



## MEMORANDUM #3

DATE: May 26, 2021

TO: Project Management Team

FROM: Scott Mansur, P.E., PTOE | DKS Associates  
Jenna Bogert, P.E. | DKS Associates  
Travis Larson, E.I. | DKS Associates

SUBJECT: Wheatland Road Corridor Plan – Design Alternatives and Tier 1 Screening P#20020-009

---

### INTRODUCTION

This memorandum summarizes the development of the design alternatives for the Wheatland Road corridor and includes a preliminary evaluation (Tier 1 Screening) of the three proposed design alternatives, building off the two previous memoranda which covered the existing conditions analysis<sup>1</sup> and proposed evaluation criteria<sup>2</sup>. The conceptual cross sections of this memorandum illustrate alternative uses of the available right-of-way along Wheatland Road. A summary of public feedback from the Virtual Open House #1 is also provided here.

### VIRTUAL OPEN HOUSE #1 SUMMARY

Public outreach and feedback are important to ensure the Wheatland Road corridor transportation improvements are consistent with the community's needs and desires. The first Virtual Open House was held for the project from February 12th to March 21st (total of 38 days). Virtual Open House #1 was accessed through the City's project website<sup>3</sup> and provided the general public with digital posterboards, the two previous memoranda describing the existing and future baseline conditions and evaluation criteria, as well as a 10-question feedback survey. Announcement of Virtual Open House #1 was made to the following stakeholders via Facebook, flyers, emails, the Keizer Times, and at Committee meetings:

---

<sup>1</sup> Existing and Future Forecast Conditions – Memorandum #1, Wheatland Road Corridor Plan, DKS Associates, January 2021.

<sup>2</sup> Evaluation Criteria – Memorandum #2, Wheatland Road Corridor Plan, DKS Associates, December 2020.

<sup>3</sup> <https://www.keizer.org/WheatlandRoadMultimodalCorridorPlan>

- Traffic Safety-Bikeways-Pedestrian Committee
- Salem Bicycle Club
- Vineyard Homeowners Association
- Keizer Neighborhood Associations (Gubser, Southeast, West)
- Courthouse Athletic Club
- B&S Market
- Revis Keizer Automotive
- McNary Heights Apartments
- Wheatland Village Apartments
- Keizer Christian Church

- Parkmeadow Apartments
- Willamette Lutheran Retirement Homes
- Keizer Clearlake United Methodist Church
- Keizer Storage Center
- Marion County Fire District - Clearlake Fire Station #6
- Mr. Rooter Plumbing
- McNary Estates
- Cherriots Transit
- Clear Lake Elementary School
- Forest Ridge Elementary School

There were over 550 website views during Virtual Open House #1 (February 12th – March 21st) and 55 feedback surveys completed. See the Appendix for the feedback survey. Responses from the public feedback survey are summarized below:

CONTINUOUS SIDEWALKS	TRANSIT IMPROVEMENTS
<p><b>1</b> Many of the comments from the public expressed the need for continuous sidewalks along the entire Wheatland Road corridor. Walking was the mode of travel that was identified as needing the most improvements (above biking, motor vehicle, or transit) and the mode that most people wish was safer and more accessible to use.</p>	<p><b>4</b> For transit, many people requested covered waiting areas with benches at the bus stops, street lighting, and expanded transit service north of Parkmeadow Drive.</p>
SAFE ROUTES TO SCHOOLS	EVALUATION CRITERIA
<p><b>2</b> Many parents noted that their students need wider, continuous sidewalks, safer crosswalks, and improved lighting.</p>	<p><b>5</b> When asked which Evaluation Criteria were the most important to respondents, Safety, Neighborhood Livability, and Safe Routes to School were the top three choices by the public.</p>
PEDESTRIAN IMPROVEMENTS	POSTED SPEED LIMIT
<p><b>3</b> The most common overall improvements that were recommended by the public were a two-way multi-use path, continuous sidewalks, street lighting, and a lower posted speed limit.</p>	<p><b>6</b> Over 60% of respondents said that they would support a speed limit reduction, over 25% said they would not support it, and 10% were unsure.</p>

The second Virtual Open House will occur after the conceptual design alternatives have been created and evaluated against the ten Evaluation Criteria<sup>4</sup> (Tier 1 Screening). At the second Virtual Open House, the public will be able to provide feedback on their preferred design alternative.

## CROSS SECTION ELEMENTS

Practical design must be employed when evaluating this facility and proposing future enhancements. For pedestrians, system connectivity needs to be achieved by adding sidewalk, curb ramps, and separation from vehicle traffic where possible. There are many segments of roadway without sidewalks on either side of the road which can discourage or inhibit walking for many users, including people in wheelchairs or those with other mobility issues. For cyclists, all types of cyclists should be comfortable while riding along a bike facility. The National Association of City Transportation Officials (NACTO) published contextual guidance for designing bicycle facilities for all ages and abilities using the criteria of safety, comfortability, and equity<sup>5</sup>. Based on the average daily vehicle traffic volumes and the posted speed of Wheatland Road, a protected bike lane or separated bike facility is recommended to provide bicycle facilities where all users feel safe and comfortable.

NACTO guidelines<sup>6</sup> and the City's Transportation System Plan (TSP) and Public Works Design Standards<sup>7</sup> recommend the following minimum widths for various cross section elements.

**TABLE 1: MINIMUM WIDTHS FOR CROSS SECTION ELEMENTS**

CROSS SECTION ELEMENT	NACTO MINIMUM WIDTH	CITY MINIMUM WIDTH
<b>SIDEWALK</b>	5 feet	6 feet
<b>MULTI-USE PATH</b>	10 feet	12 feet
<b>BIKE LANE</b>	5 feet	6 feet
<b>BIKE LANE BUFFER</b>	1.5 feet	-
<b>PLANTER STRIP</b>	-	5 feet
<b>CURB-TO-CURB WIDTH</b>	-	36 to 50 feet (Minor Arterials)
<b>RIGHT-OF-WAY</b>	-	72 feet (Minor Arterials)

<sup>4</sup> Evaluation Criteria – Memorandum #2, Wheatland Road Corridor Plan, DKS Associates, December 2020.

<sup>5</sup> Designing for All Ages and Abilities, National Association of City Transportation Officials, December 2017.

<sup>6</sup> <https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/>  
[https://nacto.org/docs/usdg/shared\\_use\\_path\\_accessibility\\_guidelines\\_federal\\_register.pdf](https://nacto.org/docs/usdg/shared_use_path_accessibility_guidelines_federal_register.pdf)  
<https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/conventional-bike-lanes/>  
<https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/buffered-bike-lanes/>

<sup>7</sup> City of Keizer Transportation System Plan, Part 1 of 2, April 2009.

Section 3.13, Public Works Design Standards, City of Keizer.

## STREET DESIGN ALTERNATIVES

Based on the comments received during the Virtual Open House #1 and guidance from City planning documents, there are three conceptual street design alternatives that are being considered for the Wheatland Road corridor. Because a left-turn lane is warranted<sup>8</sup> at the Russett Drive intersection, specific cross section designs were created for that area that include a center-left turn lane. There are also some additional design options for potential enhanced pedestrian crossing locations. See the [Enhanced Pedestrian Crossing Treatments](#) section.

The proposed alternatives focused on developing a design that best meets the current and future transportation needs of the corridor. To facilitate development of a conceptual design plan that can be adopted and implemented, an effort was made to identify alternatives that minimize the costs related to right-of-way acquisition and curb reconstruction. A total of three street design alternatives plus a No Build alternative are described in the following sections.

### NO BUILD ALTERNATIVE (EXISTING CONFIGURATION)

The No Build alternative would involve no changes to the current roadway with no improvements or alterations. It is a baseline that gives perspective to the changes with the proposed alternatives. The current cross section along Wheatland Road consists primarily of two travel lanes, bike lanes directly adjacent to the vehicle travel lanes with no buffer zone, and intermittent sections of sidewalk. The travel lanes are 11 feet wide and bike lanes are between 5 to 7 feet wide, resulting in a 32 - 36 feet curb-to-curb width as shown in Figure 1. Where sidewalk exists, the width varies from 5 to 6 feet.



**FIGURE 1: NO BUILD (EXISTING CONFIGURATION) CROSS SECTION**

The table below shows a list of considerations for the No Build (Existing Configuration).

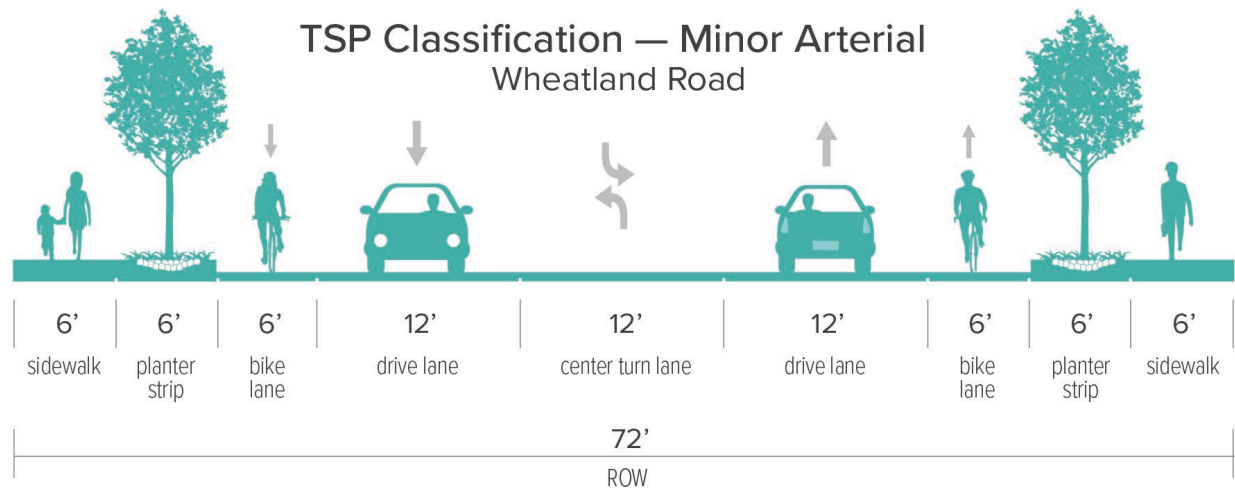
<sup>8</sup> Existing and Future Forecast Conditions – Memorandum #1, Wheatland Road Corridor Plan, DKS Associates, January 2021.

**TABLE 2: NO BUILD (EXISTING CONFIGURATION) ALTERNATIVE CONSIDERATIONS**

CATEGORY	NOTE
SAFETY	<ul style="list-style-type: none"><li>Crash history at Russett Drive; lack of left-turn lane leads to rear-end collisions involving vehicles turning from Wheatland Road</li><li>Pedestrians are vulnerable where sidewalks are not present and at street crossings due to travel speeds and lack of enhanced pedestrian crossings (i.e., signing, striping, activated flashers, and pedestrian refuge islands)</li></ul>
MOTOR VEHICLE OPERATIONS	<ul style="list-style-type: none"><li>Maintains the existing two-lane roadway configuration, current travel times, and current travel speeds</li><li>Left-turning vehicles block travel lanes</li></ul>
PEDESTRIAN FACILITIES	<ul style="list-style-type: none"><li>Inconsistent sidewalk presence</li><li>Inadequate lighting</li><li>Lack of enhanced pedestrian crossings for nearby students walking to/from school and other persons walking or rolling and persons with mobility challenges</li><li>Sidewalks and curb ramps are not ADA compliant</li></ul>
BICYCLE FACILITIES	<ul style="list-style-type: none"><li>On-street bicycle lanes are present (5 - 7 feet in width)</li><li>No lateral separation or protection from vehicles as recommended by NACTO for this type of roadway based on the All Ages and Abilities goal</li></ul>
TRANSIT SERVICE	<ul style="list-style-type: none"><li>Provides service south of Parkmeadow Drive only</li><li>Bus stops are located on west side of corridor only</li><li>No covered waiting areas or benches</li><li>Inadequate lighting</li></ul>
ENVIRONMENTAL	<ul style="list-style-type: none"><li>Large oak trees exist along the east side of the corridor</li></ul>
RIGHT-OF-WAY	<ul style="list-style-type: none"><li>The existing right-of-way varies between 60 – 72 feet.</li></ul>
COST	<ul style="list-style-type: none"><li>No project cost due to no improvements</li><li>Will still have typical maintenance cost</li></ul>

**BUILD ALTERNATIVE #1: TRANSPORTATION SYSTEM PLAN (TSP) STREET DESIGN**

The Transportation System Plan (TSP) alternative (Build Alternative #1) increases the existing roadway width (curb-to-curb) of Wheatland Road to 48 feet to accommodate a continuous center turn lane, two travel lanes, and bicycle lanes along the entire length of the corridor. This alternative includes 6-foot-wide planter strips and sidewalks. This cross section is based on the City’s requirements for a street that is classified as a Minor Arterial in the City’s adopted TSP (see Figure 2). A more detailed aerial view concept drawing of the design alternative can be found in the Appendix.



**FIGURE 2: TSP STREET DESIGN**

The table below shows a list of considerations for the Transportation System Plan (TSP) Street Design alternative.

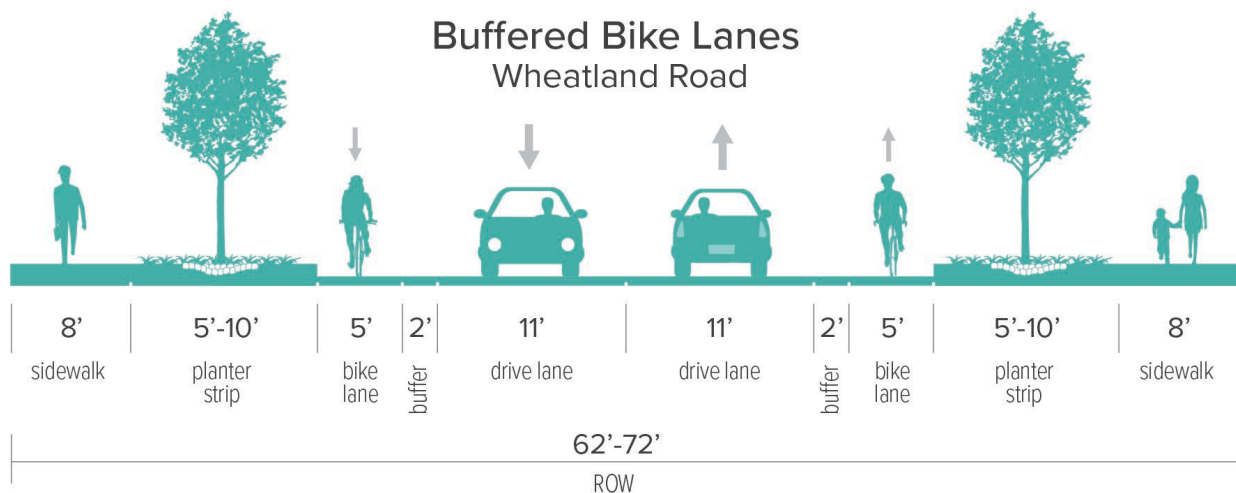
**TABLE 3: TRANSPORTATION SYSTEM PLAN (TSP) ALTERNATIVE CONSIDERATIONS**

CATEGORY	NOTE
<b>SAFETY</b>	<ul style="list-style-type: none"> <li>• Two-way center turn lane provides left-turn pockets at all intersections and driveways</li> <li>• Pedestrian must cross three-lanes of traffic at all locations</li> <li>• Wider curb-to-curb width results in increased speeds</li> <li>• Pedestrians have more separation from traffic through landscape strips</li> <li>• Lack of buffer zone next to bike lane puts bicyclists closer to vehicles</li> </ul>
<b>MOTOR VEHICLE OPERATIONS</b>	<ul style="list-style-type: none"> <li>• Provides a two-stage left-turn for vehicles turning out of side streets and driveways</li> <li>• Left-turning vehicles do not block through traffic on Wheatland Road</li> <li>• Operations meet City Level of Service (LOS) standard</li> </ul>
<b>PEDESTRIAN FACILITIES</b>	<ul style="list-style-type: none"> <li>• Consistent sidewalk presence with landscape buffer</li> <li>• New street lighting along the corridor and key pedestrian and school crossing locations</li> <li>• Opportunity for median refuge islands at school and pedestrian crossings</li> <li>• Sidewalks and curb ramps are ADA compliant</li> </ul>
<b>BICYCLE FACILITIES</b>	<ul style="list-style-type: none"> <li>• On-street bicycle lanes are present</li> <li>• No bicycle buffers or separated facilities are present</li> </ul>
<b>TRANSIT SERVICE</b>	<ul style="list-style-type: none"> <li>• Opportunity for improved bus stops (covered shelters, landings, etc.)</li> <li>• Street lighting</li> </ul>
<b>INFRASTRUCTURE &amp; UTILITIES</b>	<ul style="list-style-type: none"> <li>• Because the curb-to-curb width must be widened beyond the existing curbs, this cross section has a significant impact to existing infrastructure and utilities</li> <li>• Opportunity to construct landscaped medians where turn lanes are not needed</li> </ul>
<b>RIGHT-OF-WAY</b>	<ul style="list-style-type: none"> <li>• The existing right-of-way varies between 60 – 72 feet. A minimum of 72 feet would need to be acquired.</li> <li>• Retaining walls would be needed near the south end of the corridor to provide the width needed for the cross section design</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>• Preliminary cost estimate of \$7 million to \$9 million to construct (highest cost of the three build alternatives)</li> </ul>

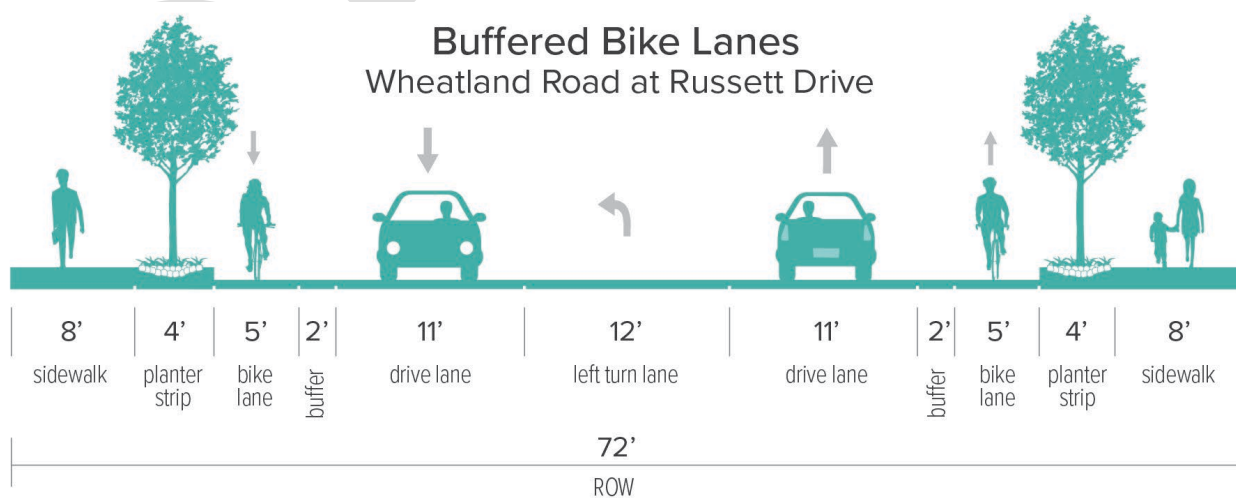


**BUILD ALTERNATIVE #2: BUFFERED BIKE LANES STREET DESIGN**

The Buffered Bike Lane alternative (Build Alternative #2) maintains much of the existing roadway width (curb-to-curb) of Wheatland Road (36 feet) to accommodate 2-foot-wide buffers for the 5-foot-wide bike lanes as shown in Figure 3. This alternative provides wider 8-foot-wide sidewalks along the entire length of the corridor on both sides of the roadway. The planter strip would vary between 5 feet and 10 feet depending on the available right-of-way. Alternative #2 maintains the two travel lanes. As previously discussed, a left-turn pocket at Russett Drive is needed and the cross section with the left-turn lane is shown in Figure 4. The full 72 feet of right-of-way would be required at Russett Drive to accommodate the northbound left-turn pocket. A more detailed aerial view concept drawing of the design alternative can be found in the Appendix.



**FIGURE 3: BUFFERED BIKE LANES CROSS SECTION**



**FIGURE 4: BUFFERED BIKE LANES CROSS SECTION (AT RUSSETT DRIVE)**



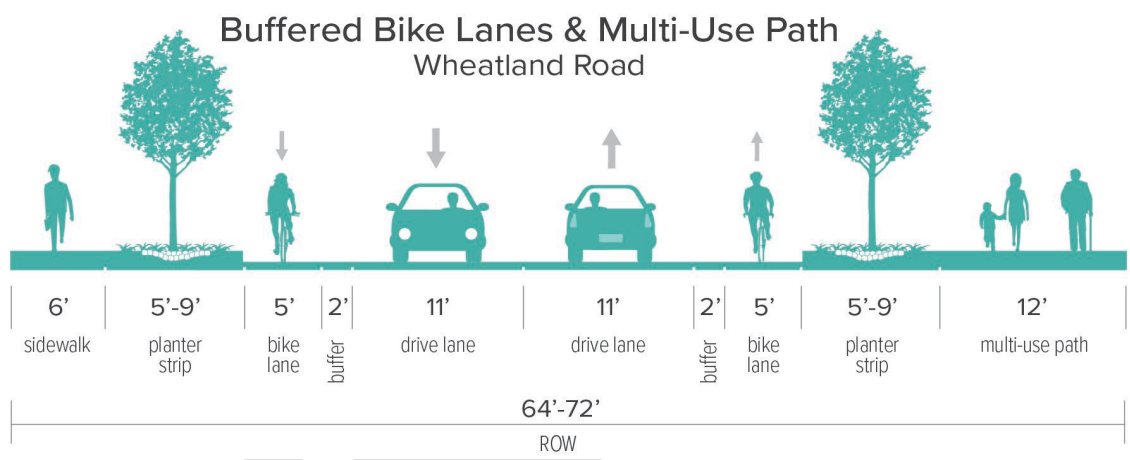
The table below shows a list of considerations for the Buffered Bike Lanes Street Design alternative.

**TABLE 4: BUFFERED BIKE LANES ALTERNATIVE CONSIDERATIONS**

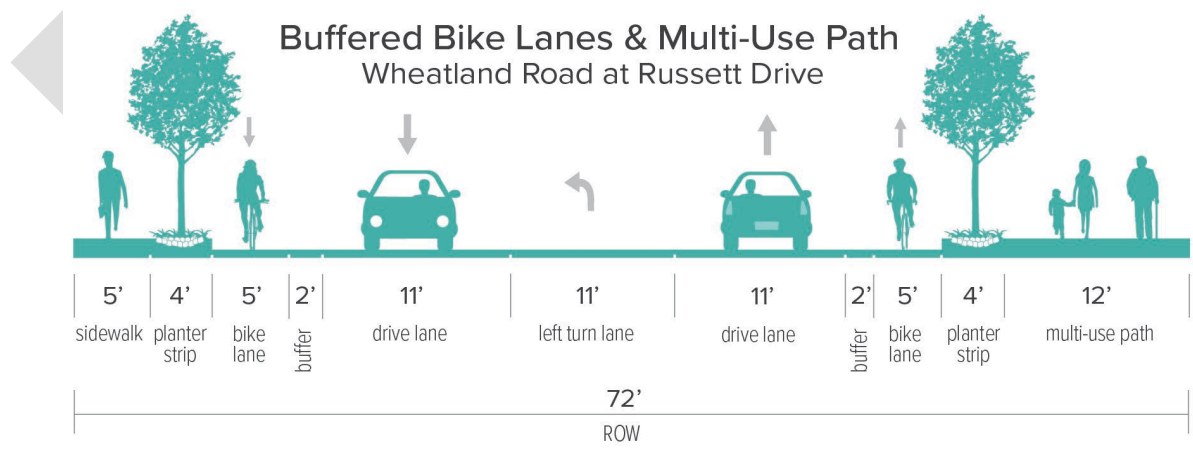
CATEGORY	NOTE
<b>SAFETY</b>	<ul style="list-style-type: none"> <li>Left-turn pocket provided at key intersection (Russett Drive) with crash history and operational/safety needs</li> <li>Pedestrians and bicyclists have more separation from traffic through landscape strips and bike lane buffers</li> </ul>
<b>MOTOR VEHICLE OPERATIONS</b>	<ul style="list-style-type: none"> <li>Maintains the existing two-lane roadway configuration, current travel times, and current travel speeds</li> <li>Left-turning vehicles block travel lanes along the corridor</li> <li>Operations meet City Level of Service (LOS) standard</li> </ul>
<b>PEDESTRIAN FACILITIES</b>	<ul style="list-style-type: none"> <li>Consistent widened sidewalk presence (8' sidewalks compared to 6' in TSP alternative)</li> <li>New street lighting</li> <li>Opportunity for enhanced pedestrian crossings for nearby schools</li> <li>Sidewalks and curb ramps are ADA compliant</li> </ul>
<b>BICYCLE FACILITIES</b>	<ul style="list-style-type: none"> <li>On-street bicycle lanes are present (5 feet wide)</li> <li>Bike lane buffers are present (2 feet wide), providing greater level of comfort for bicyclists</li> </ul>
<b>TRANSIT SERVICE</b>	<ul style="list-style-type: none"> <li>Opportunity for improved bus stops (covered shelters, landings, etc.)</li> <li>Street lighting</li> </ul>
<b>INFRASTRUCTURE &amp; UTILITIES</b>	<ul style="list-style-type: none"> <li>Because the existing curb-to-curb width can be maintained, this cross section has the least impact to existing infrastructure and utilities.</li> <li>Retaining walls are needed near the south end of the corridor to provide the width needed for the cross section design.</li> </ul>
<b>RIGHT-OF-WAY</b>	<ul style="list-style-type: none"> <li>The existing right-of-way varies between 60 – 72 feet. A minimum of 62 feet would be required for this cross section design (72 feet at Russett Drive).</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>Preliminary cost estimate of \$4 million to \$6 million to construct (lowest cost of the three build alternatives)</li> <li>By maintaining the existing curb-to-curb width, savings are realized through less roadway reconstruction</li> </ul>

**BUILD ALTERNATIVE #3: BUFFERED BIKE LANES AND MULTI-USE PATH STREET DESIGN**

The Buffered Bike Lanes and Multi-Use Path alternative (Build Alternative #3) maintains much of the existing roadway width (curb-to-curb) of Wheatland Road (36 feet) and is able to accommodate 2-foot-wide buffers for 5-foot-wide bike lanes as shown in Figure 5. This alternative provides 6-foot-wide sidewalks along the west side of the corridor and a 12-foot multi-use path on the east side of the corridor that can be used for both pedestrians and cyclists that are not comfortable riding adjacent to traffic on Wheatland Road. The multi-use path will result in more adults and younger users feeling comfortable walking and biking along Wheatland Road. The planter strip would vary between 5 feet and 9 feet depending on the available right-of-way. The Multi-Use Path alternative maintains the two travel lanes. A left-turn pocket at Russett Drive is needed and the cross section with the left-turn lane is shown in Figure 6. To accommodate a left-turn pocket and stay within 72 feet of ROW, the sidewalk and planter strip must be reduced by a foot. A more detailed aerial view concept drawing of the design alternative can be found in the Appendix.



**FIGURE 5: MULTI-USE PATH CROSS SECTION**



**FIGURE 6: MULTI-USE PATH CROSS SECTION (AT RUSSETT DRIVE)**

The table below shows a list of considerations for the Buffered Bike Lanes and Multi-Use Path Street Design alternative.

**TABLE 5: BUFFERED BIKE LANES AND MULTI-USE PATH ALTERNATIVE CONSIDERATIONS**

<b>BUFFERED BIKE LANES AND MULTI-USE PATH ALTERNATIVE CONSIDERATIONS</b>	
<b>SAFETY</b>	<ul style="list-style-type: none"> <li>• Left-turn pocket provided at key intersection (Russet Drive) with crash history and operational/safety needs</li> <li>• Pedestrians and bicyclists have more separation from traffic through landscape strips and bike lane buffers</li> </ul>
<b>MOTOR VEHICLE OPERATIONS</b>	<ul style="list-style-type: none"> <li>• Maintains the existing two-lane roadway configuration, current travel times, and current travel speeds</li> <li>• Left-turning vehicles block travel lanes along the corridor</li> <li>• Operations meet City Level of Service (LOS) standard</li> </ul>
<b>PEDESTRIAN FACILITIES</b>	<ul style="list-style-type: none"> <li>• Multi-use path provides consistent, comfortable separated pedestrian facility along entire corridor</li> <li>• New street lighting</li> <li>• Opportunity for enhanced pedestrian crossings for nearby schools</li> <li>• Sidewalks and curb ramps are ADA compliant</li> </ul>
<b>BICYCLE FACILITIES</b>	<ul style="list-style-type: none"> <li>• Multi-use path provides a separated facility that accommodates all ages and abilities</li> <li>• On-street bicycle lanes are present (5 feet wide)</li> <li>• Bike lane buffers are present (2 feet wide), providing greater level of comfort for bicyclists</li> </ul>
<b>TRANSIT SERVICE</b>	<ul style="list-style-type: none"> <li>• Opportunity for improved bus stops (covered shelters, landings, etc.)</li> <li>• New street lighting</li> </ul>
<b>INFRASTRUCTURE &amp; UTILITIES</b>	<ul style="list-style-type: none"> <li>• This cross section has less impact than the TSP Alternative, but slightly more impact than the Buffered Bike Lanes Alternative to existing infrastructure and utilities</li> </ul>
<b>RIGHT-OF-WAY</b>	<ul style="list-style-type: none"> <li>• The existing right-of-way varies between 60 – 72 feet. A minimum of 64 feet would be required for this cross section design (72 feet at Russett Drive).</li> <li>• Retaining walls are needed near the south end of the corridor to provide the width needed for the cross section design</li> </ul>
<b>COST</b>	<ul style="list-style-type: none"> <li>• Preliminary cost estimate of \$5 million to \$7 million to construct (Lower cost than TSP Alternative but higher cost than the Buffered Bike Lane Alternatives)</li> <li>• By maintaining the existing curb-to-curb width, savings are realized through less roadway reconstruction</li> </ul>

## SUMMARY OF ALTERNATIVES

A summary of Alternatives #1, #2, and #3 is provided in the Table 6 below. Various considerations for each alternative are compared with the No Build Alternative (Existing Configuration).

**TABLE 6: ALTERNATIVES SUMMARY**

<b>Alternative</b>	<b>No Build Alternative (Existing)</b>	<b>Build Alternative #1 TSP</b>	<b>Build Alternative #2 Buffered Bike Lanes</b>	<b>Build Alternative #3 Buffered Bike Lanes &amp; Multi-Use Path</b>
<b>MEDIAN / CENTER TURN LANE</b>	None	12 feet center two-way center turn lane for entire corridor	Left-turn pocket provided at key intersection (Russet Drive)	Left-turn pocket provided at key intersection (Russet Drive)
<b>BIKE FACILITIES</b>	Bike Lanes	Bike Lanes	Buffered Bike Lanes	Buffered Bike Lanes and Multi-Use Path
<b>PEDESTRIAN FACILITIES</b>	Intermittent Sidewalks with frequent gaps	Consistent 6' Sidewalk	Consistent 8' Sidewalk	6' Sidewalk on west side and Multi-Use Path on east side
<b>VEHICLE LOS<sup>A</sup> AND DELAY</b>	Meets City Standard	Meets City Standard	Meets City Standard	Meets City Standard
<b>TRAVEL SPEEDS</b>	43 mph – 45 mph (85th percentile)	Increased or similar travel speeds due to wider paved cross section	Speeds likely to be lower than No Build Alternative with narrowed lanes and street trees	Speeds likely to be lower than No Build Alternative with narrowed lanes and street trees
<b>INFRASTRUCTURE &amp; UTILITIES</b>	No change	Has the largest impact	Has the smallest impact	Slightly less impact than the Alt #1, but more impact than Alt #2
<b>RIGHT-OF-WAY</b>	No ROW acquisition	Requires the most ROW acquisition (72')	Requires the least ROW acquisition (62' with 72' needed at Russett Drive)	Requires more ROW acquisition than Alt #2 and less than Alt #1 (64' with 72' needed at Russett Drive)
<b>PRELIMINARY COST</b>	-	\$7 - \$9 million	\$4 - \$6 million	\$5 - \$7 million

<sup>A</sup> LOS = LEVEL OF SERVICE

## PRACTICAL DESIGN CONSIDERATIONS

In the previous section, multiple cross section concepts were identified for the Wheatland Road corridor. However, as the project progresses from concept design into detailed design, some portions of the corridor will need to slightly deviate from the cross section designs shown in this report to save critical natural resources (mature oak trees, and other substantial trees); to minimize impacts to existing properties; and to reduce the cost for structures, such as retaining walls. The section contains some practical design considerations that can be implemented to reduce costs and preserve existing infrastructure and natural resources as the conceptual design progresses.

The table below shows some practical design considerations for the Wheatland Road corridor.

**TABLE 7: PRACTICAL DESIGN CONSIDERATIONS**

CONDITIONS	DESIGN CONSIDERATIONS
MATURE OAK TREES; OTHER TREES	<ul style="list-style-type: none"> <li>Construct meandering sidewalk to preserve existing trees</li> </ul>
NEED FOR RETAINING WALLS	<ul style="list-style-type: none"> <li>Eliminate or reduce landscape strip</li> <li>Eliminate bicycle buffer</li> <li>Shift center line of street</li> </ul>
ROW ACQUISITION	<ul style="list-style-type: none"> <li>Eliminate landscape strip</li> <li>Eliminate bicycle buffer</li> </ul>



**FIGURE 7: CONCEPT OF PRACTICAL DESIGN ON WHEATLAND**

## ENHANCED PEDESTRIAN CROSSING TREATMENTS

Enhanced pedestrian crossing treatments can be implemented with the selection of any of the concept design alternatives. Below are a few examples of enhanced pedestrian crossing treatments that can be considered at key locations along the corridor:

### **Treatments**

- Median refuge island
- Raised crosswalks
- Enhanced signing and pavement markings
- Rectangular Rapid Flashing Beacons (RRFBs) at pedestrian crosswalks

### **Key Locations (See Figure 7)**

- Clear Lake Road (School Crossing)
- Parkmeadow Drive (School Crossing)
- Russett Drive
- McNary Heights Drive/Foothill Court



**FIGURE 8: RAISED CROSSING CONCEPT**



**FIGURE 9: RRFB CONCEPT**



# Pedestrian Crossing Improvements —

Conceptual Scale



Wheatland Rd. @ Clear Lake Rd. (School Crossing)



Wheatland Rd. @ Parkmeadow Dr. (School Crossing)



Wheatland Rd. @ Russett Dr.



Wheatland Rd. @ Foothill Ct./McNary Heights Dr.

 Sidewalk Infill
  Public Transit Bus Stop
  School Bus Stop

**FIGURE 10: POSSIBLE PEDESTRIAN ENHANCEMENT LOCATIONS**

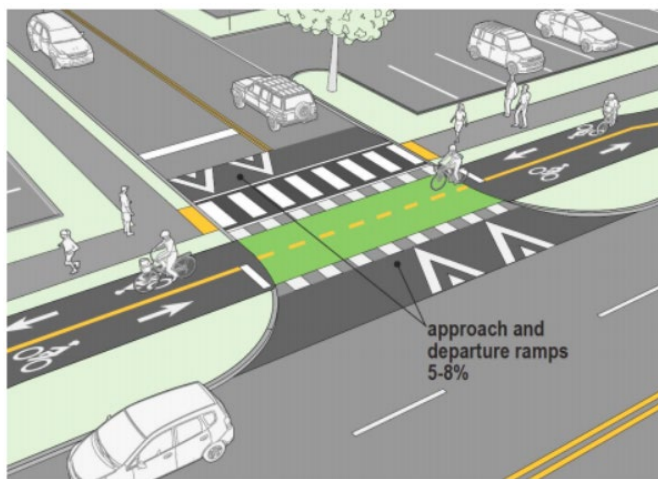


## MULTI-USE PATH INTERSECTION CROSSINGS

For the Multi-Use path, it is important that the path crossings at minor streets are more visible and safer than a standard intersection crossing because many of the users will be children or the elderly. There are two options for minor street crossings that can help improve visibility and safety of pedestrians and bicyclists using the Multi-Use Path.

- Raised crossing through minor street intersection (Figure 11)
- Street-level crossing with marked crosswalks (Figure 12)

Both options included a marked crosswalk to improve visibility and would place the stop bar for vehicles before the marked crosswalk. The raised crossing option also includes raising the crosswalk above the street-level to help bring more attention to the pedestrian and bicyclists crossing the street.



**FIGURE 11: EXAMPLE OF RAISED CROSSING THROUGH MINOR STREET INTERSECTION**



**FIGURE 12: EXAMPLE OF STREET-LEVEL CROSSING WITH MARKED CROSSWALK**

## TRANSIT TREATMENTS

Transit bus stop treatments can be implemented with the selection of any of the concept design alternatives. The project team is coordinating with Cherriots by presenting possible future treatment options. Below are a few examples of transit treatments that are being considered:

- Bus Stop Shelters
- Bus Stop "Concrete Bridge" (constructed over landscape strips or bioswales to provide ADA compliant boarding/deboarding)



**FIGURE 13: CHERRIOTS BUS STOP SHELTER**



**FIGURE 14: CHERRIOTS BUS STOP "CONCRETE BRIDGE" EXAMPLE OF PRATICAL DESIGN ON PARKMEADOW**

Currently, Cherriots Route 9 travels in the southbound only direction on Wheatland Road. If two-way service were ever provided, bus stops on the east side of the street would also need to be provided. This should be considered during the detailed design phase of the corridor project.

Cherriots will be conducting a needs assessment this this year to determine any deficiencies and needs in the Cherriots public transit system for potential implementation in 2022. Route 9 will be analyzed during this process and there may be improvements identified and implemented depending on public feedback received.

## STREET LIGHTING

Street lighting provides increased pedestrian and bicycle visibility during the night and the dawn/dusk periods of the day by providing contrast between the pedestrian and their surroundings.

The existing lighting along this corridor is limited, especially near school bus stops and crossings. Adequate street lighting will be implemented with the selection of any of the concept design alternatives. Improvements along the Wheatland Road Corridor could include new streetlight poles as well as supplemental lighting on utility poles.

## ACCESS MANAGEMENT

Along the Wheatland Road study corridor, there are a total of 62 private driveways, with a higher density near the north end of the corridor. Most of these driveways do not have alternative access to other public streets, and Wheatland Road provides the only access to the property.

Managing access points/private driveways along a minor arterial requires finding an appropriate balance between safety, mobility, and land access. As vacant lands adjacent to Wheatland Road are developed, it is recommended that existing private driveways are removed, relocated, consolidated, or aligned with existing driveways and public streets to improve safety, eliminate conflict points with pedestrian and bikes, and improve mobility. It is also recommended that access spacing be considered as well. Per the City's Development Code<sup>9</sup>, accesses on arterial streets (public streets or driveways) shall be spaced no closer than 185-feet based on a posted speed of 40 mph.

## TIER 1 SCREENING

The following section provides Tier 1 screening evaluation of the three design alternatives for Wheatland Road. The alternatives were scored using the Evaluation Criteria established in the Evaluation Criteria Memorandum.<sup>10</sup> Evaluation criteria were established to assess the potential of alternatives to best meet the transportation needs and community goals for the Wheatland Road Corridor Study. The evaluation criteria are listed below.

- Neighborhood Livability
- Environmental
- Utilization of Existing Infrastructure
- Traffic Operations
- Safe Routes to School
- Safety
- Transportation Mode Choices/ Multimodal Connectivity
- Equity
- Convenient and Accessible Transit
- Cost Effective

The criteria were scored over a range of -2 to +2 as compared to the No Build (Existing Configuration) alternative. A score of 0 implies the alternative has no change from the existing, a negative score implies the alternative has worse conditions than existing, and a positive score implies the alternative has improved conditions than existing. The scoring weighs each criterion equally. Tier 1 screening is only intended to be a tool that helps guide the decision process; it does not select the preferred alternative based on the City's and Community's goals. The summary matrix that documents the results of the evaluation process can be found in the Appendix.

---

<sup>9</sup> Page 320, Development Code, City of Keizer, Updated May 2020.

<sup>10</sup> Evaluation Criteria – Memorandum #2, Wheatland Road Corridor Plan, DKS Associates, December 2020.

<b><u>ALTERNATIVE #1</u></b> <b>TSP Street Design</b>  <b>1.25</b>	<b><u>ALTERNATIVE #2</u></b> <b>Buffered Bike Lanes</b>  <b>1.65</b>	<b><u>ALTERNATIVE #3</u></b> <b>Buffered Bike Lanes &amp; Multi-Use Path</b>  <b>1.75</b>
---	---	--

Alternative #1 scored an average of 1.25, Alternative #2 scored an average of 1.65, and Alternative #3 scored an average of 1.75. All three alternatives are shown to be an overall improvement from existing conditions. Alternatives #2 and #3 received relatively similar scores, indicating the need for the Keizer community to weigh in on their preference of design options.

The difference in scores between Alternative #1 and Alternatives #2 and #3 can be attributed to two basic differences amongst the designs. First, Alternatives #2 and #3 provide increasingly safer multimodal facilities. The buffered bike lanes and multi-use path are safe options for students going to/from school, bicyclists of all ages and abilities, and the general public, while also giving flexibility in transportation mode choice and accommodating all users and abilities. Secondly, Alternatives #2 and #3 have similar pavement cross section widths as the existing condition, meaning that road reconstruction would be less invasive than Alternative #1. More of the existing infrastructure could be utilized for Alternatives #2 and #3, also decreasing the total project cost.