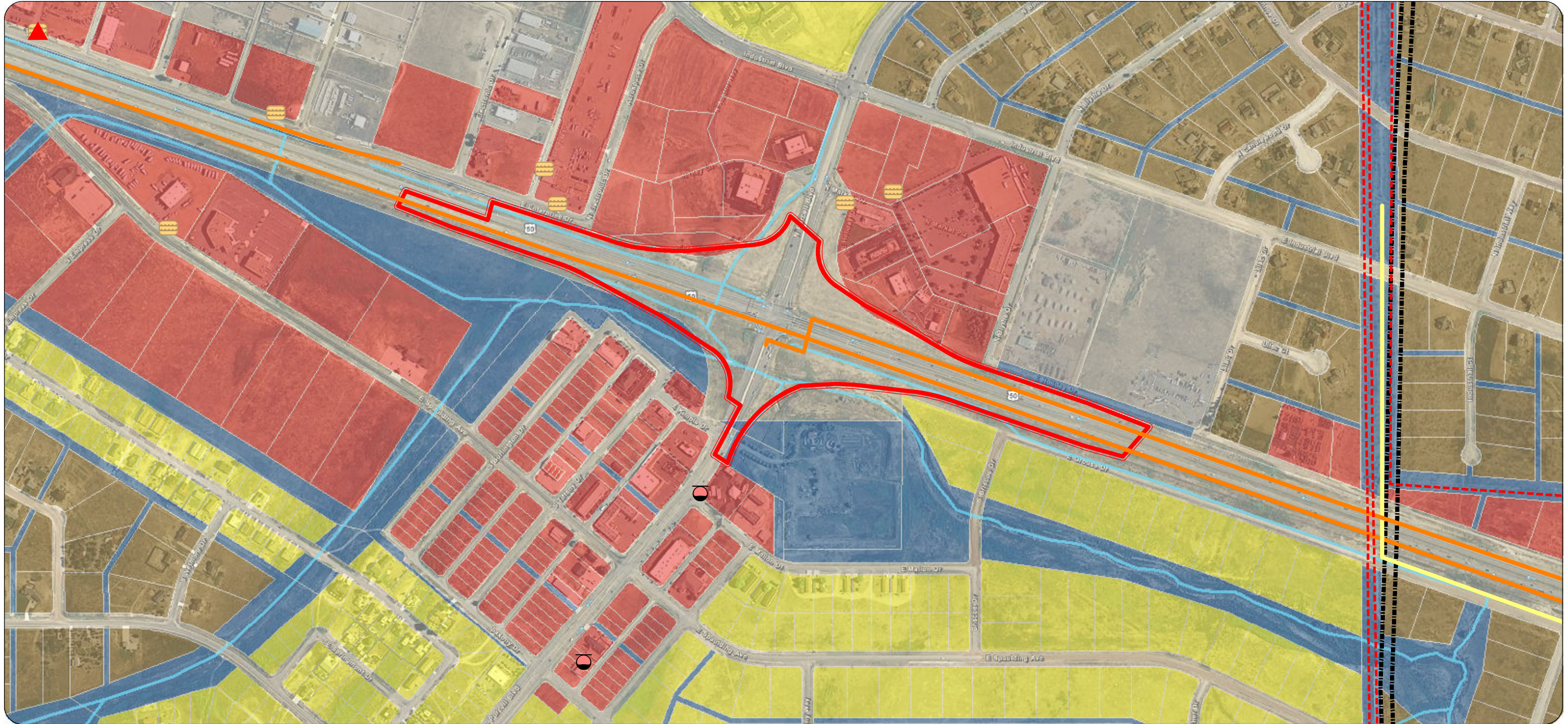


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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Single-Point Urban (SP-4)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

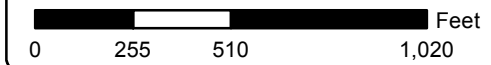
Underground Fiber

Electric Transmission

Water Transmission

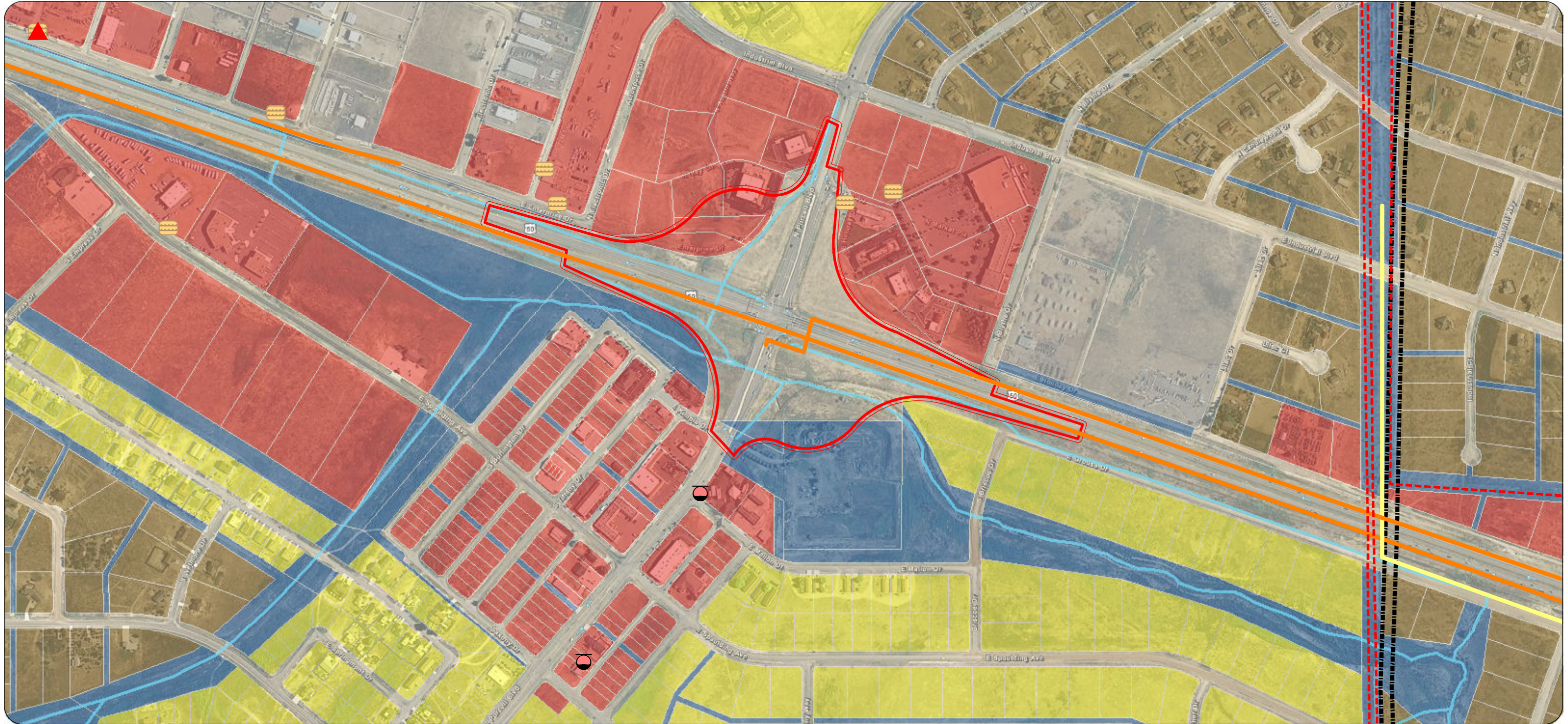


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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard
Partial Cloverleaf (PC-4)

<p>Roadway Design</p> <ul style="list-style-type: none"> Roadway and Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> Floodplain Streams 	<p>Zoning</p> <ul style="list-style-type: none"> Agricultural Industrial Public Use Office Business Residential PUD/Rural Land Use Plan 	<p>HazMat</p> <ul style="list-style-type: none"> Underground Storage Tank Leak Underground Storage Tanks RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> Gas Underground Fiber Electric Transmission Water Transmission
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DOT DEPARTMENT OF TRANSPORTATION

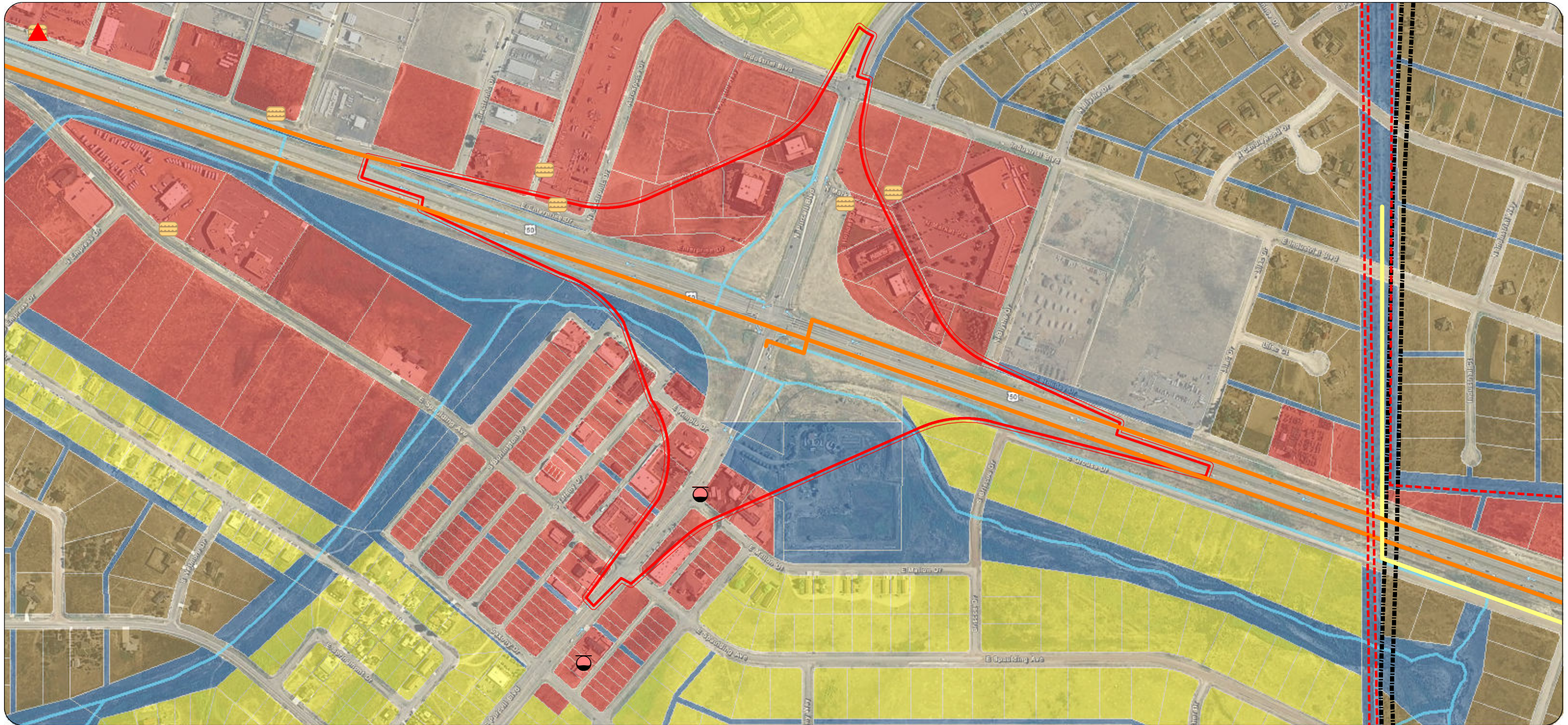
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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Partial Cloverleaf
w/ Flyovers (PF-4)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural
Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

Underground Fiber

Electric Transmission

Water Transmission



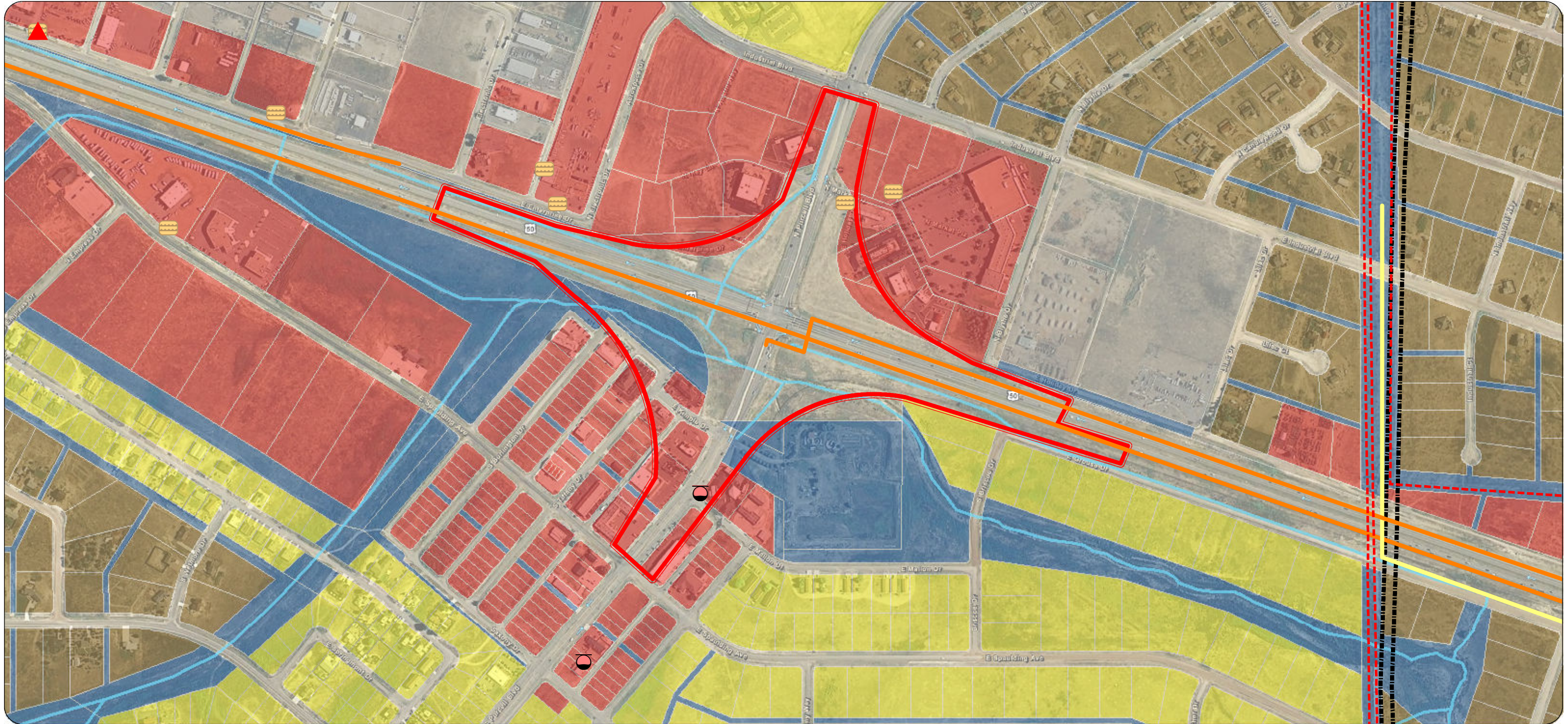
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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Four-Level Stack (FS-4)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

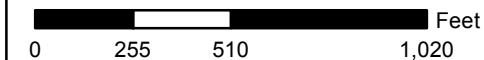
Underground Fiber

Electric Transmission

Water Transmission

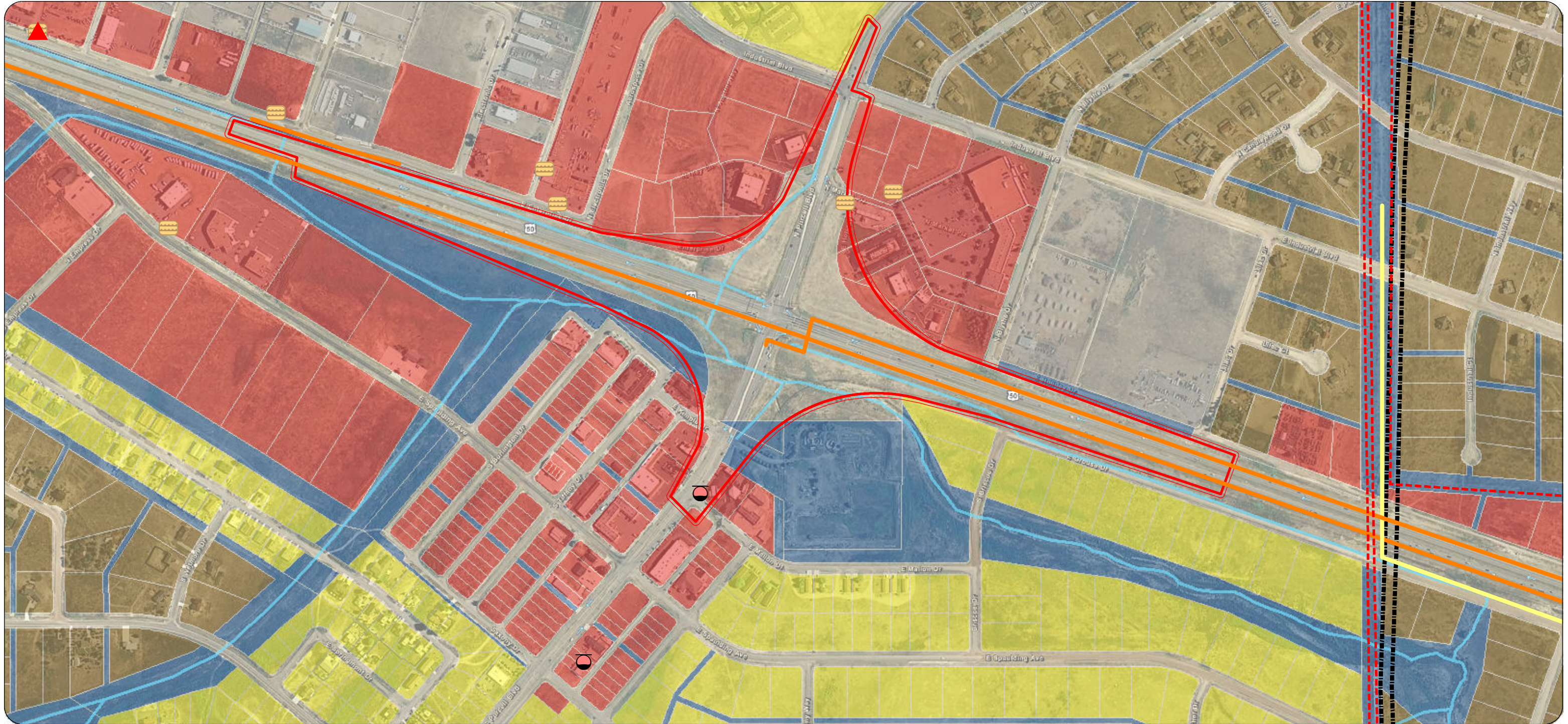


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard

Three-Level Roundabout (TR-4)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

Underground Storage Tank Leak

Underground Storage Tanks

RCRA Generator Sites

Utilities

Gas

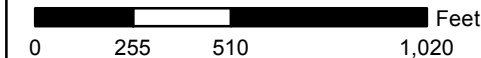
Underground Fiber

Electric Transmission

Water Transmission

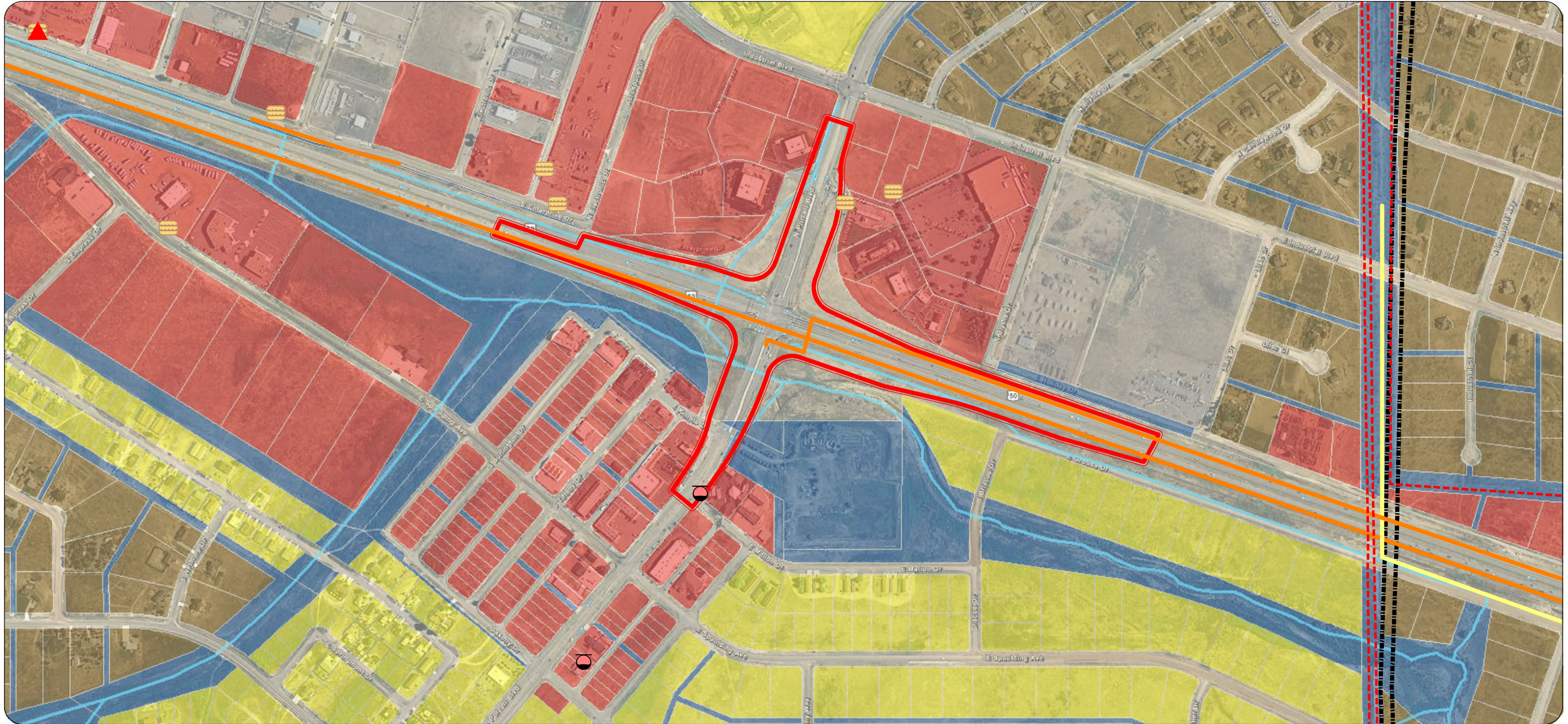


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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard
Four-Leg Continuous Flow Intersection (CF-4)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p>	<p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> Underground Storage Tank Leak</p> <p> Underground Storage Tanks</p> <p> RCRA Generator Sites</p>	<p>Utilities</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p> <p> Water Transmission</p>
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JFS & A
 J.E. SATO AND ASSOCIATES

DOT
 DEPARTMENT OF TRANSPORTATION

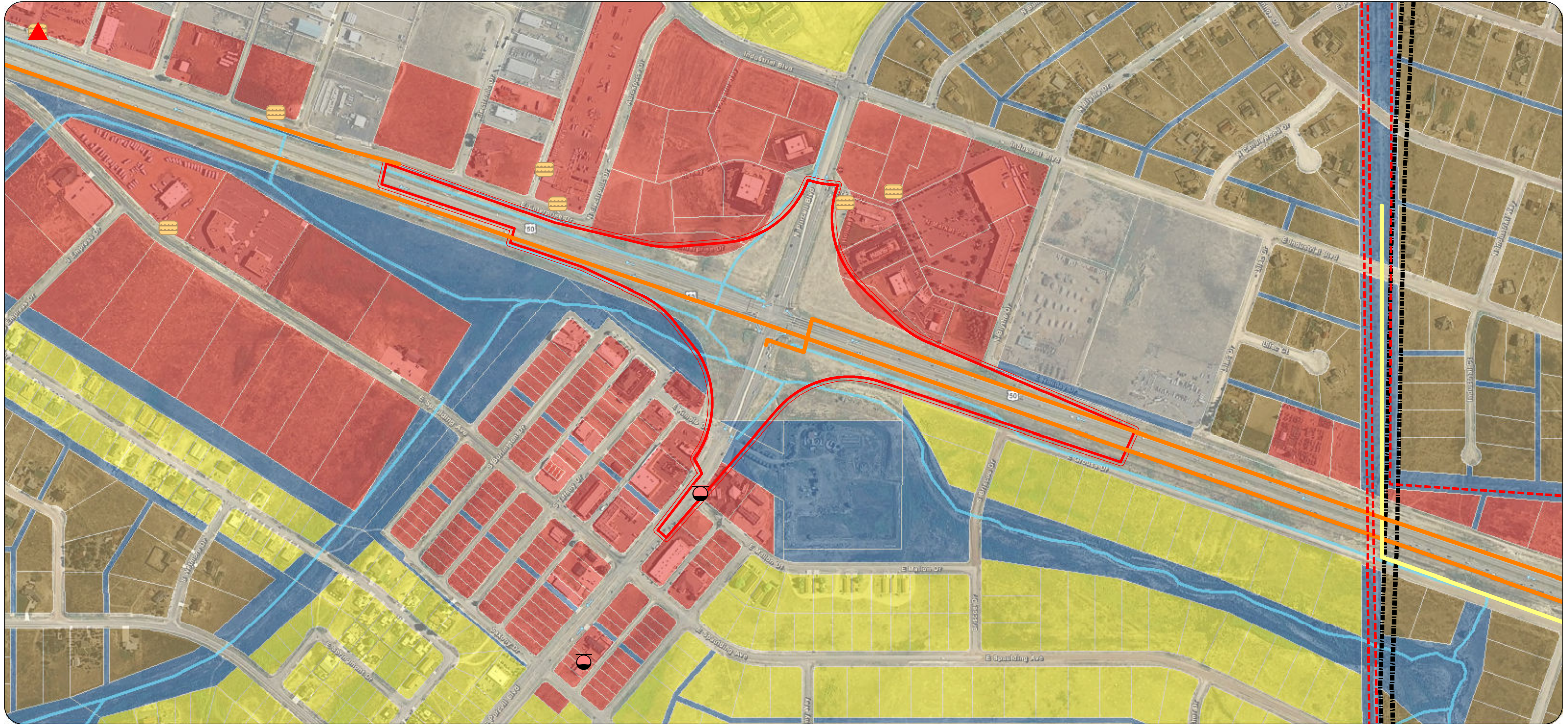
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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Purcell Boulevard
Diverging Diamond (DD-4)

Roadway Design Roadway and Construction Footprint Waterways Floodplain Streams	Zoning Agricultural Industrial Public Use Office Business Residential PUD/Rural Land Use Plan	HazMat RCRA Generator Sites Underground Storage Tanks Underground Storage Tank Leak	Utilities Gas Underground Fiber Electric Transmission Water Transmission
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Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Pueblo Blvd.

Legend:

– = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
PC-5 Partial Cloverleaf	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: High-volume left turn movements accommodated with loop ramps rather than at signalized intersections Local access: + No access closures √ Realignment of Capri Circle due to westbound exit ramp – access to future zoned development √ Realignment of Wild Horse Rd. – access to CDOT maintenance located at northwest quadrant √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including two crossings); 14 fewer conflict points than existing √ Driver expectation: Many applications elsewhere in Colorado	√ Land use: Requires approximately 3 acres outside CDOT right-of-way (ROW) including lands zoned for public use. + Parcels: Impacts on 1 parcel (CDOT maintenance facility) √ Streams: 2,800 ft. of stream relocation for Williams Creek √ General wetlands: 0.8 acre of wetlands + Floodplain: Approximately 2.5 acres of floodplain impact based on FEMA + Visual: Intermediate potential for visual impact	√ Cost: Range of typical costs for this option is \$35M to \$40M + Phasing: May be built in phases	+ Retain for further analysis + Has least impacts on floodplains + Minimizes impacts on parcels + Avoids impacts on business + Requires no access closures + Minimizes visual impacts + Offers phasing flexibility + Has moderate cost + Familiar interchange type
PF-5 Partial Cloverleaf with Flyovers	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for high-volume left turning movements √ Local access: + Disruption to Bahama Dr. due to eastbound exit ramp - eliminates access to 7 parcels in southwest quadrant of interchange + Disruption to Capri Circle due to westbound exit ramp – eliminates access to future zoned development + Realignment of Wild Horse Rd. – access to CDOT maintenance located at northwest quadrant – Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed √ Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado	√ Land use: Requires approximately 4 to 5 acres outside CDOT ROW, including lands zoned for business and public use - among the greatest impacts to uses √ Parcels: Impacts on 9 parcels (1 agricultural, 2 businesses and 6 public use, including CDOT maintenance facility) – Streams: 3,850 ft. of stream relocation for Williams Creek and Wild Horse Creek; greatest impact on streams √ General wetlands: 0.9 acre of wetlands √ Floodplain: Approximately 3 acres of floodplain impacts based on FEMA √ Visual: Among the greatest potential for visual impact	√ Cost: Range of typical costs for this option is \$40M to \$45M + Phasing: May be built in phases	– Discontinue from further consideration – Greatest stream and wetland impacts – Among the greatest floodplain impacts – Among the greatest impacts on land use and parcels – Among the greatest visual impact

Resources not differentiating among intersection options:
 Future land use compatibility – All options are consistent with future mixed use
 Historic properties – None were recorded
 Community/business cohesion – 3 undeveloped quadrants
 Noise – No sensitive receptors at this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat
 Hazardous materials – No sites

Note: Construction cost does not include cost of additional ROW acquisition

The Single-Point Urban Interchange (SPUI) option does not meet the minimum LOS criterion with the Pueblo Blvd. Extension. However, without the Pueblo Blvd. Extension, the SPUI operates at acceptable LOS and avoids all land use, stream, wetland, and floodplain impacts.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
FS-5 Four-Level Stack Interchange	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for all turning movements - Local access: <ul style="list-style-type: none"> - Bahama Dr. – Access eliminated - Capri Dr. – Access eliminated - Wild Horse Rd. – Access eliminated - Baker Steamer Rd. – Access eliminated - Pedestrian and bicycle access: Access greatly reduced from current conditions; independent pedestrian/bicycle facility needed √ Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado 	<ul style="list-style-type: none"> - Land use: Requires approximately 5 acres outside CDOT ROW, including lands zoned for business and public use – the greatest impacts to uses - Parcels: <ul style="list-style-type: none"> - Total take of the CDOT maintenance facility - Impacts on 7 other parcels (2 businesses and 5 public uses) √ Streams: 3,000 ft. of stream relocation for Williams Creek and Wild Horse Creek - General wetlands: 1.3 acres of wetlands; greatest impact on wetlands √ Floodplain: Approximately 3 acres of floodplain impacts based on FEMA - Visual: Greatest potential for visual impact – highest level of visual contrast to setting and viewers due to high profile 	<ul style="list-style-type: none"> - Cost: Range of typical costs for this option is \$65M to \$75M; highest cost + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Greatest impacts on local access, land use, and parcels - Greatest visual impacts - Greatest impact on pedestrian and bicycle access - Extensive impacts on streams and wetlands - Among greatest impact on CDOT maintenance facility - Highest cost
TR-5 Three-Level Roundabout	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – through movements bypass roundabout - Local access: Same as Four-Level Stack Interchange - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed √ Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: May be unfamiliar – no current application in Colorado – one in Louisiana 	<ul style="list-style-type: none"> √ Land use: Requires approximately 2 to 3 acres outside CDOT ROW, including lands zoned for business and public use √ Parcels: <ul style="list-style-type: none"> √ Total take of the CDOT maintenance facility √ Impacts on 3 parcels (3 public use, including CDOT maintenance facility) √ Streams: 1,350 ft. of stream relocation for Williams Creek and Wild Horse Creek √ General wetlands: 0.6 acre of wetlands - Floodplain: Approximately 2 acres of floodplain impacts based on FEMA - greatest impact on floodplain √ Visual: Among the greatest potential for visual impact 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$45M to \$55M - Phasing: Difficult to build in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Greatest impacts on floodplain - Greatest impacts on local access - Greatest impact on pedestrian and bicycle access - Among greatest impact on CDOT maintenance facility - Among the greatest visual impact - Lack of flexibility for implementation - Among the highest cost options

Resources not differentiating among intersection options:
 Future land use compatibility – All options are consistent with future mixed use
 Historic properties – None were recorded
 Community/business cohesion – 3 undeveloped quadrants
 Noise – No sensitive receptors at this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat
 Hazardous materials – No sites

Note: Construction cost does not include cost of additional ROW acquisition

The Single-Point Urban Interchange (SPUI) option does not meet the minimum LOS criterion with the Pueblo Blvd. Extension. However, without the Pueblo Blvd. Extension, the SPUI operates at acceptable LOS and avoids all land use, stream, wetland, and floodplain impacts.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	Disposition and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
DD-5 Diverging Diamond Interchange	√ LOS: Meets Purpose & Need LOS √ Turning movement benefits: Left turns are free or yield-controlled movements to and from ramps – accommodates large left turning volumes Local access: + No access closures √ Realignments of Wild Horse Rd., Baker Steamer Rd., Capri Dr., and Bahama Dr. √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points(including two crossing); 14 fewer conflict points than existing √ Driver expectation: May be unfamiliar to drivers. New concept – none in Colorado yet (one planned for Grand Junction). Used successfully in Missouri and Utah. Could be designed so that drivers would not notice the lane shift in the opposite direction.	+ Land use: Requires approximately 1 acre outside CDOT ROW, including lands zoned for agricultural and public use √ Parcels: Minor impacts on 2 parcels (1 agricultural and 1 public use, the CDOT maintenance facility) + Streams: 800 ft. of stream relocation for Williams Creek; least impact on streams + General wetlands: 0.3 acre of wetlands; least impact on wetlands + Floodplain: Approximately 1 acre of floodplain impact based on FEMA + Visual: Intermediate potential for visual impact	+ Cost: Range of typical costs for this option is \$20M to \$25M; least cost + Phasing: May be built in phases from a conventional diamond interchange	+ Retain for further analysis + Has the least overall impacts on streams, wetlands and floodplains + Minimizes impacts on parcels + Requires no access closures + Has the least cost + Offers phasing flexibility + Minimizes visual impacts + Minimizes acreage to be purchased for additional right-of-way

The Single-Point Urban Interchange (SPUI) option does not meet the minimum LOS criterion with the Pueblo Blvd. Extension. However, without the Pueblo Blvd. Extension, the SPUI operates at acceptable LOS and avoids all land use, stream, wetland, and floodplain impacts.

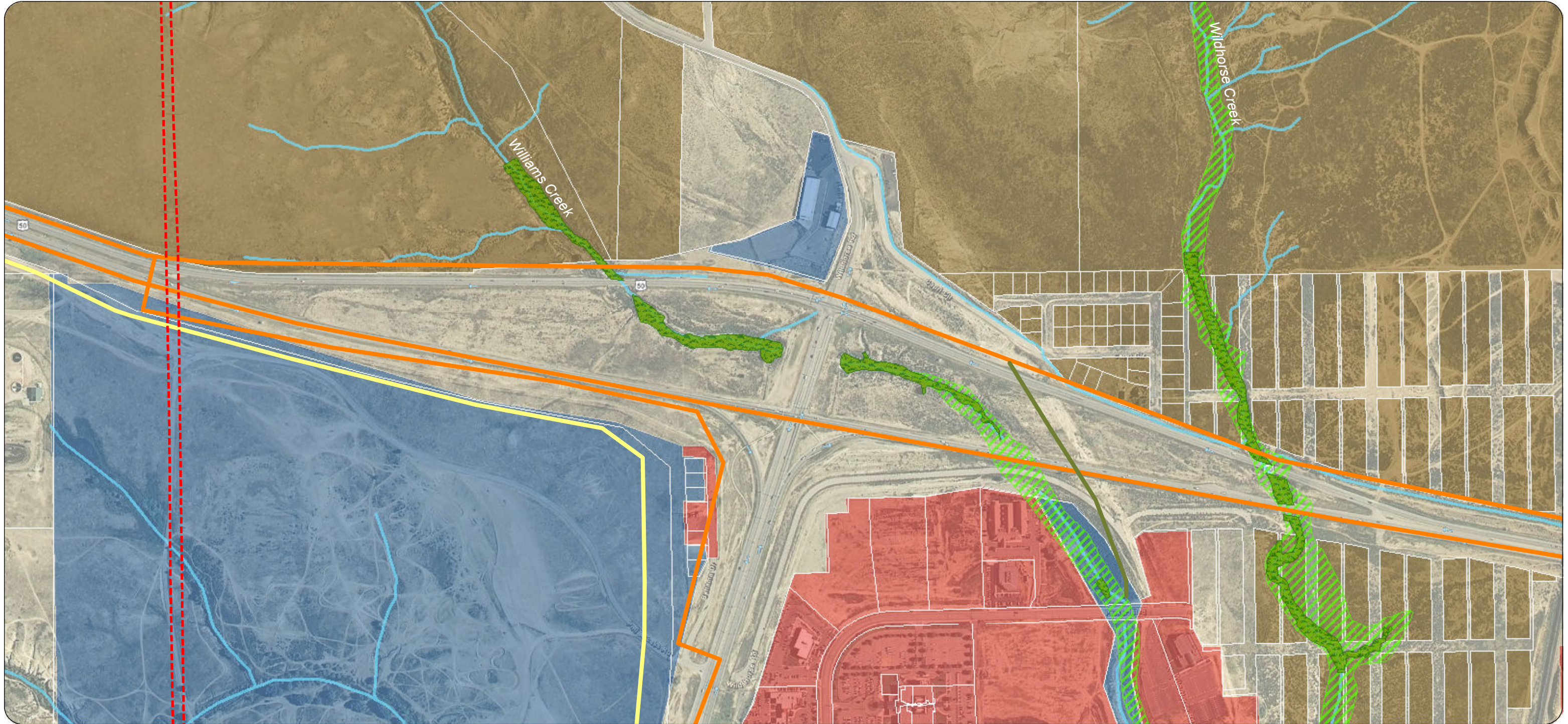
Resources not differentiating among intersection options:

Future land use compatibility – All options are consistent with future mixed use
 Historic properties – None were recorded
 Community/business cohesion – 3 undeveloped quadrants
 Noise – No sensitive receptors at this intersection
 Utilities – Crosses 2 underground fiber optic cables currently parallel to US 50 eastbound and westbound lanes. Also crosses one 36" sanitary sewer line.
 T & E species – No habitat
 Hazardous materials – No sites

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Pueblo Blvd Context Map

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

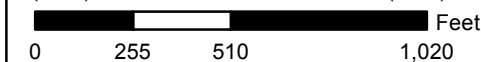
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

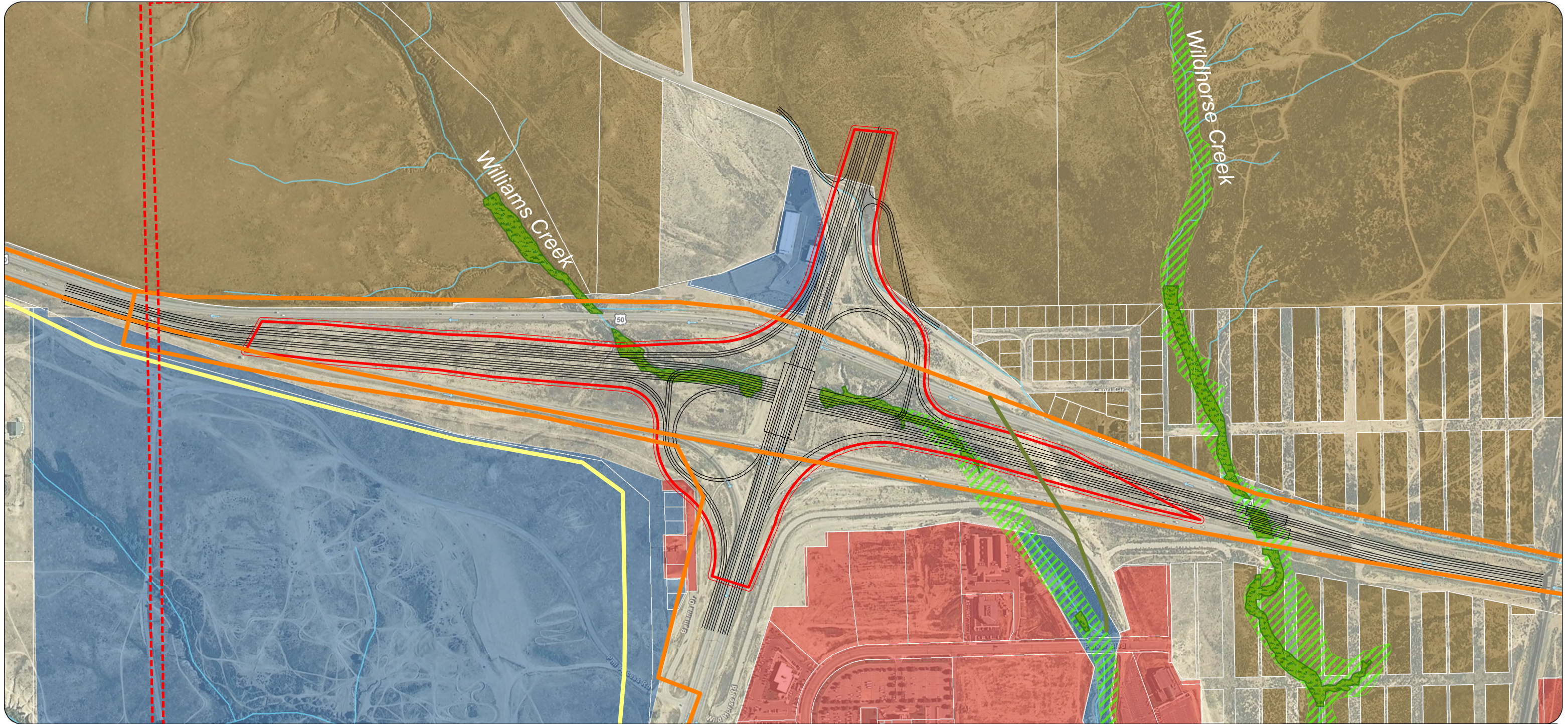


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Traffic Operations Evaluation Pueblo Boulevard

Partial Cloverleaf (PC-5)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



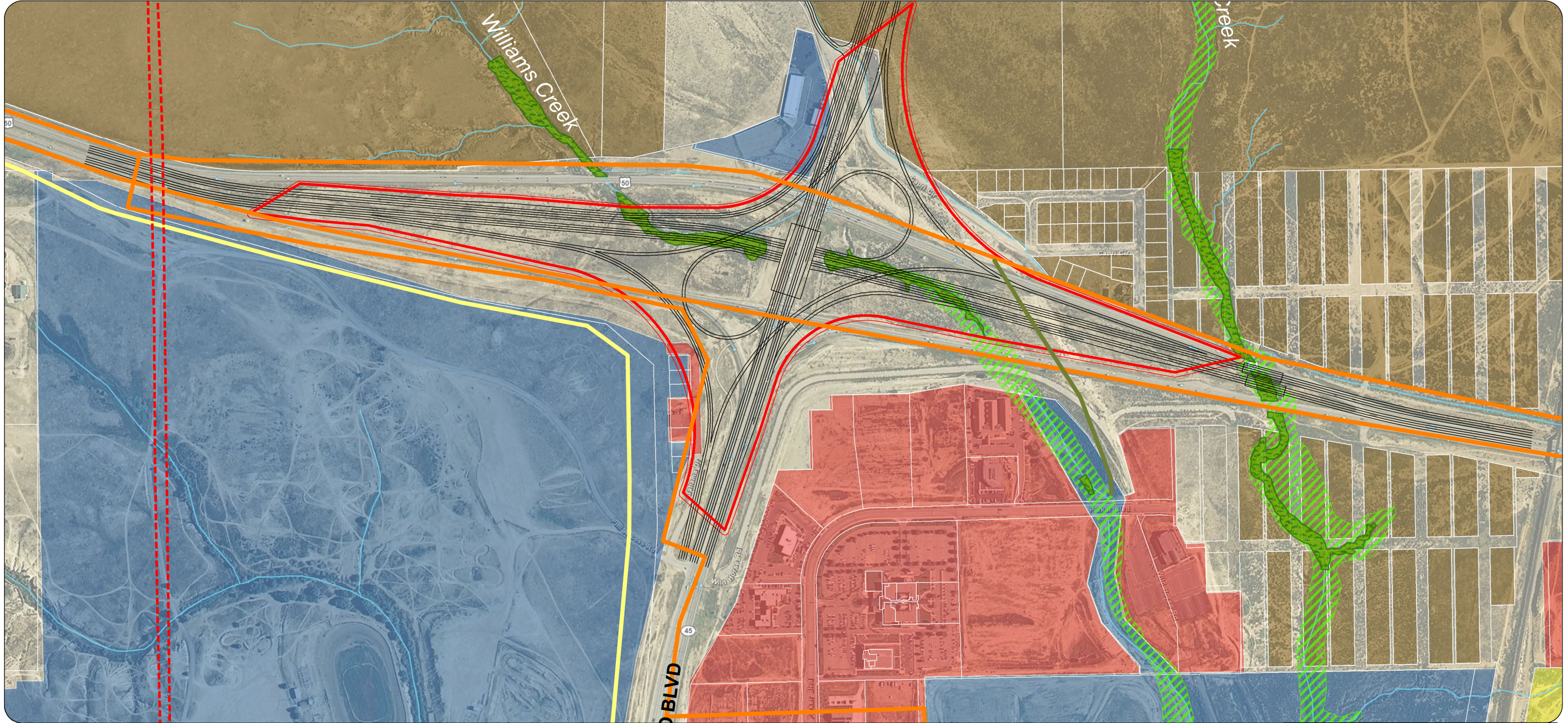
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 240 480 960 Feet





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Traffic Operations Evaluation Pueblo Boulevard

Partial Cloverleaf with Flyovers (PF-5)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/RULP

HazMat

- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



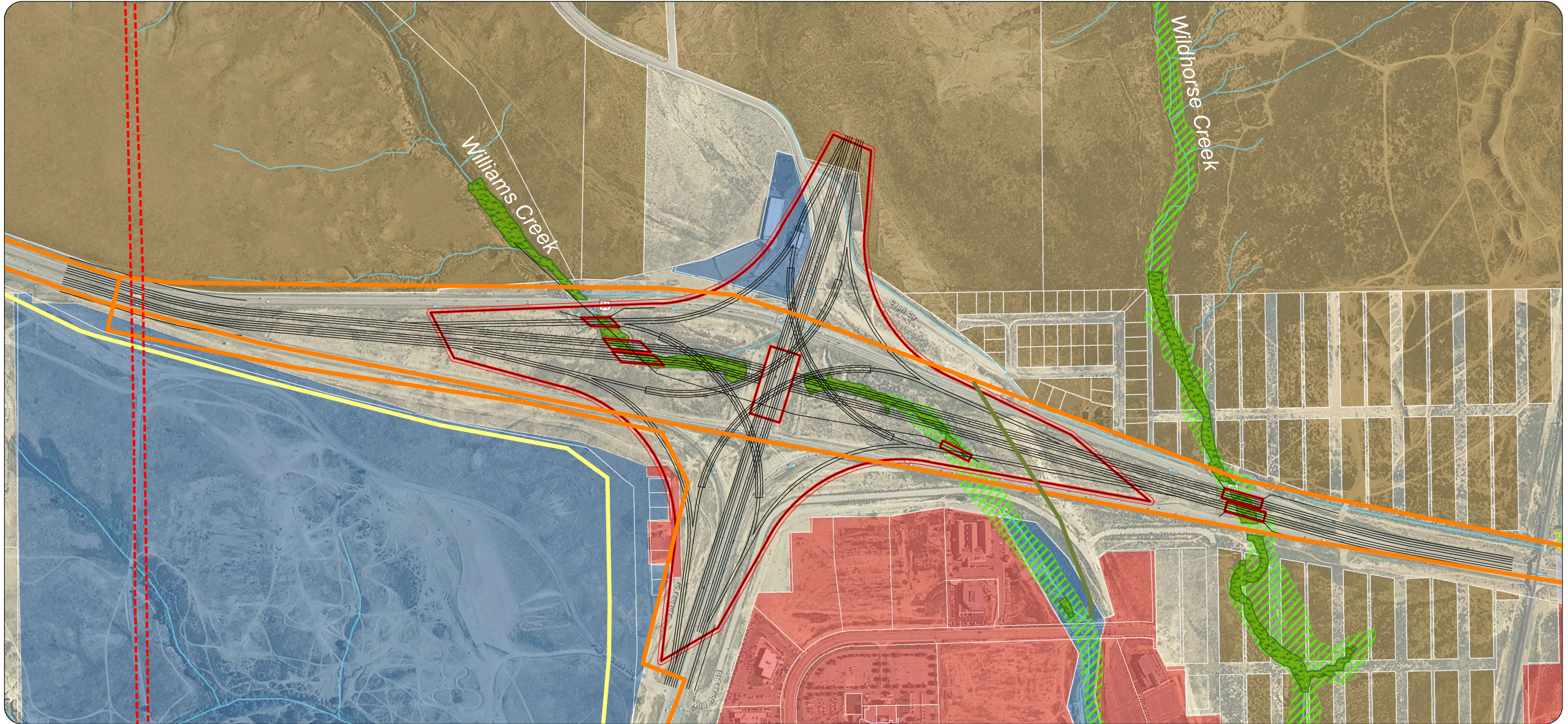
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 240 480 960 Feet





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Traffic Operations Evaluation Pueblo Boulevard

Four-Level Stack (FS-5)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/RULP

HazMat

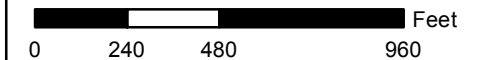
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

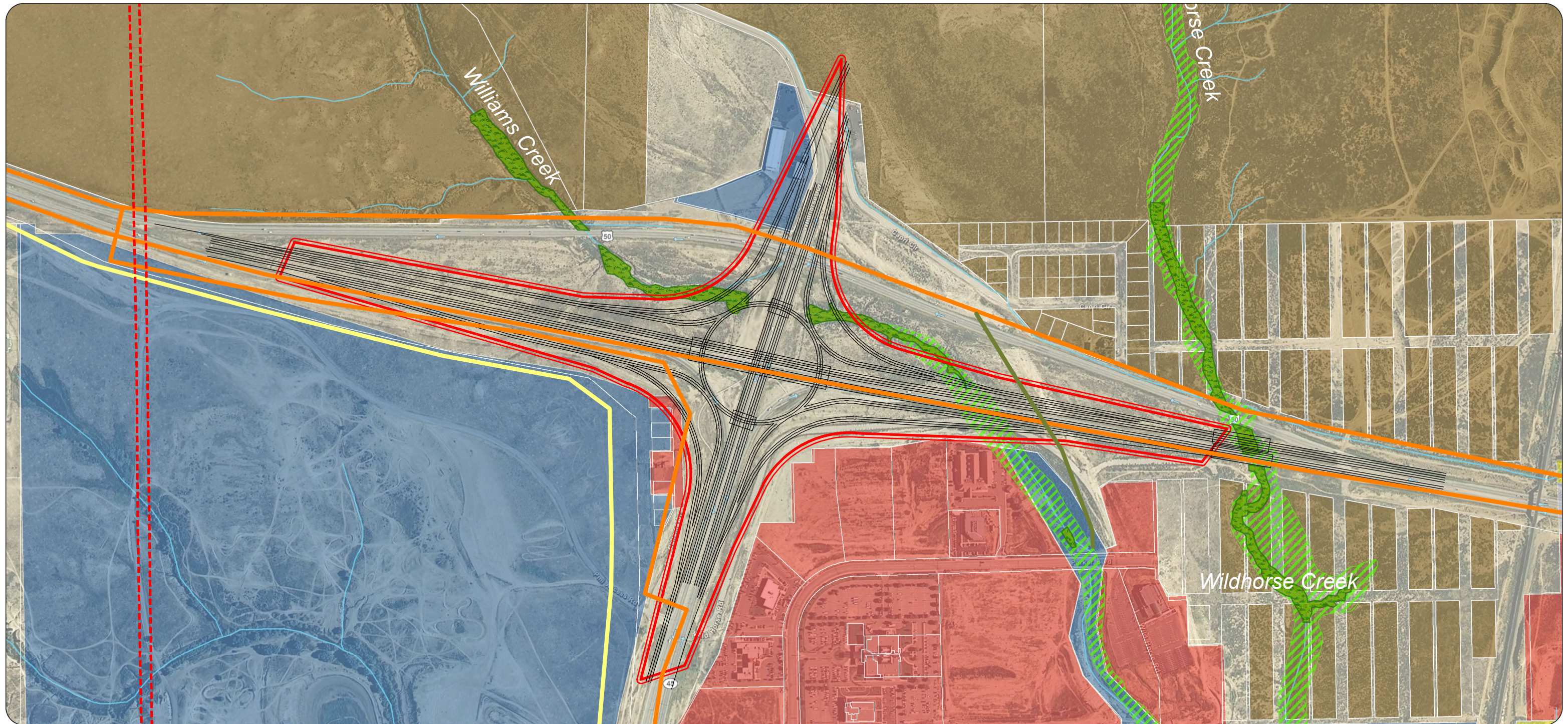


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Traffic Operations Evaluation Pueblo Boulevard

Three Level Roundabout (TR-5)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

- Office
- Business
- Residential
- PUD/RULP

HazMat

- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



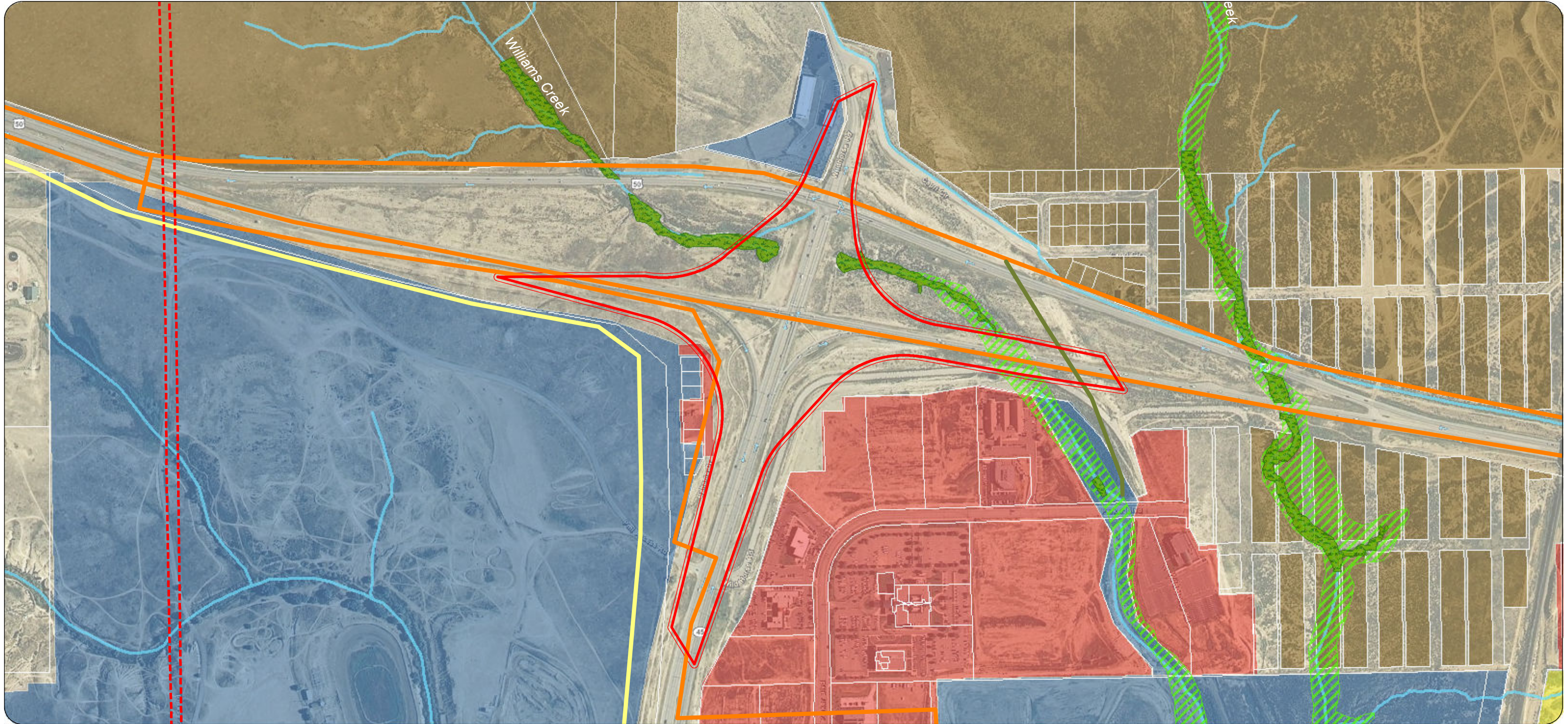
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 255 510 1,020 Feet





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Pueblo Boulevard

Diverging Diamond (DD-5)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

Office

- Business
- Residential
- PUD/RULP

HazMat

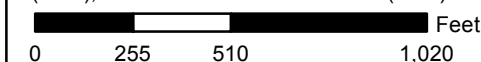
- Underground Storage Tank Leak
- Underground Storage Tanks
- RCRA Generator Sites

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Wills Blvd.

Legend:

– = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
SI-6 Signalized Intersection	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS √ Turning movement benefits: Green time can be reserved for low volume movements + Local access: No change from current conditions √ Pedestrian and bicycle access: Access similar to current conditions √ Safety: 32 conflict points (including 16 crossings) same number of conflict points as existing + Driver expectation: Familiar to drivers – near ubiquitous application 	<ul style="list-style-type: none"> + Land use: No additional right-of-way (ROW) required + Parcels: No additional ROW required + Future land use compatibility: Compatible with future land use + Community/business cohesion: Supports community and business cohesion + Streams: None in existing intersection ROW + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas √ Hazardous materials: N/A 	<ul style="list-style-type: none"> + Cost: Range of typical costs for this option is \$200,000 to \$250,000; little or no additional cost required to upgrade from existing conditions – Phasing: Must be built as a single phase 	<ul style="list-style-type: none"> + Identify for preferred alternative + No access closures + Compatible with existing and future land use + Avoids land use impacts – no ROW requirements or parcel impacts + Least visual impact + Least cost
SF-6 Signalized Intersection with Flyover Ramp	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Grade separating a high-volume turning movement allows more signal green time to be given to other movements – Local access: 1 street closure, 1 access closure and 1 modification involving northeast and southwest quadrants of interchange <ul style="list-style-type: none"> – Wills Blvd. entrance to car dealership in southwest quadrant closed – Access to Kachina Dr. west of Wills Blvd. closed, eliminating access to 6 undeveloped parcels (zoned business); alternate access might be constructed from US 50 through 1 parcel. √ Westroads Ave. north of US 50 modified to right-in only √ Pedestrian and bicycle access: Access similar to current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: Few applications in Colorado but driving experience would be similar to diamond interchange with flyover 	<ul style="list-style-type: none"> √ Land use: 5 to 6 acres required beyond existing CDOT right-of-way (ROW) Parcels: <ul style="list-style-type: none"> – Total take of 1 developed business parcel (car dealership in northeast quadrant) √ Impacts on 4 additional developed parcels (all zoned business) √ Impacts on 1 undeveloped parcel (zoned business) <ul style="list-style-type: none"> – Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to two car dealerships in northeast and southwest quadrants, and impacts on residential community in northeast quadrant – Community/business cohesion: There would be a disruption to the local community cohesion as a result of access and parcel impacts within 2 quadrants of the intersection quadrants + Streams: None in intersection footprint √ Visual: Intermediate potential for visual impact + Noise: Potential to decrease noise levels because retaining walls for flyover ramp will act as noise walls – Hazardous materials: Potential conflicts with an underground storage tank leak in northeast quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW near Baltimore Ave. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$5M to \$5.5M + Phasing: May be built in phases; the flyover may be built in second phase 	<ul style="list-style-type: none"> – Discontinue from further consideration – Access impacts on existing dealerships and undeveloped commercial parcels, and residential parcels – Southwest quadrant would become undevelopable due to access impacts – Access closure land-locks 6 parcels – Incompatible with future arterial commercial planning along US 50

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

– = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>
DI-6 Tight Urban Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to through movements on major roadway (US 50 or Pueblo Blvd.) √ Local access: 6 access closures and 1 access modification involving all 4 quadrants on interchange <ul style="list-style-type: none"> + No street closures √ Traffic entering westbound US 50 from Westroads Ave. must take exit ramp to Wills Blvd. – Entrances from US 50 to two businesses in northwest quadrant closed – Wills Blvd. entrance to car dealership in northeast quadrant closed – Wills Blvd. entrance to car dealership in southwest quadrant closed √ Access to Hopi Dr. closed in southwest quadrant; alternate access available from Kachina Dr. √ Access to Westroads Ave. south of US 50 closed in southwest quadrant; alternate access available from Kachina Dr. – Access to businesses closed in southeast quadrant √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 30 conflict points (including 10 crossings); 2 fewer conflict points than existing √ Driver expectation: Familiar to drivers with applications elsewhere in Colorado – many applications on I-25 in Pueblo 	<ul style="list-style-type: none"> √ Land use: 9 to 10 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> – 2 total takes due to loss of parking √ Impacts on 8 developed parcels (all zoned business) √ Impacts on 2 undeveloped parcels (both zoned business) – Future land use compatibility: This option would result in a reduced compatibility with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to two car dealerships in northeast and southwest quadrants, and impacts on residential community in northeast quadrant – Community/business cohesion: There would be a moderate disruption to the local community/business cohesion as a result of access and parcel impacts within 2 of the intersection quadrants. + Streams: None in intersection footprint √ Visual: Intermediate potential for visual impact – Noise: Potential to increase noise levels because US 50 passes over Wills Blvd. – Hazardous materials: Potential conflicts with an underground storage tank leak in northeast quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW near Baltimore Ave. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases 	<ul style="list-style-type: none"> – Discontinue from further consideration (unless local improvement projects are not built by the design year of 2035; may reconsider during NEPA clearance) <ul style="list-style-type: none"> + Avoids street closure(s) + Compatible with a Tight Urban Diamond Interchange at Baltimore Ave. + Minimizes parcel impacts – Reduced compatibility with planned land use due to access impacts – Potential to increase noise levels

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
DF-6 Diamond Interchange with Flyover	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to high-volume turning movement given flyover Local access: 1 street closure, 4 business access closures, and 1 access modification involving all 4 quadrants on interchange - Aztec Dr. closed from Wills Blvd. √ Westroads Ave. north of US 50 modified to right-in only √ Wills Blvd. entrance to car dealership in southwest quadrant closed √ Wills Blvd. entrance to parcels in southeast quadrant closed √ Access to Hopi Dr. closed; alternate access available from Kachina Dr. √ Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 28 conflict points (including 8 crossings); 4 fewer conflict points than existing √ Driver expectation: Familiar to drivers with applications elsewhere in Colorado	√ Land use: 20 to 25 acres required beyond existing CDOT ROW Parcels: - Total take of 6 developed parcels (all zoned business) √ Impacts on 10 developed parcels (all zoned business) √ Impacts on 2 undeveloped parcels (both zoned business) √ Impacts on 7 additional developed parcels (all zoned business) √ Impacts on 1 undeveloped parcel (zoned business) √ Impacts on residential parcels north of US 50 - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts within each intersection quadrant + Streams: None in intersection footprint - Visual: Among the greatest potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Wills Blvd. - Hazardous materials: Potential conflicts with an underground storage tank leak in northwest quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$30M - \$35M + Phasing: May be built in phases	- Discontinue from further consideration - Street closure - Total takes to existing businesses including street access closure and parcel takes - Considered incompatible with planned Arterial Commercial Mixed Uses and Urban Residential - Among the greatest visual impact - Potential to increase noise levels

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave.. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
SP-6 Single-Point Urban Interchange	√ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Single traffic signal for intersection of ramps and cross street Local access: 4 street closures, 3 business access closures and 1 access modification - Access to South Dr. east of Wills Blvd. closed in northeast quadrant residential area - Access to Aztec Dr. closed in business and residential area of northeast quadrant √ Westroads Ave. north of US 50 modified to right-in only - Wills Blvd. entrance to car dealership in southwest quadrant closed - Wills Blvd. entrance to parcels in southeast quadrant closed √ Access to Hopi Dr. closed; alternate access available from Kachina Dr. √ Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 24 conflict points (including 8 crossings); 8 fewer conflict points than existing √ Driver expectation: Familiar to drivers – existing interchange at I-25 and US 50	√ Land use: 20 to 25 acres required beyond existing CDOT ROW Parcels: - Total take of 11 developed parcels (6 business and 5 residential) √ Impacts on 10 additional developed parcels (8 business and 2 residential) √ Impacts on 3 undeveloped parcels (all zoned business) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection. + Streams: None in intersection footprint √ Visual: Intermediate potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Wills Blvd. - Hazardous materials: Potential conflicts with an underground storage tank leak in northwest quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$25M to \$30M - Phasing: Difficult to build in phases	- Discontinue from further consideration - Street closures on South Dr. and Aztec Dr. affecting residences and businesses in northeast quadrant - Impacts on existing businesses and residences including street access closures and parcel takes - Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential - Potential to increase noise levels - Difficult to build in phases

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
PC-6 Partial Cloverleaf	√ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: High-volume left turn movements accommodated with loop ramps rather than at signalized intersections Local access: 6 street closures and 1 business access closure involving all quadrants of the interchange <ul style="list-style-type: none"> - Access to South Dr. east and west of Wills Blvd. closed - Access to Aztec Dr. closed - Access to Westroads Ave. north of US 50 closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) √ Wills Blvd. entrance to car dealership in southwest quadrant closed √ Access to Hopi Dr. closed; alternate access available from Kachina Dr. √ Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr.	√ Land use: 25 to 30 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 24 developed parcels (7 business and 17 residential) - Total take of 2 undeveloped parcels (both zoned business) - Impacts on 9 additional developed parcels (4 business and 5 residential) - Impacts on 1 undeveloped parcel (zoned business) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection + Streams: None in intersection footprint √ Visual: Intermediate potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas - Hazardous materials: Potential conflicts with an underground storage tank leak in northwest quadrant, and a RCRA Small Quantity Generator site in the US 50 ROW near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$35M to \$40M + Phasing: May be built in phases	- Discontinue from further consideration <ul style="list-style-type: none"> - Street closures on South Dr. in both northeast and northwest quadrants limiting access to local residences - Incompatible with both business uses in all quadrants and residential uses both northeast and northwest quadrants - Considerable land use impacts due to business and residential property takes - Substantial access closures involving each quadrant of the interchange - Considerable cost

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave.. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
PF-6 Partial Cloverleaf with Flyovers	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for high-volume left turning movements - Local access: Greatest access impacts – 12 street closures involving all of the quadrants of the interchange. Greatest number of closures <ul style="list-style-type: none"> - Access to Newcastle Dr. closed; alternate access available from Wheatland Dr. - Access to Crownridge Dr. closed; alternate access available from Wheatland Dr. - Access to West Dr. from South Dr. closed; alternate access available from North Dr. - Access to South Dr. west of Wills Blvd. closed.; alternate access available from Wheatland Dr. - Access to South Dr. east of Wills Blvd. closed; alternate access available from Valley Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Aztec Dr. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Access to Westroads Ave. north of US 50 closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Wills Blvd. entrance to undeveloped parcel in southeast quadrant closed - Access to Hopi Dr. closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Kachina Dr. west of Wills Blvd. closed, eliminating access to 6 undeveloped parcels (zoned business); alternate access might be constructed from US 50 through 1 parcel. - Access to Kachina Dr. east of Wills Blvd. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Interchange footprint extends farther south than existing paved Wills Blvd. - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado 	<ul style="list-style-type: none"> - Land use: Among the greatest land use impacts – 40 to 50 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Among the greatest total take of 37 developed parcels (11 business and 26 residential) - Total take of 4 undeveloped parcels (all zoned business) √ Impacts on 9 additional developed parcels (6 business and 3 residential) √ Impacts on 7 undeveloped parcels (5 business and 2 residential) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection - Streams: Approximately 300 ft. of stream impact on a local drainage ditch south of the business area - Visual: Greatest potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas - Hazardous materials: Potential conflicts with 1 underground storage tank leak in northwest quadrant and another near Baltimore Ave., and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$40M to \$45M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Greatest number of access closures - Among the greatest number of developed business and residential parcels taken - Incompatible with existing and future commercial and residential uses due to loss of access and parcel takes in all 4 quadrants - Among the greatest land use impacts - Among the greatest for access impacts - Among the greatest impact on local drainage ditch - Among the greatest visual impact

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety		Community, Business and Environment	Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>		Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
FS-6 Four-Level Stack Interchange	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) / travel for all turning movements - Local access: Among the greatest for access impacts – 10 closures, involving all quadrants of the interchange <ul style="list-style-type: none"> - Access to Crownridge Dr. closed; alternate access available from Newcastle Dr. - Access to South Dr. west of Wills Blvd. closed; alternate access available from Newcastle Dr. - Access to South Dr. east of Wills Blvd. closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Aztec Dr. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Access to Westroads Ave. north of US 50 closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Wills Blvd. entrance to undeveloped parcel in southeast quadrant closed - Access to Hopi Dr. closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Kachina Dr. west of Wills Blvd. Closed, eliminating access to 6 undeveloped parcels (zoned business); alternate access might be constructed from US 50 through 1 parcel. - Access to Kachina Dr. east of Wills Blvd. Closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Interchange footprint extends as far south as existing paved Wills Blvd. - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado 		<ul style="list-style-type: none"> - Land use: Among the greatest land use impacts – 40 to 50 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 30 developed parcels (10 business and 20 residential) - Total take of 4 undeveloped parcels (all zoned business) √ Impacts on 6 additional developed parcels (5 business and 1 residential) √ Impacts on 7 undeveloped parcels (all zoned business) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection - Streams: Approximately 300 ft. of stream impact on a local drainage ditch south of the business area - Visual: Greatest potential for visual impact – highest level of visual contrast to setting and viewers due to high profile √ Noise: Possible increase and decrease in noise levels at various areas - Hazardous materials: Potential conflicts with 1 underground storage tank leak in northwest quadrant and another near Baltimore Ave., and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave. 	<ul style="list-style-type: none"> - Cost: Range of typical costs for this option is \$65M to \$75M; highest cost + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Among the greatest land use impacts - Involves extensive business and residential property takes - Extensive access impacts on businesses and residents - Among the greatest for access impacts - Greatest visual impacts - Among the greatest impact on local drainage ditch - Highest cost

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

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PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
TR-6 Three-Level Roundabout	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – through movements bypass roundabout - Local access: Greatest access impacts – 12 closures involving all quadrants of the interchange. Greatest number of closures - Access to Wheatland Dr. closed; alternate access available from Crestview Dr. - Access to Newcastle Dr. closed; alternate access available from Crestview Dr. - Access to Crownridge Dr. closed; alternate access available from Crestview Dr. - Access to South Dr. west of Wills Blvd. closed; alternate access available from Crestview Dr. - Access to South Dr. east of Wills Blvd. closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Aztec Dr. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Access to Westroads Ave. north of US 50 closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Wills Blvd. entrance to undeveloped parcel in southeast quadrant closed - Access to Hopi Dr. closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Kachina Dr. west of Wills Blvd. closed, eliminating access to 6 undeveloped parcels (zoned business); alternate access might be constructed from US 50 through 1 parcel - Access to Kachina Dr. east of Wills Blvd. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) - Interchange footprint extends farther south than existing paved Wills Blvd. - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options - Driver Expectation: May be unfamiliar – no current application in Colorado – One in Louisiana	- Land use: Among the greatest land use impacts – 40 to 50 acres required beyond existing CDOT ROW Parcels: - Greatest total take of 55 developed parcels (10 business and 45 residential) - Total take of 3 undeveloped parcels (all zoned business) √ Impacts on 4 additional developed parcels (all zoned business) √ Impacts on 6 undeveloped parcels (3 business and 3 residential) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion and local community viability as a result of access and parcel impacts in each quadrant of the intersection - Streams: Approximately 300 ft. of stream impact on a local drainage ditch south of the business area - Visual: Greatest potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Wills Blvd. and roundabout intersection of ramps - Hazardous materials: Potential conflicts with an underground storage tank leak in northwest quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$45M to \$55M Phasing: Difficult to build in phases	- Discontinue from further consideration - Greatest number of developed residential parcels taken - Greatest land use impacts due to acres affected and parcel takes - Greatest number of access closures - Among the greatest for access impacts - Among the greatest visual impacts - Potential to increase noise levels - Among highest cost - Lack of flexibility for implementation

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

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PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
CT-6 Two-Leg Continuous Flow Intersection	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Main road left turns share green phase with through movements Local access: Among the least access impacts – 1 business/residential street closure and 1 access modification – Access to Aztec Dr. closed; alternate access available from Westroads Ave. √ Wills Blvd. entrance to car dealership in southwest quadrant modified to right-in, right-out (RIRO) only + Pedestrian and bicycle access: Access similar to current conditions √ Safety: 30 conflict points (including 14 crossings); 2 fewer conflict points than existing √ Driver expectation: May be unfamiliar – new concept – one in use in Loveland	√ Land use: 9 to 10 acres required beyond existing CDOT ROW √ Future land use compatibility: Moderate compatibility with future land use Parcels: – Total take of 5 developed parcels (3 business and 2 residential) √ Impacts on 11 additional developed parcels (all zoned business) √ Impacts on 3 undeveloped parcels (all zoned business) √ Future land use compatibility: Compatibility with future Arterial Commercial Mixed Uses and Urban Residential is reduced due to local access closure and access modifications. Continuous traffic flow pattern may be inconsistent with current local business access and future planning. √ Community/business cohesion: Residential and business cohesion is reduced as a result of access and parcel impacts. + Streams: None in intersection footprint + Visual: Least potential for visual impact – Noise: Moderate potential to increase noise levels – Hazardous materials: Potential conflicts with an underground storage tank leak in northwest quadrant, and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$3M to \$5M + Phasing: May be built in phases	Discontinue from further consideration unless local improvement projects are not built by the design year of 2035; may reconsider during NEPA clearance Minimizes parcel takes and land use impacts Limited access impacts Least visual impacts Moderate potential to increase noise levels Among the lowest cost options
CF-6 Four-Leg Continuous Flow Intersection	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns share a green phase with corresponding through movements – Local access: 5 closures involving all quadrants of the interchange – Access to South Dr. west of Wills Blvd. closed; alternate access available from Wheatland Dr. – Access to South Dr. east of Wills Blvd. closed; alternate access available from Valley Dr. (unless disrupted by improvements at Baltimore Ave.) – Access to Aztec Dr. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements there) – Wills Blvd. entrance to car dealership in southwest quadrant closed – Wills Blvd. entrance to undeveloped parcel in southeast quadrant closed + Pedestrian and bicycle access: Access similar to current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: May be unfamiliar – no current application in Colorado	√ Land use: 16 to 18 acres required beyond existing CDOT ROW Parcels: – Total take of 12 developed parcels (3 business and 9 residential) √ Impacts on 12 additional developed parcels (all zoned business) √ Impacts on 7 undeveloped parcels (all zoned business) Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50. Continuous traffic flow pattern may be inconsistent with current local business access and future planning. – Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection + Streams: None in intersection footprint + Visual: Least potential for visual impact – Noise: Moderate potential to increase noise levels – Hazardous materials: Potential conflicts with 2 underground storage tank leaks in northwest quadrant and near Baltimore Ave., and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave.		√ Cost: Range of typical costs for this option is \$5M to \$10M + Phasing: May be built in phases	– Discontinue from further consideration – Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50. – Marginal traffic operations improvement from Two-Leg CFI does not justify additional land use impacts or cost

Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

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PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise, and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>
DD-6 Diverging Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns are free or yield-controlled movements to and from ramps – accommodates large left turning volumes - Local access: 8 closures involving all quadrants of the interchange <ul style="list-style-type: none"> - Access to South Dr. west of Wills Blvd. closed; alternate access available from Wheatland Dr. - Access to South Dr. east of Wills Blvd. closed; alternate access available from Valley Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Aztec Dr. closed; alternate access available from Baltimore Ave. (unless disrupted by improvements at there) - Wills Blvd. entrance to car dealership in southwest quadrant closed - Wills Blvd. entrance to undeveloped parcel in southeast quadrant closed - Access to Westroads Ave. north of US 50 closed; alternate access available from Aztec Dr. (unless disrupted by improvements at Baltimore Ave.) - Access to Hopi Dr. closed; alternate access available from Kachina Dr. - Access to Westroads Ave. south of US 50 closed; alternate access available from Kachina Dr. √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including 2 crossings); 14 fewer conflict points than existing √ Driver expectation: New concept – none in Colorado yet (one planned for Grand Junction) – used successfully in Missouri and Utah. Could be designed so that drivers would not notice the lane shift in the opposite direction. 	<ul style="list-style-type: none"> √ Land use: 25 to 30 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 19 developed parcels (6 business and 13 residential) - Total take of 1 undeveloped parcel (zoned business) √ Impacts on 9 additional developed parcels (all zoned business) √ Impacts on 6 undeveloped parcels (all zoned business) - Future land use compatibility: Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts to residential community north of US 50 - Community/business cohesion: There would be a loss of business cohesion as a result of access and parcel impacts in each quadrant of the intersection √ Streams: Approximately 100 ft. of stream impact on a local drainage ditch south of the business area √ Visual: Intermediate potential for visual impact + Noise: Potential to decrease noise levels because retaining walls for ramp will act as noise walls - Hazardous materials: Potential conflicts with 1 underground storage tank leak in northwest quadrant and another near Baltimore Ave., and a RCRA Small Quantity Generator and hazardous material spill site in the US 50 ROW also near Baltimore Ave. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to 25M + Phasing: May be built in phases from a conventional diamond interchange 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Substantial access closures - Substantial parcel takes - Incompatible with planned Arterial Commercial Mixed Uses and Urban Residential, due to loss of access to businesses in each quadrant, and impacts on residential community north of US 50 - Potential to decrease noise levels

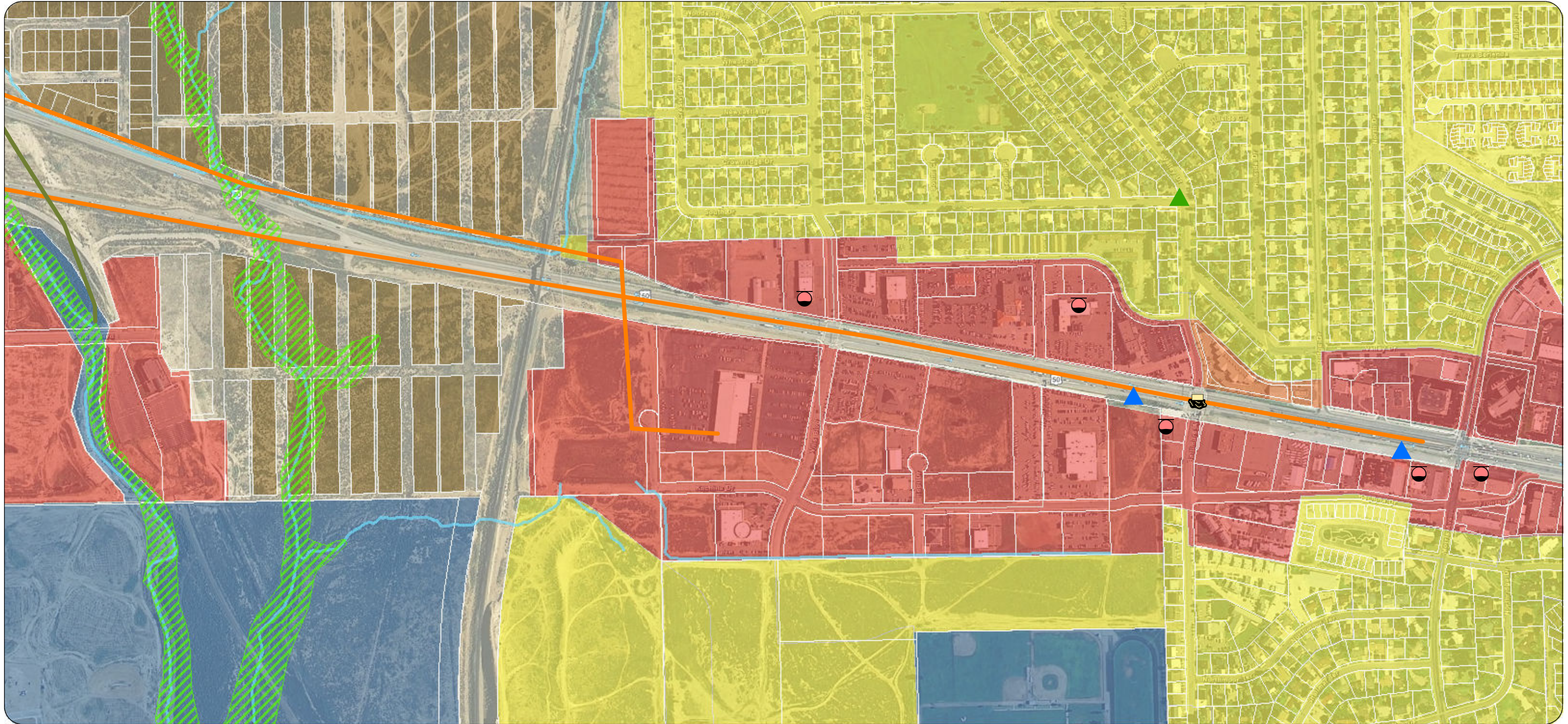
Resources not differentiating among intersection options:
 Wetlands and floodplain – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable within US 50 ROW
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Wills Blvd. are calculated in isolation; that is, assuming no action at Baltimore Ave. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Roadway Design	Zoning	Office	HazMat	Utilities
Roadway and Construction Footprint	Agricultural	Business	RCRA Small Quantity Generator	Sanitary Sewer
Waterways	Industrial	Residential	RCRA Corrective Action	Gas
Floodplain	Public Use	PUD/Rural Land Use Plan	Underground Storage Tank Leak	Underground Fiber
Streams			Hazardous Material Spill	Electric Transmission

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DOT DEPARTMENT OF TRANSPORTATION

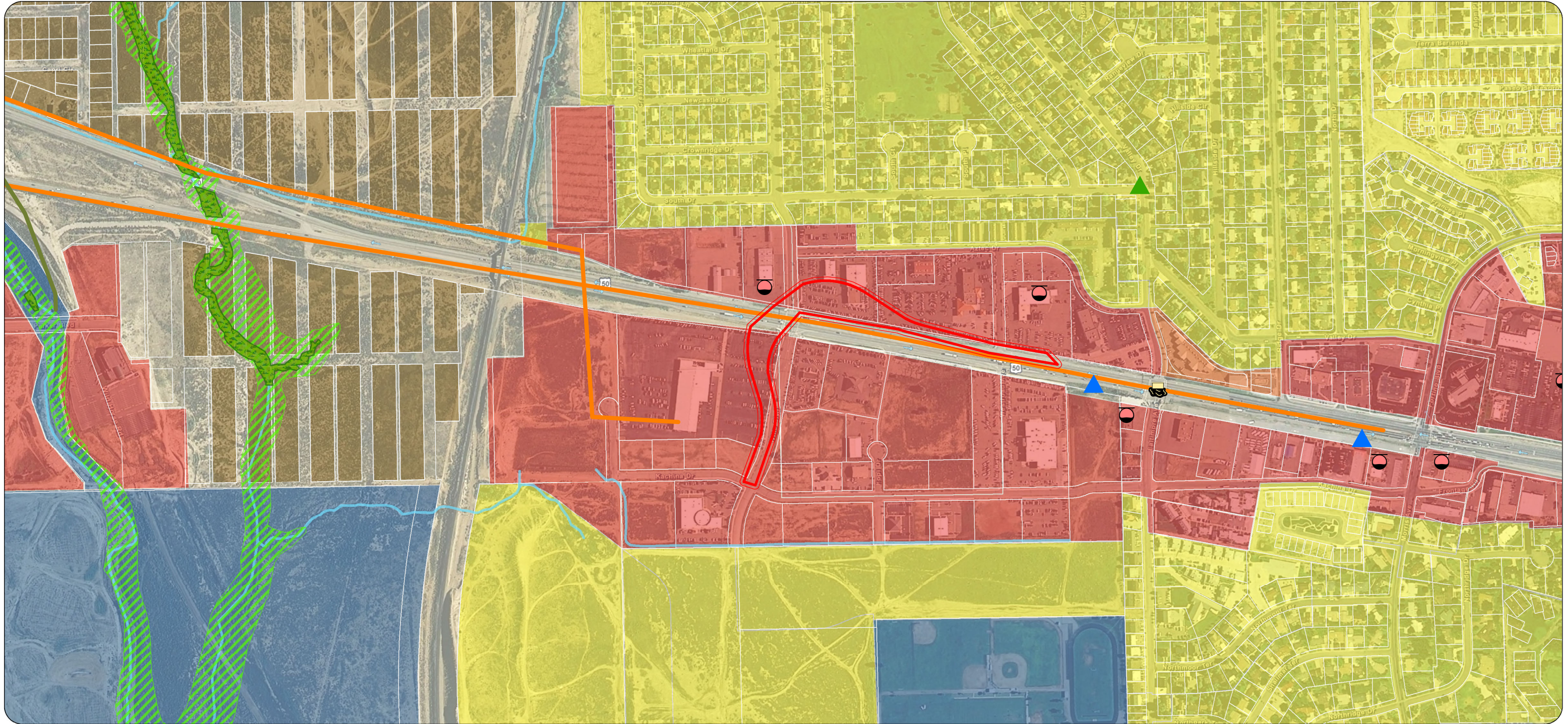
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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N



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard
Signalized Intersection with Flyover (SF-6)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p>	<p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> RCRA Small Quantity Generator</p> <p> RCRA Corrective Action</p> <p> Underground Storage Tank Leak</p> <p> Hazardous Material Spill</p>	<p>Utilities</p> <p> Sanitary Sewer</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p>
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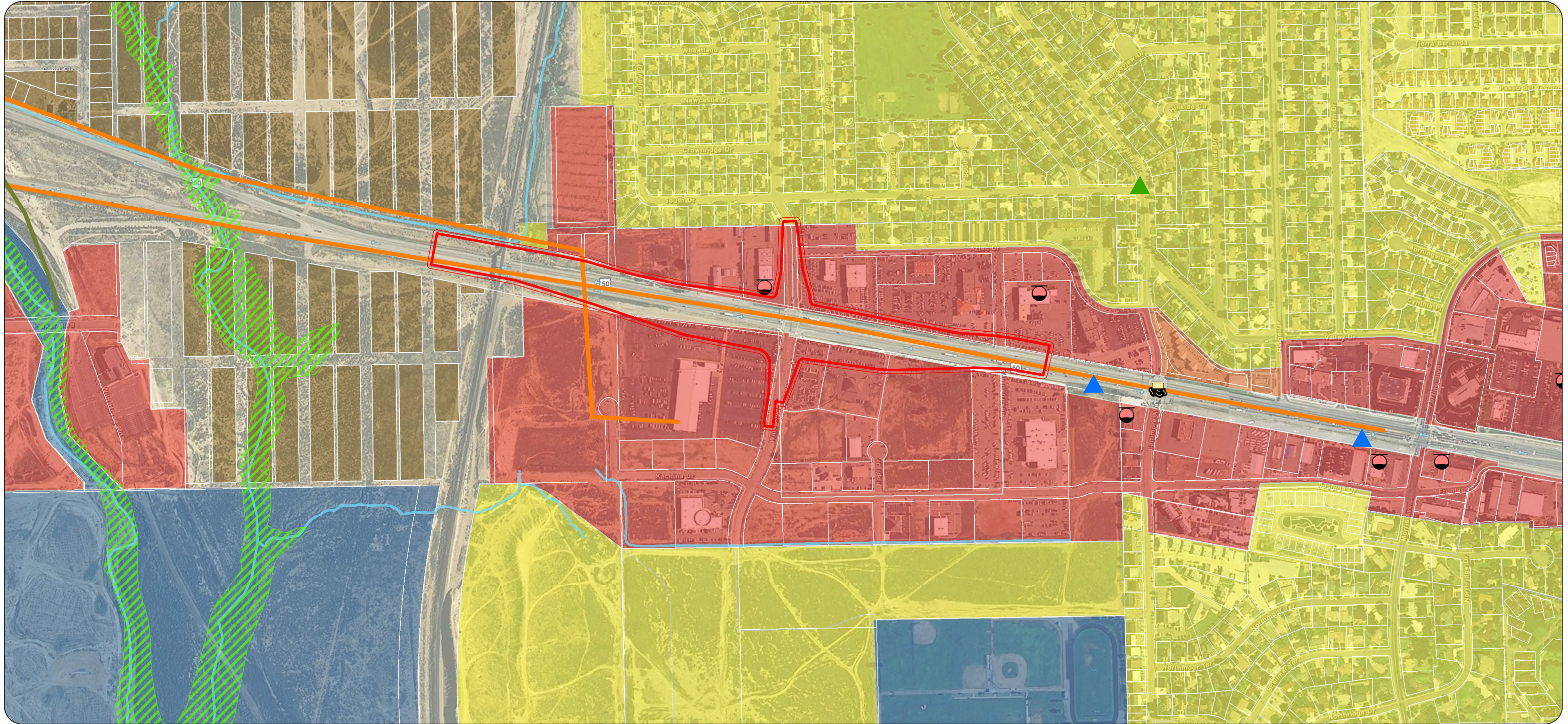
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0 255 510 1,020 Feet

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard
Type Urban Diamond Interchange (TUDI-6)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p> <p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> RCRA Small Quantity Generator</p> <p> RCRA Corrective Action</p> <p> Underground Storage Tank Leak</p> <p> Hazardous Material Spill</p>	<p>Utilities</p> <p> Sanitary Sewer</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p>
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DOT DEPARTMENT OF TRANSPORTATION

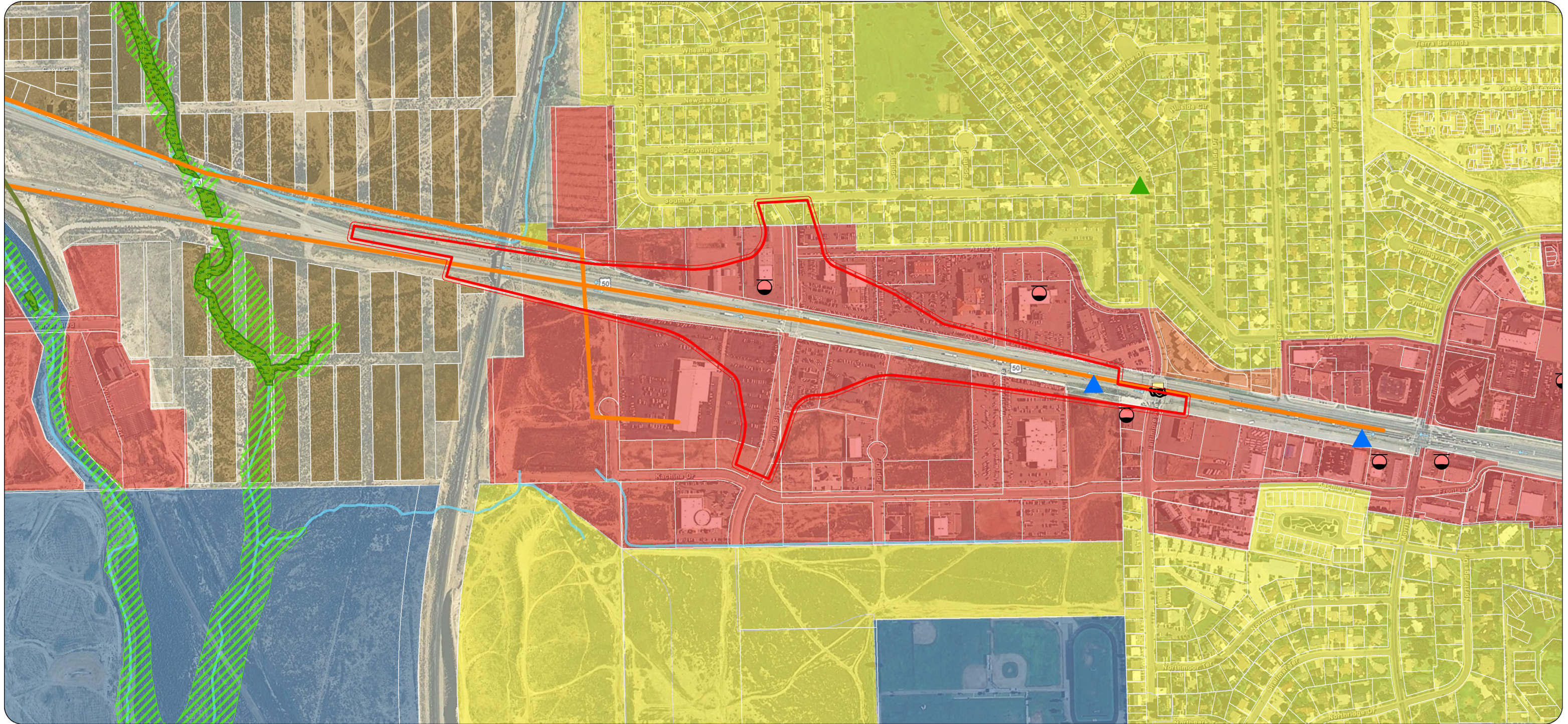
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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N



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Diamond Interchange with Flyover (DF-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission



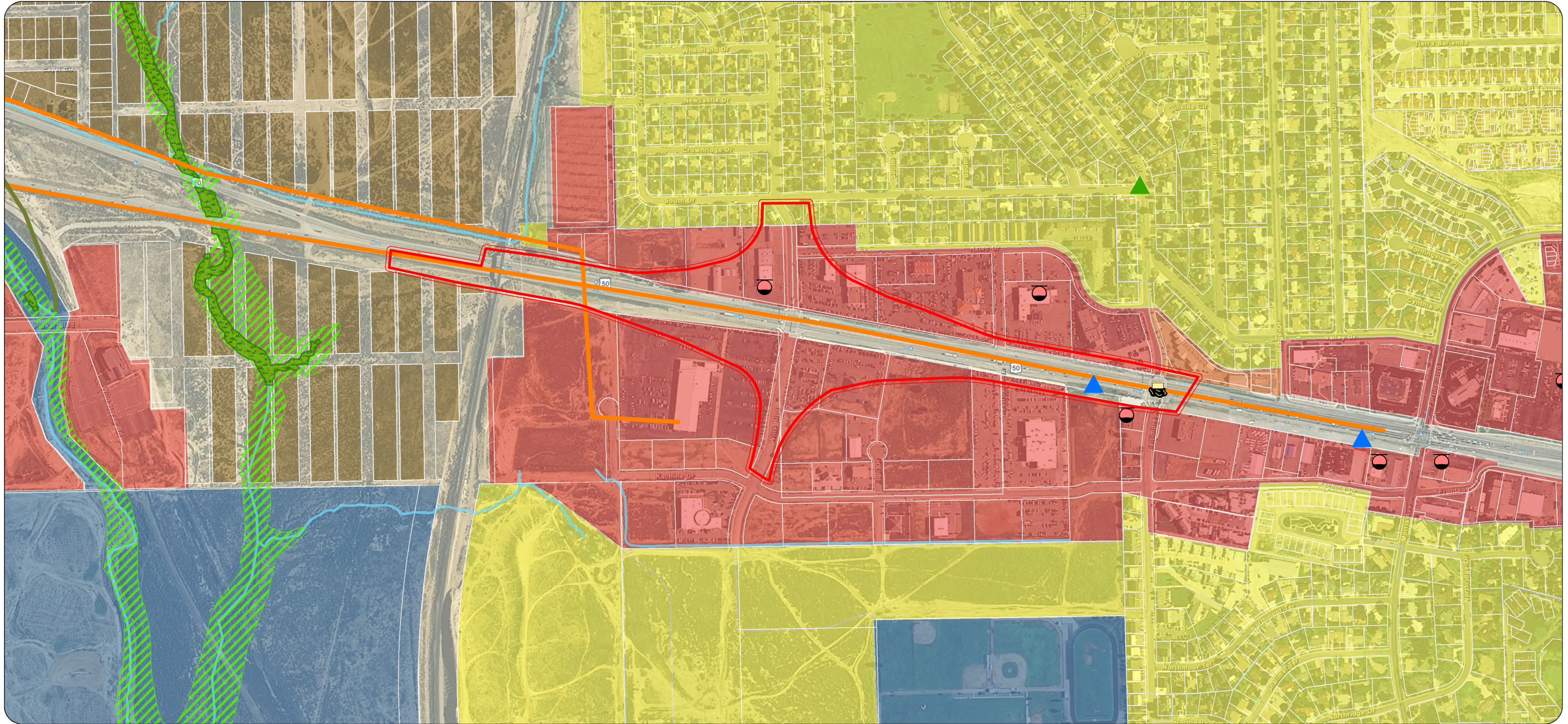
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Single-Point Urban Interchange (SP-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

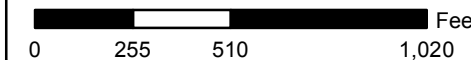
Gas

Underground Fiber

Electric Transmission

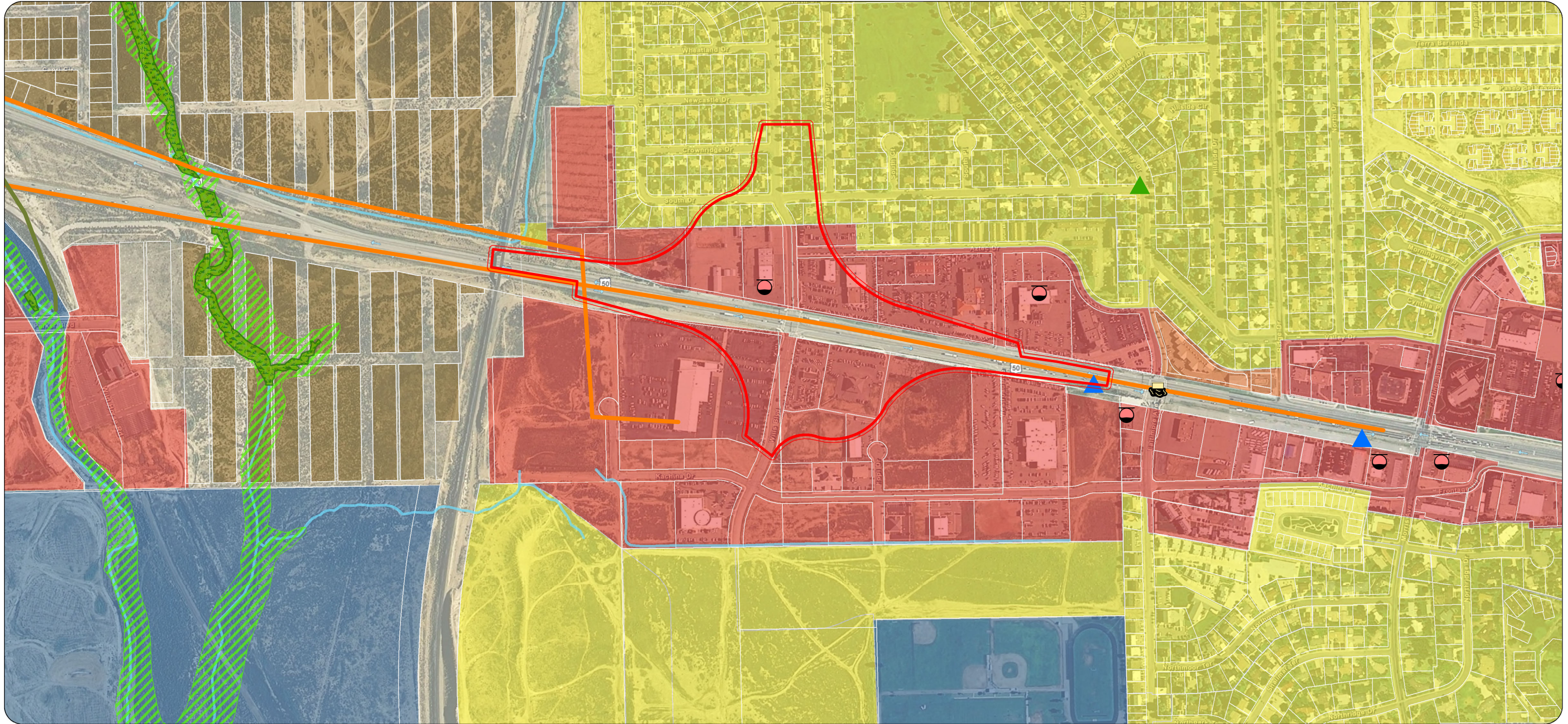


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Partial Cloverleaf (PC-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission



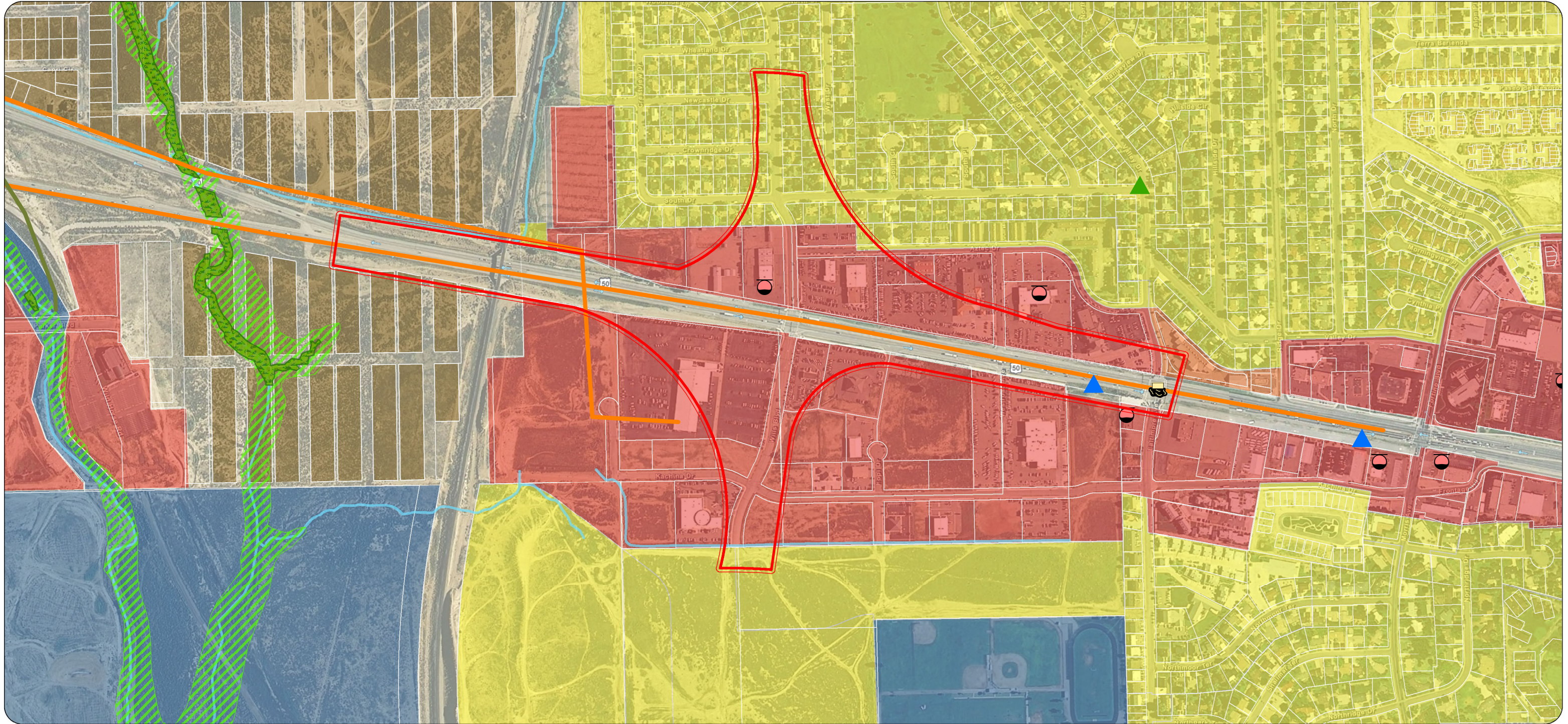
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Partial Cloverleaf with Flyover (PF-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission



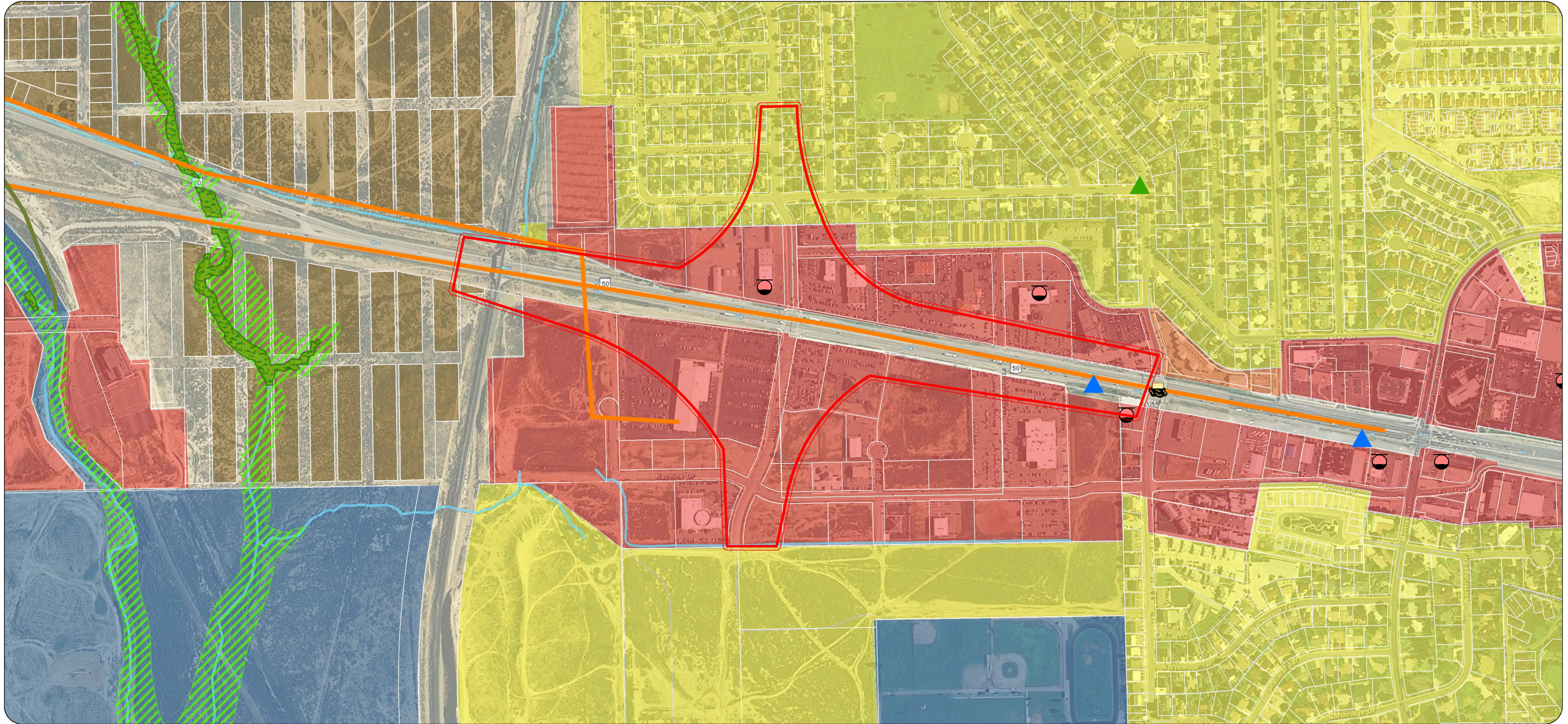
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard
Four-Level Stack Interchange (FS-6)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p> <p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> RCRA Small Quantity Generator</p> <p> RCRA Corrective Action</p> <p> Underground Storage Tank Leak</p> <p> Hazardous Material Spill</p>	<p>Utilities</p> <p> Sanitary Sewer</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p>
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JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

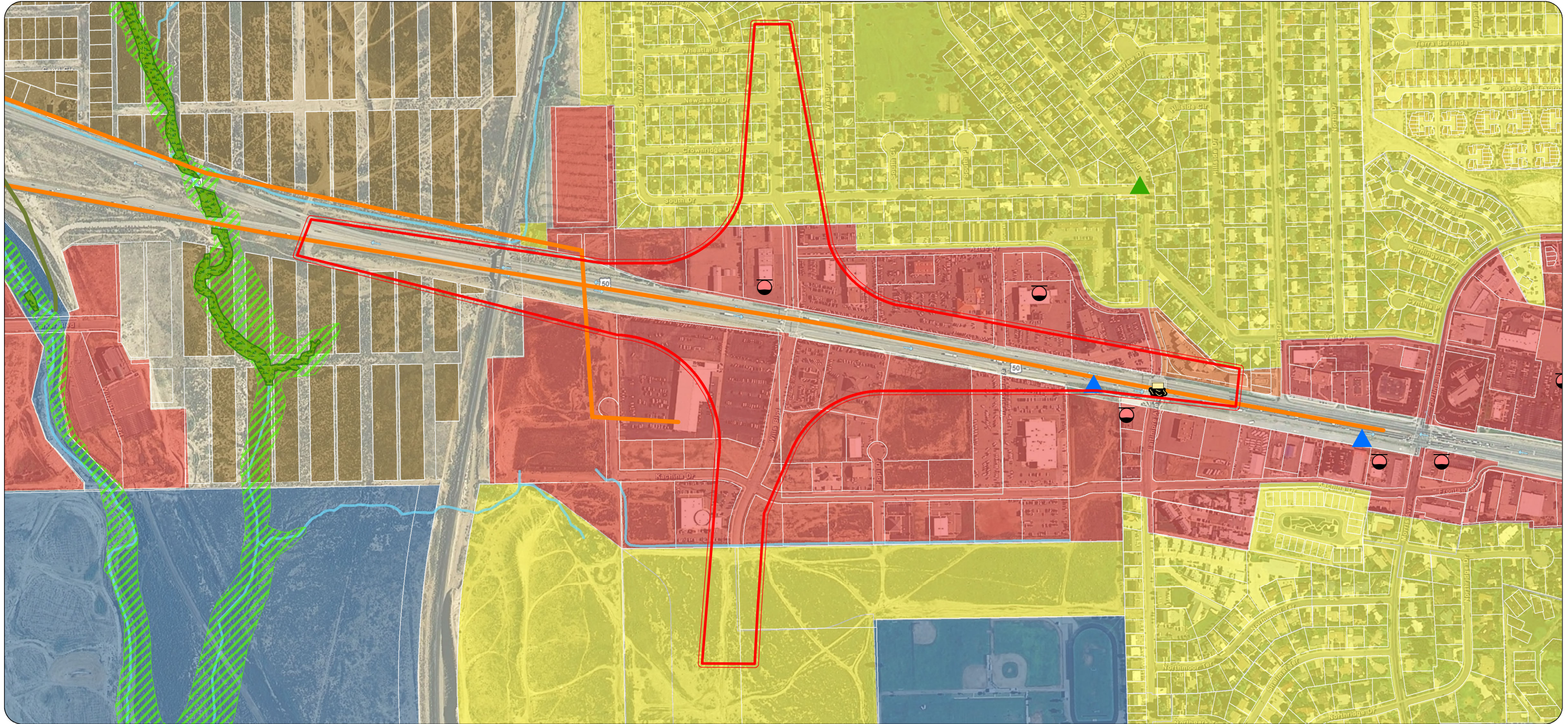
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Three Level Roundabout (TR-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission



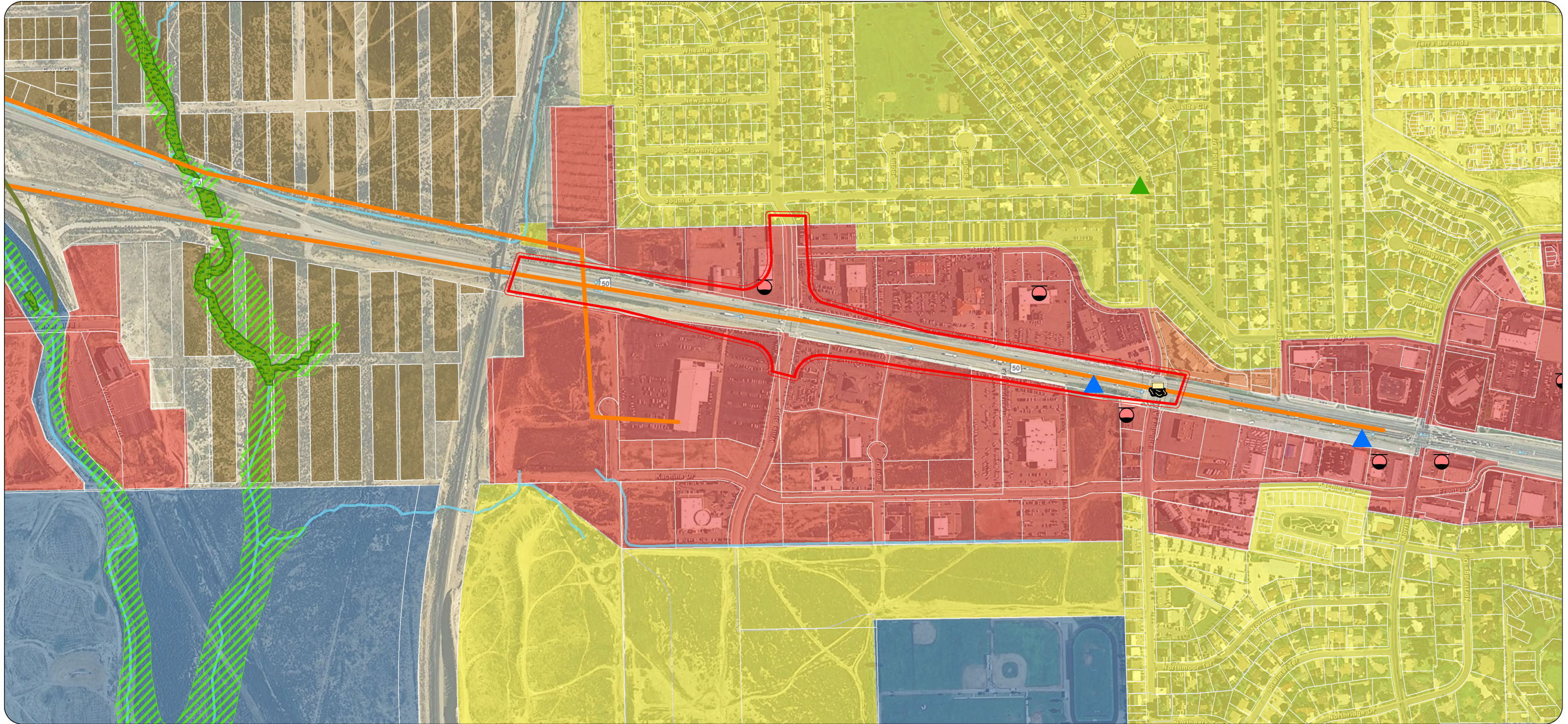
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard
Two-Leg Continuous Flow Intersection (CT-6)

Roadway Design	Zoning	Office	HazMat	Utilities
Roadway and Construction Footprint	Agricultural	Business	RCRA Small Quantity Generator	Sanitary Sewer
Waterways	Industrial	Residential	RCRA Corrective Action	Gas
Floodplain	Public Use	PUD/Rural Land Use Plan	Underground Storage Tank Leak	Underground Fiber
Streams			Hazardous Material Spill	Electric Transmission

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

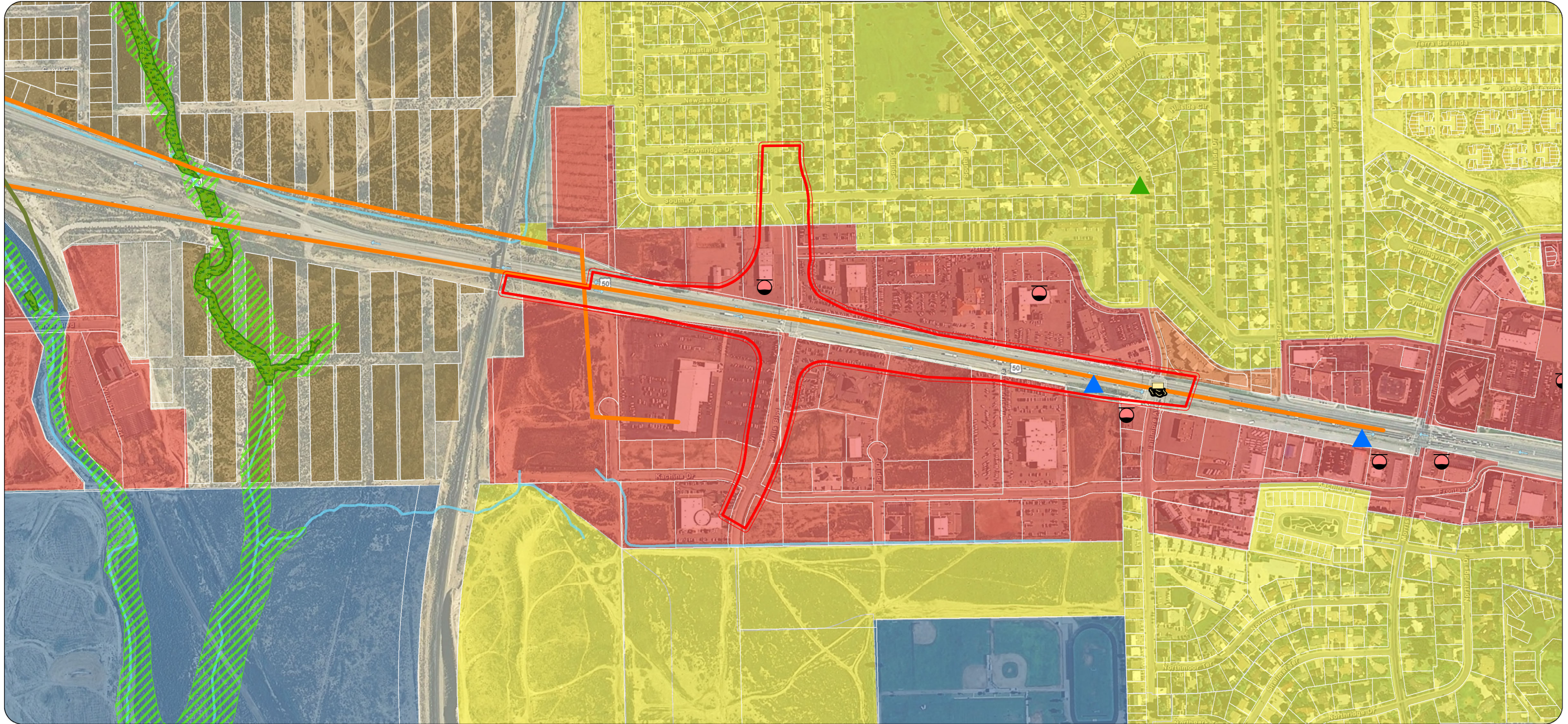
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard

Four-Leg Continuous Flow Intersection (CF-6)

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission



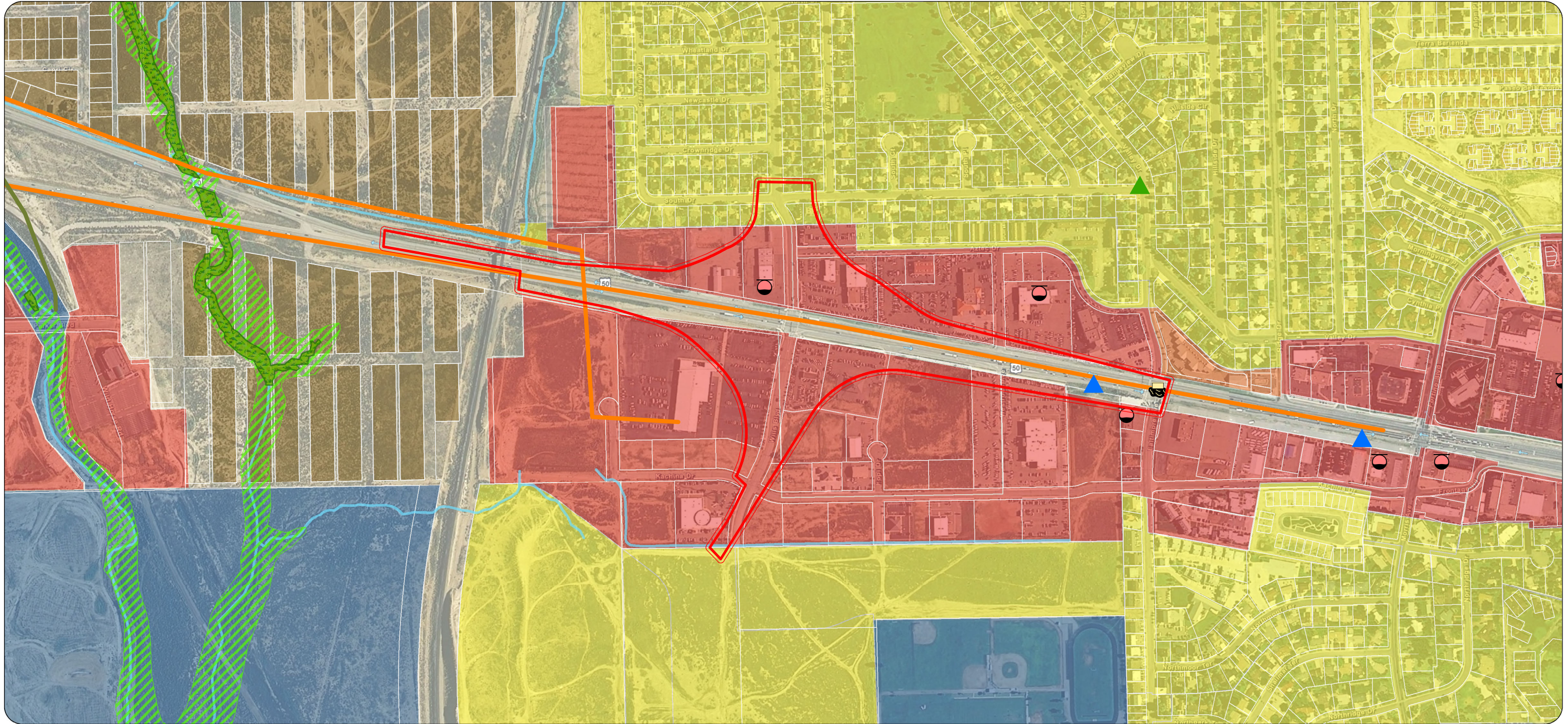
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Wills Boulevard
Diverging Diamond Interchange (DD-6)

<p>Roadway Design</p> <p> Roadway and Construction Footprint</p> <p>Waterways</p> <p> Floodplain</p> <p> Streams</p>	<p>Zoning</p> <p> Agricultural</p> <p> Industrial</p> <p> Public Use</p> <p> Office</p> <p> Business</p> <p> Residential</p> <p> PUD/Rural Land Use Plan</p>	<p>HazMat</p> <p> RCRA Small Quantity Generator</p> <p> RCRA Corrective Action</p> <p> Underground Storage Tank Leak</p> <p> Hazardous Material Spill</p>	<p>Utilities</p> <p> Sanitary Sewer</p> <p> Gas</p> <p> Underground Fiber</p> <p> Electric Transmission</p>
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JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 3 Environmental Comparative Analysis Comparison of Intersection Options – US 50 & Baltimore Ave.

Legend:

– = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS				
Comparison Criteria	Operations and Safety	Community, Business and Environment	Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>	Financing <i>Criteria: Construction cost and phasing</i>	
SI-7 Signalized Intersection	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS with Pueblo Blvd. Extension and West Pueblo Connector √ Turning movement benefits: Green time can be reserved for low-volume movements + Local access: No change from current conditions + Pedestrian and bicycle access: Access similar to current conditions – Safety: 32 conflict points (including 16 crossings); same number of conflict points as existing √ Driver expectation: Familiar to drivers – near ubiquitous application 	<ul style="list-style-type: none"> + Land use: No additional right-of-way (ROW) required + Parcels: No additional ROW required + Future land use compatibility: Compatible with future land use + Community/business cohesion: Least disruption to community and business cohesion + Visual: Least potential for visual impact √ Noise: Possible increase and decrease in noise levels at various areas + Hazardous materials: No Impacts 	<ul style="list-style-type: none"> + Cost: Range of typical costs for this option is \$200,000 to \$250,000 – little or no additional cost required to upgrade from existing conditions – Phasing: Must be built in a single phase 	<ul style="list-style-type: none"> + Identify for preferred alternative + No access closures + Compatible with existing and future land use + Avoids land use impacts – no ROW requirements or parcel impacts + Least visual impact + Least cost
SF-7 Signalized Intersection with Flyover Ramp	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS with Pueblo Blvd. Extension and West Pueblo Connector √ Turning movement benefits: Grade separating a high-volume turning movement allows more signal green time to be given other movements Local access: <ul style="list-style-type: none"> – 2 road closures: Northwest quadrant – Access to Ridge Dr. closed and southwest quadrant – Access to Kachina Dr. west of Baltimore Ave. closed √ Access modification: Northeast quadrant – entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) converted to right-in only √ Pedestrian and bicycle access: Access similar to or improved from current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: Few applications in Colorado, but driving experience would be similar to diamond interchange with flyover 	<ul style="list-style-type: none"> √ Land use: Approximately 5 to 6 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> – Total take of 10 developed parcels (5 business and 5 residential) √ Impacts on 7 additional developed parcels (4 business and 3 residential) – Future land use compatibility: Reduced compatibility with future Arterial Commercial Mixed Use due to access impacts; incompatible with Urban Residential Use – Community/business cohesion: Disruption to community and business cohesion due to access impacts √ Visual: Intermediate potential for visual impact + Noise: Potential to decrease noise levels because retaining walls for flyover ramp will act as noise walls √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leak, and hazardous material spill site in proximity to the Baltimore Ave. intersection; and a RCRA Small Quantity Generator site and an underground storage tank leak near the Morris Ave. intersection. 	<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$5M to \$5.5M + Phasing: May be built in second phase 	<ul style="list-style-type: none"> – Discontinue from further consideration – Street closures and parcel takes – Access impacts on existing developed commercial parcels and residential parcels – Reduced compatibility with future Arterial Commercial Mixed Use due to access impacts – Potential to decrease noise levels

Resources not differentiating among intersection options:

Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
DI-7 Tight Urban Diamond Interchange	<ul style="list-style-type: none"> √ LOS: Meets Purpose & Need LOS √ Turning movement benefits: No delay to through movements on major roadway (US 50 or Pueblo Blvd.) Local access: <ul style="list-style-type: none"> - 2 road closures: Southwest quadrant - Access to Hopi Dr. closed and access to Westroads Ave. south of US 50 closed √ Access modification: Northeast quadrant – Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) converted to right-in only √ Northwest quadrant – Westroads Ave. north of US 50 converted to right-in only √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 30 conflict points (including 10 crossings); 2 fewer conflict points than existing √ Driver expectation: Familiar to drivers – used at several interchanges along I-25 in Pueblo 	<ul style="list-style-type: none"> √ Land use: Approximately 4 to 5 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 3 developed parcels (all business). √ Impacts on 19 additional developed parcels (all business) - Future land use compatibility: Reduced compatibility with future Arterial Commercial Mixed Use due to access impacts and loss of developed business parcels - Community/business cohesion: Disruption to community and business cohesion due to access impacts and land use impacts √ Visual: Intermediate potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Baltimore Ave. √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leak, and hazardous material spill site in proximity to the Baltimore Ave. intersection; and a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration (unless local improvement projects are not built by the design year of 2035; may reconsider during NEPA clearance) + Minimizes the area of the footprint and ROW impacts in comparison to the other interchange options - Still results in street and business access closures and parcel takes due to the lane configuration √ Compatible with TUDI at Wills Blvd.

Resources not differentiating among intersection options:
Streams, wetlands and floodplains – None in vicinity of intersection
Historic properties – None were recorded
Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
DF-7 Diamond Interchange with Flyover	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: No delay to high-volume turning movement given flyover - Local access: 5 road closures in all quadrants: - Access to Hopi Dr. closed - Access to Westroads Ave. north and south of US 50 closed - Access to Kachina Dr. west of Baltimore Ave. closed - Access to Ridge Dr. closed √ Access modification: Northeast quadrant Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) converted to right-in only √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 28 conflict points (including 8 crossings); 4 fewer conflict points than existing √ Driver expectation: Familiar to drivers with applications elsewhere in Colorado	√ Land use: Approximately 20 to 25 acres required beyond existing CDOT ROW Parcels: - Total take of 21 developed parcels (10 business and 11 residential) √ Impacts on 17 additional developed parcels (15 business and 2 residential) √ Impacts on 2 undeveloped parcels (both business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: This option would result in loss of community and business cohesion due to loss of local access and extensive loss of business and residential properties - Visual: Greatest potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Baltimore Ave. √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leak, and hazardous material spill site in proximity to the Baltimore Ave. intersection; and a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection.		√ Cost: Range of typical costs for this option is \$30M to \$35M + Phasing: May be built in phases	- Discontinue from further consideration - Street closures - Total takes to existing businesses and residences - Incompatible with current and future land uses - Among the greatest visual impact - Potential to increase noise levels

Resources not differentiating among intersection options:

Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
SP-7 Single-Point Urban Interchange	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Single traffic signal for intersection of ramps and cross street - Local access: 8 road closures in all quadrants: <ul style="list-style-type: none"> - Access to Hopi Dr. closed - Access to Westroads Ave. north and south of US 50 closed - Access to Kachina Dr. east of Baltimore Ave. closed - Access to Ridge Dr. closed - Access to Valley Dr. closed - Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) closed - Access to Aztec Dr. closed √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 24 conflict points (including 8 crossings); 8 fewer conflict points than existing √ Driver expectation: Familiar to drivers – existing interchange at I-25 and US 50 	<ul style="list-style-type: none"> √ Land use: Approximately 8 to 9 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 25 developed parcels (10 business and 15 residential) √ Impacts on 22 additional developed parcels (15 business and 7 residential) √ Impacts on 2 undeveloped parcels (both business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: This option would result in loss of community and business cohesion due to loss of local access in all quadrants of the interchange, and extensive loss of business and residential properties √ Visual: Intermediate potential for visual impact - Noise: Potential to increase noise levels because US 50 passes over Baltimore Ave. √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leaks, and hazardous material spill site in proximity to the Baltimore Ave. intersection; a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection; and a RCRA Corrective Action site near the intersection of Baltimore Ave. and South Ave. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$25M to \$30M - Phasing: Difficult to build in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Street closures - Substantial access closures - Impacts on existing businesses and residences including street access closures and parcel takes - Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Potential to increase noise levels

Resources not differentiating among intersection options:
 Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
PC-7 Partial Cloverleaf	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: High-volume left turn movements accommodated with loop ramps rather than at signalized intersections - Local access: 9 road closures in all quadrants: - Access to Kachina Dr. east and west of Baltimore Ave. closed - Access to Westroads Ave. north and south of US 50 closed - Access to Ridge Dr. closed - Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) closed - Valley Dr. closed between Baltimore Ave. and Ridge Dr. - Access to Hillside Dr. closed - Access to Aztec Dr. closed √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including 2 crossings); 14 fewer conflict points than existing √ Driver expectation: Many applications elsewhere in Colorado	√ Land use: Approximately 25 to 30 acres required beyond existing CDOT ROW Parcels: - Total take of 38 developed parcels (12 business and 26 residential) - Total take of 1 undeveloped parcel (zoned business) √ Impacts on 7 additional developed parcels (all business) √ Impacts on 2 additional undeveloped parcels (both business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Significant disruption to community and business cohesion due to access impacts in all 4 quadrants of the intersection, and loss of business and residential properties √ Visual: Intermediate potential for visual impact √ Noise: Possible increase or decrease in noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leak, and hazardous material spill site in proximity to the Baltimore Ave. intersection; a RCRA Small Quantity Generator site near the Morris Ave. intersection; and a RCRA Corrective Action site near the intersection of Baltimore Ave. and South Ave.		√ Cost: Range of typical costs for this option is \$35M to \$40M + Phasing: May be built in phases	- Discontinue from further consideration - Street closures in all quadrants - Considerable land use impacts due to business and residential property takes - Significant disruption to community and business cohesion due to access impacts in all 4 quadrants of the intersection, and loss of business and residential properties - Substantial access closures involving each quadrant of the interchange

Resources not differentiating among intersection options:

Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
PF-7 Partial Cloverleaf with Flyovers	<ul style="list-style-type: none"> + LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for high-volume left turning movements - Local access: 10 road closures in all quadrants: <ul style="list-style-type: none"> - Access to Kachina Dr. east of Baltimore Ave. closed - Access to Hopi Dr. closed - Access to Westroads Ave. north and south of US 50 closed - Access to Ridge Dr. closed - Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) closed - Morris Ave. and Fortino Blvd. grade-separated – access to US 50 closed. Alternatively, access to Morris Ave. and Fortino Blvd. can be maintained by extending acceleration and deceleration lanes east on US 50, resulting in greater ROW impacts than those shown here. Traffic from the ramp entering US 50 eastbound would not be able to turn north on to Fortino Blvd. - Access to South Dr. closed - Access to Valley Dr. closed - Access to Aztec Dr. closed - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado 	<ul style="list-style-type: none"> √ Land use: Approximately 35 to 40 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 46 developed parcels (23 business and 23 residential) √ Impacts on 12 additional developed parcels (8 business and 4 residential) √ Impacts on 2 undeveloped parcels (both business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Greatest disruption to community and business cohesion due to loss of access in all quadrants of the intersection, and extensive loss of business and residential properties - Visual: Greatest potential for visual impact √ Noise: Possible increase or decrease in noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, 2 underground storage tank leaks, and hazardous material spill site in proximity to the Baltimore Ave. intersection; a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection; and a RCRA Corrective Action site near the intersection of Baltimore Ave. and South Ave. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$40M to \$45M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Street closures in all quadrants - Considerable land use impacts due to business and residential property takes - Significant disruption to community and business cohesion due to access impacts in all 4 quadrants of the intersection, and loss of business and residential properties - Substantial access closures involving each quadrant of the interchange - Among the greatest for visual impacts

Resources not differentiating among intersection options:
 Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
FS-7 Four-Level Stack Interchange	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – directional ramps allow high-speed (45 mph) travel for all turning movements - Local access: 14 road closures in all quadrants: - Access to Hopi Dr. closed - Access to Westroads Ave. north and south of US 50 closed - Entrance south of Kachina Dr. west of Baltimore Ave. (north of Centennial High School track) closed - Access to Northmoor Terrace closed - Access to Ridge Dr. closed - Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) closed - Morris Ave. and Fortino Blvd. grade-separated – access to US 50 closed - Access to South Dr. closed - Valley Dr. closed between Baltimore Ave. and Ridge Dr. - Access to Aztec Dr. closed - Access to Kachina Dr. east and west of Baltimore Ave. closed - Access to Kachina Dr. east of Morris Ave. closed - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: Applications elsewhere in Colorado	- Land use: Approximately 40 to 50 acres required beyond existing CDOT ROW Parcels: - Total take of 72 developed parcels (25 business and 47 residential) - Total take of 1 undeveloped parcel (zoned business) √ Impacts on 18 additional developed parcels (10 business, 7 residential and 1 public, Centennial High School track) √ Impacts on 1 additional undeveloped parcel (zoned business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Greatest disruption to community and business cohesion due to loss of access in all quadrants of the intersection, and extensive loss of business and residential properties - Visual: Greatest potential for visual impact – highest level of visual contrast to setting and viewers due to high profile √ Noise: Possible increase or decrease in noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, 2 underground storage tank leaks, and hazardous material spill site in proximity to the Baltimore Ave. intersection; a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection; and a RCRA Corrective Action site near the intersection of Baltimore Ave. and South Ave.		- Cost: Range of typical costs for this option is \$65M to \$75M; highest cost + Phasing: May be built in phases	- Discontinue from further consideration - Street closures in all quadrants - Greatest number of developed residential properties taken - Greatest number of developed business properties taken - Incompatible with current and future land use - Greatest disruption to community and business cohesion due to loss of access in all quadrants of the intersection, and extensive loss of business and residential properties - Greatest number of access closures involving each quadrant of the interchange - Greatest potential for visual impacts - Highest cost

Resources not differentiating among intersection options:

Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
TR-7 Three-Level Roundabout	+ LOS: Greatly exceeds Purpose & Need LOS √ Turning movement benefits: Fully grade-separated – no signals – through movements bypass roundabout - Local access: 12 road closures in all quadrants: - Access to Hopi Dr. closed - Access to Westroads Ave. north and south of US 50 closed - Access to Kachina Dr. east and west of Baltimore Ave. closed - Entrance south of Kachina Dr. west of Baltimore Ave. (north of Centennial High School track) closed - Access to Northmoor Terrace closed - Access to Ridge Dr. closed - Entrance between Ridge Dr. and Fortino Blvd. (Walgreens, Chase Bank) closed - Access to Morris Ave. closed - Fortino Blvd. converted to right-in, right-out (RIRO) only - Access to Aztec Dr. closed - Valley Dr. closed between Baltimore Ave. and Ridge Dr. - Pedestrian and bicycle access: Access greatly reduced from current conditions, independent pedestrian/bicycle facility needed + Safety: 16 conflict points (none crossing); least of all intersection options √ Driver expectation: May be unfamiliar – no current application in Colorado – One in Louisiana	- Land use: Approximately 40 to 50 acres required beyond existing CDOT ROW Parcels: - Total take of 60 developed parcels (21 business and 39 residential) - Total take of 1 undeveloped parcel (zoned business) √ Impacts on 17 additional developed parcels (13 business, 3 residential and 1 public, Centennial High School track) √ Impacts on 3 additional undeveloped parcels (2 business and 1 residential) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Significant disruption to community and business cohesion due to loss of access in all quadrants of the intersection and extensive loss of business and residential properties - Visual: Greatest potential for visual impact - Noise: Potential to increase noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, an underground storage tank leak, and hazardous material spill site in proximity to the Baltimore Ave. intersection; a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection; and a RCRA Corrective Action site near the intersection of Baltimore Ave. and South Ave.		√ Cost: Range of typical costs for this option is \$45M to \$55M - Phasing: Difficult to build in phases	- Discontinue from further consideration - Street closures in all quadrants - Incompatible with current and future land use - Significant disruption to community and business cohesion due to loss of access in all quadrants of the intersection and extensive loss of business and residential properties - Substantial access closures involving each quadrant of the interchange - Greatest potential for visual impacts - Difficult to build in phases

Resources not differentiating among intersection options:
 Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	JFSA Recommendations and Rationale
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
CT-7 Two-Leg Continuous Flow Intersection	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Main road left turns share green phase with through movements + Local access: No change from current conditions √ Pedestrian and bicycle access: Access similar to current conditions √ Safety: 30 conflict points (including 14 crossings); 2 fewer conflict points than existing √ Driver expectation: New concept – one in Loveland	√ Land use: Approximately 9 to 10 acres required beyond existing CDOT ROW √ Future land use compatibility: Moderate compatibility with future land use Parcels: - Total take of 4 developed parcels (3 business and 1 residential) √ Impacts to 25 additional developed parcels (23 business and 2 residential) √ Impacts to 1 undeveloped parcel (zoned business) √ Future land use compatibility: Moderate compatibility with future land use + Community/business cohesion: Minimizes disruption to community and business cohesion + Visual: Least potential for visual impact - Noise: Potential to increase noise levels √ Hazardous materials: Potential conflicts to a RCRA Small Quantity Generator site, underground storage tank leak, hazardous material spill site in proximity to the Baltimore Ave. intersection; and a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection.		√ Cost: Range of typical costs for this option is \$3M to \$5M + Phasing: May be built in phases	Discontinue from further consideration (unless local improvement projects are not built by the design year of 2035; may reconsider during NEPA clearance) + No street closures + No access closures + Minimizes takes to business and residential parcels - Moderate impacts on business and residential parcels √ Moderate compatibility with future land use + Minimizes disruption to community and business cohesion - Potential to increase noise levels + May be built in phases + Low cost

Resources not differentiating among intersection options:
 Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness √ = Neutral result/minimal impact or change on resource or measure of effectiveness + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
CF-7 Four-Leg Continuous Flow Intersection	<ul style="list-style-type: none"> √ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns share a green phase with corresponding through movements - Local access: 4 road closures in all quadrants: <ul style="list-style-type: none"> - Access to Aztec Dr. closed - Access to Valley Dr. closed - Access to Kachina Dr. east and west of Baltimore Ave. closed √ Pedestrian and bicycle access: Access similar to current conditions √ Safety: 28 conflict points (including 12 crossings); 4 fewer conflict points than existing √ Driver expectation: New concept – no current application in Colorado 	<ul style="list-style-type: none"> √ Land use: Approximately 16 to 18 acres required beyond existing CDOT ROW Parcels: <ul style="list-style-type: none"> - Total take of 27 developed parcels (7 business and 20 residential) √ Impacts on 19 additional developed parcels (17 business and 2 residential) √ Impacts on 2 undeveloped parcels (both business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Disruption to community and business cohesion due to access impacts in all quadrants of the intersection and extensive impacts on business and residential parcels + Visual: Least potential for visual impact - Noise: Potential to increase noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, underground storage tank leak, and hazardous material spill site near Baltimore Ave.; and a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection. 		<ul style="list-style-type: none"> √ Cost: Range of typical costs for this option is \$5M to \$10M + Phasing: May be built in phases 	<ul style="list-style-type: none"> - Discontinue from further consideration <ul style="list-style-type: none"> - Street closures - Moderate impacts on business and residential parcels - Moderate compatibility with future land use - Disruptive to community and business cohesion - Least potential for visual impact - Potential to increase noise levels - May be built in phases - Little improvement in traffic operations for additional impacts and cost

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

Resources not differentiating among intersection options:
Streams, wetlands and floodplains – None in vicinity of intersection
Historic properties – None were recorded
Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Legend:

- = Option with greatest impact on resource or measure of effectiveness
 √ = Neutral result/minimal impact or change on resource or measure of effectiveness
 + = Option with least impact on resource or measure of effectiveness

PROJECT EVALUATION CONSIDERATIONS					
Comparison Criteria	Operations and Safety	Community, Business and Environment		Feasibility and Cost	
	Meeting Purpose & Need Level of Service (LOS) <i>Criteria: LOS, turning movements, local access, pedestrian & bicycle access, safety and driver expectation</i>	Environmental Impacts <i>Criteria: Land use, future land use compatibility, parcels, streams, wetlands, floodplain, T & E species, visual, utilities, hazardous materials, historic properties, noise and community/business cohesion</i>		Financing <i>Criteria: Construction cost and phasing</i>	
DD-7 Diverging Diamond Interchange	√ LOS: Exceeds Purpose & Need LOS √ Turning movement benefits: Left turns are free or yield-controlled movements to and from ramps – accommodates large left turning volumes - Local access: 7 road closures in all quadrants: - Access to Ridge Dr. closed - Access to Valley Dr. closed - Access to Aztec Dr. closed - Access to Kachina Dr. east and west of Baltimore Ave. closed - Access to Westroads Ave. north and south of US 50 closed √ Pedestrian and bicycle access: Access reduced from current conditions √ Safety: 18 conflict points (including 2 crossings); 14 fewer conflict points than existing √ Driver expectation: New concept – none in Colorado yet (one planned for Grand Junction) – used successfully in Missouri and Utah	√ Land use: Approximately 7 to 8 acres required beyond existing CDOT ROW Parcels: - Total take of 33 developed parcels (9 business and 24 residential) - Total take of 1 undeveloped parcel (zoned business) √ Impacts on 20 additional developed parcels (18 business and 2 residential) √ Impacts on 1 additional undeveloped parcel (zoned business) - Future land use compatibility: Incompatible with current and future Arterial Commercial Mixed Use and Urban Residential Use due to access impacts and extended footprint into residential area - Community/business cohesion: Disruption to community and business cohesion due to access impacts in all quadrants of the intersection and extensive impacts to business and residential parcels √ Visual: Intermediate potential for visual impact + Noise: Potential to decrease noise levels √ Hazardous materials: Potential conflicts with a RCRA Small Quantity Generator site, underground storage tank leak, and hazardous material spill site near Baltimore Ave.; and a RCRA Small Quantity Generator site and 2 underground storage tank leaks near the Morris Ave. intersection.		√ Cost: Range of typical costs for this option is \$20M to \$25M + Phasing: May be built in phases from a conventional diamond interchange	- Discontinue from further consideration - Street closures - Substantial access closures - Substantial parcel takes of existing businesses and residences - Incompatible with current and future land use - Disruption to community and business cohesion due to access impacts in all quadrants of the intersection - Potential to decrease noise levels - May be built in phases from a conventional diamond interchange

Resources not differentiating among intersection options:

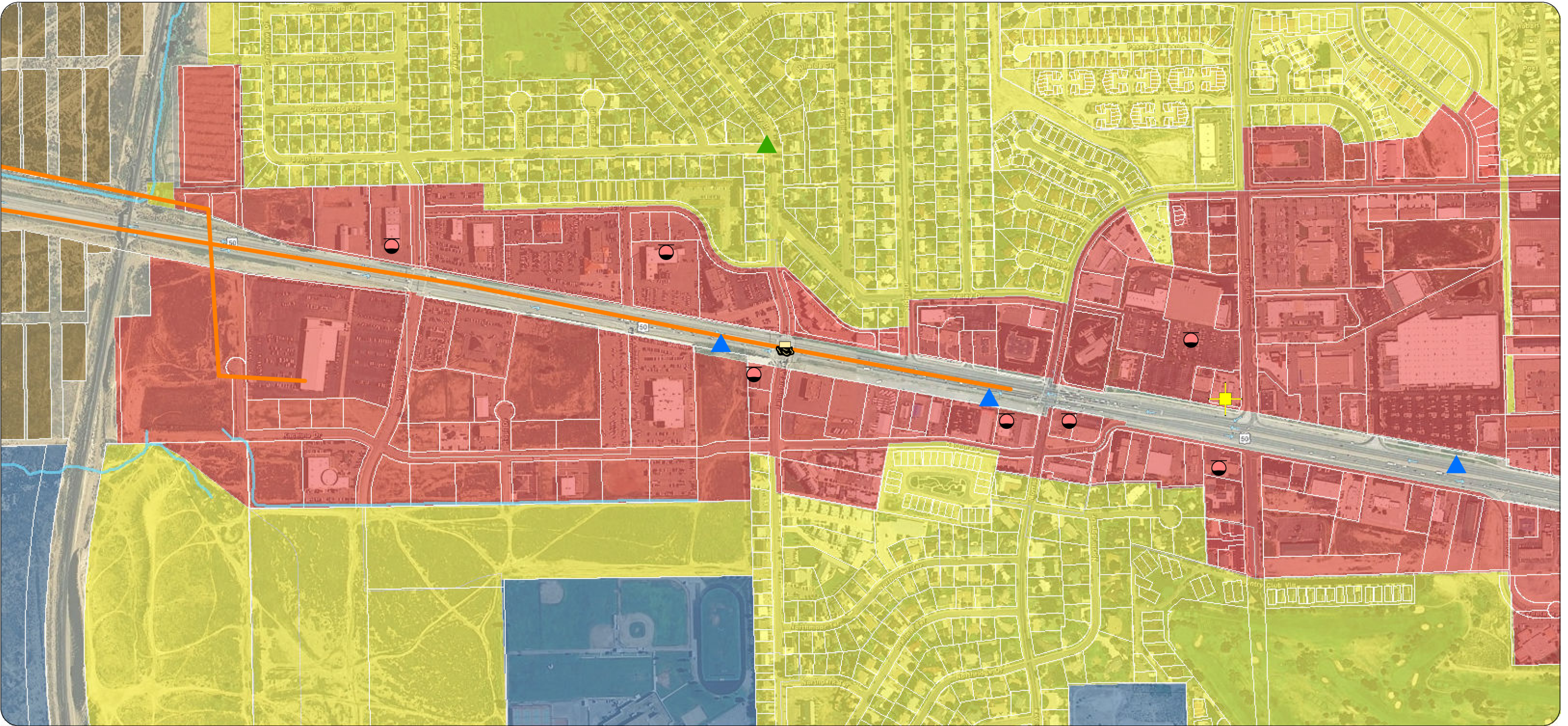
Streams, wetlands and floodplains – None in vicinity of intersection
 Historic properties – None were recorded
 Utilities – Underground fiber optic cable beneath US 50 eastbound and westbound lanes
 T & E species – No habitat

Note: Construction cost does not include cost of additional ROW acquisition

Note: Impacts of intersection options at Baltimore Ave. are calculated in isolation; that is, assuming no action at Wills Blvd. Combinations of action alternatives at Wills Blvd. and Baltimore Ave. may have overlapping impacts and may require custom design.

50

US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue

Roadway Design

Roadway and Construction Footprint

Waterways

Floodplain

Streams

Zoning

Agricultural

Industrial

Public Use

Office

Business

Residential

PUD/Rural Land Use Plan

HazMat

RCRA Small Quantity Generator

RCRA Corrective Action

Underground Storage Tank Leak

Hazardous Material Spill

Voluntary Cleanup Program

Utilities

Sanitary Sewer

Gas

Underground Fiber

Electric Transmission

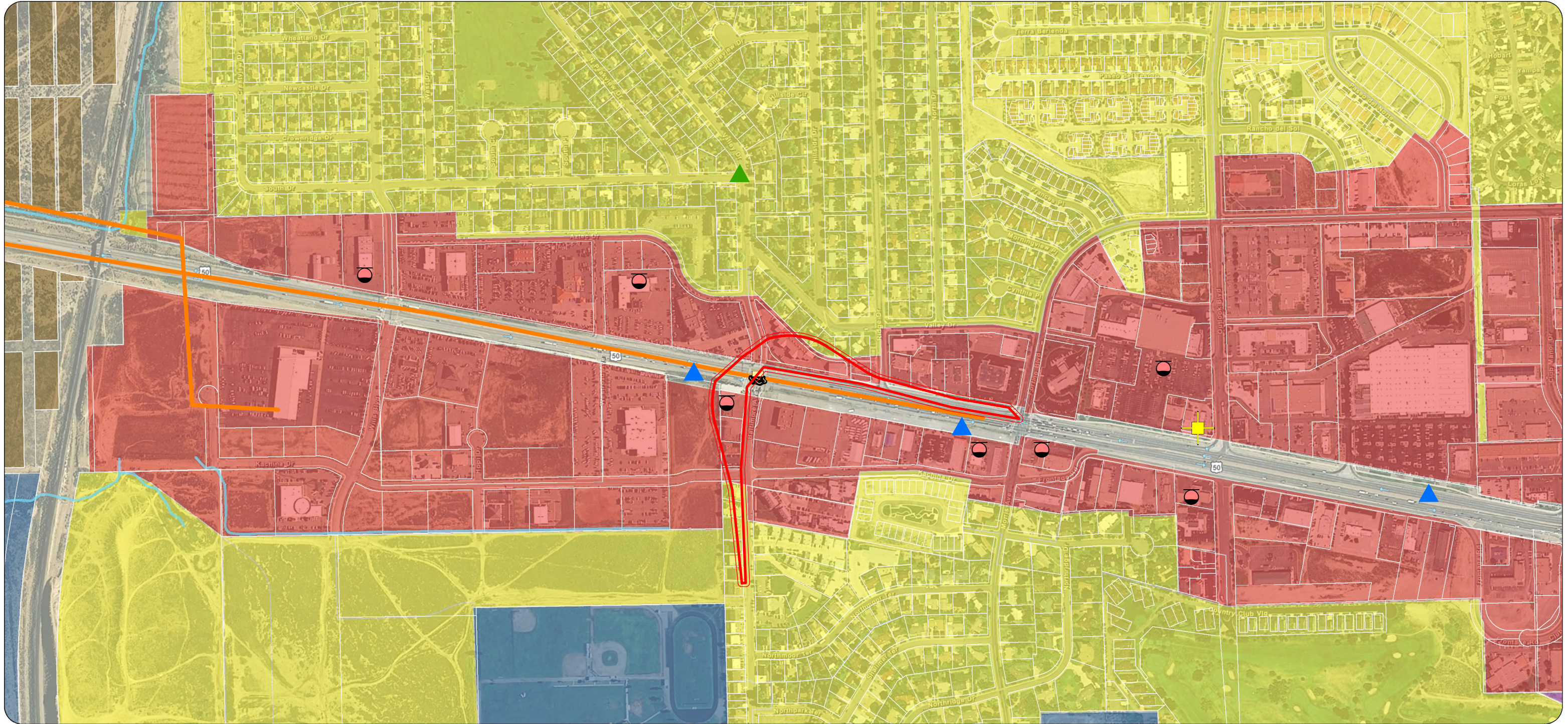


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue
Signalized Intersection with Flyover (SF-7)

<p>Roadway Design</p> <ul style="list-style-type: none"> Roadway Footprint Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> Floodplain Streams 	<p>Zoning</p> <ul style="list-style-type: none"> Agricultural Industrial Public Use 	<p>Office</p> <ul style="list-style-type: none"> Business Residential PUD/Rural Land Use Plan 	<p>HazMat</p> <ul style="list-style-type: none"> RCRA Small Quantity Generator RCRA Corrective Action Underground Storage Tank Leak Hazardous Material Spill Voluntary Cleanup Program 	<p>Utilities</p> <ul style="list-style-type: none"> Sanitary Sewer Gas Underground Fiber Electric Transmission
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DOT DEPARTMENT OF TRANSPORTATION

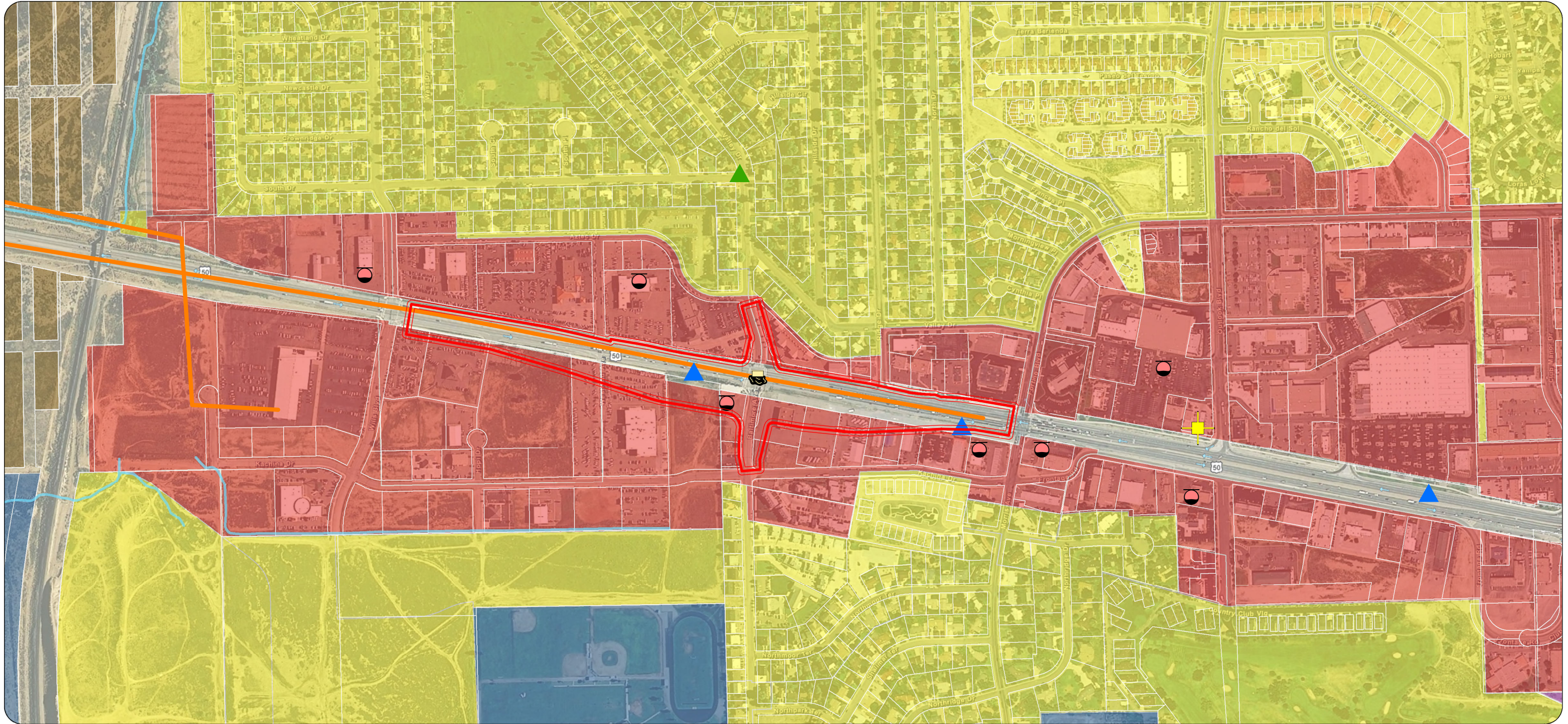
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0 255 510 1,020 Feet

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue Type Urban Diamond Interchange (TUDI-7)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

Office

- Office

Business

- Business

Residential

- Residential

PUD/Rural Land Use Plan

- PUD/Rural Land Use Plan

HazMat

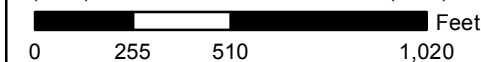
- RCRA Small Quantity Generator
- RCRA Corrective Action
- Underground Storage Tank Leak
- Hazardous Material Spill
- Voluntary Cleanup Program

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

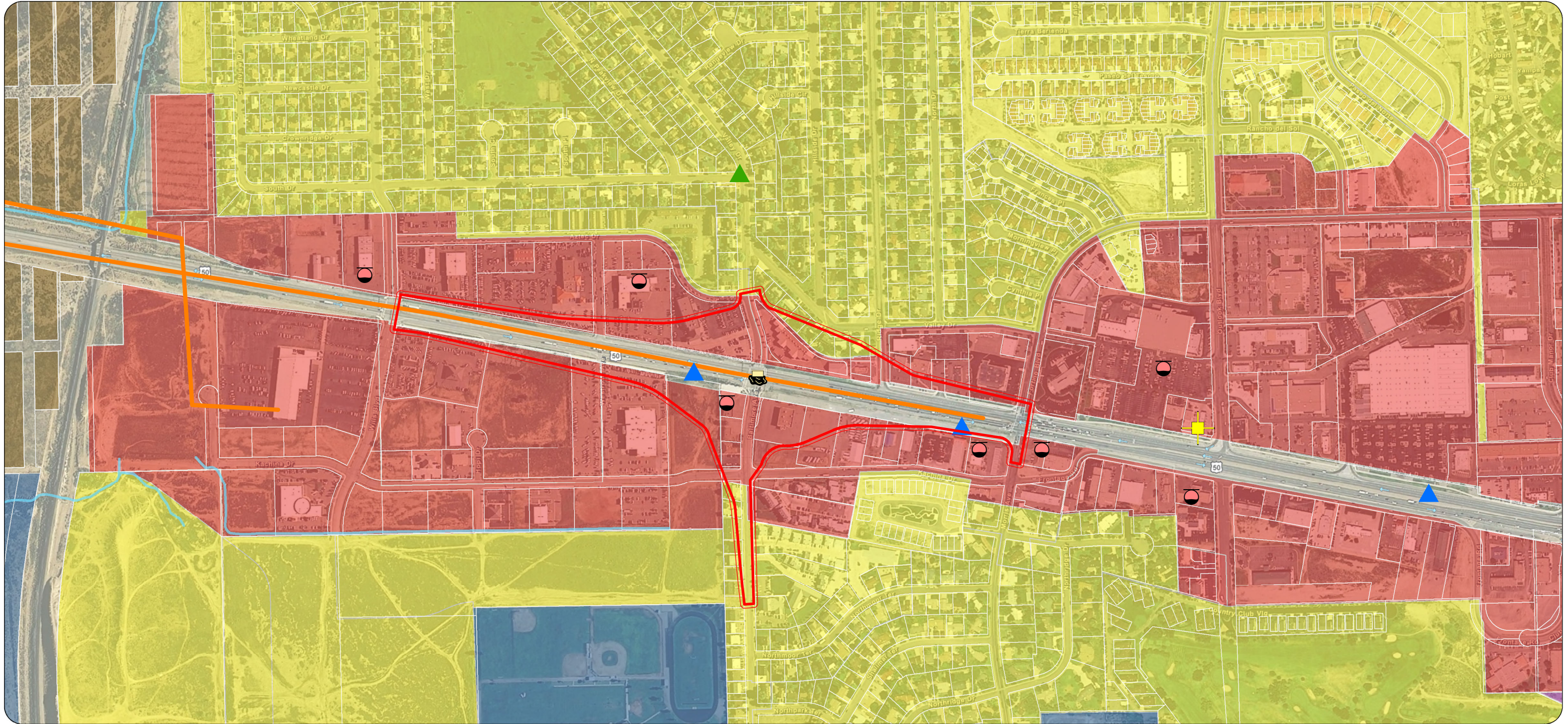


Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue

Diamond Interchange with Flyover (DF-7)

Roadway Design

- Roadway Footprint
- Construction Footprint

Waterways

- Floodplain
- Streams

Zoning

- Agricultural
- Industrial
- Public Use
- Office
- Business
- Residential
- PUD/Rural Land Use Plan

HazMat

- RCRA Small Quantity Generator
- RCRA Corrective Action
- Underground Storage Tank Leak
- Hazardous Material Spill
- Voluntary Cleanup Program

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission



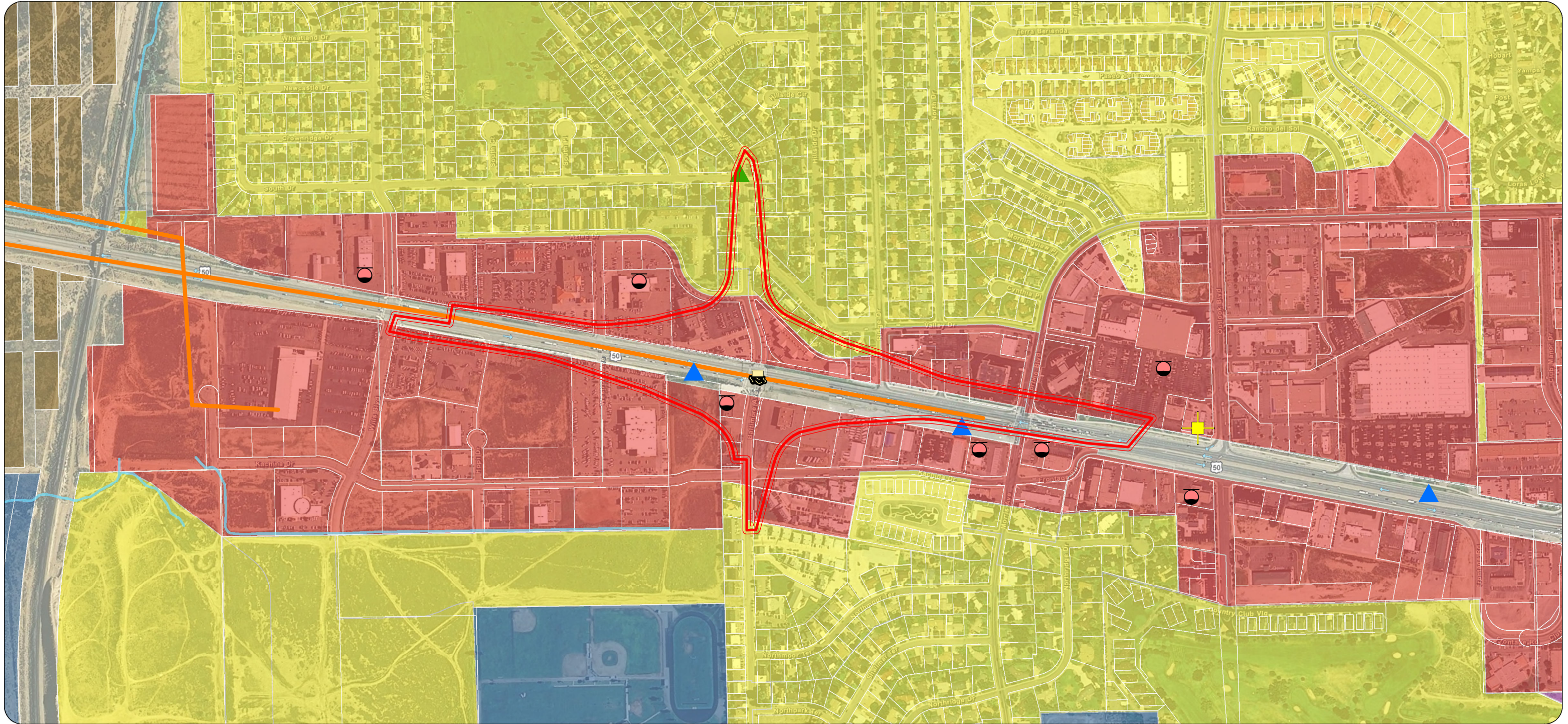
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue
Single-Point Urban Interchange (SP-7)

Roadway Design	Zoning	HazMat	Utilities
Roadway Footprint	Agricultural	RCRA Small Quantity Generator	Sanitary Sewer
Construction Footprint	Business	RCRA Corrective Action	Gas
Waterways	Industrial	Underground Storage Tank Leak	Underground Fiber
Floodplain	Public Use	Hazardous Material Spill	Electric Transmission
Streams	PUD/Rural Land Use Plan	Voluntary Cleanup Program	

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DOT DEPARTMENT OF TRANSPORTATION

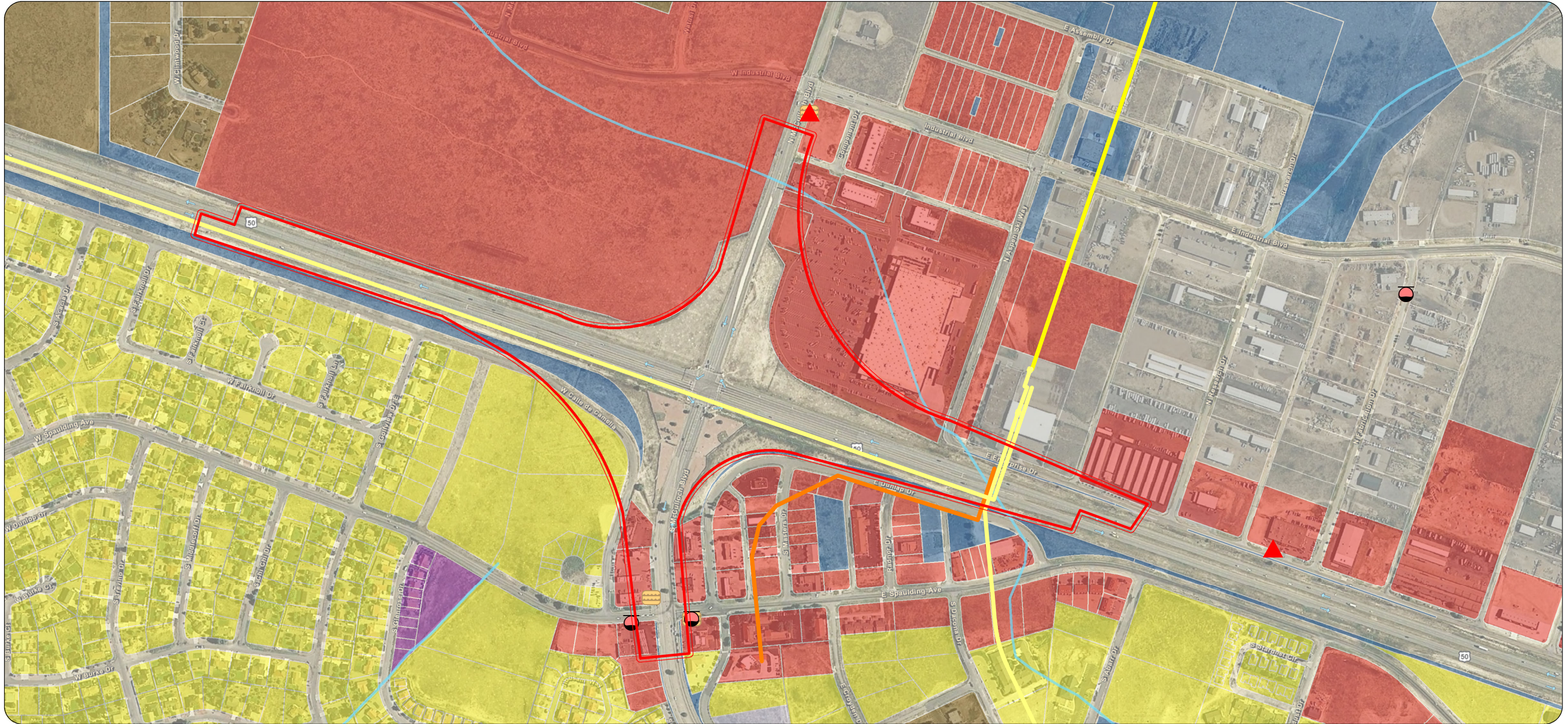
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Partial Cloverleaf
with Flyovers (PC-3)

<p>Roadway Design</p> <ul style="list-style-type: none"> ▬ Roadway Footprint ▬ Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> ▨ Floodplain ▬ Streams 	<p>Zoning</p> <ul style="list-style-type: none"> ■ Agricultural ■ Industrial ■ Public Use ■ Office ■ Business ■ Residential ■ PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> ● Underground Storage Tank Leak ● Underground Storage Tanks ▲ RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> ▬ Sanitary Sewer ▬ Gas ▬ Underground Fiber - - - Electric Transmission
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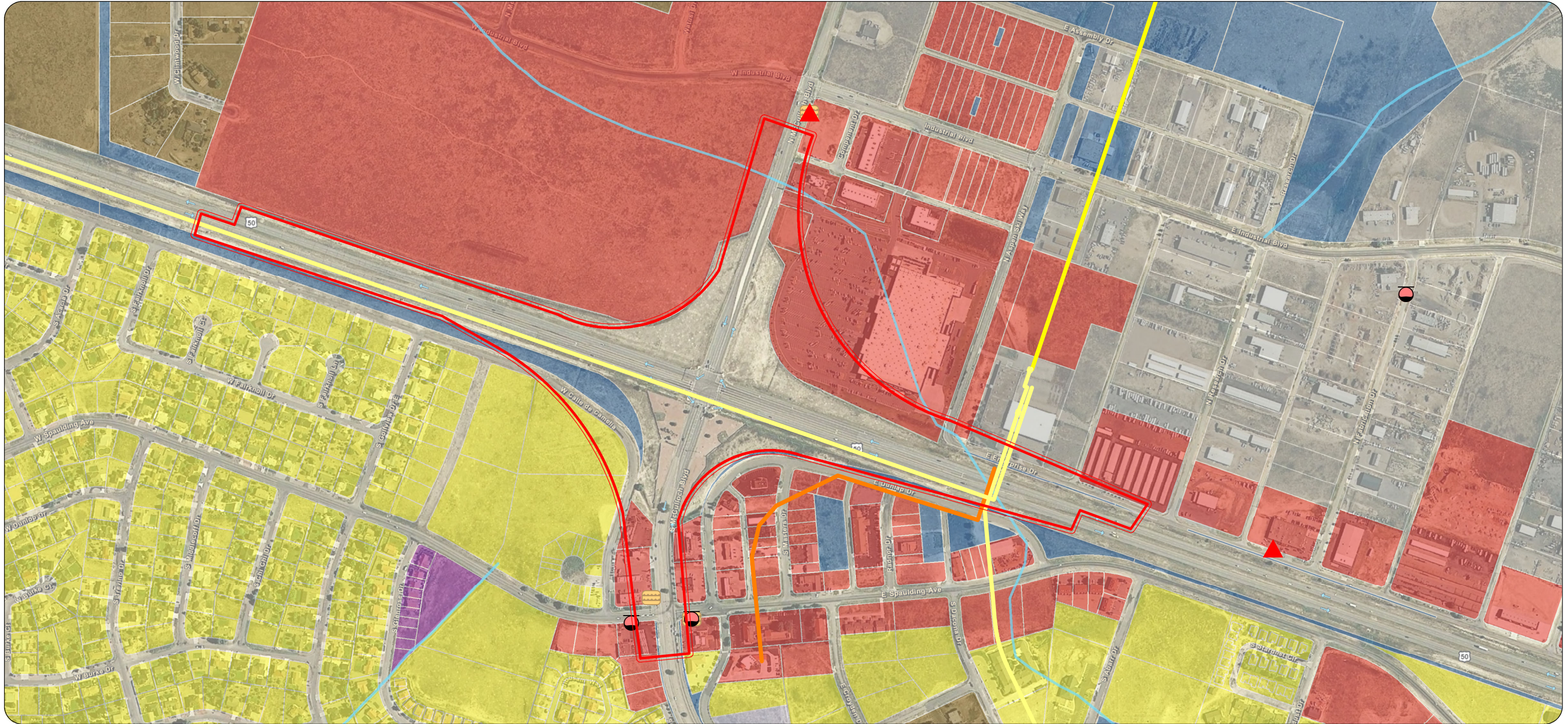
J.F. SATO AND ASSOCIATES

DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Main McCulloch
Partial Cloverleaf
with Flyovers (PF-3)

<p>Roadway Design</p> <ul style="list-style-type: none"> ▬ Roadway Footprint ▬ Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> ▨ Floodplain ▬ Streams 	<p>Zoning</p> <ul style="list-style-type: none"> ■ Agricultural ■ Industrial ■ Public Use ■ Office ■ Business ■ Residential ■ PUD/RULP 	<p>HazMat</p> <ul style="list-style-type: none"> ● Underground Storage Tank Leak ● Underground Storage Tanks ▲ RCRA Generator Sites 	<p>Utilities</p> <ul style="list-style-type: none"> ▬ Sanitary Sewer ▬ Gas ▬ Underground Fiber - - - Electric Transmission
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DEPARTMENT OF TRANSPORTATION

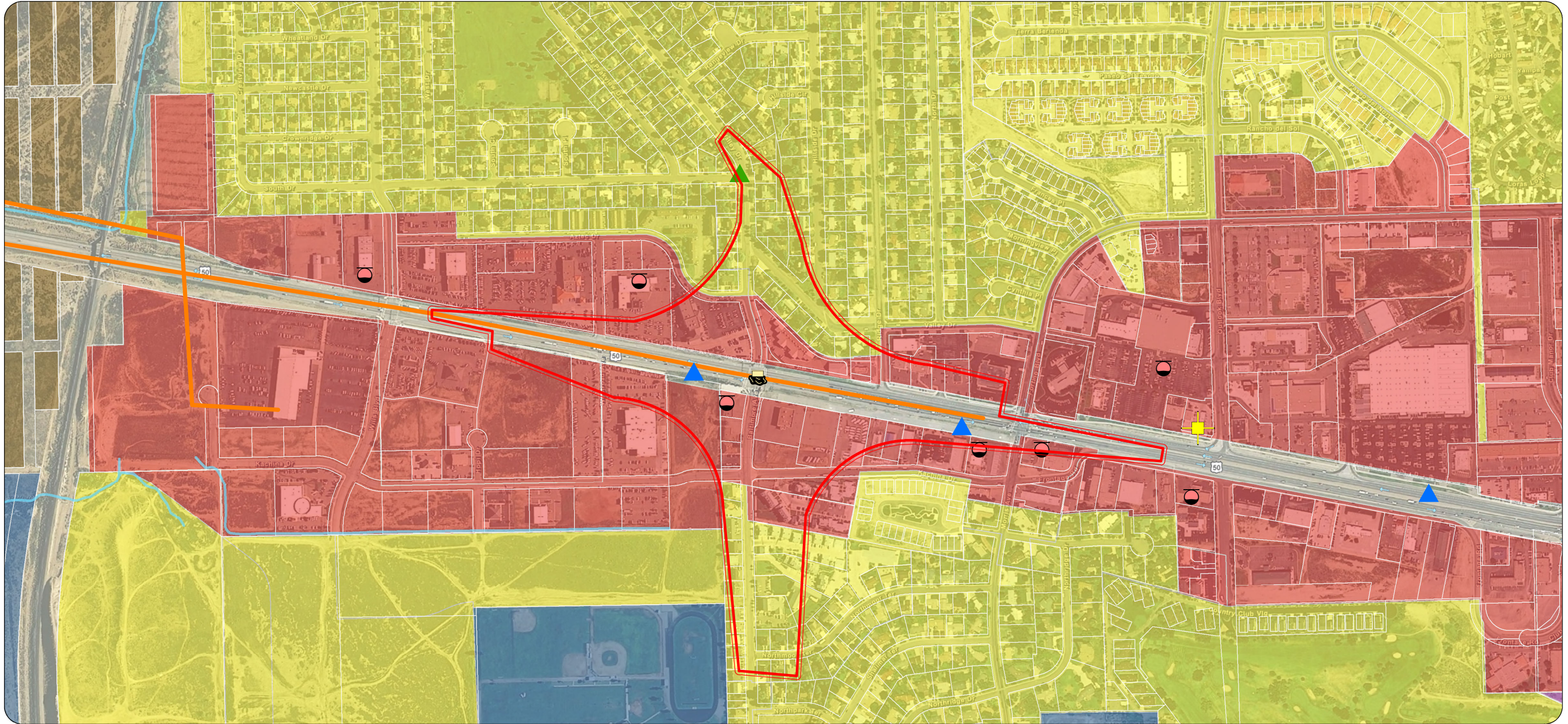
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue

Four-Level Stack Interchange (FS-7)

<p>Roadway Design</p> <ul style="list-style-type: none"> — Roadway Footprint — Construction Footprint <p>Waterways</p> <ul style="list-style-type: none"> ▨ Floodplain — Streams 	<p>Zoning</p> <ul style="list-style-type: none"> ■ Agricultural ■ Industrial ■ Public Use ■ Office ■ Business ■ Residential ■ PUD/Rural Land Use Plan 	<p>HazMat</p> <ul style="list-style-type: none"> ▲ RCRA Small Quantity Generator ▲ RCRA Corrective Action ● Underground Storage Tank Leak ☼ Hazardous Material Spill ■ Voluntary Cleanup Program 	<p>Utilities</p> <ul style="list-style-type: none"> — Sanitary Sewer — Gas — Underground Fiber - - - Electric Transmission
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J.F. SATO AND ASSOCIATES

DEPARTMENT OF TRANSPORTATION

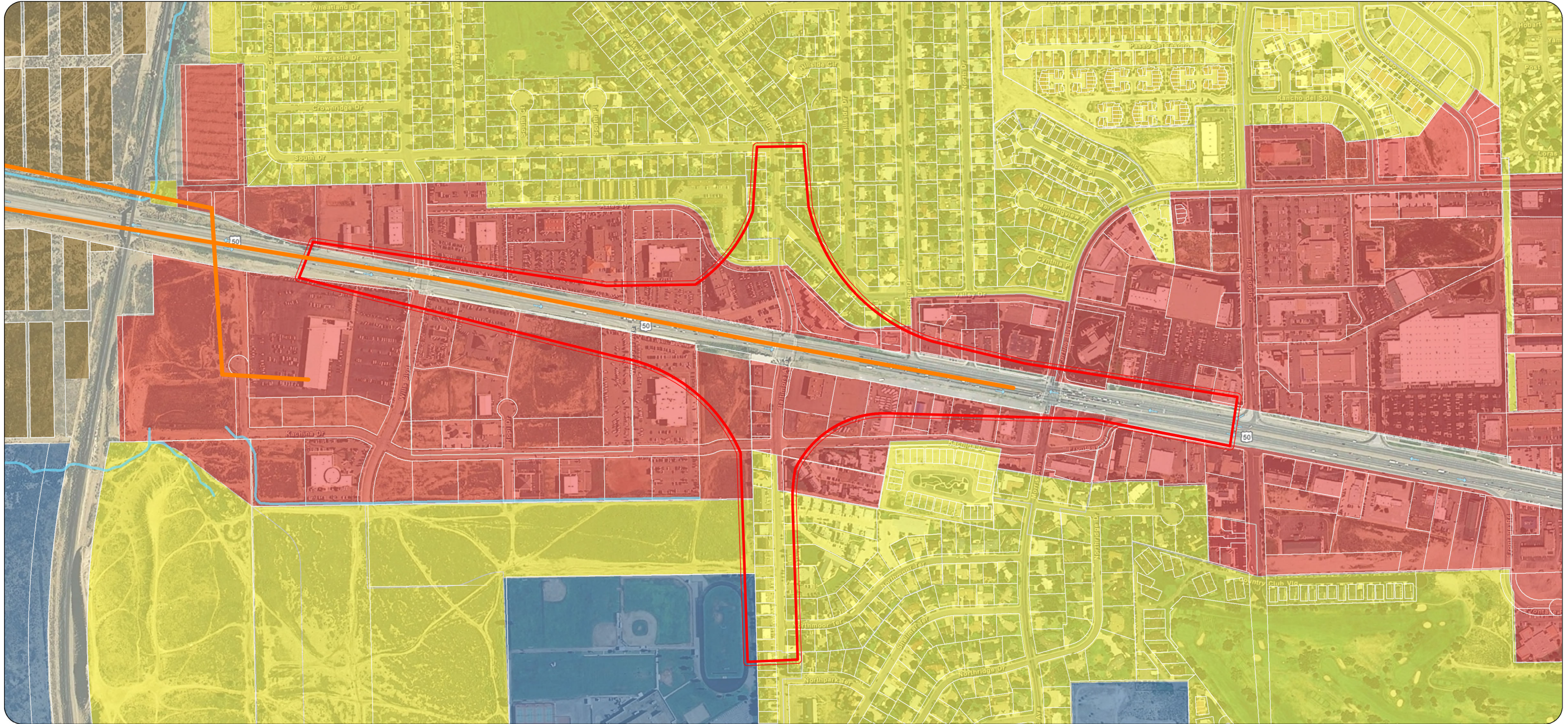
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue
Three Level Roundabout (TR-7)

Roadway Design	Waterways	Zoning	Utilities
Roadway Footprint	Floodplain	Agricultural	Sanitary Sewer
Construction Footprint	Generalized Wetland	Industrial	Gas
Lane Configuration	Streams	Public Use	Underground Fiber
		Business	Electric Transmission
		Residential	
		PUD/Rural Land Use Plan	

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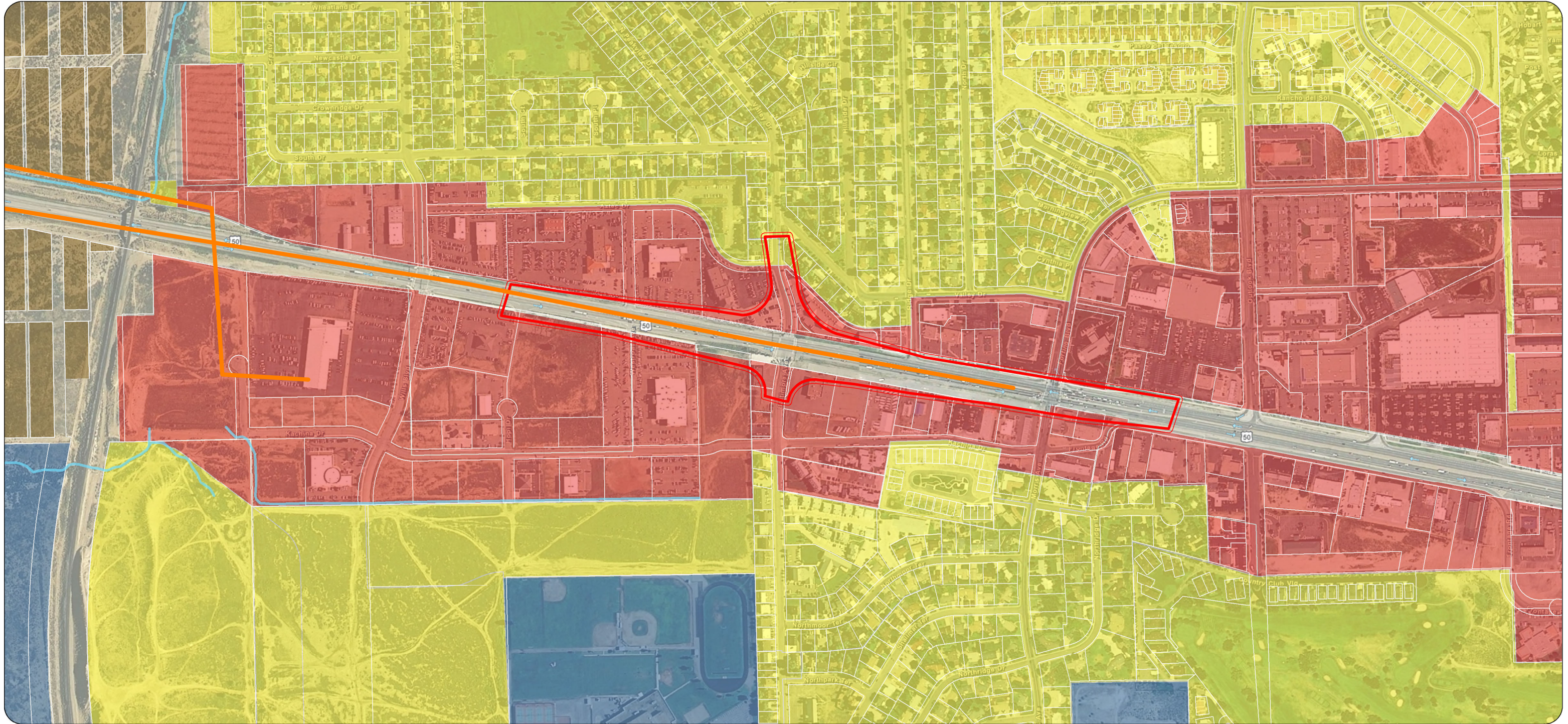
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue
Two-Leg Continuous
Flow Intersection (CT-7)

Roadway Design	Waterways	Zoning	Utilities
Roadway Footprint	Floodplain	Agricultural	Sanitary Sewer
Construction Footprint	Generalized Wetland	Industrial	Gas
Lane Configuration	Streams	Public Use	Underground Fiber
		Business	Electric Transmission
		Residential	
		PUD/Rural Land Use Plan	

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

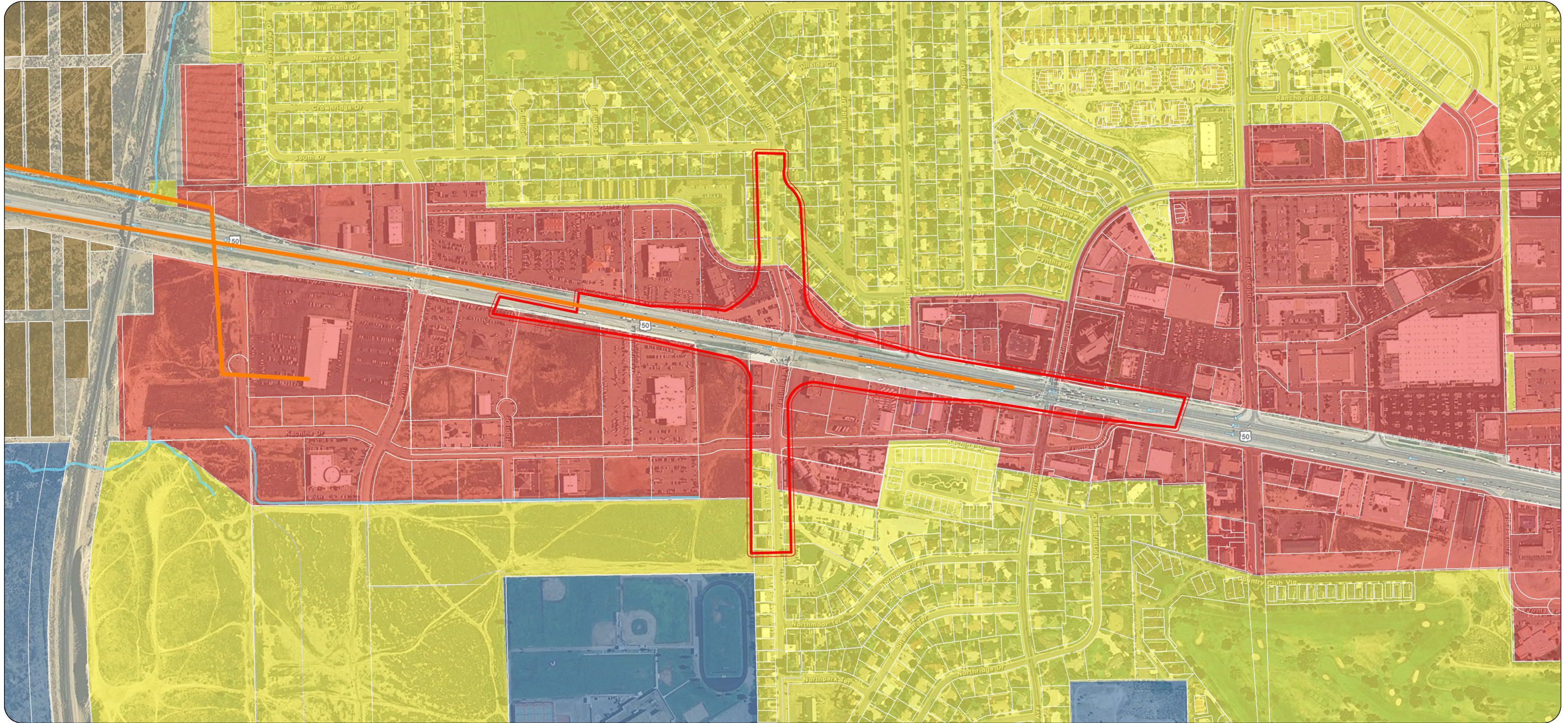
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue

Four-Leg Continuous Flow Intersection (CF-7)

Roadway Design

- Roadway Footprint
- Construction Footprint
- Lane Configuration

Waterways

- Floodplain
- Generalized Wetland
- Streams

Zoning

- Agricultural
- Industrial
- Public Use

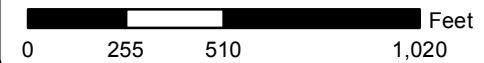
- Business
- Residential
- PUD/Rural Land Use Plan

Utilities

- Sanitary Sewer
- Gas
- Underground Fiber
- Electric Transmission

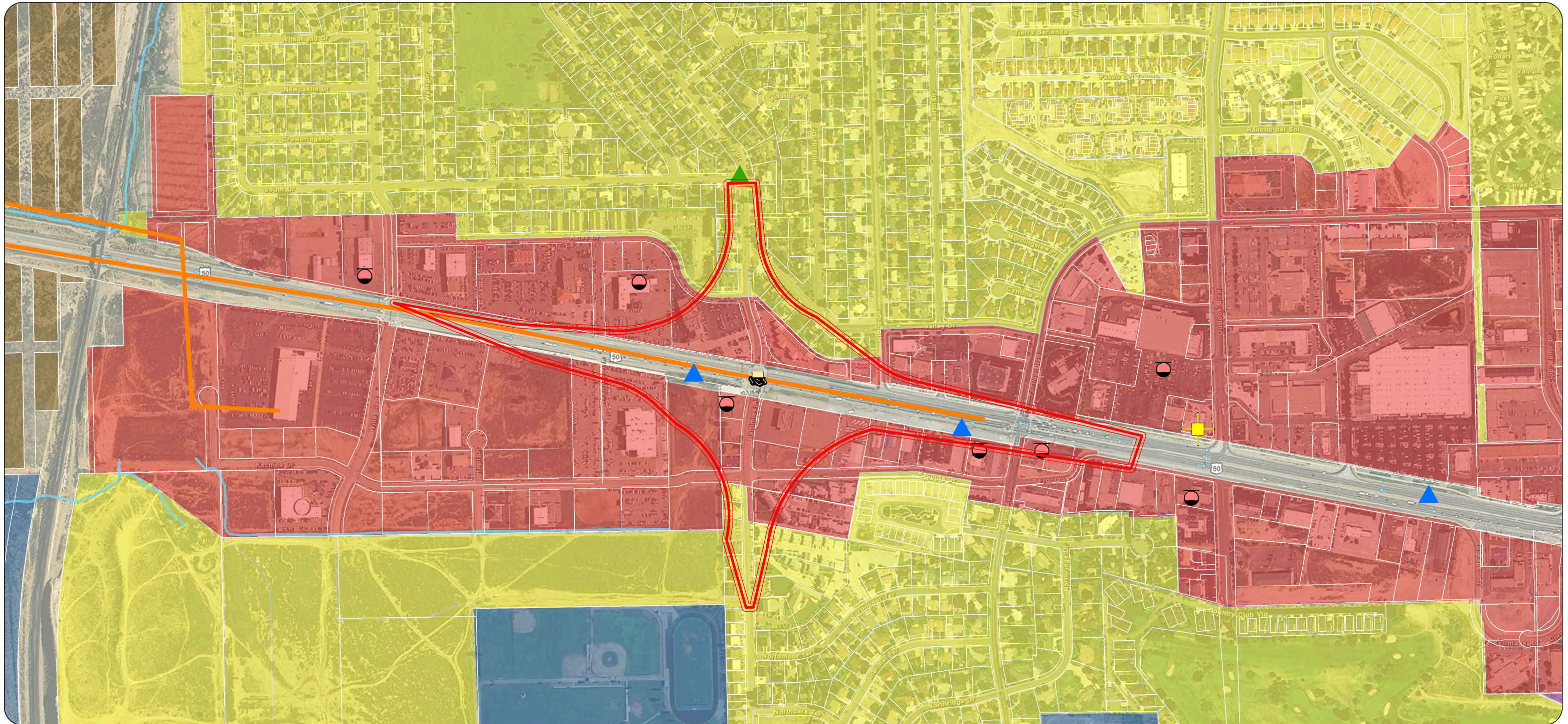


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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.



Baltimore Avenue
Diverging Diamond Interchange (DD-7)

Roadway Design	Zoning	HazMat	Utilities
Roadway Footprint	Agricultural	RCRA Small Quantity Generator	Sanitary Sewer
Construction Footprint	Business	RCRA Corrective Action	Gas
Waterways	Residential	Underground Storage Tank Leak	Underground Fiber
Floodplain	PUD/Rural Land Use Plan	Hazardous Material Spill	Electric Transmission
Streams	Public Use	Voluntary Cleanup Program	

JFS J.E. SATO AND ASSOCIATES

DOT DEPARTMENT OF TRANSPORTATION

Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

B.4 Level 4 Comparative Analysis of Alternatives

The TAT conducted Level 4 comparative analysis during meetings on June 23, 2011 and July 12, 2011 using the following materials, which consist of a table comparing the alternatives and a series of maps.

The comparative table shows the alternatives in columns, with another column for current conditions in the Corridor. Rows correspond to measures of effectiveness and resource impacts. The rows are grouped based on the following sections:

1. Meeting Purpose and Need
2. Environmental impacts
3. Implementation and financing
4. Disposition and rationale

The Purpose and Need section discusses measures of effectiveness regarding:

- Mobility, such as travel time, delay, and LOS
- Vehicular, pedestrian, and bicycle access
- Safety

The environmental section examines the following resources:

- Land use and ROW acquisition
- Community and business cohesion
- Visual
- Noise
- Hazardous materials
- Utilities
- Streams, wetlands, and floodplains

The implementation and financing section considers:

- Construction cost by component
- The ability to construct the alternative in phases
- Flexibility for future expansion

The disposition and rationale section discusses which alternative was identified as the Preferred Alternative (Alternative E) and why.

In comparing the measures of effectiveness and resource impacts across alternatives, a color coding and symbol scheme is used similar that that used for Level 3 comparative analysis:

- The alternative(s) with the least impact or the most desirable measure of effectiveness is (are) shown in green text and with a plus sign
- The alternative(s) with the greatest impact or the least desirable measure of effectiveness is (are) shown in blue and with a minus sign
- Black text and a check mark indicates an alternative with an intermediate level of impact or measure of effectiveness

Corridor context maps of the five action alternatives come after the comparative table. The footprint of each alternative is presented on five sheets (from west to east) overlaid with information about land use and zoning, floodplains and wetlands, utilities, and hazardous materials.



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Level 4 Environmental Comparative Analysis

Legend

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
Meeting Purpose and Need								
Corridor Travel Time Summary (Between Swallows Rd. and Baltimore Ave.)		– <i>Slowest alternative</i>			+ <i>Fastest alternative</i>	– <i>Slowest action alternative</i>		
AM Peak Hour EB		– 14.4 to 25.8 min	√ 12.5 to 13.2 min	√ 12.4 to 13.3 min	+ 12.5 to 12.9 min	– 13.5 to 13.8 min	+ 12.4 to 13.0 min	
AM Peak Hour WB		– 13.6 to 18.2 min	√ 12.5 to 13.0 min	√ 13.2 to 13.9 min	+ 12.3 to 12.6 min	– 13.9 to 14.7 min	√ 13.2 to 13.8 min	
PM Peak Hour EB		– 19.2 to 30.4 min	+ 12.4 to 13.0 min	√ 12.8 to 13.8 min	+ 12.5 to 12.8 min	– 14.0 to 14.5 min	√ 12.5 to 13.6 min	
PM Peak Hour WB		– 19.5 to 30.1 min	√ 12.6 to 13.5 min	√ 12.7 to 13.7 min	+ 12.6 to 13.2 min	– 13.8 to 14.7 min	√ 12.7 to 13.5 min	
Segment Travel Time								
AM Peak Hour EB Swallows Rd. to Main McCulloch Blvd.		√ 6.1 to 6.4 min	+ 5.9 to 6.0 min	+ 5.9 to 6.0 min	+ 5.9 to 6.0 min	– 6.4 to 6.6 min	+ 5.9 to 6.0 min	
Main McCulloch Blvd. to Pueblo Blvd.		– 6.4 to 22.6 min	+ 4.8 to 5.2 min	– 5.3 to 5.6 min	+ 4.9 to 5.0 min	√ 5.3 to 5.4 min	√ 5.3 to 5.4 min	
Pueblo Blvd. to Baltimore Ave.		– 2.1 to 2.6 min	– 1.8 to 2.0 min	+ 1.3 to 1.7 min	√ 1.7 to 1.9 min	√ 1.6 to 1.7 min	+ 1.4 to 1.7 min	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
AM Peak Hour WB Baltimore Ave. to Pueblo Blvd.		– 3.2 to 4.0 min	√ 2.7 to 3.1 min	√ 3.3 to 3.9 min	+ 2.7 to 2.9 min	– 3.6 to 3.9 min	√ 3.5 to 3.8 min
Pueblo Blvd. to Main McCulloch Blvd.		– 5.9 to 11.2 min	√ 5.2 to 5.4 min	√ 5.4 min	+ 5.1 to 5.2 min	– 5.8 to 5.9 min	√ 5.3 min
Main McCulloch Blvd. to Swallows Rd.		– 4.6 to 4.6 min	+ 4.5 to 4.6 min	+ 4.5 to 4.6 min	+ 4.5 min	– 4.6 to 4.7 min	+ 4.5 min
PM Peak Hour EB Swallows Rd. to Main McCulloch Blvd.		√ 6.1 to 6.3 min	+ 5.9 to 6.0 min	+ 5.9 to 6.0 min	√ 6.0 to 6.1 min	– 6.5 to 6.6 min	+ 5.9 to 6.0 min
Main McCulloch Blvd. to Pueblo Blvd.		– 10.6 to 29.6 min	+ 4.8 to 5.0 min	– 5.6 to 5.9 min	+ 4.8 to 4.9 min	– 5.4 to 6.1 min	√ 5.5 to 5.8 min
Pueblo Blvd. to Baltimore Ave.		– 2.1 to 2.5 min	– 1.8 to 2.0 min	+ 1.5 to 1.8 min	– 1.8 to 2.0 min	+ 1.6 to 1.7 min	– 1.5 to 1.8 min
PM Peak Hour WB Baltimore Ave. to Pueblo Blvd.		– 3.5 to 18.4 min	√ 2.8 to 3.4 min	√ 2.9 to 3.6 min	+ 2.8 to 3.1 min	– 3.0 to 3.5 min	– 3.0 to 3.6 min
Pueblo Blvd. to Main McCulloch Blvd.		– 12.8 to 21.6 min	√ 5.3 to 5.6 min	√ 5.4 to 5.5 min	+ 5.2 to 5.4 min	– 6.0 to 6.2 min	√ 5.3 to 5.5 min
Main McCulloch Blvd. to Swallows Rd.		√ 4.6 to 4.7 min	+ 4.5 to 4.6 min	+ 4.5 to 4.7 min	+ 4.5 to 4.6 min	– 4.7 to 4.8 min	+ 4.5 to 4.6 min



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
Delay in Corridor Summary		– Most delayed alternative	+ Among the least delayed alternatives	√ Intermediate delay	+ Least delayed alternative	√ Intermediate delay	+ Among the least delayed alternatives	
Average Delay AM Peak Hour		– 3 min 35 sec per vehicle	√ 35 sec per vehicle	√ 40 sec per vehicle	+ 30 sec per vehicle	√ 40 sec per vehicle	√ 35 sec per vehicle	
Average Delay PM Peak Hour		– 7 min 20 sec per vehicle	√ 35 sec per vehicle	√ 45 sec per vehicle	+ 30 sec per vehicle	√ 45 sec per vehicle	√ 35 sec per vehicle	
Levels of Service Summary		– Does not meet Purpose and Need because of intersection congestion	√ Mainline LOS meets Purpose and Need criteria, <i>except for EB segment from Purcell Blvd. to Pueblo Blvd., which will require a third auxiliary lane at approximately \$3 million</i> + Intersection LOS greatly exceeds Purpose and Need criteria	√ Mainline LOS meets Purpose and Need criteria, <i>except for EB segment from Purcell Blvd. to Pueblo Blvd., which will require a third auxiliary lane at approximately \$3 million</i> + Intersection LOS at Main McCulloch Blvd. and Purcell Blvd. exceeds Purpose and Need criteria	+ Greatly exceeds Purpose and Need criteria	+ Mainline LOS greatly exceeds Purpose and Need criteria √ Intersection LOS meets Purpose and Need criteria	+ Mainline LOS greatly exceeds Purpose and Need criteria + Intersection LOS at Main McCulloch Blvd. and Purcell Blvd. exceeds Purpose and Need criteria	
Mainline Segment LOS Eastbound (AM/PM) Swallows Rd. to West McCulloch Blvd.		√ Not calculated	+ A/A	+ Same as Alternative A	+ A/A	+ Same as Alternative C	+ Same as Alternative C	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
West McCulloch Blvd. to Main McCulloch Blvd.			+ B/A	+ Same as Alternative A	+ B/A	+ Same as Alternative C	+ Same as Alternative C
Main McCulloch Blvd. to Purcell Blvd.			√ D/C	√ Same as Alternative A	+ C/B	+ Same as Alternative C	+ Same as Alternative C
Purcell Blvd. to Pueblo Blvd.			– F/D	– Same as Alternative A	+ D/C	+ Same as Alternative C	+ Same as Alternative C
Pueblo Blvd. to Wills Blvd.			+ C/B	+ Same as Alternative A	+ C/B	+ Same as Alternative C	+ Same as Alternative C
Wills Blvd. to Baltimore Ave.			+ C/C	+ Same as Alternative A	+ C/B	+ Same as Alternative C	+ Same as Alternative C
Mainline Segment LOS Westbound (AM Peak Hour/PM Peak Hour)							
Baltimore Ave. to Wills Blvd.			+ A/B	+ Same as Alternative A	+ A/B	+ Same as Alternative C	+ Same as Alternative C
Wills Blvd. to Pueblo Blvd.			+ B/D	+ Same as Alternative A	+ B/D	+ Same as Alternative C	+ Same as Alternative C
Pueblo Blvd. to Purcell Blvd.			+ B/D	+ Same as Alternative A	+ A/C	+ Same as Alternative C	+ Same as Alternative C
Purcell Blvd. to Main McCulloch Blvd.			+ A/C	+ Same as Alternative A	+ A/B	+ Same as Alternative C	+ Same as Alternative C



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Main McCulloch Blvd. to West McCulloch Blvd.			+ A/B	+ Same as Alternative A	
West McCulloch Blvd. to Swallows Rd.			+ A/A	+ Same as Alternative A	+ A/A	+ Same as Alternative C	+ Same as Alternative C	
Intersection LOS (for intersections with different treatment by alternative) (AM Peak Hr/PM Peak Hr)								
Main McCulloch Blvd.	C/C	– F/F	+ B/B	+ B/B	+ Same as Alternative A	√ C/C	+ Same as Alternative A	
Purcell Blvd.	E/C	– F/F	+ C/B	+ C/B	+ Same as Alternative A	√ C/D	+ Same as Alternative A	
Pueblo Blvd.	C/C at US 50 EB B/E at US 50 WB	– F/F at US 50 EB – F/F at US 50 WB	+ A/A	√ C/D	+ A/A	√ Same as Alternative B	√ Same as Alternative B	
Local Vehicular Access Summary		– Travel growth may degrade LOS and result in movement or access closures at unsignalized intersections.	+ Least impact on local access	√ Intermediate impacts on local access	+ Same as Alternative A	– Greatest impacts on local access – Mitigated with local access planning	√ Same as Alternative B	
Intersection Impacts Swallows Rd., West McCulloch Blvd. Wills Blvd., and Baltimore Ave.			√ No change from existing conditions	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Main McCulloch Blvd. and Purcell Blvd.			+ No local access impacts	+ Same as Alternative A	
Purcell Blvd.			+ No local access impacts	+ Same as Alternative A	+ Same as Alternative A	√ Access from northbound Purcell Blvd. to businesses and commercial uses in the northwest and northeast quadrants is eliminated	+ Same as Alternative A	
Pueblo Blvd.			√ No access closures 2 road realignments required	√ No access closures 4 local road realignments required	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Mainline Impacts Railroad bridge to Wills Blvd.			√ Impacts on 3 business access points - To be addressed in the Access Management Plan	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Wills Blvd. to Baltimore Ave.			√ Westroads Ave. - Impact on left turn movement - To be addressed in the Access Management Plan	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Main McCulloch to railroad bridge					√ Potential impacts on E. Dunlap Dr. and Spaulding Ave. √ Impacts avoidable through design	√ Same as Alternative C	√ Same as Alternative C	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
Pedestrian and Bicycle Access		√ No change from existing conditions	+ Access similar to or improved from existing conditions	+ Same as Alternative A	+ Same as Alternative A	√ CFIs increase crossing distance. √ Crossing the Four-Leg CFI at Purcell Blvd. at grade would require multiple signal phases. √ <i>Mitigated by providing elevated pedestrian crossings at a total cost of \$13 million.</i>	+ Same as Alternative A	
Safety Conflict Point Analysis		– Greatest number of crossing conflict points	+ Least number of crossing conflict points	+ Same as Alternative A	+ Same as Alternative A	– Greatest number of crossing conflict points among action alternatives	+ Same as Alternative A	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Environmental Impacts					
Land Use (Right-of-Way Acquisition) Summary Pueblo West Metro District (PWMD) Buffer – An undefined strip adjacent to CDOT right-of-way (ROW) Multi-use easement (MUE) – Narrow strip of PWMD land bounded by parcel lines parallel to CDOT ROW, for utility or trail use The PWMD buffer and MUE are considered compatible with utility and pedestrian/bicycle paths		+ No additional ROW required	– Greatest interchange ROW impacts + Least mainline US 50 ROW impact	√ Intermediate interchange ROW impacts + Least mainline US 50 ROW impact	– Same interchange ROW impacts as Alternative A – Greatest mainline US 50 ROW impacts	+ Least interchange ROW impacts – Greatest mainline US 50 ROW impacts	√ Intermediate interchange ROW impacts – Greatest mainline US 50 ROW impacts	
Intersection Impacts Summary			– Greatest ROW impacts at US 50 interchanges	√ Intermediate ROW impacts at US 50 interchanges	– Same as Alternative A	+ Least ROW impacts at US 50 intersections	√ Same as Alternative B	
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave. (signalized)			+ No additional ROW required	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	
Main McCulloch Blvd.			+ 0.5 acre (PWMD S-1R parcel)	+ Same as Alternative A	+ Same as Alternative A	+ No additional ROW required	+ Same as Alternative A	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
Purcell Blvd.			+ 0.5 to 1 acre (CDOT or PWMD parcel)	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Pueblo Blvd.			– 3 acres	+ 1 acre outside ROW	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Mainline Impacts Summary			+ Least mainline US 50 ROW impact √ Considered compatible with future pedestrian path within PWMD	+ Same as Alternative A	– Greatest mainline US 50 ROW impacts √ Considered compatible with future pedestrian path within PWMD	– Same as Alternative C	– Same as Alternative C
West McCulloch Blvd. to Main McCulloch Blvd.			+ All inside ROW up to Main McCulloch Blvd. ramps	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Main McCulloch Blvd. to Purcell Blvd.			√ 5,200 ft. of path and 7,600 ft of slope outside south side of ROW √ 2.9 acres within PWMD buffer	√ Same as Alternative A	√ Path outside south side of ROW for entire segment 10,470 ft., and 2,200 ft. of slope outside north side of ROW √ Located within 4.8 acres of MUE, and 4.2 acres of PWMD buffer	√ Same as Alternative C	√ Same as Alternative C
Purcell Blvd. to Pueblo Blvd.			√ 6,300 ft. of slope outside south side of ROW √ 1.6 acres within PWMD buffer √ Considered compatible with future pedestrian path within PWMD	√ Same as Alternative A	√ Path outside south side of ROW for entire segment 10,400 ft., and 5,200 ft. of slope outside north side of ROW √ Located within 5.5 acres of PWMD buffer	√ Same as Alternative C	√ Same as Alternative C



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Pueblo Blvd. to railroad bridge			√ 200 ft. of path and 500 ft. of slope outside south side of ROW √ 0.1 acre within 3 parcels	√ Same as Alternative A	
Railroad bridge to Baltimore Ave.			+ 4-lane with sidewalk inside CDOT ROW	+ Same as Alternative A	+ All mainline road way widening for 6 lanes plus turn lanes fit within the ROW. Portions of the adjacent sidewalk would be outside the ROW.	+ Same as Alternative C	+ Same as Alternative C	
Parcels Pueblo West Metro District (PWMD) Buffer – An undefined strip adjacent to CDOT ROW Multi-use easement (MUE) – Narrow strip of PWMD land bounded by parcel lines parallel to CDOT ROW, for utility or trail use The PWMD buffer and MUE are considered compatible with utility and pedestrian/bicycle paths								
Summary of Total Takes		+ No additional ROW required	+ No total takes	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Summary of Partial Takes			√ Impacts on 1 developed parcel (CDOT Maintenance) √ Minor impacts on 6 undeveloped parcels	√ Impacts on 1 developed parcel (CDOT Maintenance) √ Minor impacts on 7 undeveloped parcels	
Intersection Impacts Swallows Rd., West McCulloch Blvd. Wills Blvd., and Baltimore Ave.			+ No parcel impacts	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	
Main McCulloch Blvd.			√ Partial take of 3 undeveloped parcels	√ Same as Alternative A	√ Same as Alternative A	+ No parcel impacts	√ Same as Alternative A	
Purcell Blvd.			√ No takes of developed parcels √ Partial takes of 3 undeveloped parcels	√ Same as Alternative A	√ Same as Alternative A	√ Impacts on 2 developed parcels	√ Same as Alternative A	
Pueblo Blvd.			√ Impact on 1 developed parcel (CDOT maintenance facility)	√ Minor impacts on 2 parcels (1 undeveloped parcel and CDOT maintenance facility)	√ Same as Alternative A	√ Minor impacts on 1 undeveloped agricultural parcel and CDOT maintenance facility parcel	√ Same as Alternative B	
Mainline Impacts			√ Located within 3.5 acres of PWMD buffer √ 3 parcels with minimal impact (0.1 acre) that are avoidable through design	√ Same as Alternative A	√ Located within 9.7 acres of PWMD buffer √ 4.8 acres of MUE √ 3 parcels with minimal impact (0.1 acre) that are avoidable through design	√ Same as Alternative C	√ Same as Alternative C	



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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	
Future Land Use Consistency							
Summary			+ Most compatible with future land use plans	+ Same as Alternative A	+ Same as Alternative A	– Less consistent with future land use plans	+ Same as Alternative A
Intersection Consistency							
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave. (signalized)			+ Compatible with future land use	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Main McCulloch Blvd., Purcell Blvd., and Pueblo Blvd			+ Compatible with future land use	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Purcell Blvd.						√ Inconsistent with future land use due to business access impacts	
Mainline Consistency							
			+ Use of PWMD buffer is considered compatible with the proposed path	+ Same as Alternative A	+ Use of PWMD buffer and MUE is considered compatible with the proposed path	+ Same as Alternative C	+ Same as Alternative C
Community and Business Cohesion							
Summary		√ No change from existing conditions	+ Most compatible with community and business cohesion	+ Same as Alternative A	+ Same as Alternative A	– Greatest impact on community and business cohesion	+ Same as Alternative A



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Intersection Cohesion				
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave.			+ Compatible with the existing and planned uses and local road network	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Main McCulloch Blvd.			√ Compatible with the existing and planned uses and local road network	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Purcell Blvd.			+ Compatible with the existing and planned uses and local road network	+ Same as Alternative A	+ Same as Alternative A	– Impact on community/commercial business cohesion due to reduced access to commercial center north of US 50 from Pueblo West via northbound Purcell Blvd.	+ Same as Alternative A
Pueblo Blvd.			√ Not applicable due to generally undeveloped intersection	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Visual							
Summary		+ No impacts	√ Intermediate potential for visual impact	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Intersection Impacts							



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative					Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave.			+ Least potential for visual impact	+ Same as Alternative A	
Main McCulloch Blvd.			√ Intermediate potential for visual impact	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Purcell Blvd.			√ Intermediate potential for visual impact	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Pueblo Blvd.			√ Intermediate potential for visual impact	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Noise								
Summary		√ Noise increases from existing levels with increased traffic volumes	√ Impacts not recalculated with refined methodology.		√ Impacts not recalculated with refined methodology	√ <i>Same as Alternative B</i>	√ <i>Same as Alternative B</i>	
Residences Impacted	5 residences exceed CDOT's 66 dBA criterion	+ 14 residences exceed CDOT's 66 dBA criterion		√ 56 residences impacted — 32 residences do not receive mitigation		√ Same as Alternative B	√ Same as Alternative B	
Noise Wall Area			√ <i>Cost-effective mitigation consists of a 12-foot tall, 3,970-foot long noise wall between West McCulloch Blvd. and Main McCulloch Blvd. south of US 50</i>	√ <i>Same as Alternative A</i>	√ <i>Same as Alternative A</i>	√ <i>Same as Alternative A</i>	√ <i>Same as Alternative A</i>	



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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
			Mitigation Cost		√ No mitigation if no capacity improvements are made in the corridor.	√ <i>Same as Alternative B</i>	√ <i>\$2.14 million</i>	
Hazardous Materials								
Summary		+ No impacts	+ Least level of conflict with hazardous materials	+ Same as Alternative A	+ Same as Alternative A	– Greatest conflict with hazardous materials	+ Same as Alternative A	
Intersection Impacts								
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave.			√ Not applicable	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	
Main McCulloch Blvd.			+ No impacts	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	
Purcell Blvd.			+ No impacts	+ Same as Alternative A	+ Same as Alternative A	– Potential conflict for 1 underground storage tank in the northeast quadrant – Potential conflict with 1 underground storage tank leak in the southeast quadrant	+ Same as Alternative A	
Pueblo Blvd.			+ No impacts	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
Mainline Impacts							
Main McCulloch Blvd. to Purcell Blvd.			√ 4 RCRA generator sites adjacent to US 50 √ 4 underground storage tanks adjacent to US 50	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Railroad bridge to Baltimore Ave.			√ 2 underground storage tank leaks √ 1 hazardous material spill √ 1 RCRA small quantity generator site	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Utilities							
Summary		+ No impacts	– Greatest conflict with utilities	+ Least conflict with utilities	– Same as Alternative A	√ Intermediate conflict with utilities	+ Same as Alternative B
Intersection Impacts							
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave. (signalized)			+ Negligible impact	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Preferred Alternative Alternative E Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
			Main McCulloch Blvd.			<ul style="list-style-type: none"> √ Potential conflicts with gas line located in EB US 50 ROW through the interchange footprint √ Affects about 300 ft. of SECOM underground fiber optic cable √ Affects about 2,000 ft. of water line 	√ Same as Alternative A
Purcell Blvd.			<ul style="list-style-type: none"> √ Affects about 3,700 ft. of CDOT underground fiber optic cable √ Affects about 2,000 ft. of SECOM underground fiber optic cable √ Affects about 200 ft. of water line 	√ Same as Alternative A	√ Same as Alternative A	<ul style="list-style-type: none"> √ Affects about 3,700 ft. of CDOT underground fiber optic cable (Same as Alternative A) – Affects about 2,500 ft. of SECOM underground fiber optic cable – Affects about 700 ft. of water line 	√ Same as Alternative A
Pueblo Blvd.			<ul style="list-style-type: none"> – Affects about 3,400 ft. of CDOT underground fiber optic cable – Affects about 2,500 ft. of SECOM underground fiber optic cable √ Affects about 500 ft. of sanitary sewer 	<ul style="list-style-type: none"> √ Affects about 1,000 ft. of CDOT underground fiber optic cable √ Affects about 1,500 ft. of SECOM underground fiber optic cable √ Affects about 500 ft. of sanitary sewer 	– Same as Alternative A	√ Same as Alternative B	√ Same as Alternative B



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Comparison Criteria	Existing Condition	2035 No Action	Conditions by Future Alternative				
			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
Streams							
Summary		+ No impacts	– Greatest impact on streams	+ Least impact on streams	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Intersection Impacts							
Purcell Blvd.			– Approximately 680 ft. of stream impact on a local drainage ditch flowing to Wild Horse Creek	– Same as Alternative A	– Same as Alternative A	+ Approximately 250 ft. of stream impact on a local drainage ditch flowing to Wild Horse Creek	– Same as Alternative A
Pueblo Blvd.			– Approximately 2,800 ft. of stream relocation for William's Creek	+ Approximately 800 ft. of stream relocation for William's Creek	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Mainline Impacts			√ New bridge structure will span Wild Horse Creek (existing EB and WB bridge structures would be removed)	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Wetlands							
Summary		+ No impacts	– Greatest impact on wetlands	+ Least impact on wetlands	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Intersection Impacts							
Pueblo Blvd.			– Approximately 2,800 ft. of stream and an estimated 0.8 acre of wetland impacts	+ Approximately 800 ft. of stream and an estimated 0.3 acre of wetland impacts	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B



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			Alternative A	Alternative B	Alternative C	Alternative D	Preferred Alternative Alternative E
			Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	Six-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange
Mainline Impacts			√ New bridge structure will span approximately 0.2 acre of Wild Horse Creek wetland (existing EB and WB bridge structures would be removed).	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Floodplain							
Summary		+ No impacts	– Greatest impact on floodplain	+ Least impact on floodplain	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Intersection Impacts							
Pueblo Blvd.			– Approximately 2.5 acres of floodplain impact based on FEMA	+ Approximately 1.0 acre of floodplain impact based on FEMA	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Mainline Impacts			√ New bridge structure will span Wild Horse Creek floodplain approximately 0.5 – 1.0 acres based on FEMA (existing EB and WB bridge structures would be removed).	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A



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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	
Implementation and Financing							
Cost Total Construction Cost Including Mitigation (Action alternatives also include \$13 million for 4,000 feet of railroad realignment [shoofly] to accommodate standard shoulders and roadside drainage facilities. A design waiver may be pursued as six-lane widening in this area approaches final design.) ROW costs largely depend on negotiations with PWMD for use of buffer and MUE, and are not included Hazardous Material Remediation Estimate – TBD							
Summary		+ No costs beyond routine maintenance	√ Intermediate cost alternative √ Total construction cost is approximately \$113 million	√ Intermediate cost alternative √ Total construction cost is approximately \$108 million	– Highest cost alternative – Total construction cost is approximately \$124 million	+ Least cost action alternative + Total construction cost is approximately \$102 million	– Among the most costly alternatives – Total construction cost is approximately \$119 million



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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	
			Intersection Construction Cost with Pedestrian and Bicycle Access Mitigation				
Swallows Rd., West McCulloch Blvd., Wills Blvd., and Baltimore Ave.			+ Estimated cost is \$225,000	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
Main McCulloch Blvd. and Purcell Blvd.			– Estimated cost is \$19 million	– Same as Alternative A	– Same as Alternative A	√ <i>Estimated cost is \$8 million, including \$1.5 million for pedestrian and bicycle access mitigation</i>	– Same as Alternative A
Pueblo Blvd.			– Estimated cost is \$45 million	+ Estimated cost is \$40 million	– Same as Alternative A	+ Same as Alternative B	+ Same as Alternative B
Mainline Construction Costs			+ Estimated cost is \$15 million including \$3 million for EB auxiliary lane from Purcell Blvd. to Pueblo Blvd. √ Cost of pedestrian and bicycle path TBD	+ Same as Alternative A	– Estimated cost is \$25 million √ Cost of pedestrian and bicycle path TBD	– Same as Alternative C	– Same as Alternative C
Noise Mitigation Costs			√ Estimated cost is \$2.14 million	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A	√ Same as Alternative A
Utility Relocation Costs			√ Estimated cost is \$4.3 million	√ Estimated cost is \$4.2 million	– Estimated cost is \$4.7 million	+ Estimated cost is \$3.9 million	√ Estimated cost is \$4.6 million



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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange	
			Phasing				
Summary		– By definition, the No Action Alternative offers no flexibility for phasing or expansion	– Limited flexibility for phasing + Flexibility for expansion	– Limited flexibility for phasing + Flexibility for expansion	+ Flexibility for both phasing and expansion	+ Flexibility for phasing – Limited flexibility for expansion	+ Flexibility for both phasing and expansion
Construction Phasing From Existing to 2035 Configuration		√ No change from existing configuration	√ Four lanes is existing configuration. – Diamond interchange is the next phase from a signalized intersection. √ Partial cloverleaf interchange may be built as a wide diamond interchange with loop ramps built later.	√ Four lanes is existing configuration. – Diamond interchange is the next phase from a signalized intersection. √ Diverging diamond interchange at Pueblo Blvd. may be built as a conventional diamond interchange.	√ Additional lanes may initially be constructed as auxiliary lanes between intersections. √ Diamond interchange is the next phase after a six-lane signalized intersection. √ Partial cloverleaf interchange may be built as a wide diamond interchange with loop ramps built later	√ Additional lanes may initially be constructed as auxiliary lanes between intersections. √ Two-leg CFI at Main McCulloch Blvd. may be initially built as a six-lane signalized intersection. √ Four-leg CFI at Purcell Blvd. may be built in the following phases: √ Six-lane signalized intersection √ Two-leg CFI √ Four-leg CFI √ Diverging diamond interchange at Pueblo Blvd. may be built as a conventional diamond interchange.	√ Additional lanes may initially be constructed as auxiliary lanes between intersections. √ Diamond interchange is the next phase after a six-lane signalized intersection. √ Diverging diamond interchange at Pueblo Blvd. may be built as a conventional diamond interchange.



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			Potential for Future Expansion	— Future expansion would involve selection of an Action Alternative	<ul style="list-style-type: none"> √ Diamond interchange may later have flyovers added. Adding loop ramps will likely require additional ROW. √ Flyover ramps can later be added to the partial cloverleaf intersection at Pueblo Blvd.; however, additional ROW will likely be required to increase design speed of outer ramps. 	<ul style="list-style-type: none"> √ Diamond interchange may later have flyovers added. Adding loop ramps will likely require additional ROW. √ Provisions can be made for later grade separation of the two cross-overs of the diverging diamond interchange. 	<ul style="list-style-type: none"> √ Diamond interchange may later have flyovers added. Adding loop ramps will likely require additional ROW. √ Flyover ramps can be added later to the partial cloverleaf intersection at Pueblo Blvd.; however, additional ROW will likely be required to increase design speed of outer ramps. 	



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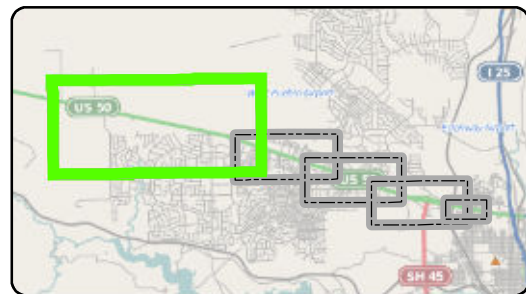
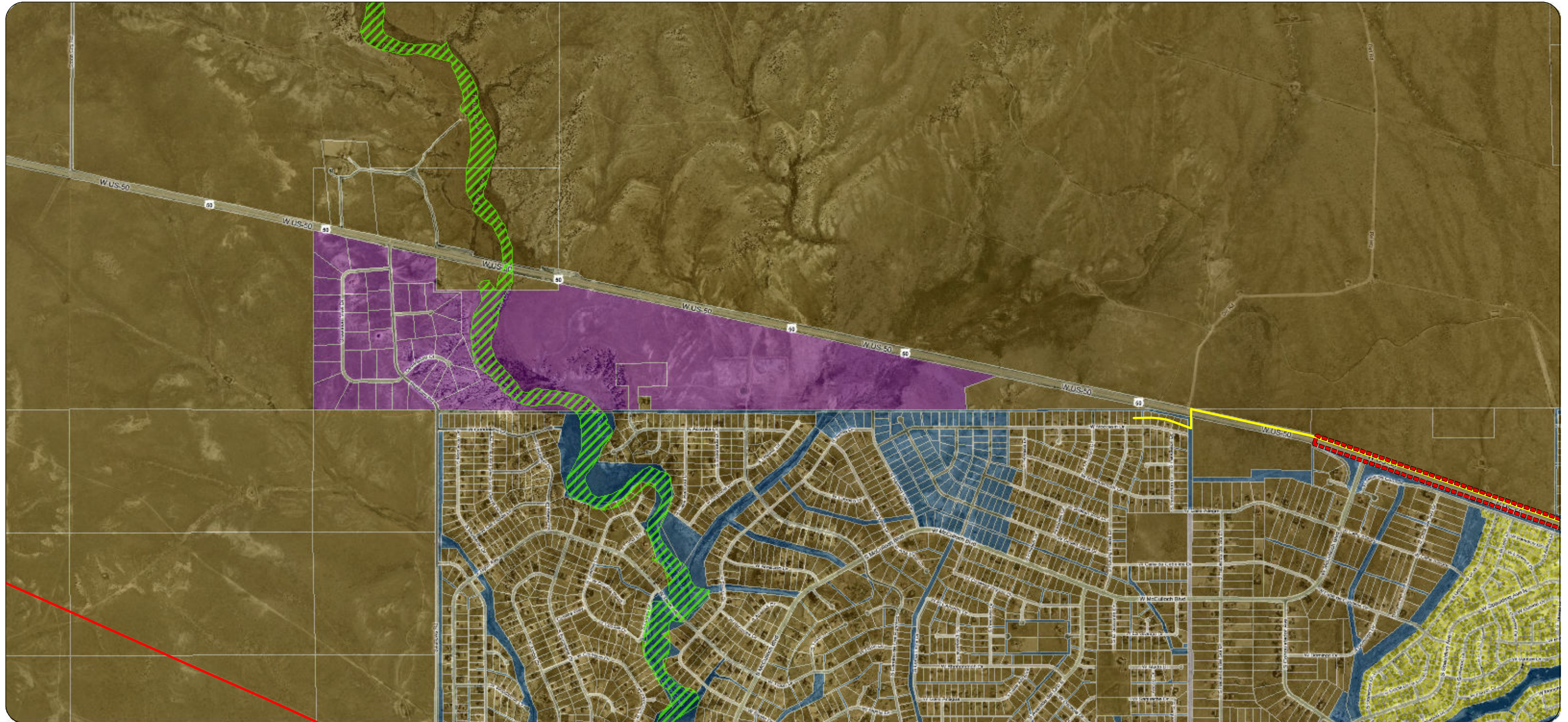
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			Alternative A Four-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative B Four-Lane US 50 with Diamond Interchanges and Diverging Diamond Interchange	Alternative C Six-Lane US 50 with Diamond Interchanges and Partial Cloverleaf Interchange	Alternative D Six-Lane US 50 with Continuous Flow Intersections and Diverging Diamond Interchange		
Disposition and Rationale								
Summary		<p>– Do not identify as Preferred Alternative</p> <p>Does not meet Purpose and Need</p> <p>Does not improve mobility and reduce congestion</p> <p>Does not improve safety</p>	<p>– Do not identify as Preferred Alternative</p> <p>Greater stream and wetland impacts than Alternative B</p> <p>Greater utility conflict than Alternative B</p> <p>Greater construction cost than Alternative B</p>	<p>– Do not identify as Preferred Alternative</p> <p>Less phasing flexibility than Alternatives C, D and E</p> <p>Four lanes may be inadequate for travel demand beyond 2035</p> <p>Among the least cost alternatives</p> <p>Least right-of-way impacts</p>	<p>– Do not identify as Preferred Alternative</p> <p>Greater stream and wetland impacts than Alternative E</p> <p>Greater utility conflict than Alternative E</p> <p>Greater construction cost than Alternative E</p>	<p>– Do not identify as Preferred Alternative</p> <p>Access from northbound Purcell to businesses and commercial uses in the northwest and northeast quadrants is eliminated</p> <p>Greatest number of conflict points at intersections among action alternatives</p> <p>Greater stream and right-of-way impacts at Purcell Blvd. than Alternatives A, B, and C</p> <p>Potential for greater hazmat remediation efforts at Purcell Blvd.</p> <p>Greater potential utility conflict than Alternatives B or E</p> <p>Least cost alternative</p>	<p>+ Identify as Preferred Alternative</p> <p>Better traffic operation and greater capacity than Alternatives B or D</p> <p>Greater cost than Alternatives B or D</p>	



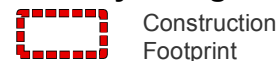
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative A



MAP 1 OF 5

Roadway Design

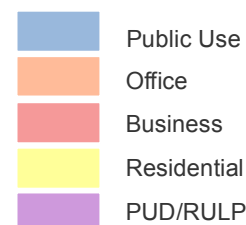


Construction Footprint

Zoning



Agricultural
Industrial



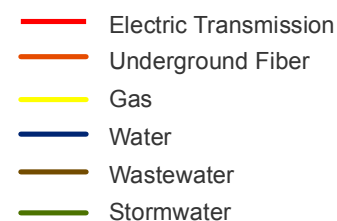
Public Use
Office
Business
Residential
PUD/RULP

Waterways



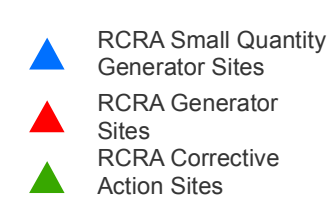
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

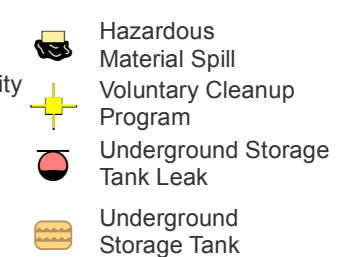


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



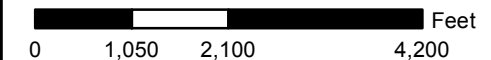
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



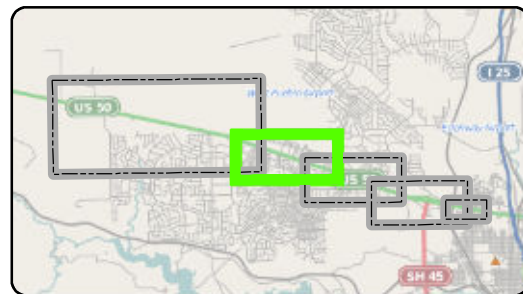
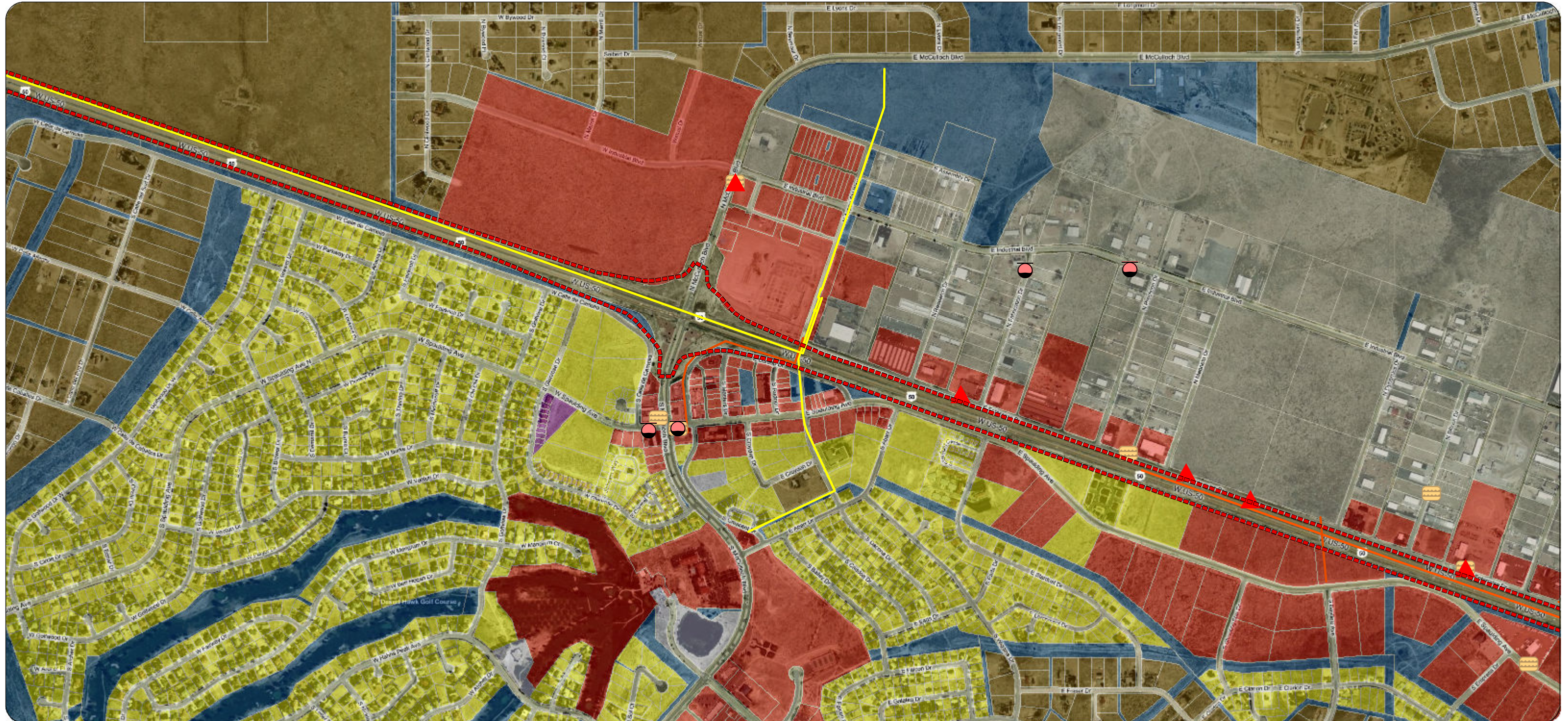
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative A



MAP 2 OF 5

Roadway Design



Construction Footprint

Zoning



Agricultural
Industrial
Public Use
Office
Business
Residential
PUD/RULP

Waterways



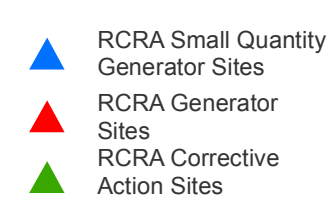
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

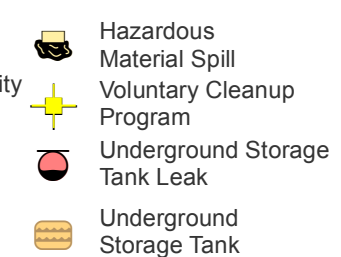


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



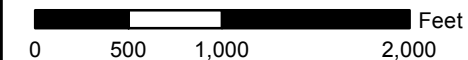
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



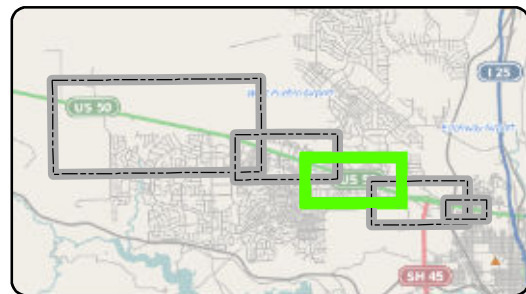
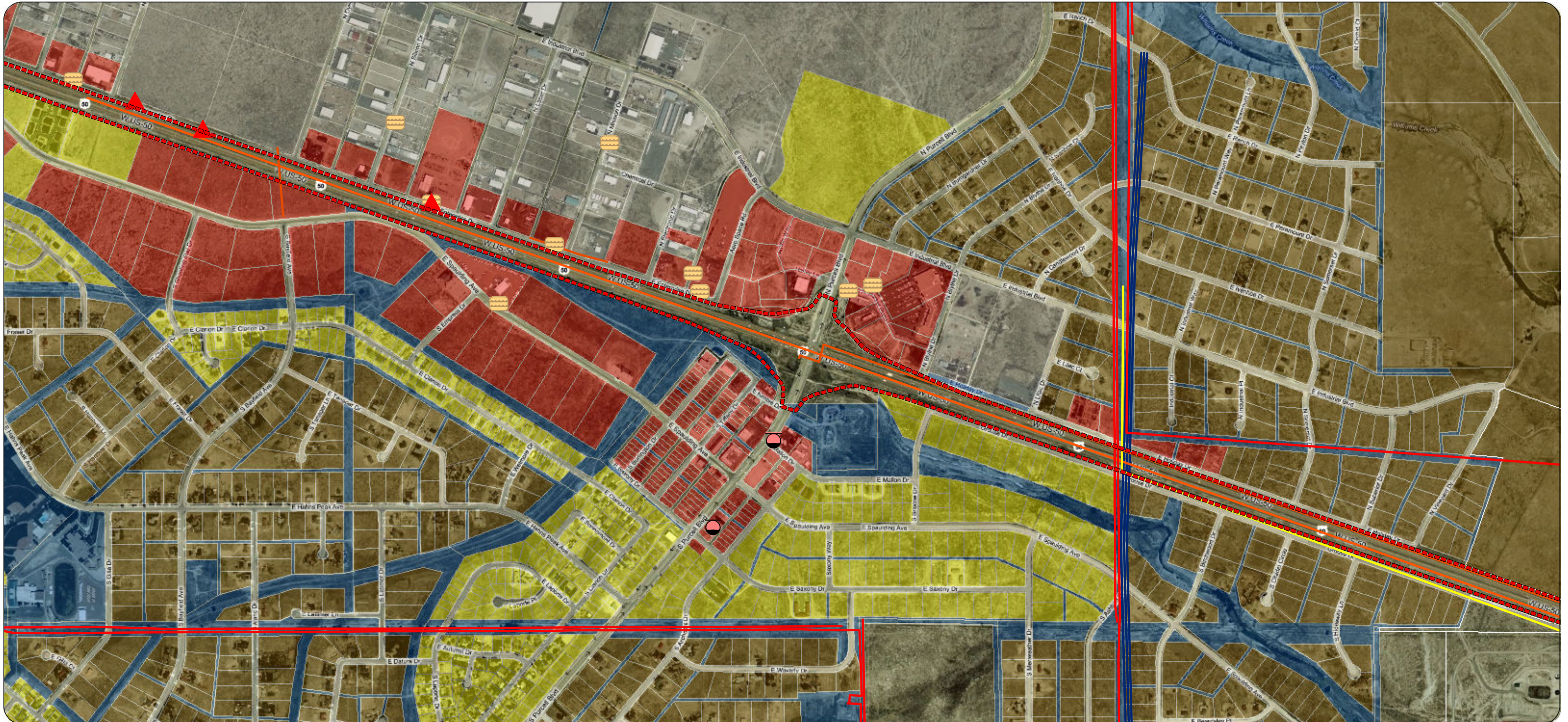
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative A



MAP 3 OF 5

Roadway Design



Construction Footprint

Zoning

- Agricultural
- Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

Waterways

- Floodplain (FEMA)
- Floodplain (City of Pueblo, 2007)
- Wetlands

Utilities

- Electric Transmission
- Underground Fiber
- Gas
- Water
- Wastewater
- Stormwater

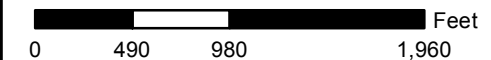
HazMat

- RCRA Small Quantity Generator Sites
- RCRA Generator Sites
- RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



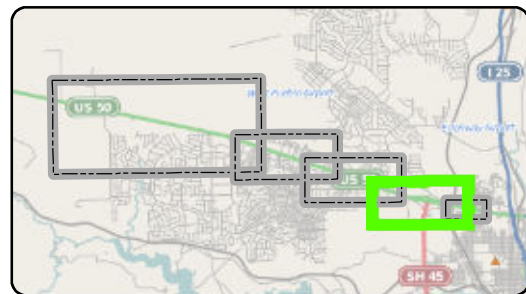
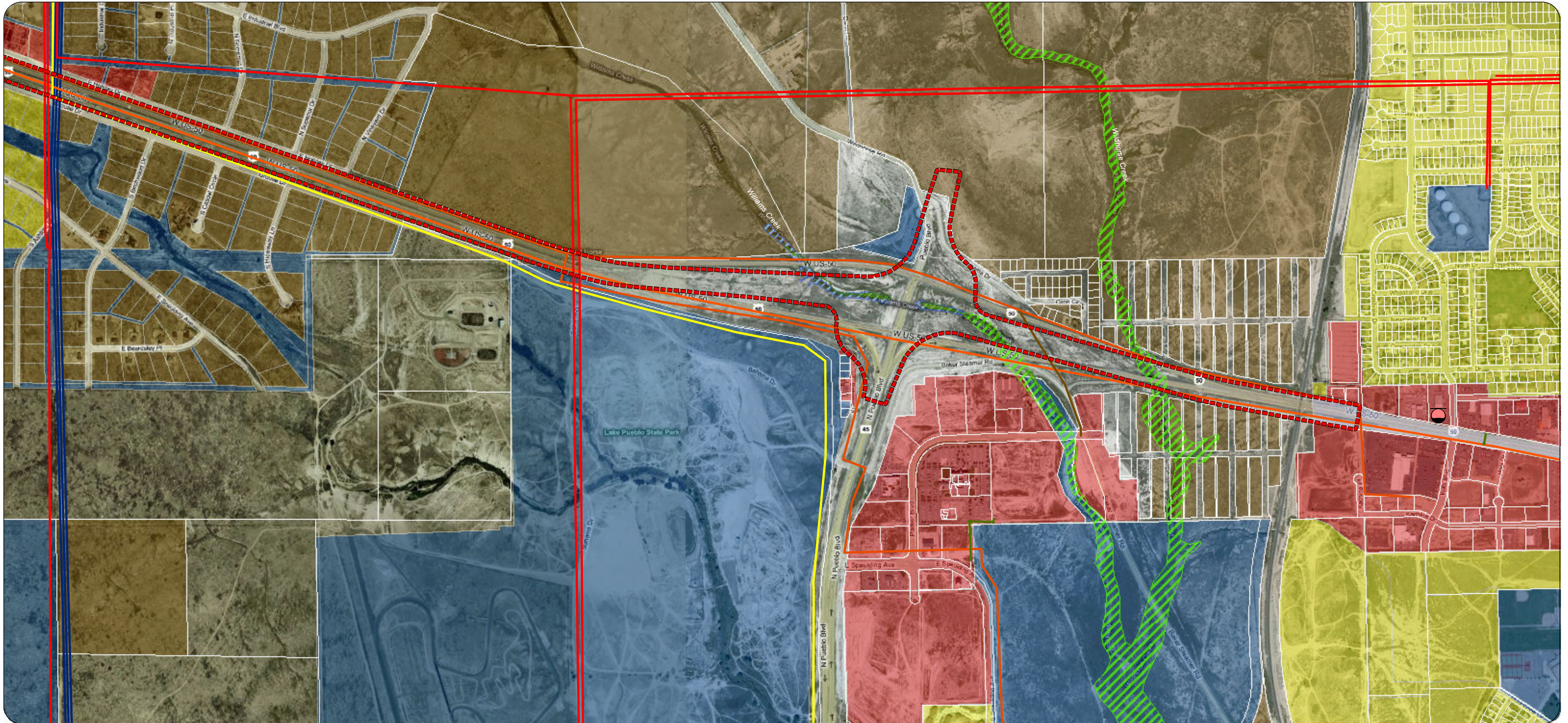
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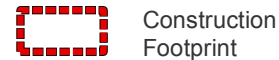
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative A



MAP 4 OF 5

Roadway Design



Construction Footprint

Zoning



Agricultural

Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

Waterways

- Floodplain (FEMA)
- Floodplain (City of Pueblo, 2007)
- Wetlands

Utilities

- Electric Transmission
- Underground Fiber
- Gas
- Water
- Wastewater
- Stormwater

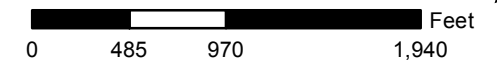
HazMat

- RCRA Small Quantity Generator Sites
- RCRA Generator Sites
- RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



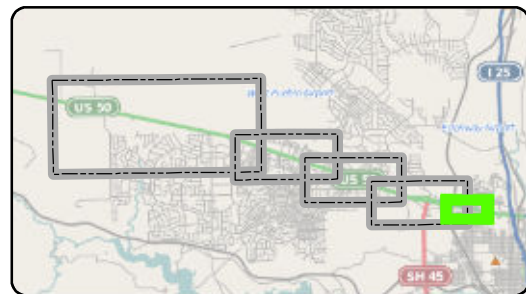
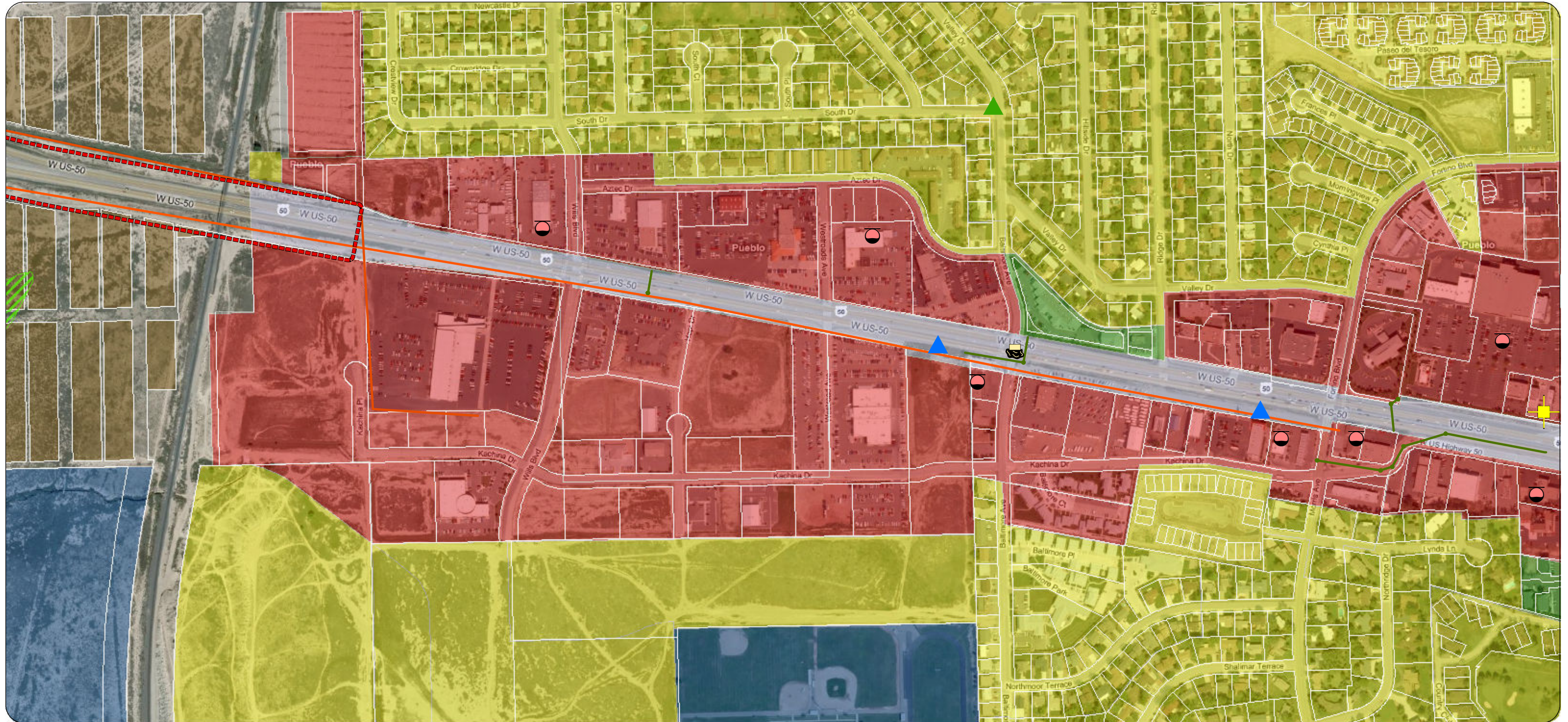
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative A



MAP 5 OF 5

Roadway Design



Zoning



- Public Use (blue)
- Office (orange)
- Business (red)
- Residential (yellow)
- PUD/RULP (purple)

Waterways

- Floodplain (FEMA) (green diagonal lines)
- Floodplain (City of Pueblo, 2007) (blue diagonal lines)
- Wetlands (green)

Utilities

- Electric Transmission (red line)
- Underground Fiber (orange line)
- Gas (yellow line)
- Water (blue line)
- Wastewater (brown line)
- Stormwater (green line)

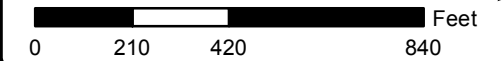
HazMat

- RCRA Small Quantity Generator Sites (blue triangle)
- RCRA Generator Sites (red triangle)
- RCRA Corrective Action Sites (green triangle)

- Hazardous Material Spill Voluntary Cleanup Program (black and yellow symbol)
- Underground Storage Tank Leak (black circle)
- Underground Storage Tank (brown circle)



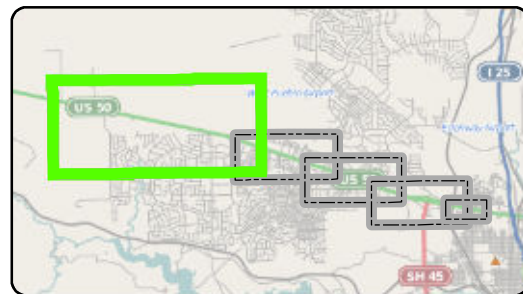
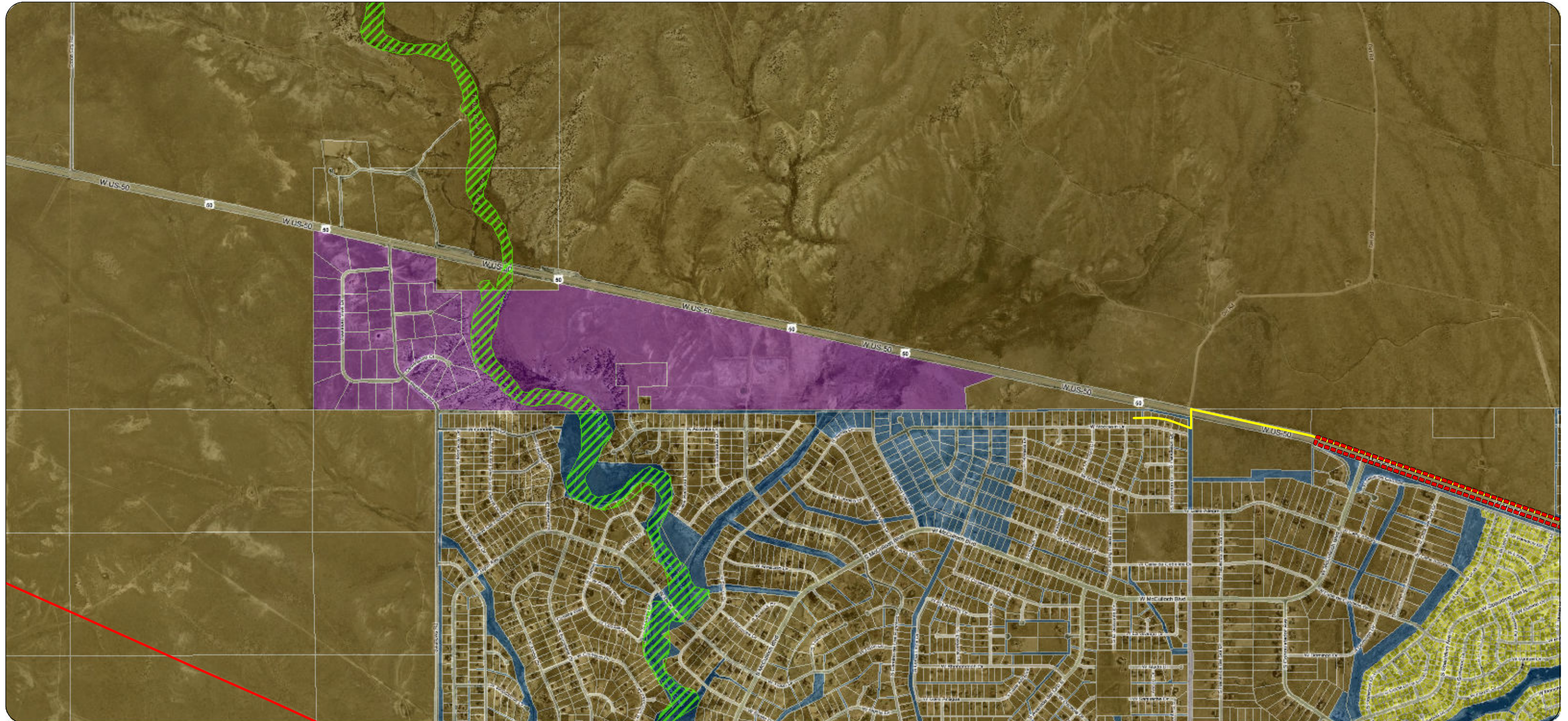
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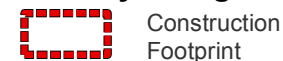
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative B



MAP 1 OF 5

Roadway Design

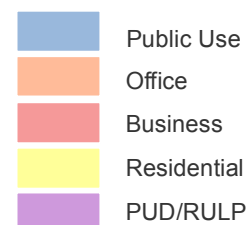


Construction Footprint

Zoning



Agricultural
Industrial



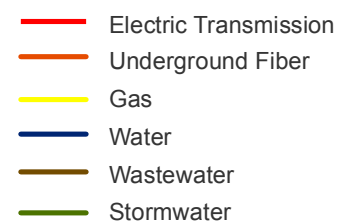
Public Use
Office
Business
Residential
PUD/RULP

Waterways



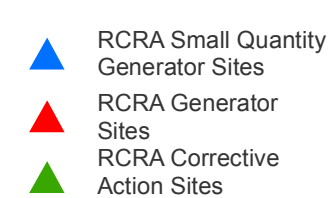
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

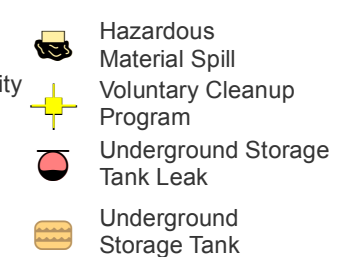


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



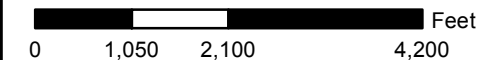
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



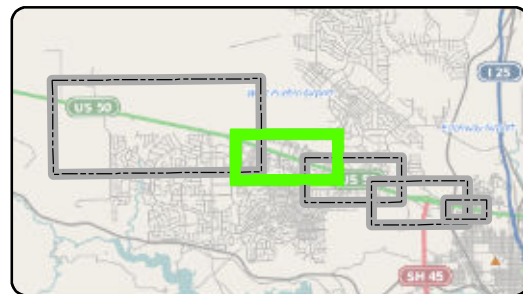
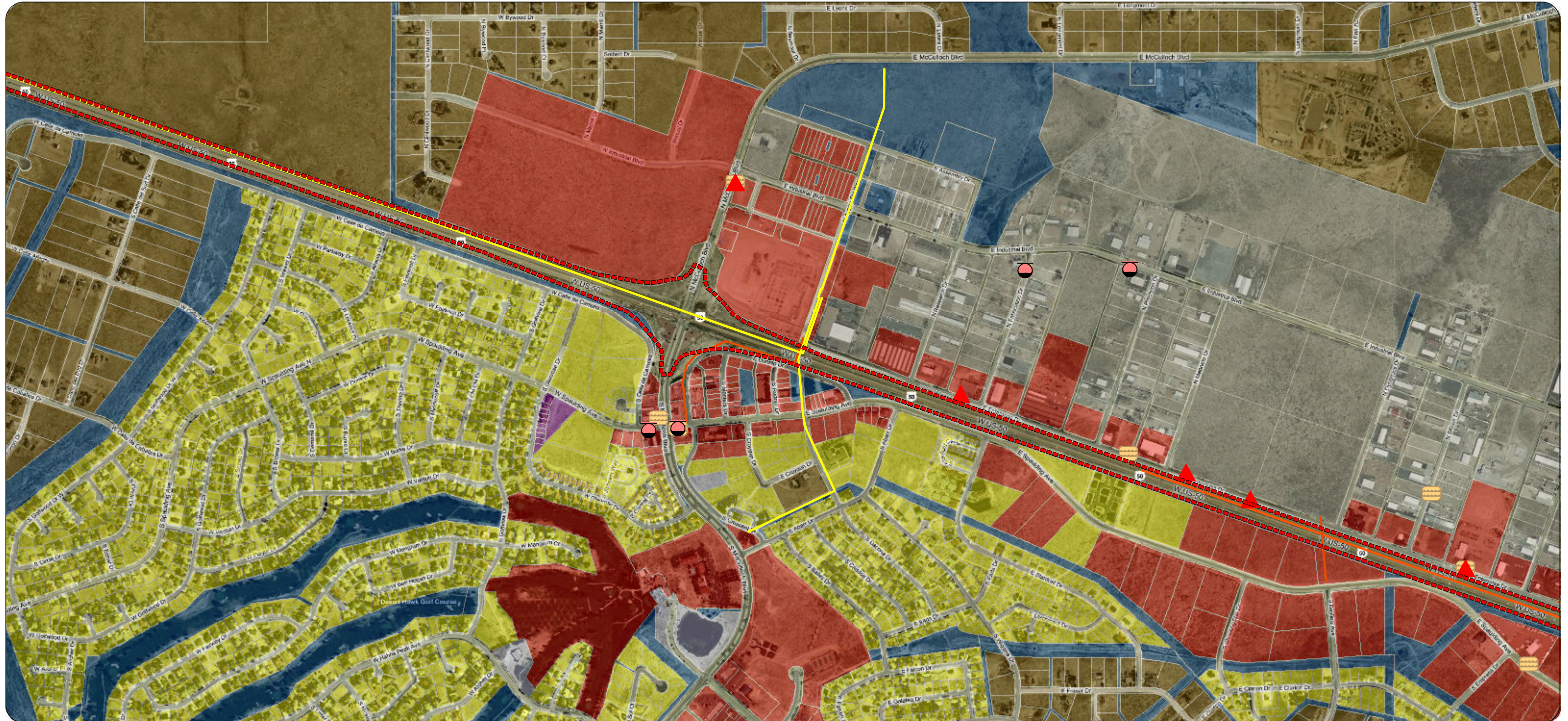
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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative B



MAP 2 OF 5

Roadway Design



Zoning



- Public Use (blue)
- Office (orange)
- Business (red)
- Residential (yellow)
- PUD/RULP (purple)

Waterways

- Floodplain (FEMA) (green diagonal lines)
- Floodplain (City of Pueblo, 2007) (blue diagonal lines)
- Wetlands (green)

Utilities

- Electric Transmission (red line)
- Underground Fiber (orange line)
- Gas (yellow line)
- Water (blue line)
- Wastewater (brown line)
- Stormwater (green line)

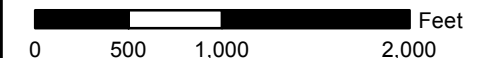
HazMat

- RCRA Small Quantity Generator Sites (blue triangle)
- RCRA Generator Sites (red triangle)
- RCRA Corrective Action Sites (green triangle)

- Hazardous Material Spill Voluntary Cleanup Program (yellow star)
- Underground Storage Tank Leak (black circle)
- Underground Storage Tank (orange circle)



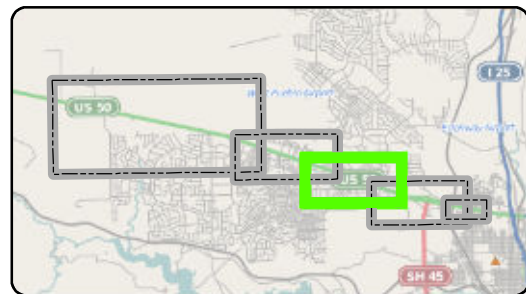
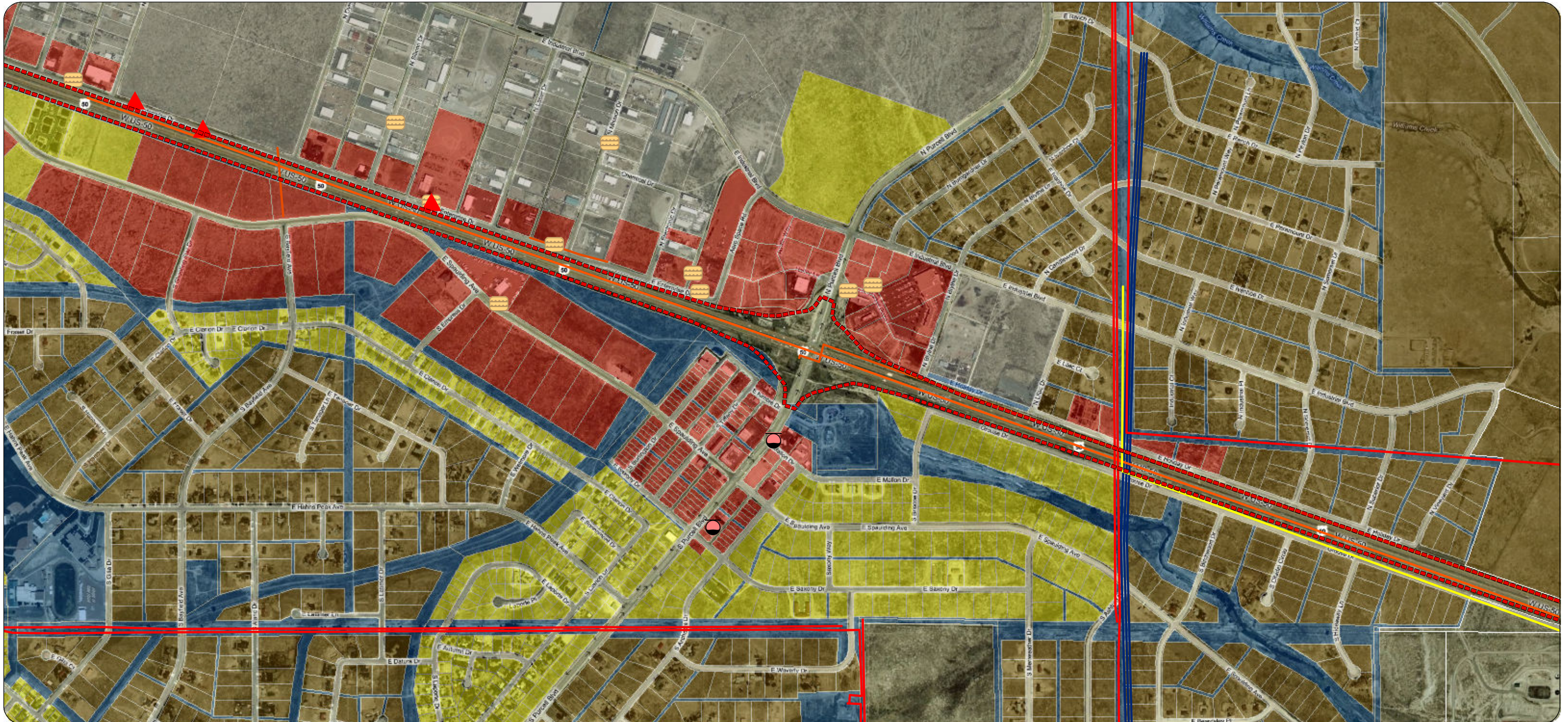
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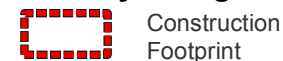
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative B



MAP 3 OF 5

Roadway Design



Zoning



- Public Use (light blue)
- Office (orange)
- Business (red)
- Residential (yellow)
- PUD/RULP (purple)

Waterways

- Floodplain (FEMA) (green diagonal lines)
- Floodplain (City of Pueblo, 2007) (blue diagonal lines)
- Wetlands (green textured)

Utilities

- Electric Transmission (red line)
- Underground Fiber (orange line)
- Gas (yellow line)
- Water (blue line)
- Wastewater (brown line)
- Stormwater (green line)

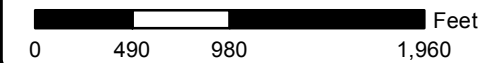
HazMat

- RCRA Small Quantity Generator Sites (blue triangle)
- RCRA Generator Sites (red triangle)
- RCRA Corrective Action Sites (green triangle)

- Hazardous Material Spill Voluntary Cleanup Program (yellow cross)
- Underground Storage Tank Leak (black circle)
- Underground Storage Tank (orange circle)



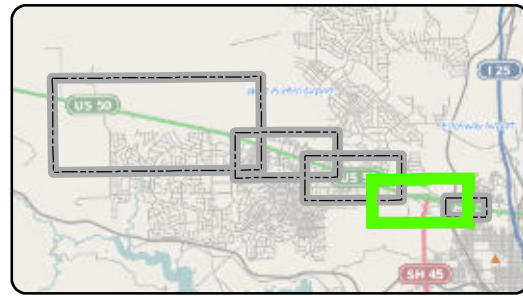
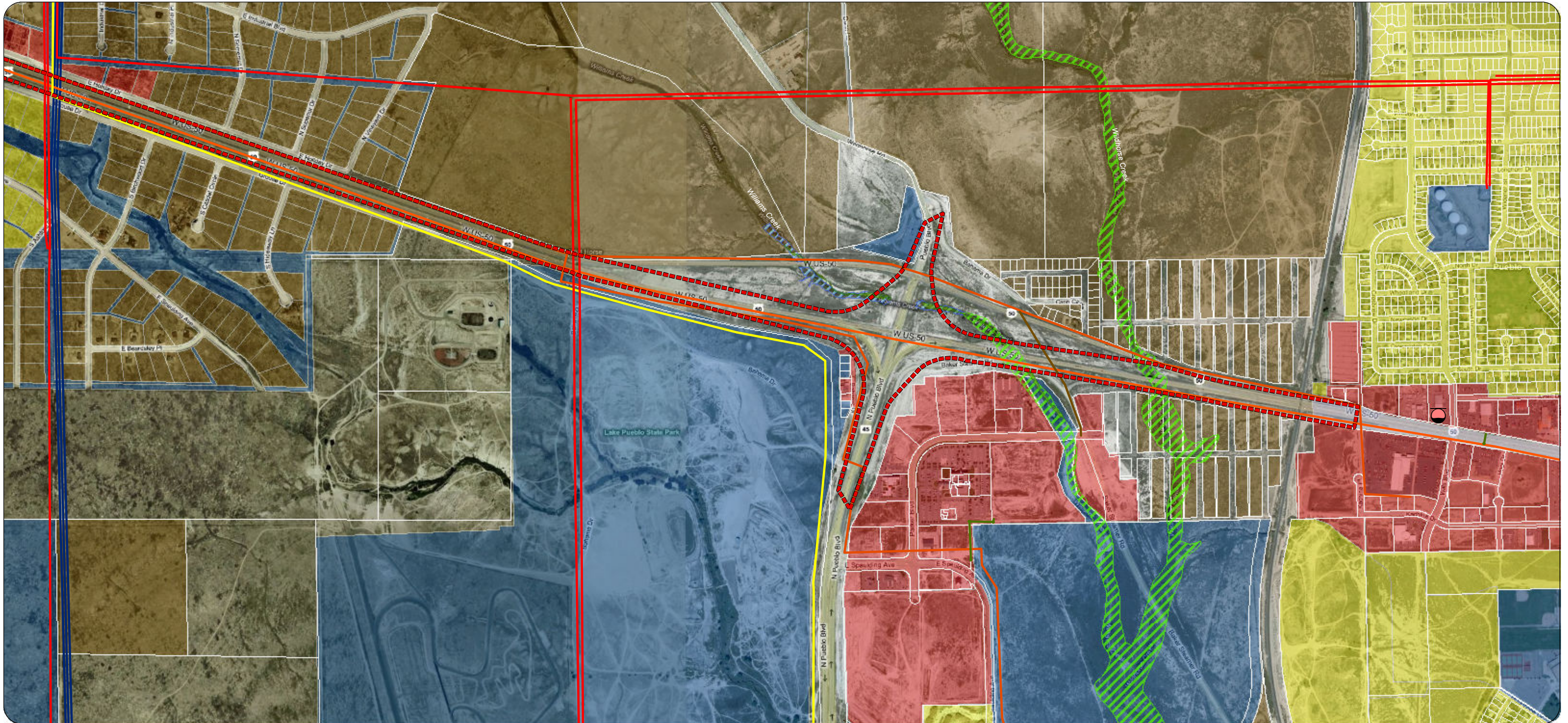
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





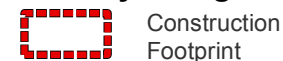
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative B



MAP 4 OF 5

Roadway Design



Construction Footprint

Zoning



Agricultural
Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

Waterways

- Floodplain (FEMA)
- Floodplain (City of Pueblo, 2007)
- Wetlands

Utilities

- Electric Transmission
- Underground Fiber
- Gas
- Water
- Wastewater
- Stormwater

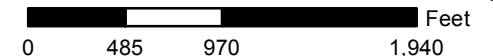
HazMat

- RCRA Small Quantity Generator Sites
- RCRA Generator Sites
- RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



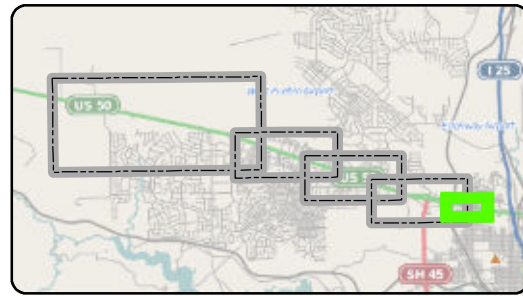
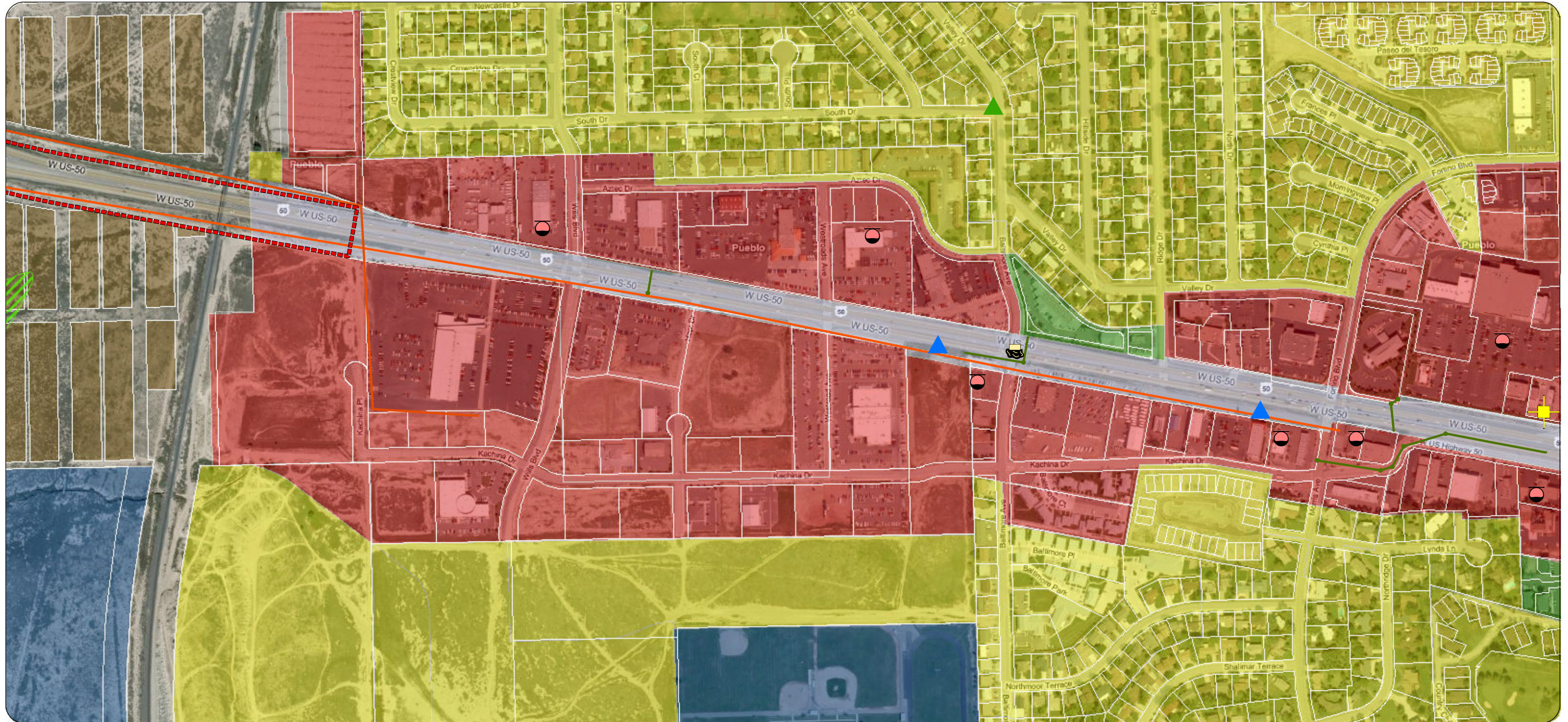
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative B



MAP 5 OF 5

- Roadway Design**
- Construction Footprint
- Zoning**
- Agricultural
 - Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

- Waterways**
- Floodplain (FEMA)
 - Floodplain (City of Pueblo, 2007)
 - Wetlands

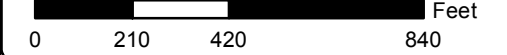
- Utilities**
- Electric Transmission
 - Underground Fiber
 - Gas
 - Water
 - Wastewater
 - Stormwater

- HazMat**
- RCRA Small Quantity Generator Sites
 - RCRA Generator Sites
 - RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



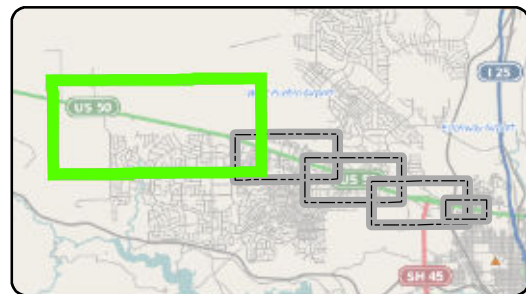
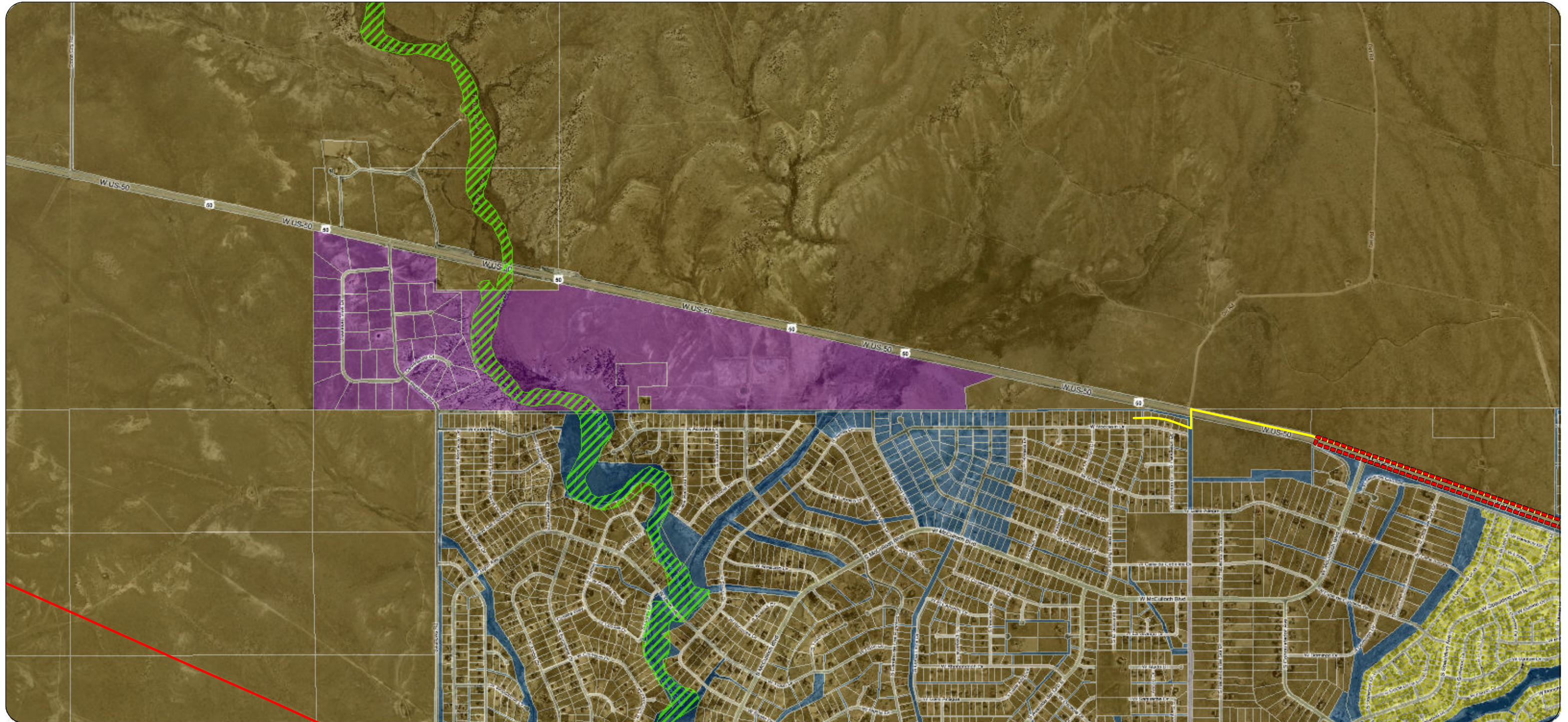
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





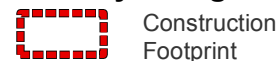
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative C



MAP 1 OF 5

Roadway Design

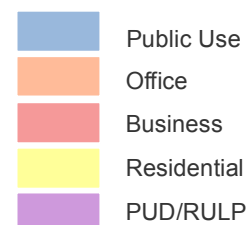


Construction Footprint

Zoning



Agricultural
Industrial



Public Use
Office
Business
Residential
PUD/RULP

Waterways



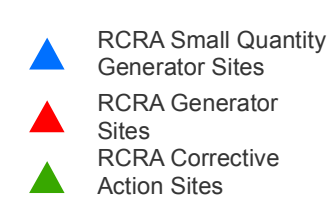
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

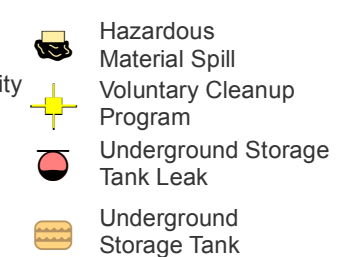


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



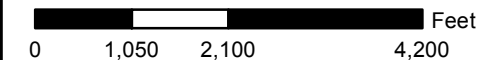
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



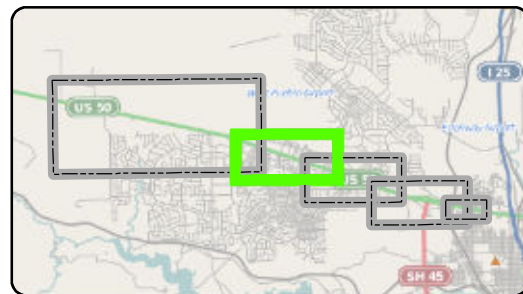
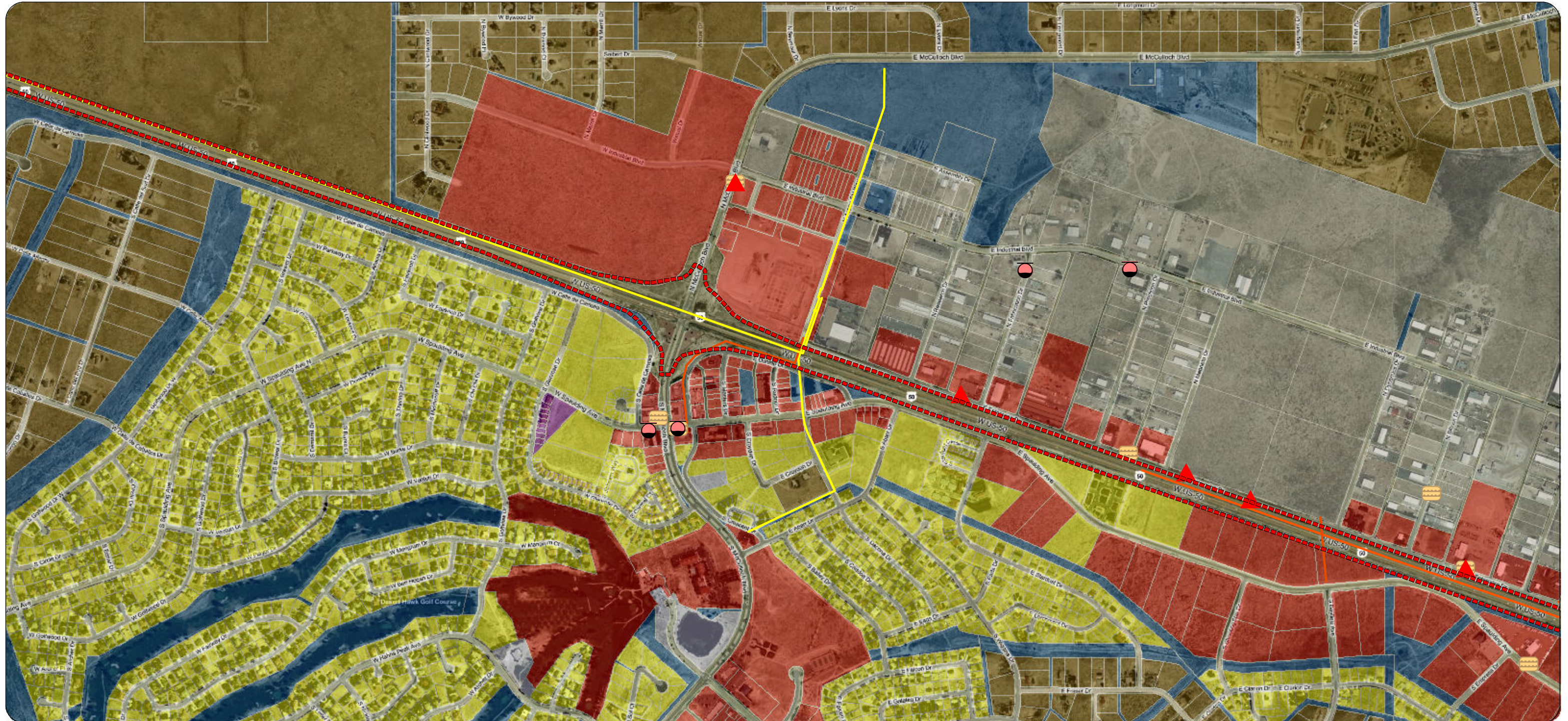
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





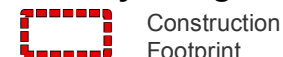
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative C

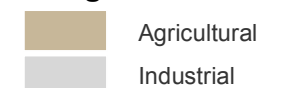


MAP 2 OF 5

Roadway Design



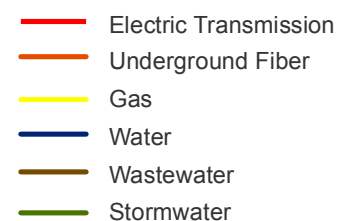
Zoning



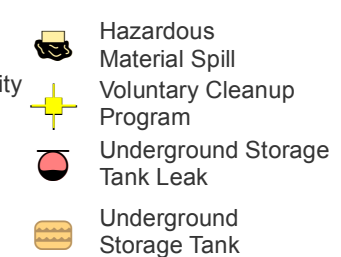
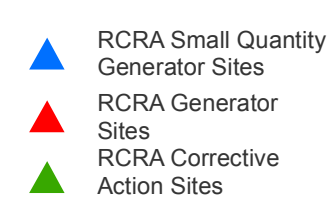
Waterways



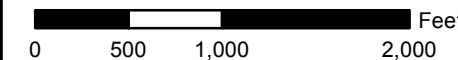
Utilities



HazMat



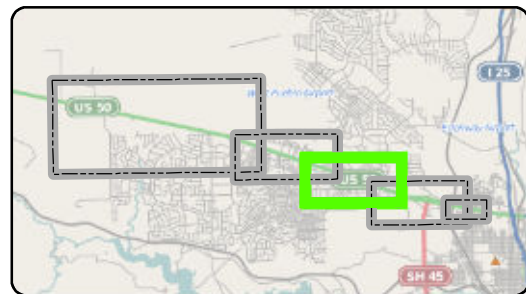
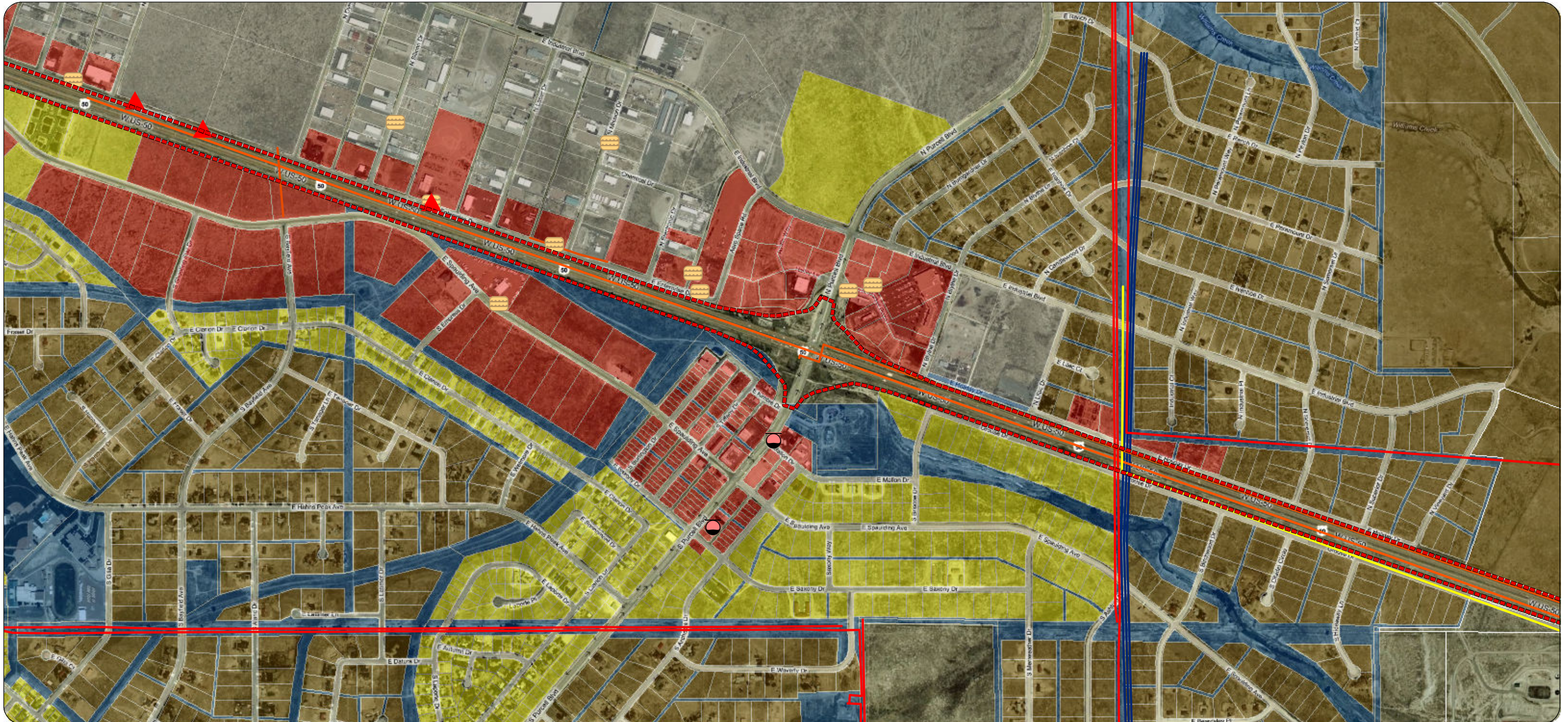
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





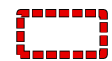
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative C



MAP 3 OF 5

Roadway Design



Construction Footprint

Zoning

- Agricultural
- Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

Waterways

- Floodplain (FEMA)
- Floodplain (City of Pueblo, 2007)
- Wetlands

Utilities

- Electric Transmission
- Underground Fiber
- Gas
- Water
- Wastewater
- Stormwater

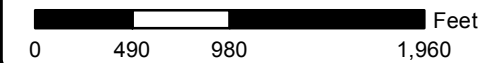
HazMat

- RCRA Small Quantity Generator Sites
- RCRA Generator Sites
- RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



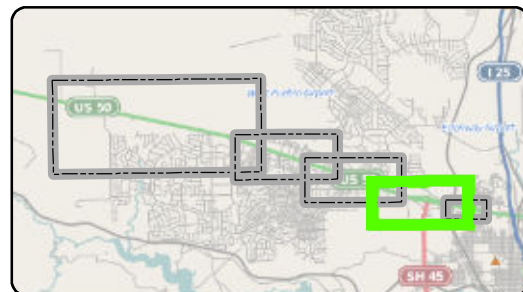
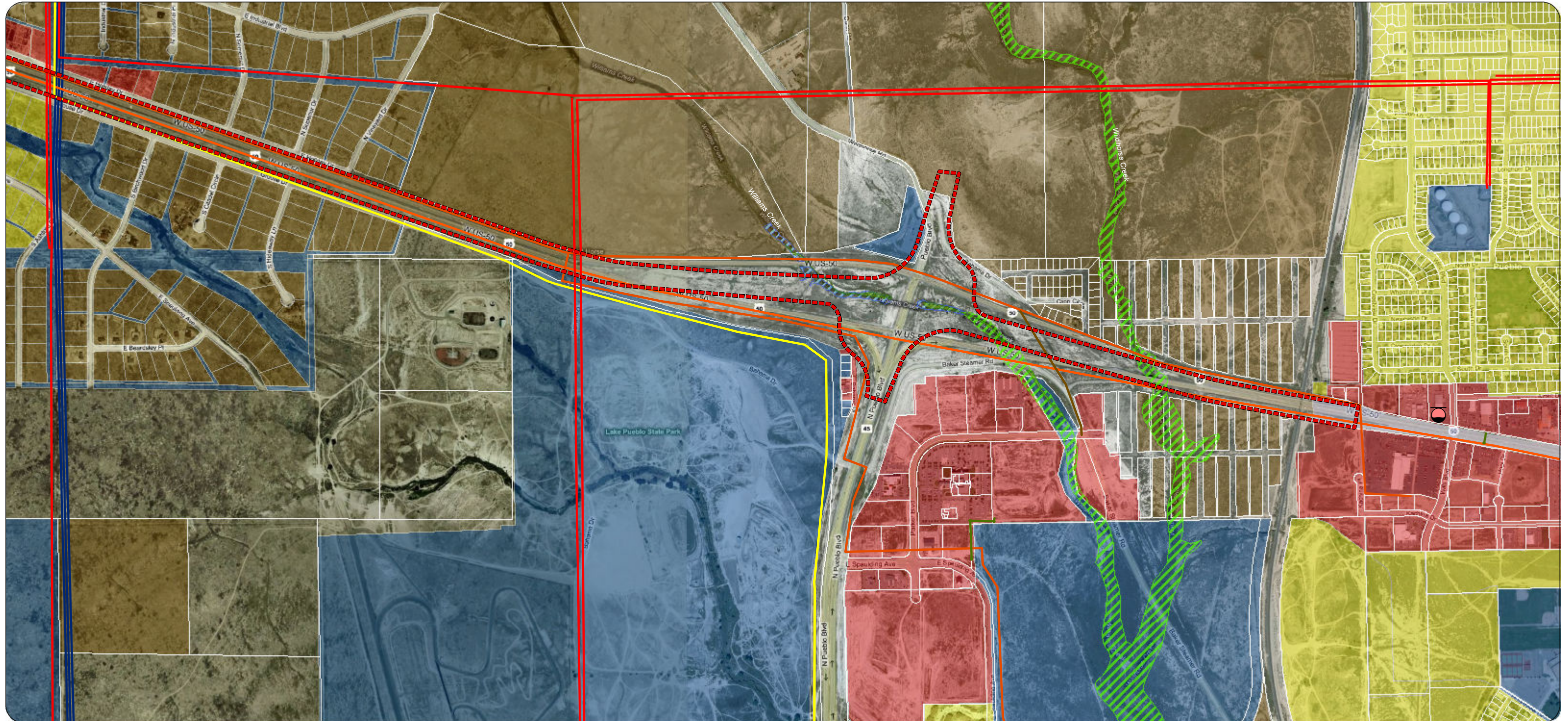
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





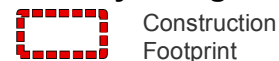
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative C



MAP 4 OF 5

Roadway Design



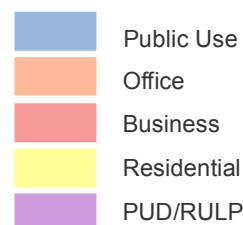
Construction Footprint

Zoning



Agricultural

Industrial



Public Use

Office

Business

Residential

PUD/RULP

Waterways

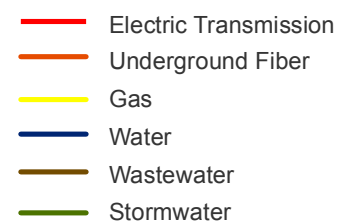


Floodplain (FEMA)

Floodplain (City of Pueblo, 2007)

Wetlands

Utilities



Electric Transmission

Underground Fiber

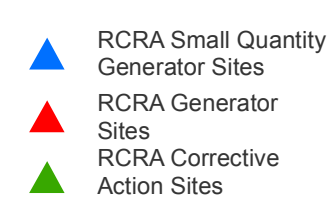
Gas

Water

Wastewater

Stormwater

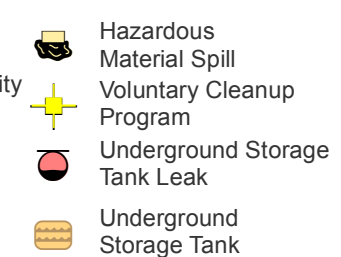
HazMat



RCRA Small Quantity Generator Sites

RCRA Generator Sites

RCRA Corrective Action Sites



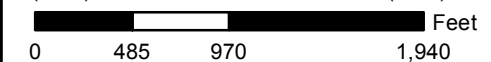
Hazardous Material Spill Voluntary Cleanup Program

Underground Storage Tank Leak

Underground Storage Tank



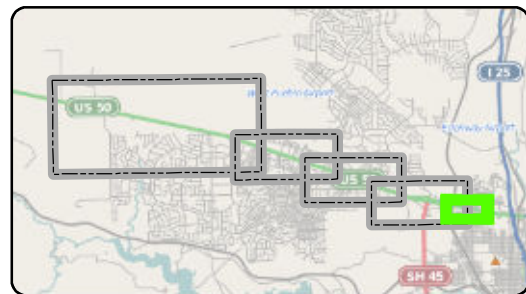
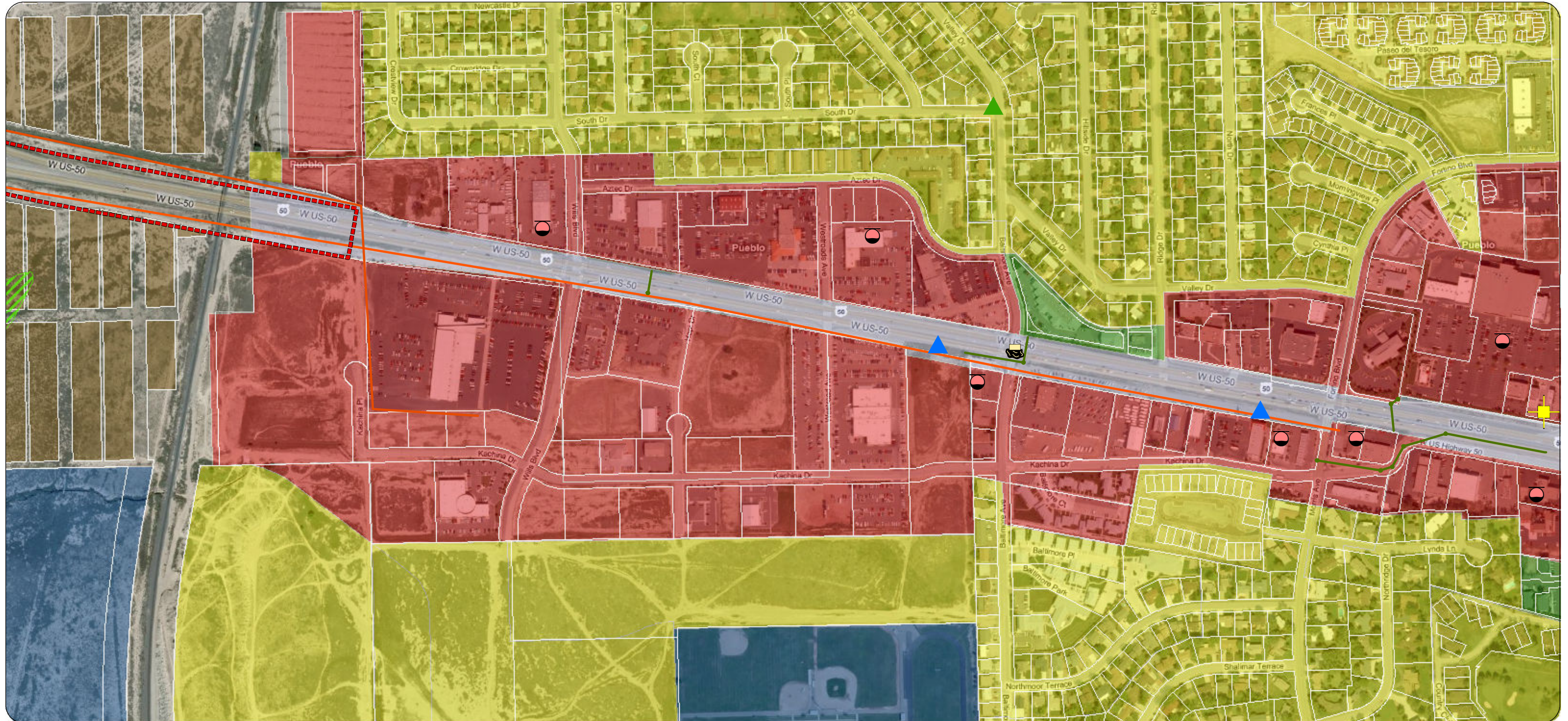
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





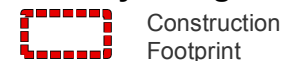
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative C



MAP 5 OF 5

Roadway Design



Construction Footprint

Zoning



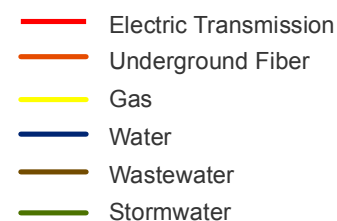
Agricultural
Industrial
Public Use
Office
Business
Residential
PUD/RULP

Waterways



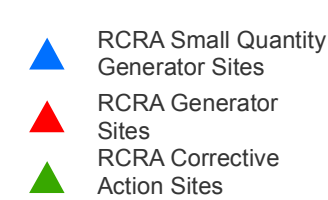
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

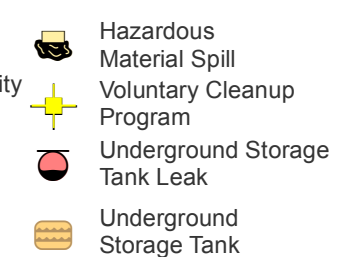


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



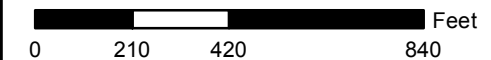
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



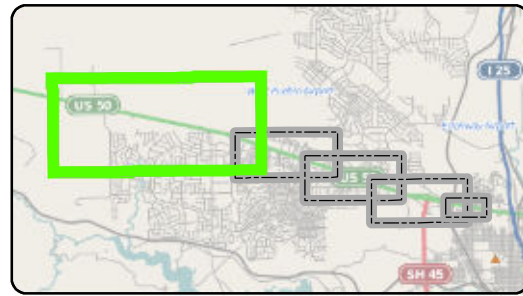
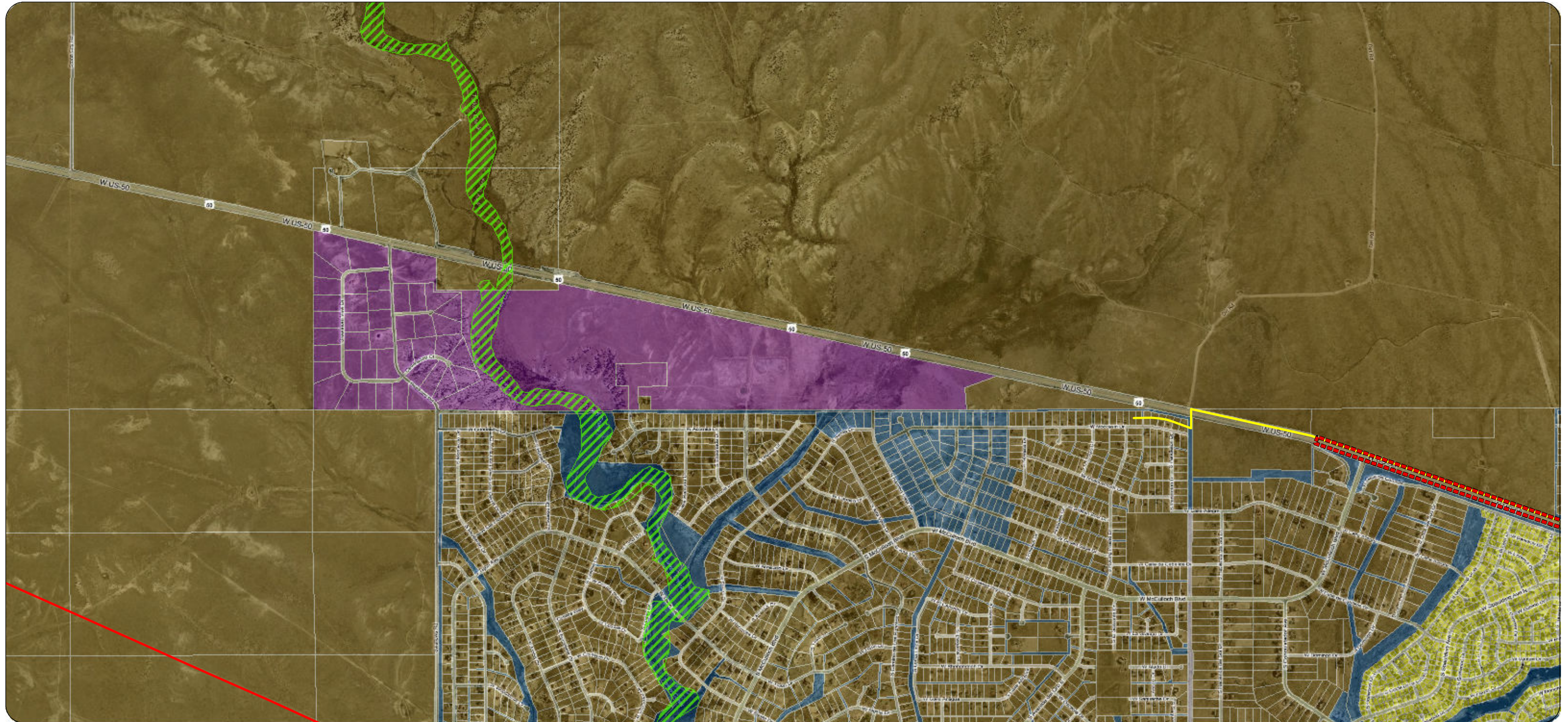
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative D



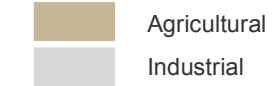
MAP 1 OF 5

Roadway Design

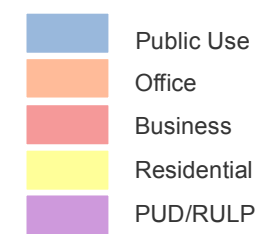


Construction Footprint

Zoning



Agricultural
Industrial



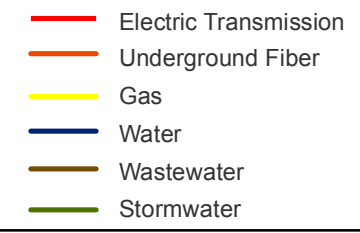
Public Use
Office
Business
Residential
PUD/RULP

Waterways



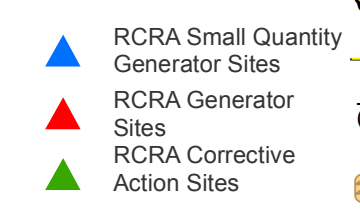
Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Wetlands

Utilities

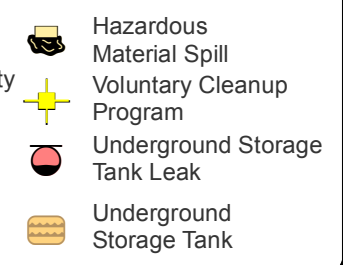


Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

HazMat



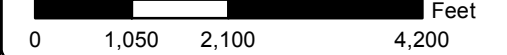
RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites



Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



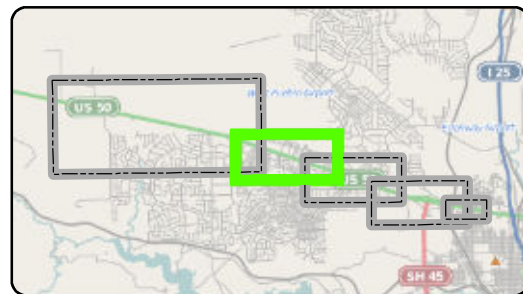
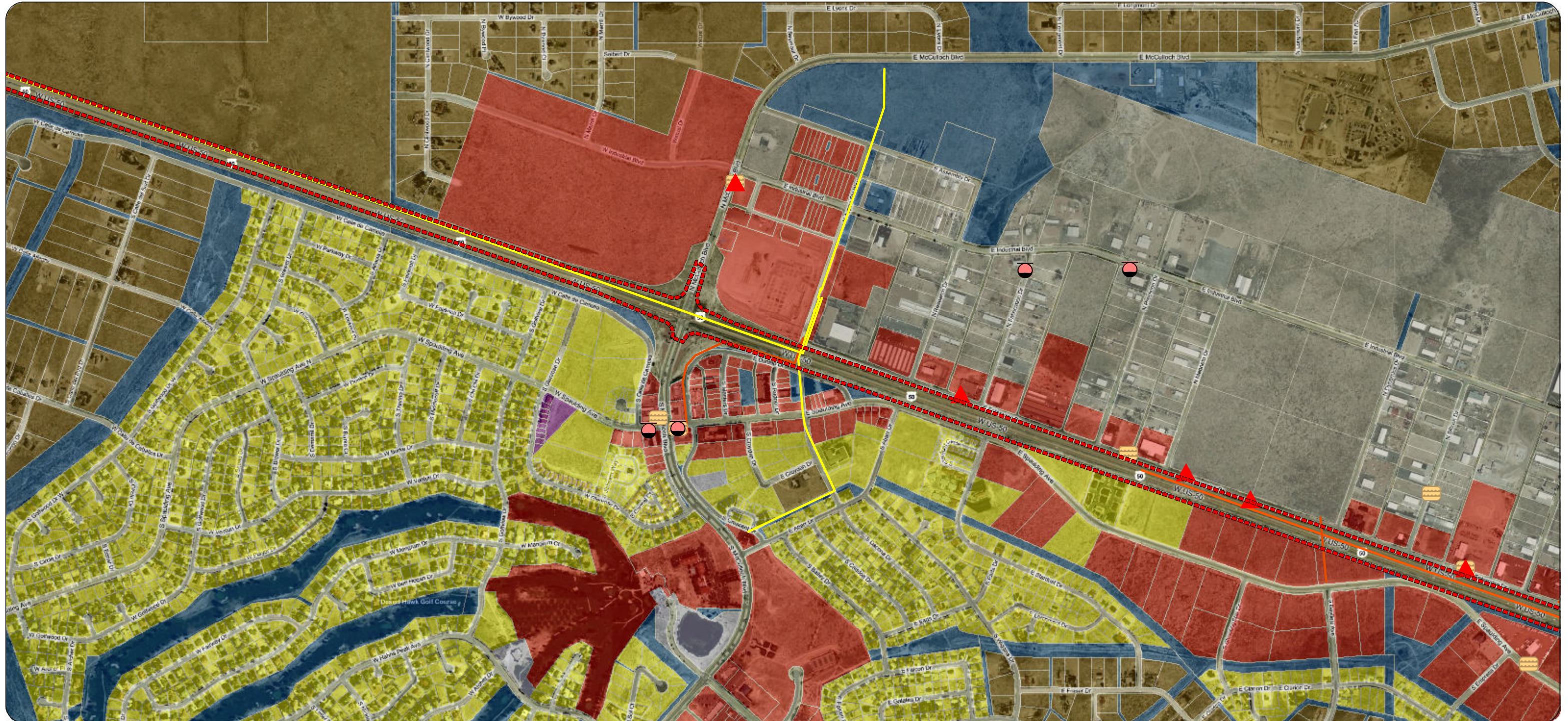
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative D



MAP 2 OF 5

Roadway Design



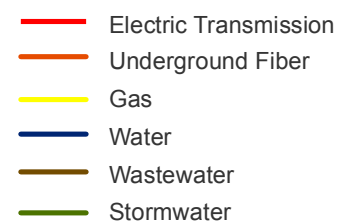
Zoning



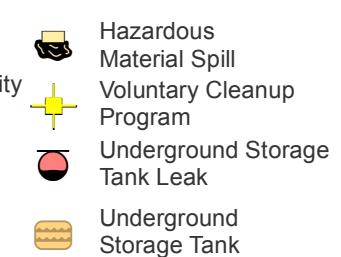
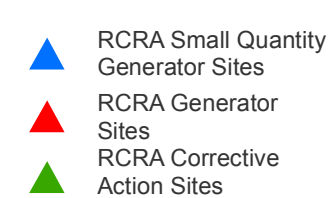
Waterways



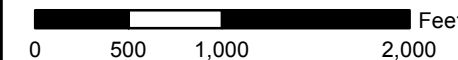
Utilities



HazMat



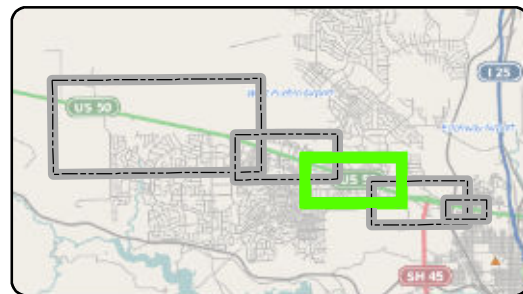
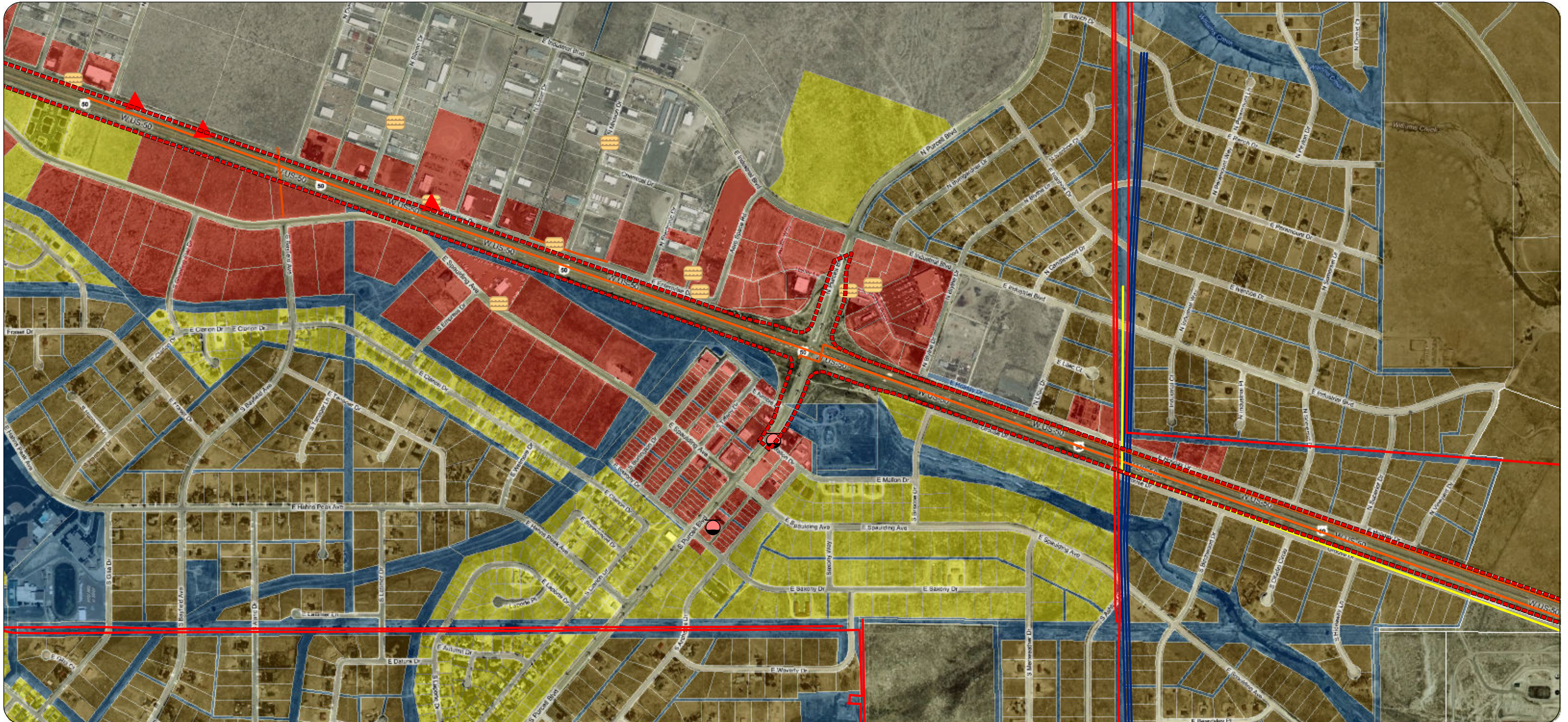
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative D



MAP 3 OF 5

Roadway Design



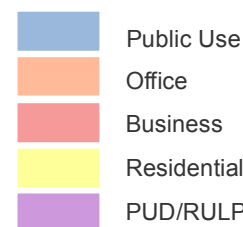
Construction Footprint

Zoning



Agricultural

Industrial



Public Use

Office

Business

Residential

PUD/RULP

Waterways

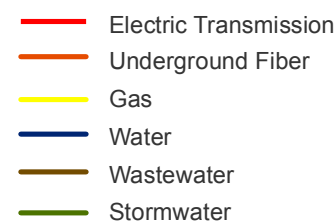


Floodplain (FEMA)

Floodplain (City of Pueblo, 2007)

Wetlands

Utilities



Electric Transmission

Underground Fiber

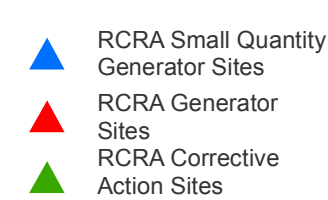
Gas

Water

Wastewater

Stormwater

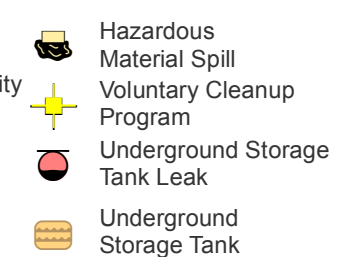
HazMat



RCRA Small Quantity Generator Sites

RCRA Generator Sites

RCRA Corrective Action Sites



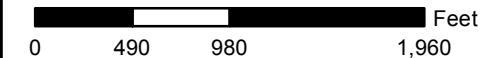
Hazardous Material Spill Voluntary Cleanup Program

Underground Storage Tank Leak

Underground Storage Tank



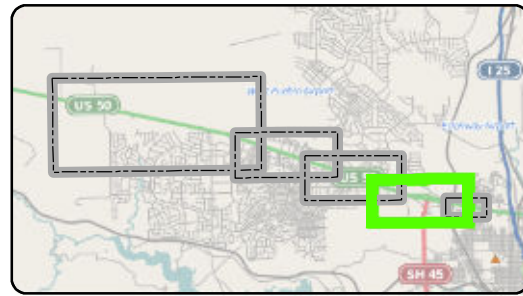
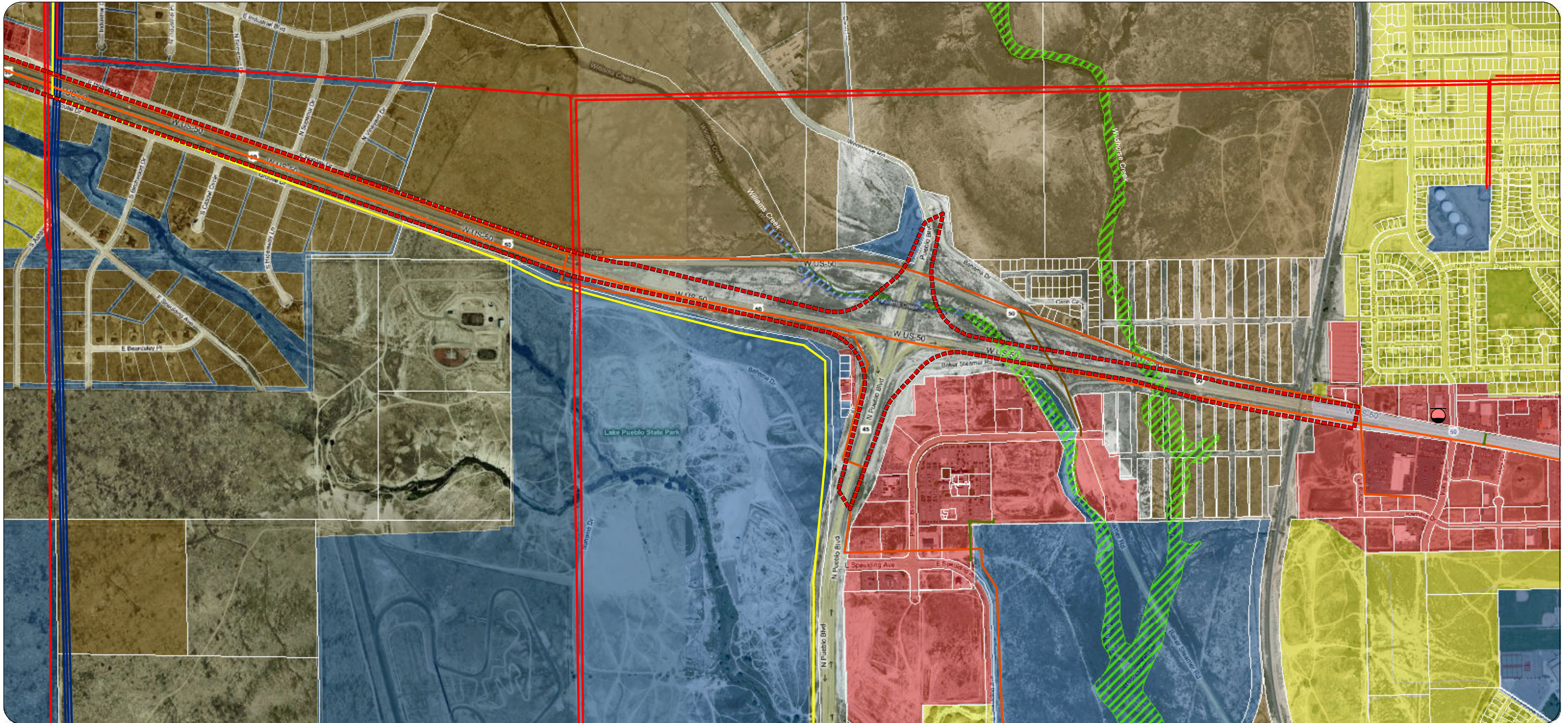
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





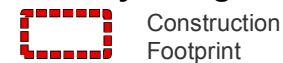
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative D



MAP 4 OF 5

Roadway Design



Construction Footprint


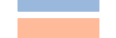



Zoning



Agricultural



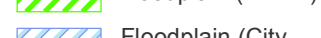
Industrial

-  Public Use
-  Office
-  Business
-  Residential
-  PUD/RULP

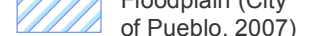
Waterways



Floodplain (FEMA)



Floodplain (City of Pueblo, 2007)



Wetlands

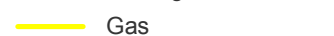
Utilities



Electric Transmission



Underground Fiber



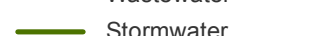
Gas



Water



Wastewater



Stormwater

HazMat







RCRA Small Quantity Generator Sites



RCRA Generator Sites

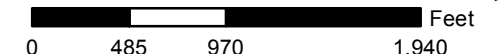


RCRA Corrective Action Sites

-  Hazardous Material Spill
-  Voluntary Cleanup Program
-  Underground Storage Tank Leak
-  Underground Storage Tank



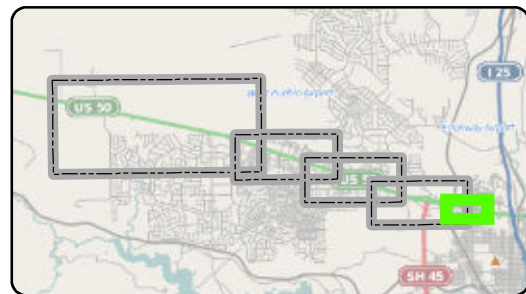
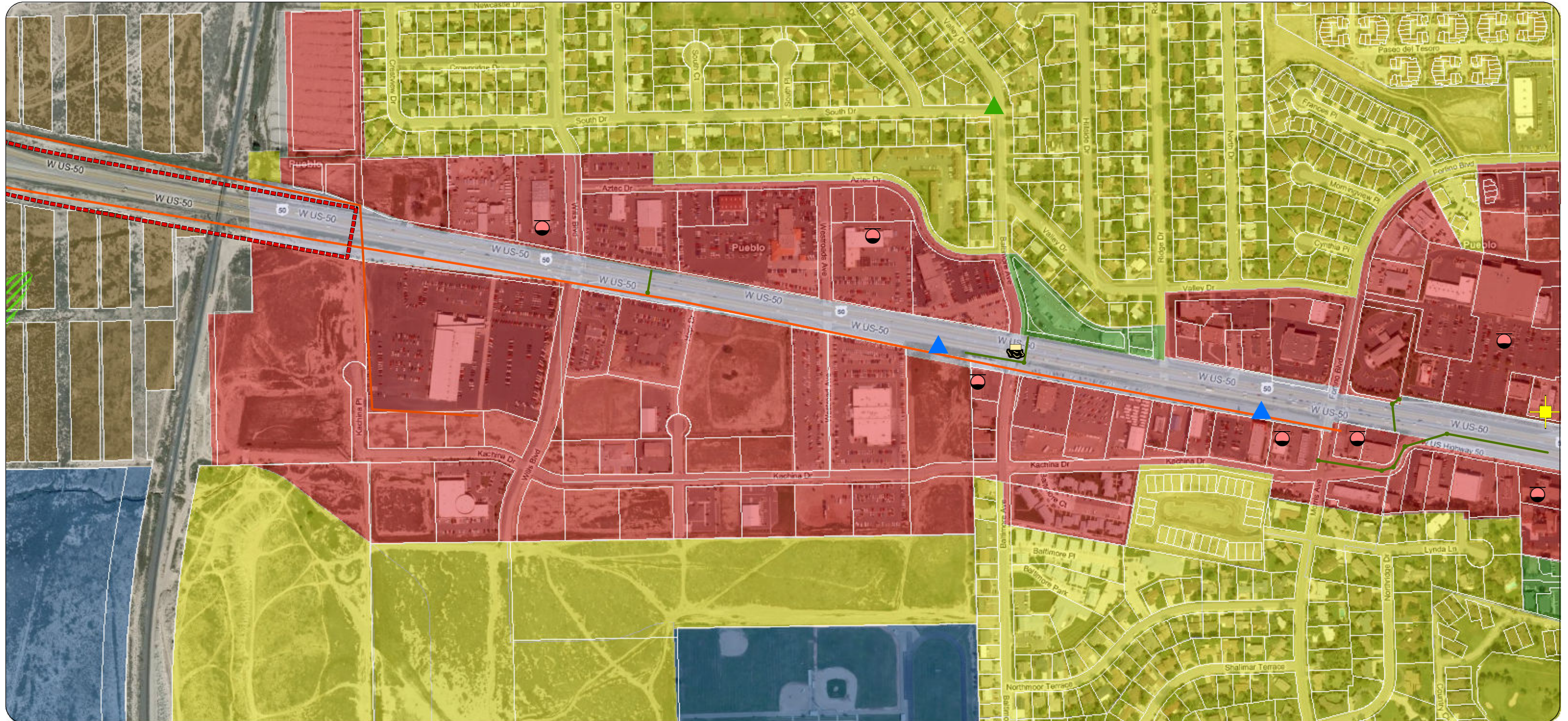
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





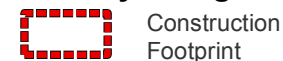
US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative D



MAP 5 OF 5

Roadway Design



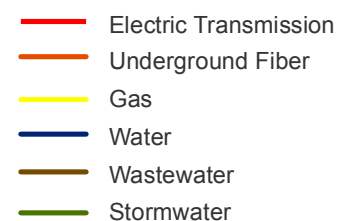
Zoning



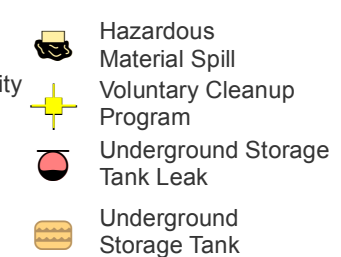
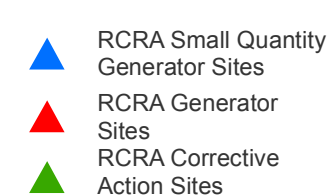
Waterways



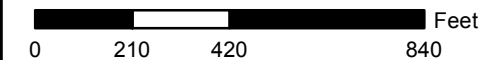
Utilities



HazMat



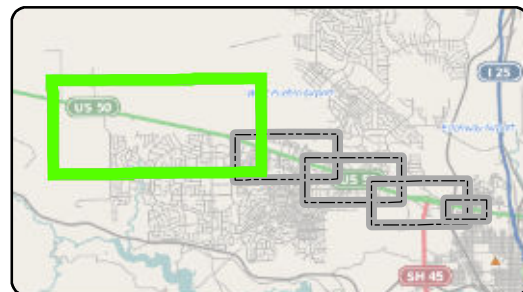
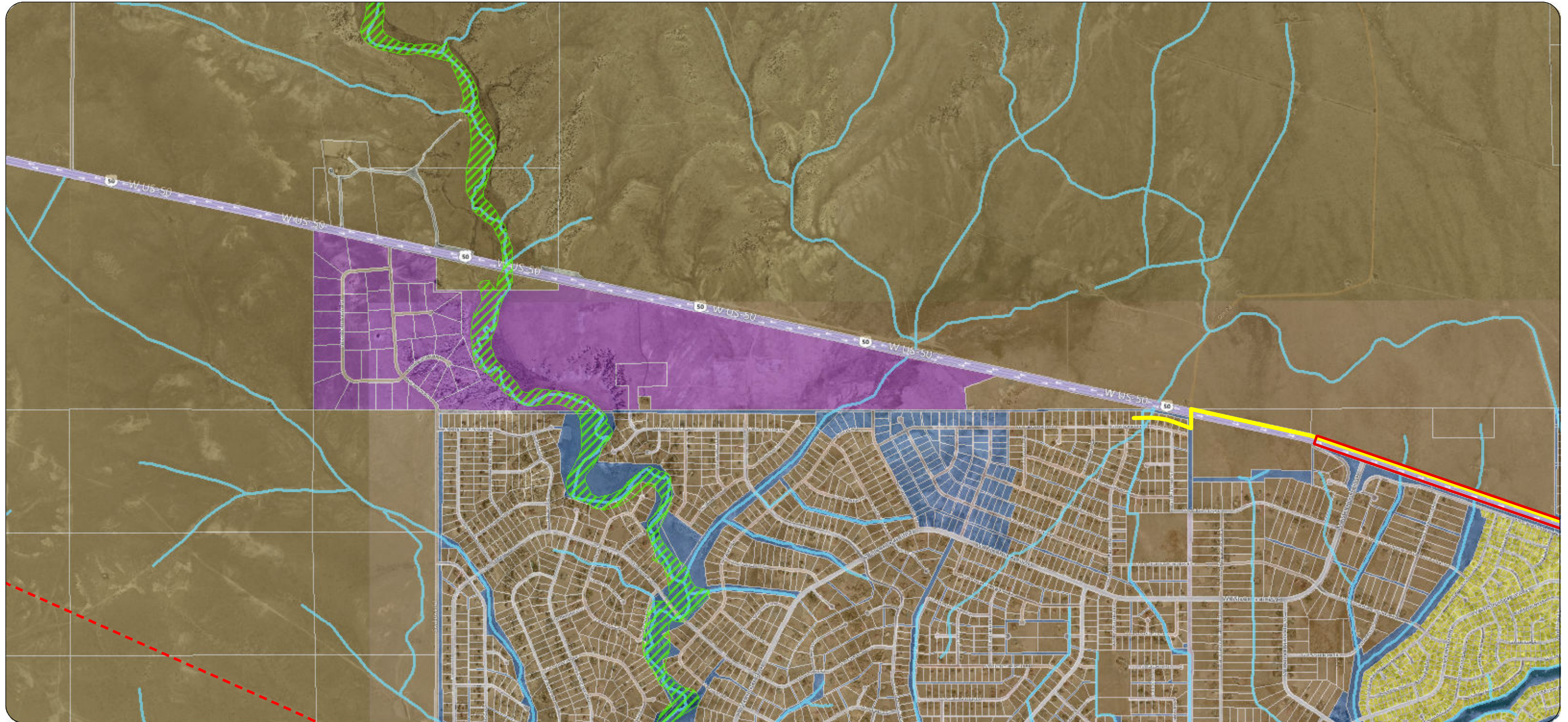
Map Info: Map created by J.F. Sato on 07.05.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative E



MAP 1 OF 5

Roadway Design

Construction Footprint

Zoning

Agricultural
Industrial

Public Use
Office
Business
Residential
PUD/RULP

Waterways

Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Generalized Wetland
Streams

Utilities

Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

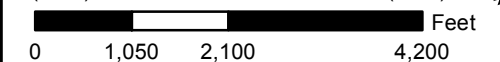
HazMat

RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites

Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



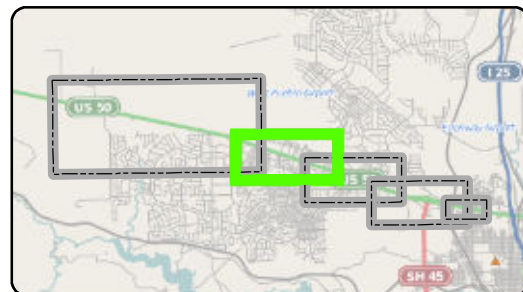
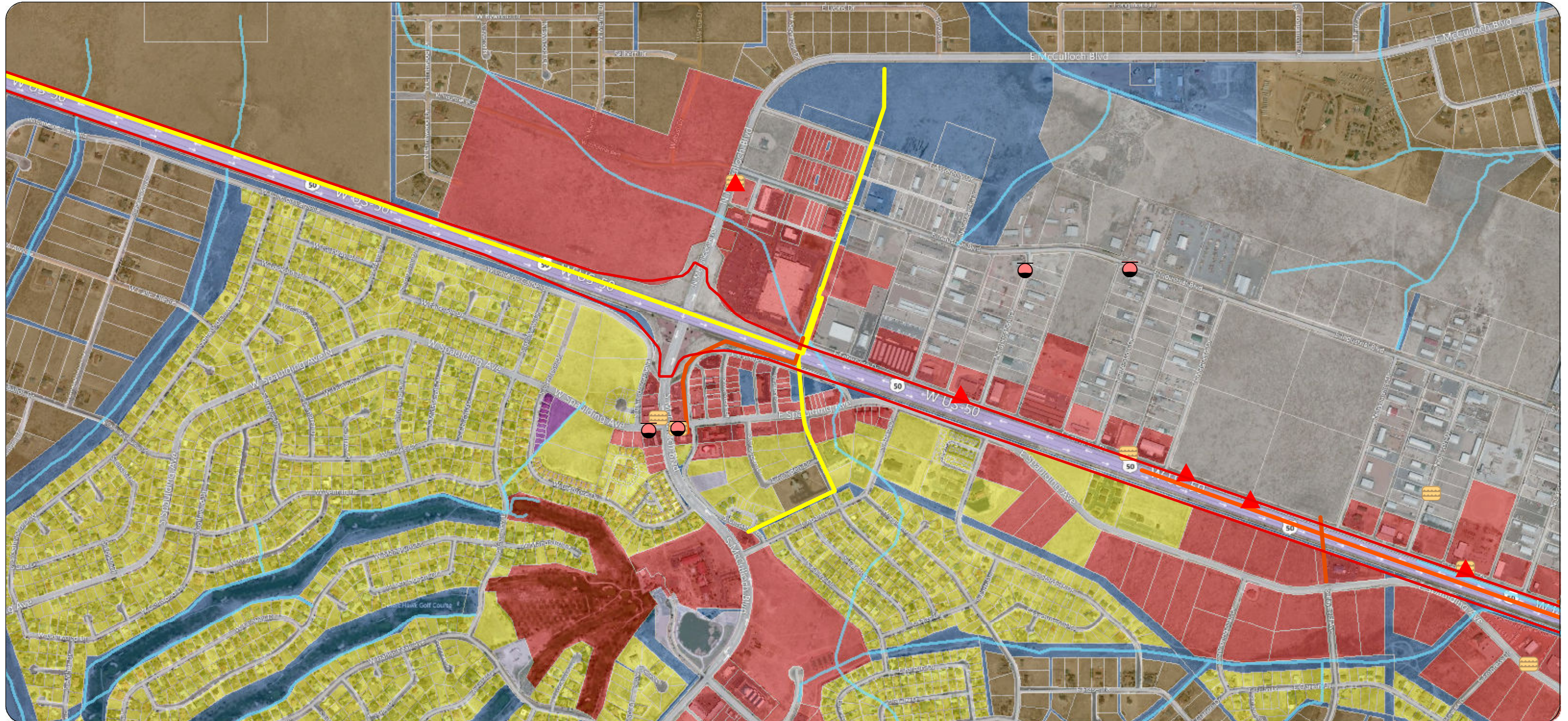
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative E



MAP 2 OF 5

- Roadway Design**
- Construction Footprint
- Zoning**
- Agricultural
 - Industrial
 - Public Use
 - Office
 - Business
 - Residential
 - PUD/RULP

- Waterways**
- Floodplain (FEMA)
 - Floodplain (City of Pueblo, 2007)
 - Generalized Wetland
 - Streams

- Utilities**
- Electric Transmission
 - Underground Fiber
 - Gas
 - Water
 - Wastewater
 - Stormwater

- HazMat**
- RCRA Small Quantity Generator Sites
 - RCRA Generator Sites
 - RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank

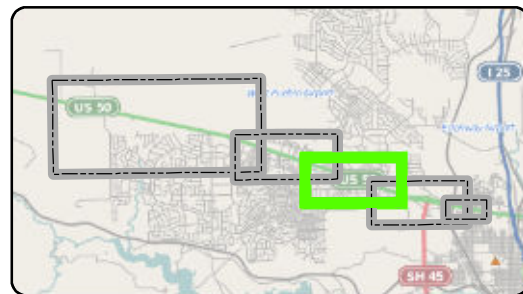
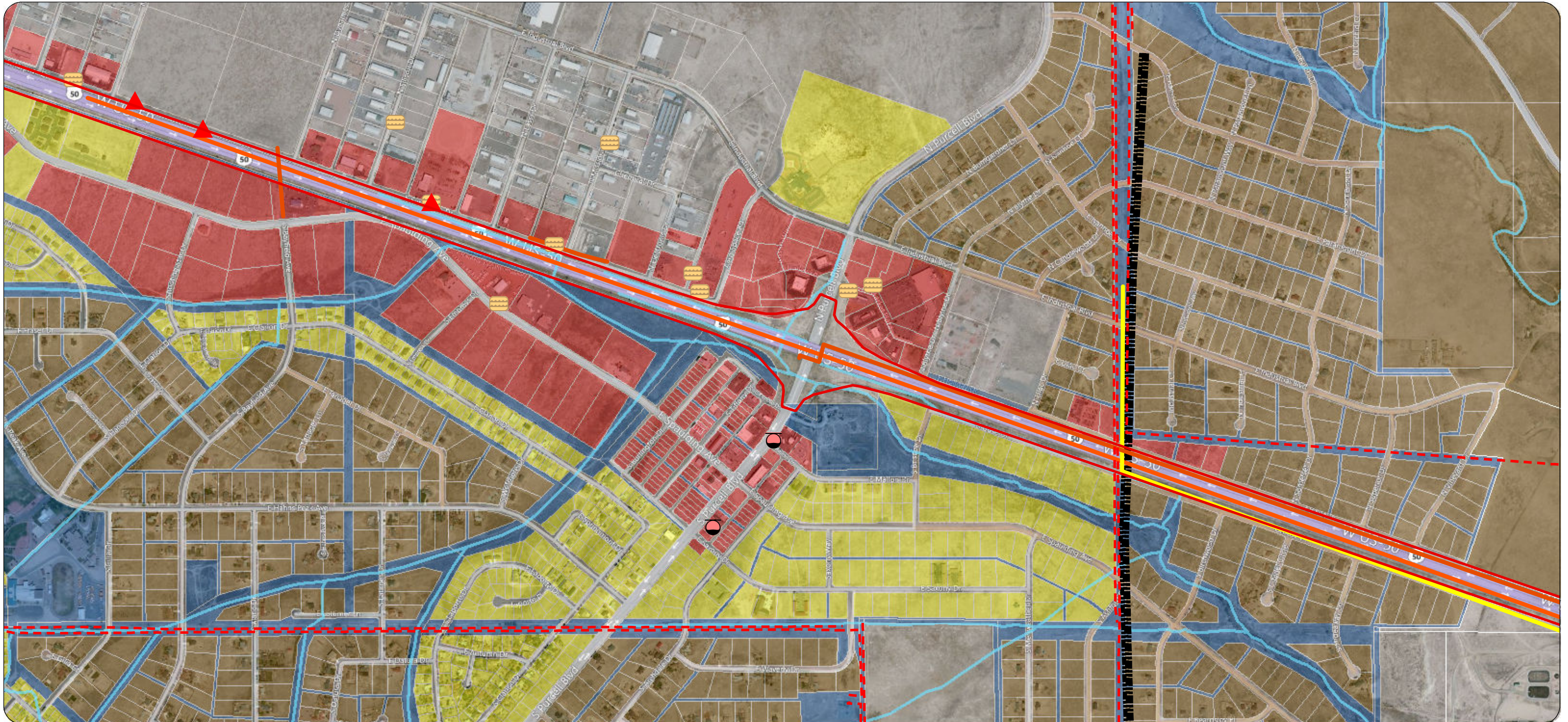
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).

0 500 1,000 2,000 Feet



US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative E



MAP 3 OF 5

Roadway Design

- Construction Footprint

Zoning

- Agricultural
- Industrial

- Public Use
- Office
- Business
- Residential
- PUD/RULP

Waterways

- Floodplain (FEMA)
- Floodplain (City of Pueblo, 2007)
- Generalized Wetland
- Streams

Utilities

- Electric Transmission
- Underground Fiber
- Gas
- Water
- Wastewater
- Stormwater

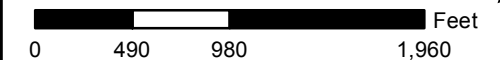
HazMat

- RCRA Small Quantity Generator Sites
- RCRA Generator Sites
- RCRA Corrective Action Sites

- Hazardous Material Spill Voluntary Cleanup Program
- Underground Storage Tank Leak
- Underground Storage Tank



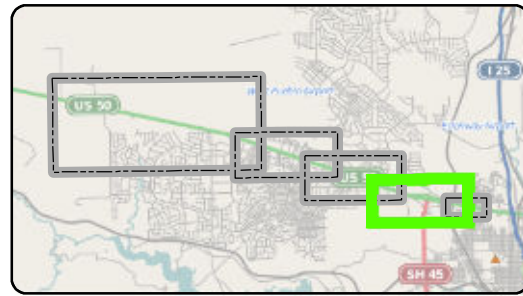
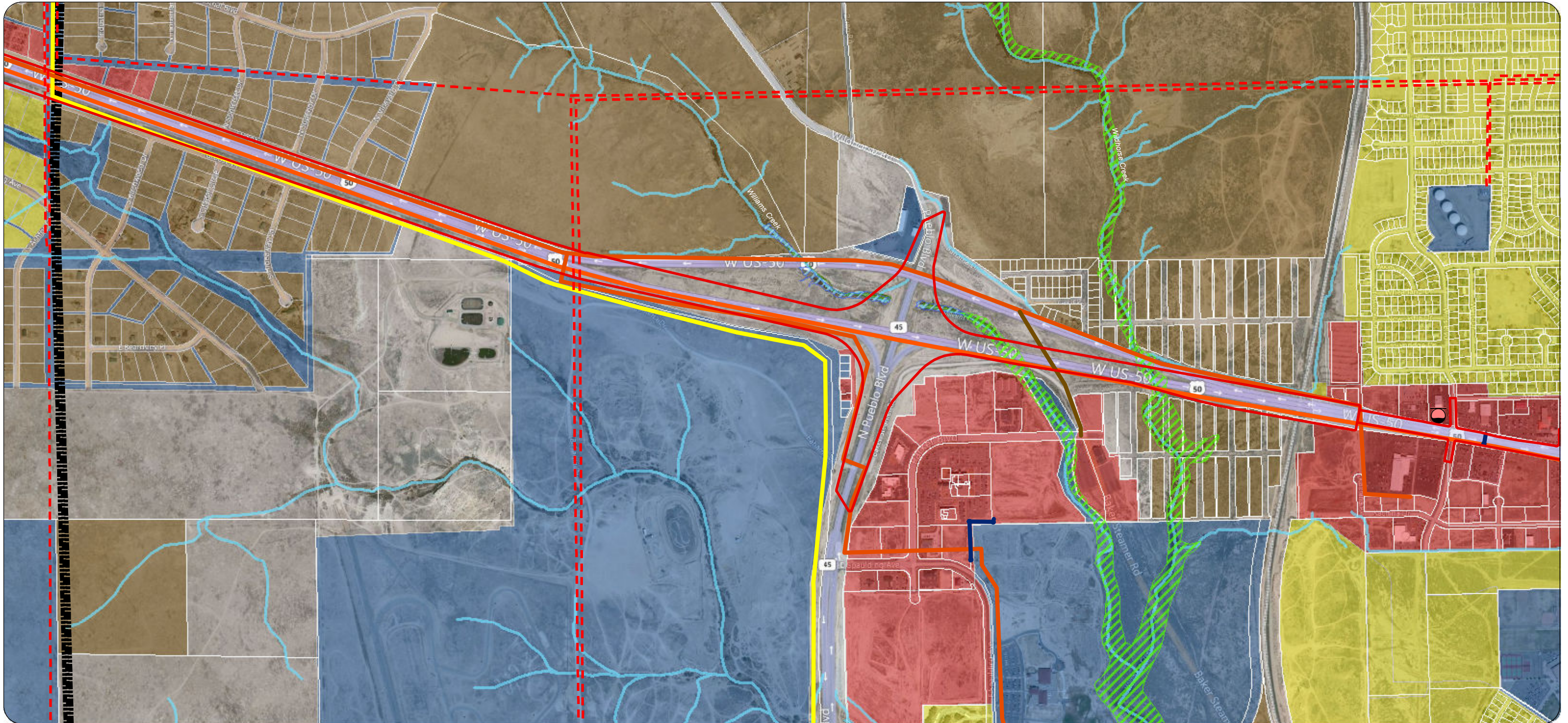
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative E



MAP 4 OF 5

Roadway Design

Construction Footprint

Zoning

Agricultural
Industrial

Public Use
Office
Business
Residential
PUD/RULP

Waterways

Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Generalized Wetland
Streams

Utilities

Electric Transmission
Underground Fiber
Gas
Water
Wastewater
Stormwater

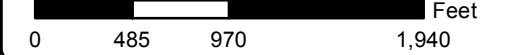
HazMat

RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites

Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



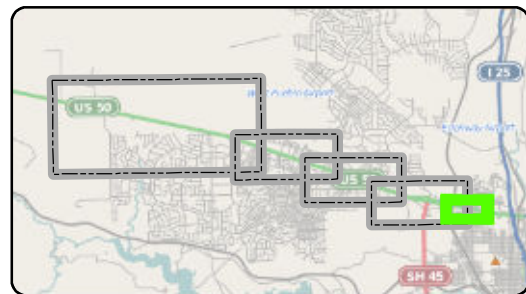
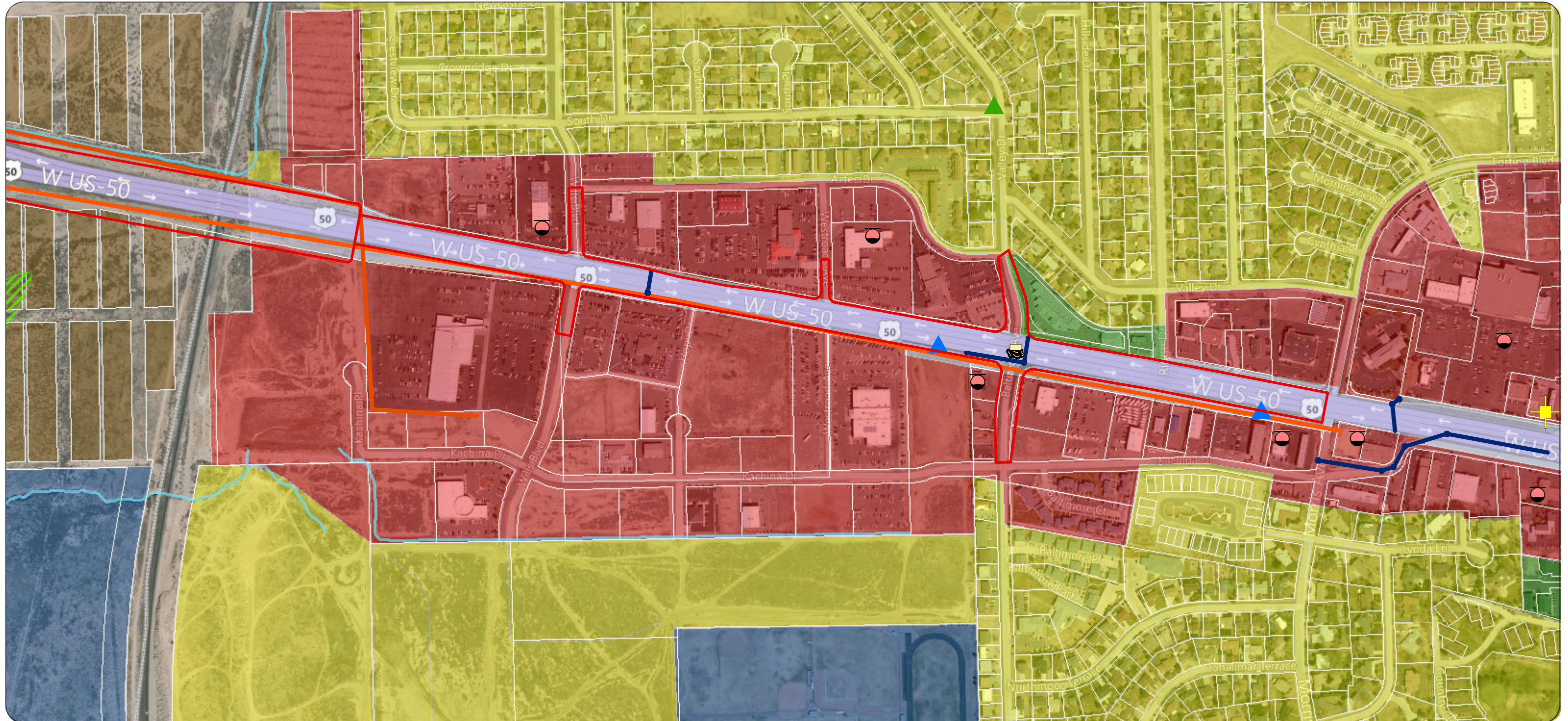
Map Info: Map created by J.F. Sato on 04.28.2011 using data gathered from field work (2011), Pueblo City GIS (2011), Pueblo County GIS (2011), and Goodbee and Associates (2011).





US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

Alternative E



MAP 5 OF 5

Roadway Design

Construction Footprint

Zoning

Agricultural
Industrial

Public Use
Office
Business
Residential
PUD/RULP

Waterways

Floodplain (FEMA)
Floodplain (City of Pueblo, 2007)
Generalized Wetland
Streams

Utilities

Electric Transmission
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Gas
Water
Wastewater
Stormwater

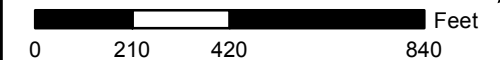
HazMat

RCRA Small Quantity Generator Sites
RCRA Generator Sites
RCRA Corrective Action Sites

Hazardous Material Spill Voluntary Cleanup Program
Underground Storage Tank Leak
Underground Storage Tank



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US 50 West PEL Study: Swallows Rd. to Baltimore Ave.

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