



# CTUIR TSP

## DRAFT TECHNICAL MEMORANDUM #5: REVISED CONCEPT DESIGN

**Date:** November 23, 2022

Project #: 23021.046

**To:** Dani Schulte, CTUIR  
Cheryl-Jarvis Smith, ODOT Region 5

**From:** Molly McCormick, Nick Foster AICP, RSP<sup>1</sup>, and Matt Hughart, AICP, *Kittelson & Associates, Inc.*  
Colin Roberts, *SERA*, Andy Lindsey, *Anderson-Perry & Associates, Inc.*

**Project:** Confederated Tribes of the Umatilla Indian Reservation Transportation System Plan Update

**Subject:** Tech Memo #5: Revised Concept Design

## TABLE OF CONTENTS

Table of Contents .....	1
Introduction .....	1
Project Goals, Objectives, and Evaluation Criteria.....	2
Proposed Transportation Policies.....	2
Roadway System.....	2
Pedestrian System – Walking and Rolling .....	24
Bicycle System .....	31
Transit System.....	34
Rail System.....	37
Pipeline System.....	37
Modification of Previous Planning Documents .....	38

## INTRODUCTION

This memorandum updates *Technical Memorandum #4: Preliminary Concept Design*, incorporating feedback from Technical Advisory Committee (TAC) members and the general public. It summarizes and evaluates projects that address identified deficiencies and needs within the Umatilla Indian Reservation (UIR). The information provided in this memorandum will serve as the foundation for projects for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Transportation System Plan (TSP) update. By developing projects that promote connectivity, safety, and comfort for all people using the transportation system, CTUIR can support equitable access, active transportation, increased connectivity, and reduced environmental and climate impacts.

In addition to transportation projects, this memorandum also includes revised roadway cross-section standards and detailed concept design graphics for two areas within the UIR.



## PROJECT GOALS, OBJECTIVES, AND EVALUATION CRITERIA

---

Project goals, objectives, and evaluation criteria were developed early in the planning process to guide the development of the TSP update. They reflect the vision of celebrating community history and emphasize the desire to increase options for people walking and biking. The project goals and objectives were used to develop projects, while the evaluation criteria were used to complete a preliminary prioritization.

The goals of the TSP update are documented in *Technical Memorandum #3: Vision Statement and Guiding Principles* and summarized below.

- **Goal 1: Safety** – Provide a safe multimodal transportation system for all members of the Umatilla Indian Reservation community.
- **Goal 2: Environment and Cultural Heritage** – Preserve existing cultural connections and the rural landscape.
- **Goal 3: Health** – Develop a transportation system that supports active transportation and encourages healthy and active choices for the Umatilla Indian Reservation community.
- **Goal 4: Equity and Accessibility** – Provide a multimodal transportation system that is accessible to all members of the Umatilla Indian Reservation community.
- **Goal 5: Connectivity** – Provide a multimodal transportation system that increases connections to the key hubs within the reservation and works to overcome existing barriers to regional connectivity.
- **Goal 6: Coordination** – Develop a transportation system that works together with Federal, State, regional, and local partners.
- **Goal 7: Financial Stability** – Develop attainable funding solutions for transportation system improvements.

The projects were evaluated based on the project evaluation criteria to identify preliminary priorities. The projects were identified as high, medium, and low priority based on how well they meet the evaluation criteria and by extension, the goals of the TSP update. *Attachment A includes the evaluation criteria and indicates how the evaluation criteria were used to evaluate and prioritize the projects.*

## PROPOSED TRANSPORTATION POLICIES

---

Through review of previous planning efforts and CTUIR staff input, this memorandum identifies policies to be considered for the transportation system in within the UIR:

- Institute policies that encourage right-sizing, and adopting appropriate technology for, fleet vehicles and equipment, and encourage the adoption of alternative fuel vehicles through policy, infrastructure, etc.
- Adopt the cross-sectional standards provided in this memorandum into necessary code and guidelines.

## ROADWAY SYSTEM

---

Streets serve most trips within the UIR across all travel modes. This section identifies alternatives to address gaps and deficiencies in the street system as well as alternatives that will facilitate improvements to the pedestrian, bicycle, and public transit systems.

The projects developed for the roadway system include realignments, repaving and updates to existing roadways, traffic calming, intersection reconfiguration, and more. Table 1 describes the projects for the roadway system. The priority levels shown in Table 1 are based on the project evaluation criteria as well as input from the project team. Prioritization has been updated based on input from the advisory committees and the community. Figure 1 illustrates the location of the projects. *Attachment B includes assumptions used to develop the planning-level cost estimates shown in Table 1. Attachment C includes summary sheets for each of the high priority projects.*

Table 1: Roadway System Projects

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Cost
R01	Kash Kash Road	Kusi Road to east of OR 331	Close existing access to OR 331 and reroute Kash Kash Road north to a new intersection with Kusi Road.	County	Medium	\$1,900,000
R02	Spilya Road	Eastern end of roadway to Kash Kash Road realignment	Extend Spilya Road east to Kash Kash Road realignment.	CTUIR	Low	\$385,000
R03	Emigrant Road	Cayuse Road to Poverty Flat Road	Widen, add shoulders, and repave Emigrant Road (County Road #937) from Cayuse Road to Poverty Flat Road.	County	Medium	\$21,800,000
R04	56th Street-Theater Road	Mission Road to US 30	Widen, add shoulders, and pave/repave 56th Street-Theater Road to help support rerouting of trucks and other regional/state traffic during I-84 closures.	County/BIA	Low	\$3,900,000
R05	North Cayuse Road	River Road to Mann Road	Widen, add shoulders, and pave North Cayuse Road (County Road #925) from River Road north to Mann Road.	County	Low	\$2,400,000
R06	Mann Road	Crawford Hollow Road to North Cayuse Road	Widen, add shoulders, and pave Mann Road (County Road #925) from Crawford Hollow Road south to North Cayuse Road.	County	Medium	\$7,000,000
R07	Motanic Road	Best Road to Spring Creek Road	Widen, add shoulders, and pave Motanic Road (County Road #1031) from Best Road south to Spring Creek Road.	County	Medium	\$10,000,000
R08	Sumac Road	Spring Creek Road to McKay Creek Road	Widen, add shoulders, and pave Sumac Road (County Road #1050) from Spring Creek Road south to McKay Creek Road.	County	Low	\$6,000,000
R09	McKay Creek Road	Sumac Road to North Fork McKay Creek Road	Widen, add shoulders, and add gravel along McKay Creek Road (County Road #1050) from Sumac Road east to North Fork McKay Creek Road.	County	Medium	\$4,700,000
R10	Exit 2016 Truck Overflow Parking	South of I-84 Exit 216	Parking lot for overflow truck parking from I-84 winter closures. Could include a shuttle service from parking lot to Arrowhead during events.	ODOT	High	\$3,200,000

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Cost
R11	OR 331 Speed Study	UIR northern boundary to I-84	Perform a speed study along the OR 331 corridor and determine whether to modify any speed zones.	ODOT	High	\$20,000
R12	Mission Road Traffic Calming	From Mustanger Lane to Parr Lane	Install speed feedback signage and other traffic calming measures.	CTUIR/ County	High	\$30,000
R13	County Road #900 (Cayuse Road and Bingham Road)	Emigrant Road to UIR eastern boundary	Perform a speed study at key intersections on the County Road #900 corridor to determine potential traffic calming or intersection safety treatments.	County	Medium	\$20,000
R14	Kirkpatrick Road, vertical curve east of McKinley Lane	Intersection extents	Evaluate sight distance and install advisory signage if warranted.	County	Low	\$25,000
R15	Cayuse Road/ Cayuse River Road intersection	Intersection extents	Reconstruct northern leg to connect at a more perpendicular angle.	County	Low	\$1,200,000
R16	River Road/White Road intersection	Intersection extents	Reconstruct southern leg to connect at a more perpendicular angle.	County	Low	\$1,200,000
R17	Confederated Way	B Street to Cayuse Road	Construct flood remediation projects on Confederated Way from B Street to Cayuse Road. Mitigations may include building a levy, raising the roadway, creating water retention areas, and rerouting the roadway.	BIA	High	To be determined by ongoing study
R18	OR 331/ Mission Road	Intersection extents	Construct a single lane roundabout. Realign the northbound and southbound approaches to avoid impacts to the Mission Market.  OR Install a traffic signal when warranted. Construct separate left-turn lanes on all four intersection approaches. Construct a separate right turn lane on the northbound approach.	ODOT/ County/ CTUIR	Development-Driven	

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Cost
			Depending on the reconfiguration of the intersection, consider incorporating bus pull-outs into the project design.			
<b>R19</b>	Mission Road/Timíne Way	Intersection extents	Construct a single lane roundabout. OR Install a traffic signal when warranted.	ODOT/ CTUIR	Development-Driven	
<b>R20</b>	OR 331/ Wildhorse Boulevard	Intersection extents	Construct a single lane roundabout. OR Install a traffic signal when warranted.	ODOT/ CTUIR	Development-Driven	
<b>R21</b>	OR 331/ Spilya Road	Intersection extents	Construct a single lane roundabout. Modify access to right-in, right-out only at Kusi Road and Arrowhead Travel Plaza driveway. OR Install a traffic signal when warranted. Modify access to right-in, right-out only at Arrowhead Travel Plaza driveway.  Depending on the reconfiguration of the intersection, consider incorporating bus pull-outs into the project design.	ODOT/ CTUIR	Development-Driven	
<b>R22</b>	OR 331/I-84 Eastbound Ramps	Intersection extents	Construct a single lane roundabout. OR Install a traffic signal when warranted. Construct exclusive left- and right-turn lanes on the off-ramp approach.  This project may be completed in conjunction with future replacement of the Exit 216 I-84 overpass.	ODOT	Development-Driven	
<b>R23</b>	OR 331/I-84 Westbound Ramps	Intersection extents	Install a traffic signal when warranted. Construct exclusive left- and right-turn lanes on the	ODOT	Development-Driven	

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Cost
			off-ramp approach and an exclusive right-turn lane on the north approach.  This project may be completed in conjunction with future replacement of the Exit 216 I-84 overpass.			
Total High Priority Cost						\$3,250,000
Total Medium Priority Cost						\$45,420,000
Total Low Priority Cost						\$15,110,000
Total Cost						\$63,780,000

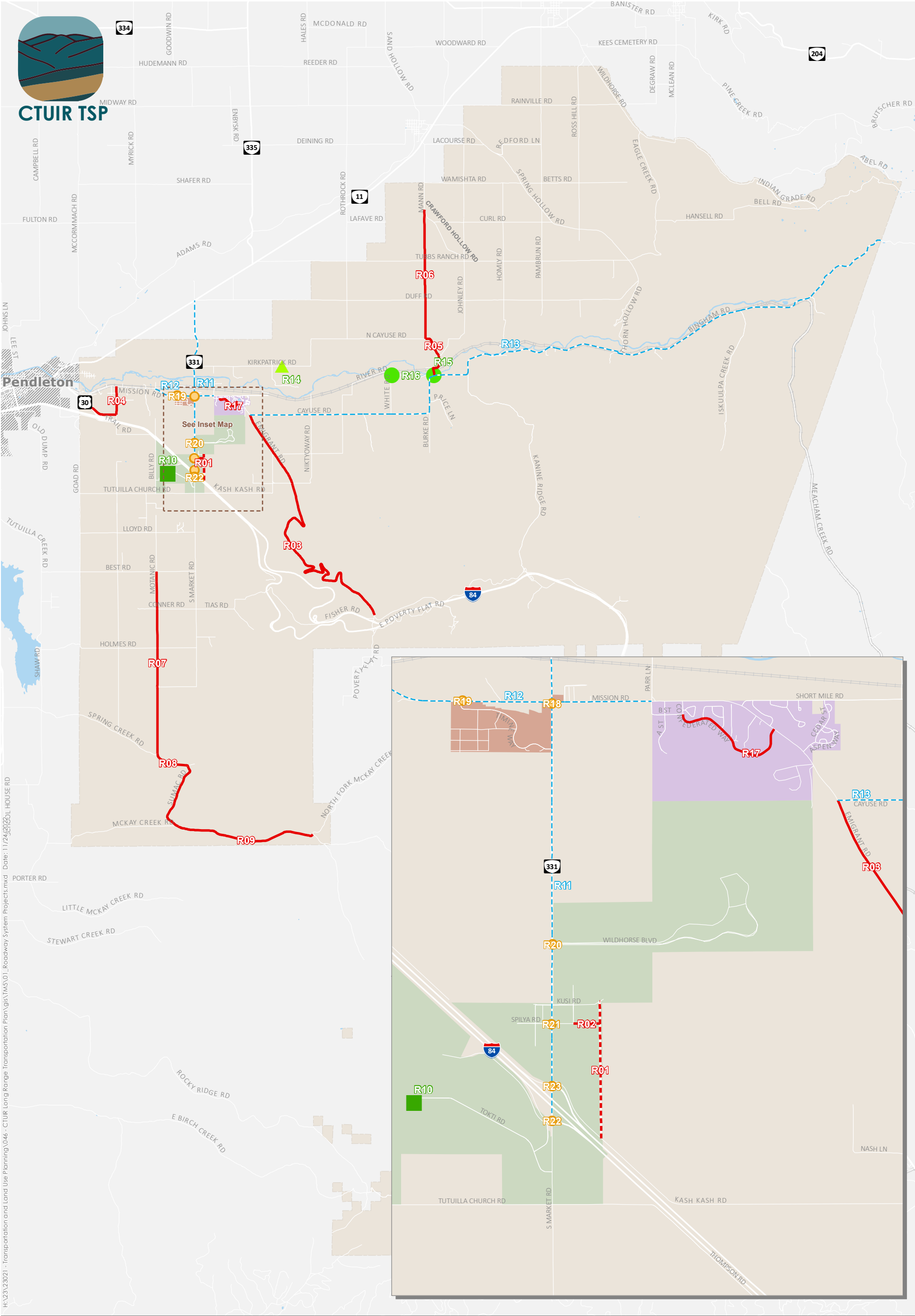


Figure 1

## Roadway System Projects Umatilla Indian Reservation



## Development Driven Capacity and Intersection Projects on OR 331

Although the operations analysis presented in *Technical Memorandum #2: Context and Site Analysis* did not highlight intersection capacity deficiencies based on generalized growth projections, previous planning efforts have identified potential intersection and roadway projects that may be needed to accommodate localized development or expansions of existing businesses and destinations.

These growth opportunities, such as expansion of the Coyote Business Park, further expansion of the Wildhorse Resort and Casino, and expansion of Arrowhead Travel Plaza, are not imminent, but could have local and regional impacts to the transportation system. If and when projects like this were to occur, the potential impacts and mitigation measures would have to be determined based on detailed traffic studies for the specific development scenario. Intersection solutions that have been identified through previous planning studies and preliminary traffic impact studies are included in Table 1. The identified solutions have historically included constructing roundabouts or installing traffic signals. Cost and benefit considerations for these two intersection control types are discussed below:

### ■ Construct a roundabout

- *Cost considerations:* Potentially higher construction cost and lower long-term maintenance cost.
- *Benefit considerations:* Improved safety, including reducing the potential for fatal and serious injury crashes and lowering speeds near the intersection. Adds capacity and reduces delay.

### ■ Install a traffic signal

- *Cost considerations:* Potentially lower construction cost (depending on turn lane impacts) and higher long-term maintenance cost.
- *Benefit considerations:* Adds capacity and reduces delay. May also reduce crash potential, but not to the same extent as a roundabout.

Due to the potential for development-related growth to influence traffic conditions along OR 331 from Mission Road to the I-84 interchange, it is recommended that CTUIR and ODOT require traffic impact studies for all new development projects requiring access along the corridor and that are expected to generate more than 500 daily trips.

## Roadway Programs and Plans

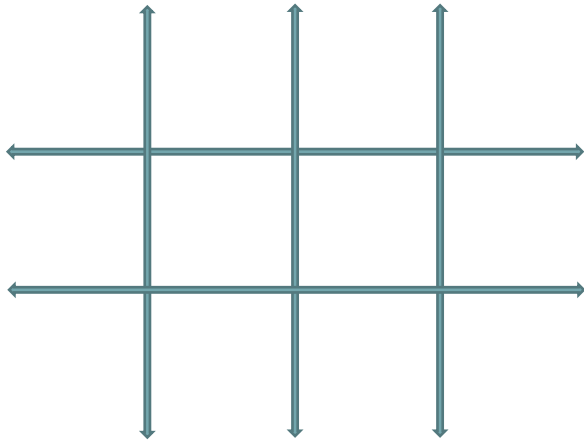
In addition to identifying potential projects, the project team also identified potential roadway-related policy and programmatic direction to support the transportation system based on input from CTUIR staff. Through the TSP update process, the following items were identified for incorporation into CTUIR programs and plans:

- Maintenance program for intersections in the northern UIR where crops limit sight distance during certain times of the year
  - Work with property owners adjacent to roads with limited sight distance to establish formal sight triangle boundaries. One example is Duff Road at Mann Road.
  - Where sight triangles cannot be established, add warning signage.
- Maintenance programs for striping
  - Complete annual striping projects to update worn striping and to add/restripe fog lines on collectors and arterials.
- Coordinate with the County and ODOT on how to address truck parking and routing when I-84 is closed.
- Coordinate with ODOT and Umatilla County on regional connecting roadways.
- Create walkable neighborhoods. Monitor the need for traffic calming measures in neighborhoods and near pedestrian and bicycle activity centers, such as the school, Mission Senior Center, July Grounds residential area, and Nixyáawii Governance Center. Potential mitigations include raised crosswalks, “Children at Play” signage, 20 MPH speed limits, and additional marked crossings.
- Update and maintain CTUIR’s parking policy based on current national guidance and local trends.



- Maintain the Tribal Transportation Program (TTP) National Tribal Transportation Facility Inventory (NTTFI) and update with routes that CTUIR may wish to include as projects move forward. Coordinate with the BIA as needed. *Attachment D includes the existing NTTFI as of September 2022.*
- As new development occurs, create a local street network that provides a high level of connectivity, pedestrian and bicycle facilities, and multiple alternative routes.

**Figure 2: Street Grid Template**



### Access Management

As noted in the 2001 CTUIR TSP, CTUIR supports the access spacing standards for County roads within the UIR. CTUIR also elects to apply these standards to the roads maintained and/or owned by CTUIR or BIA. To handle any discrepancies between functional classifications, the County standards for major and minor collectors should apply to all CTUIR rural and urban collectors. The County standards for local roads should apply to all CTUIR rural and urban local roads.

The OR 331 Access Management Plan was referenced in developing the roadway projects described in Table 1 and Figure 1. Once adopted, the standards in the updated CTUIR TSP will supersede this document.

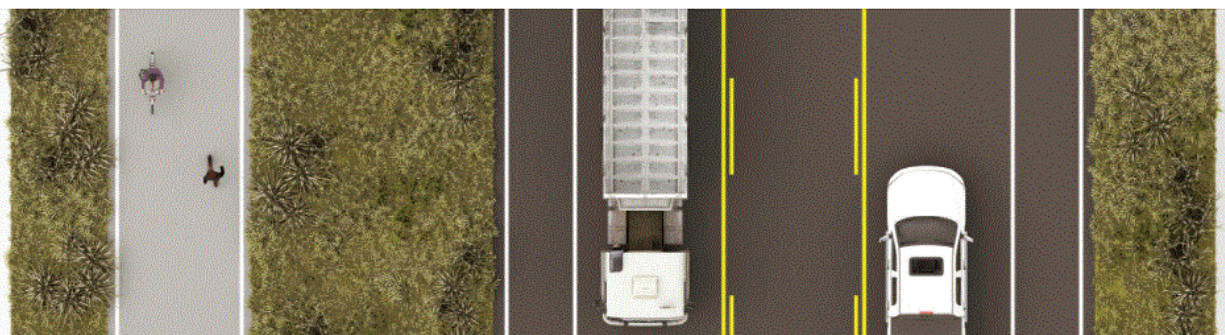
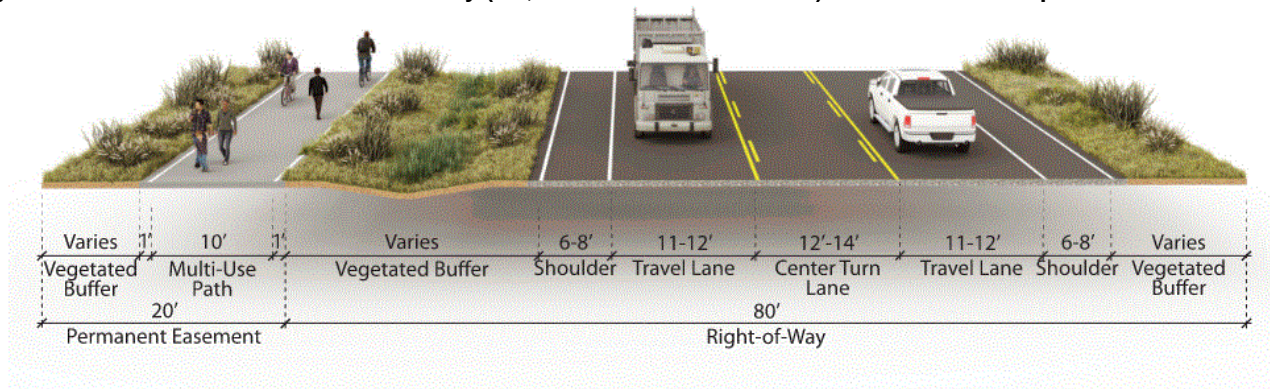
### Roadway Cross-sections and Design Standards

The 2001 CTUIR TSP does not include roadway cross-sections or standards within the UIR. Figures 3 to 15 provide proposed cross-sections for inclusion in the TSP update. Figures 16 to 19 provide proposed roadway design standards for inclusion in the TSP update.

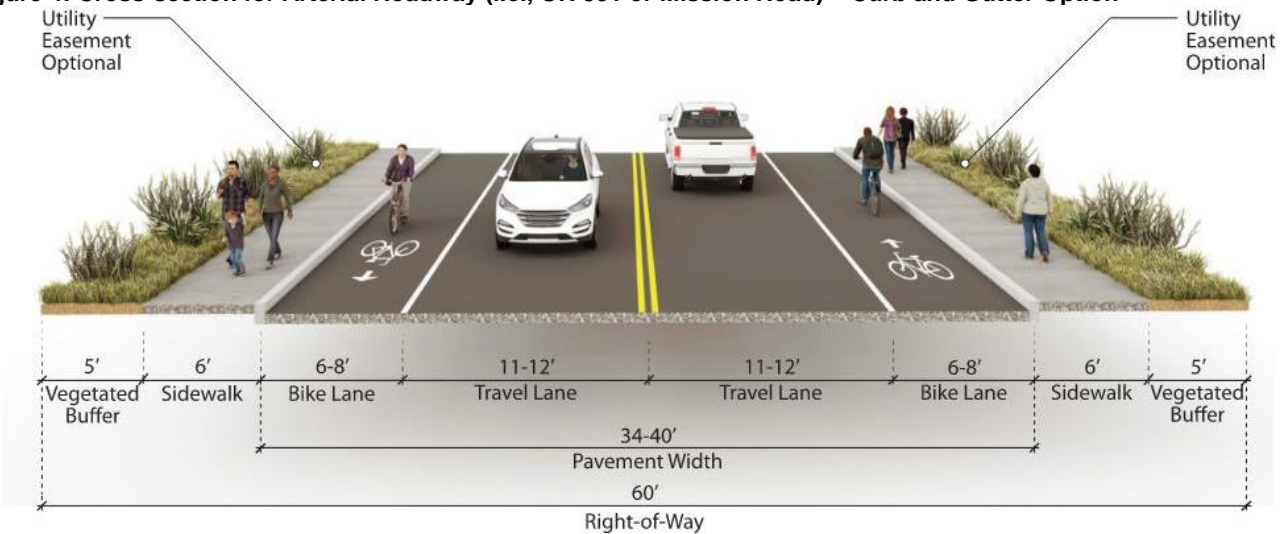
### OR 331 Detailed Concept Design Graphic

The project team created a detailed concept design graphic for OR 331 from Wildhorse Boulevard to the I-84 interchange shown in Figure 20. This graphic incorporates the projects identified throughout this memorandum, including projects that were originally identified in the 2006 OR 331 Access Management Implementation Strategy and Circulation Plan. The project team and CTUIR staff selected this location for one of the two detailed concept design graphics because it is important for the economy and cultural heritage of CTUIR. Many of the area's key destinations for both residents and visitors are located along this corridor, creating conflicts between modes and safety concerns.

**Figure 3: Cross-section for Arterial Roadway (i.e., OR 331 or Mission Road) – Multi-use Path Option**

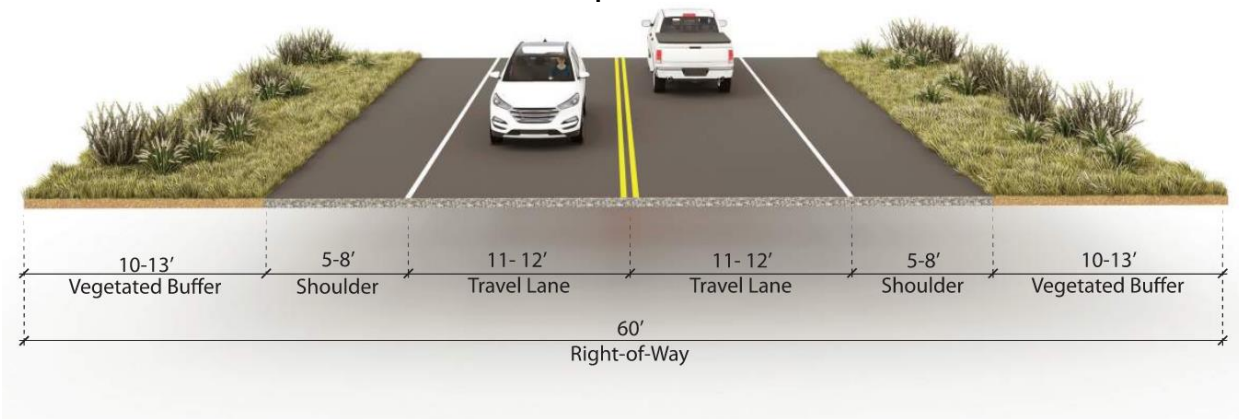


**Figure 4: Cross-section for Arterial Roadway (i.e., OR 331 or Mission Road) – Curb and Gutter Option**

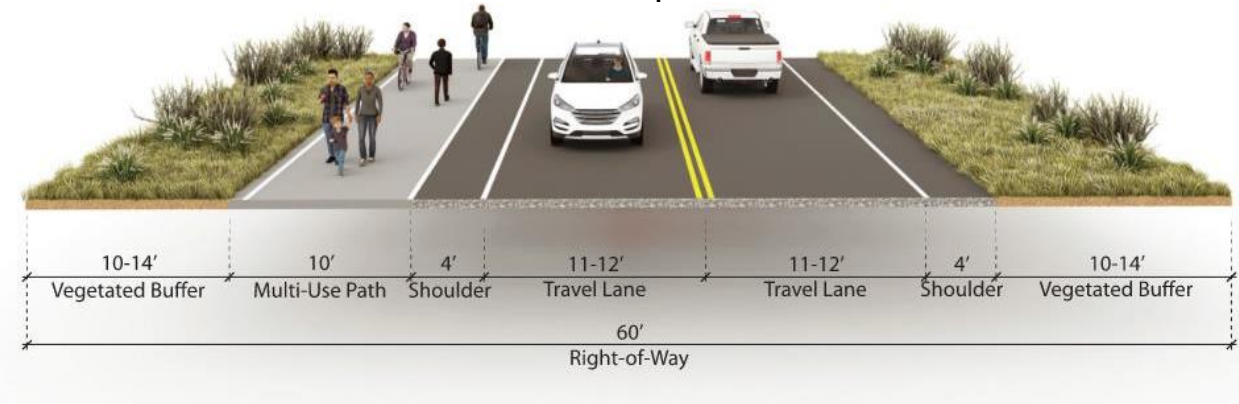




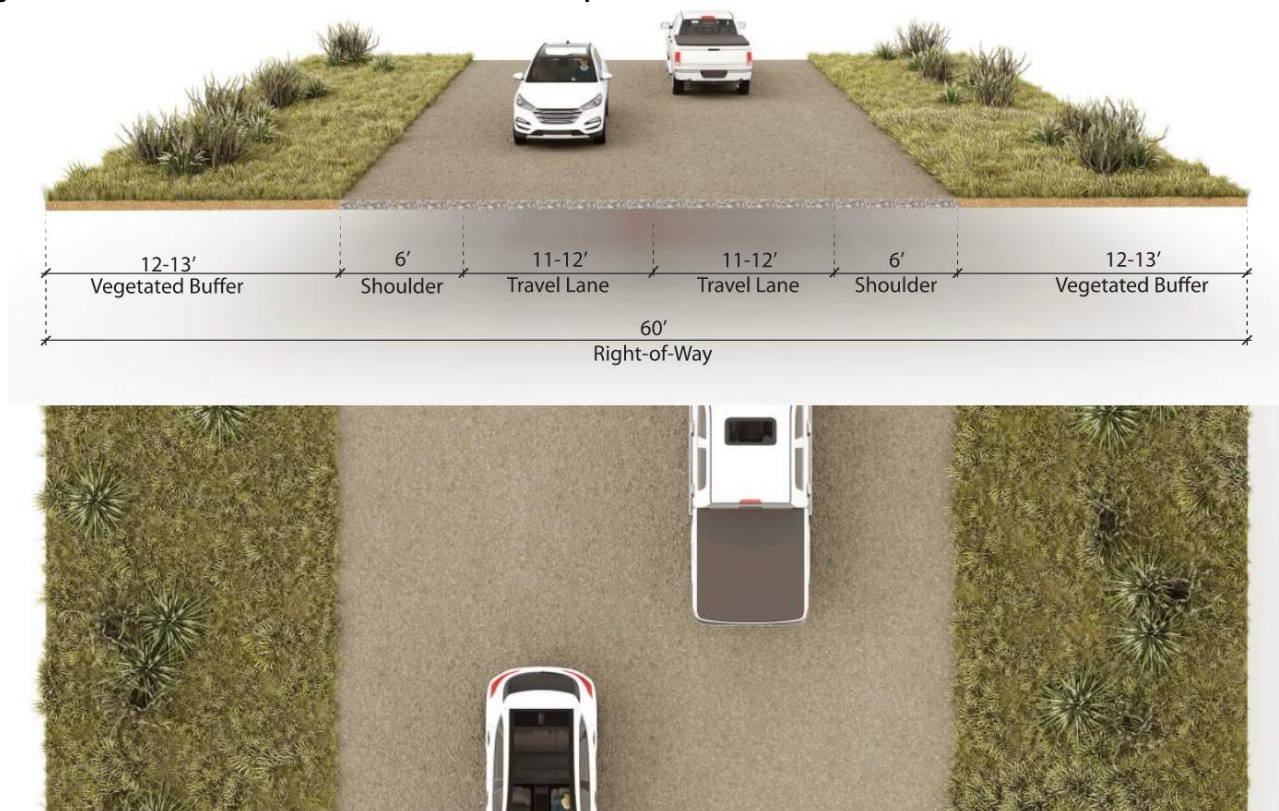
**Figure 5: Cross-section for Rural Collector – Shoulder Option**



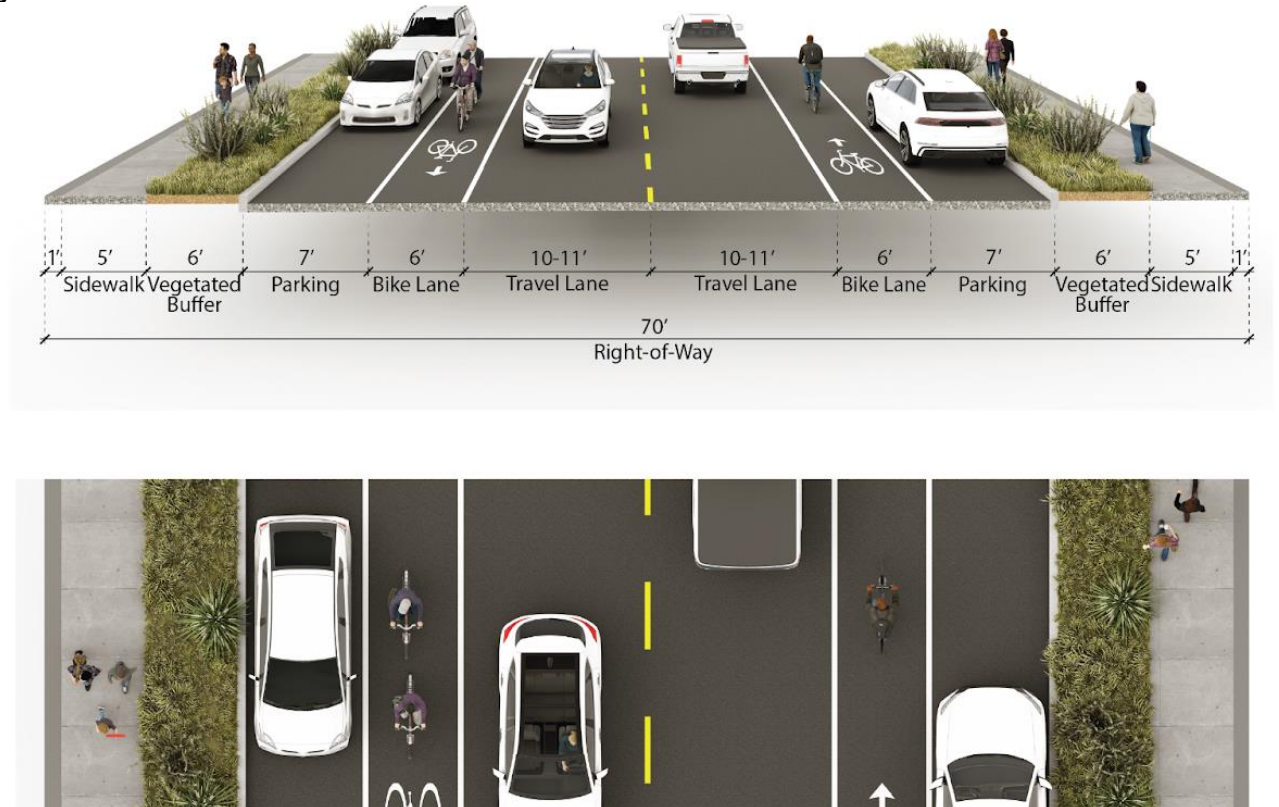
**Figure 6: Cross-section for Rural Collector – Multi-use Path Option**



**Figure 7: Cross-section for Rural Collector – Gravel Option**

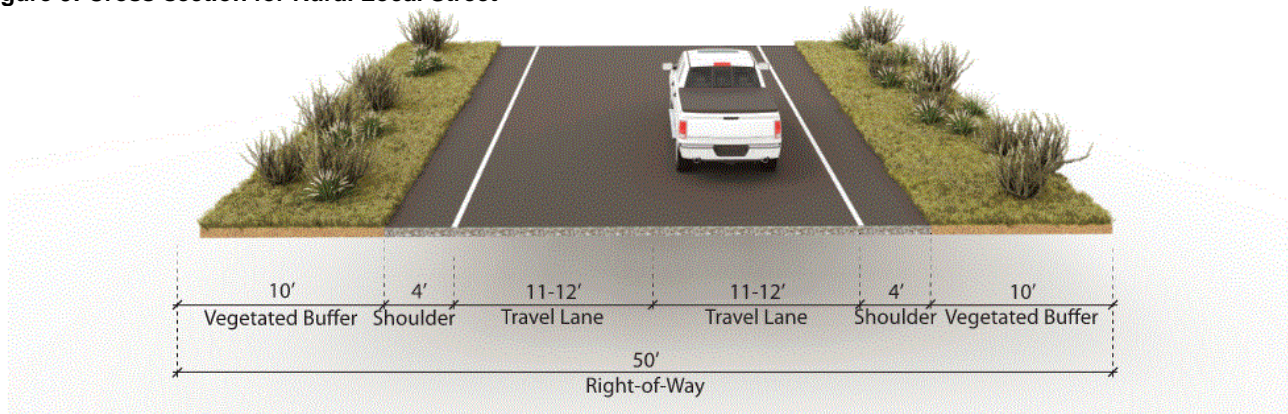


**Figure 8: Cross-section for Urban Collector**

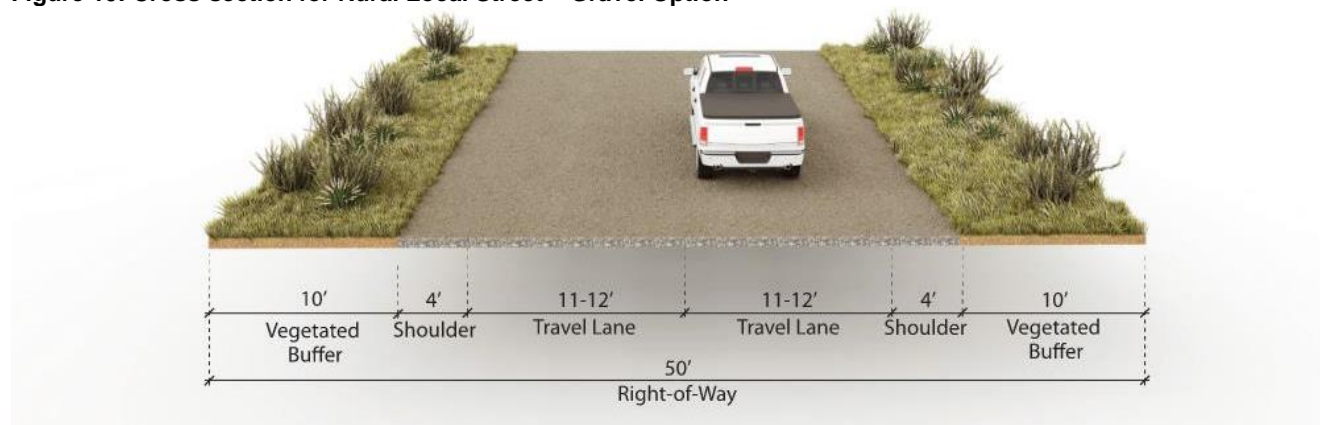




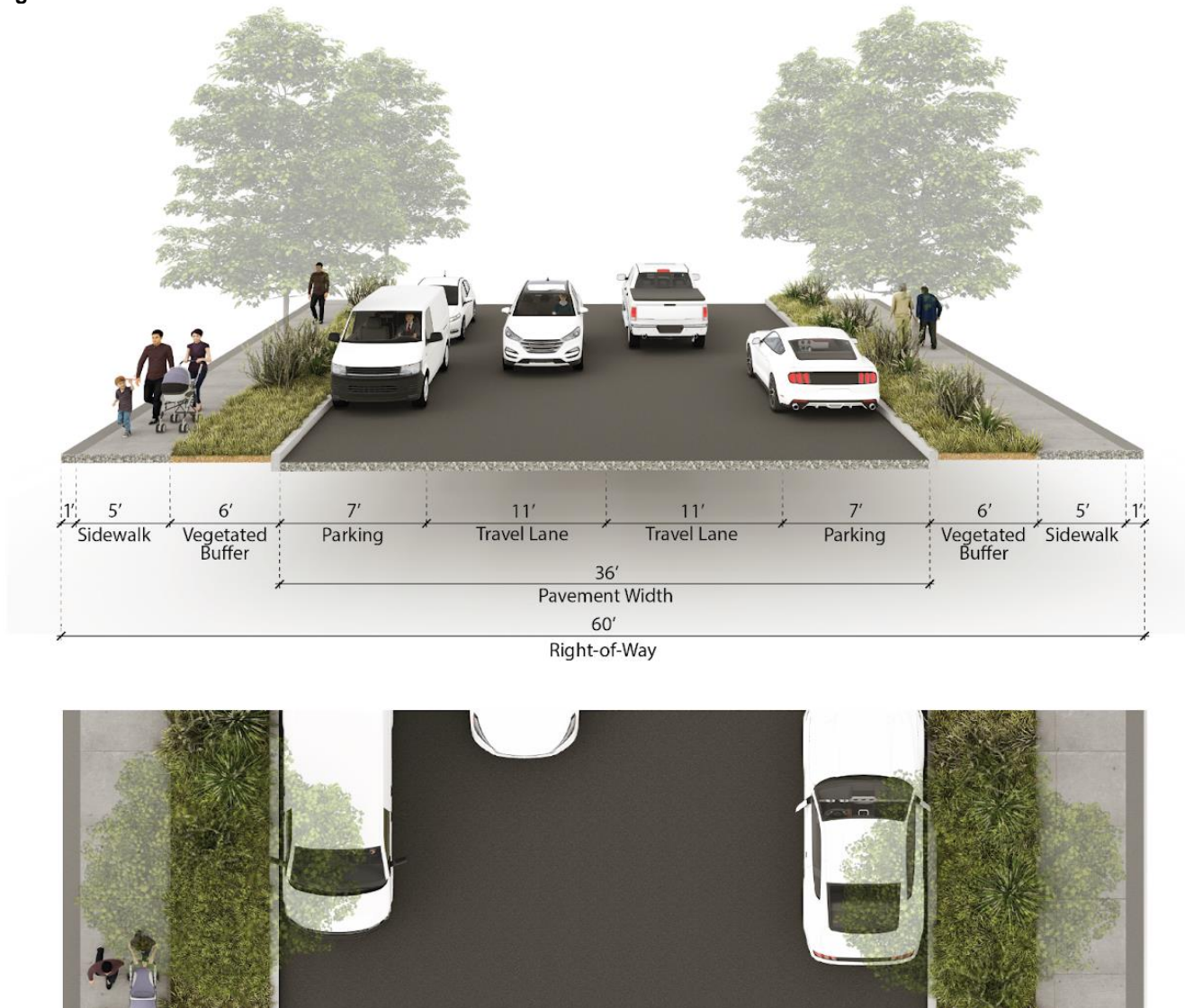
**Figure 9: Cross-section for Rural Local Street**



**Figure 10: Cross-section for Rural Local Street – Gravel Option**

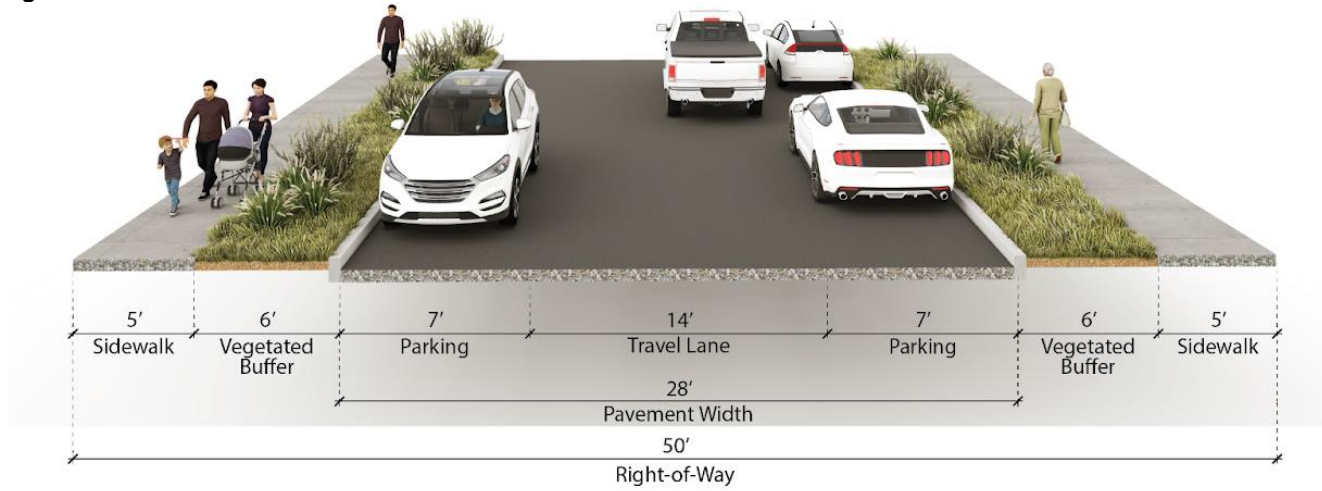


**Figure 11: Cross-section for Urban Local Street – Standard Residential Street**





**Figure 12: Cross-section for Urban Local Street – Minor Residential Street**

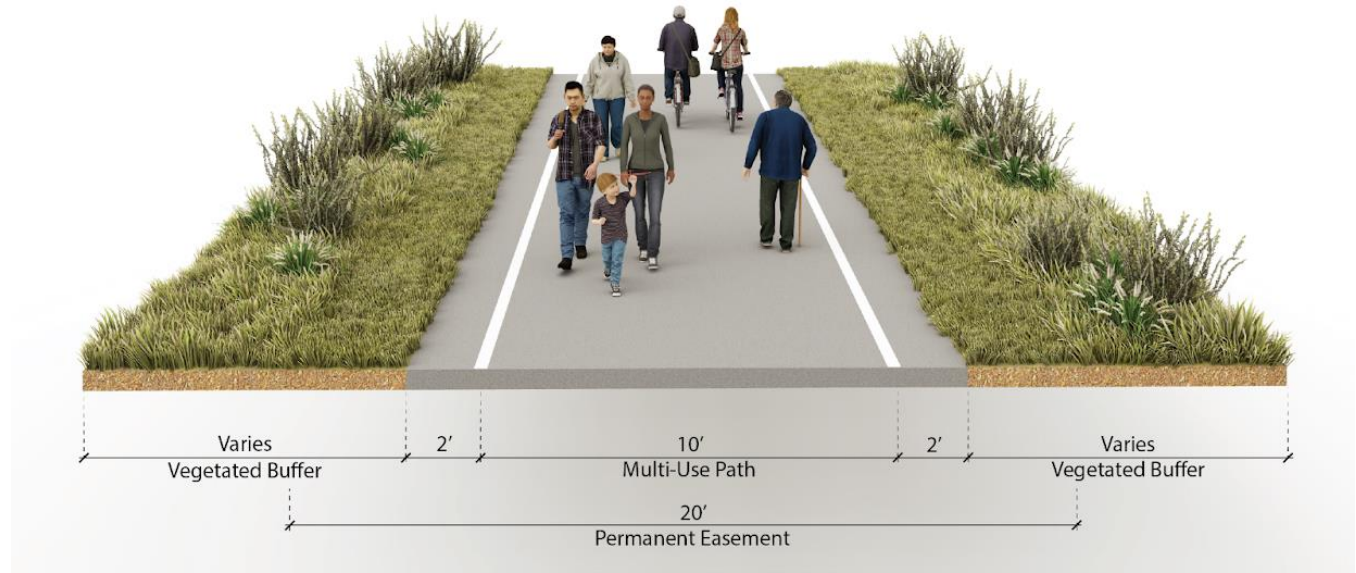




**Figure 13: Cross-section for Alley**



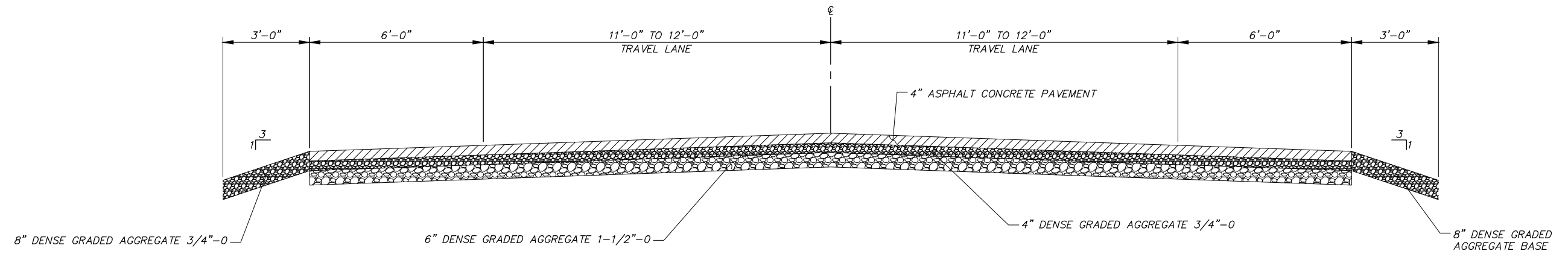
**Figure 14: Cross-section for Multi-use Path**



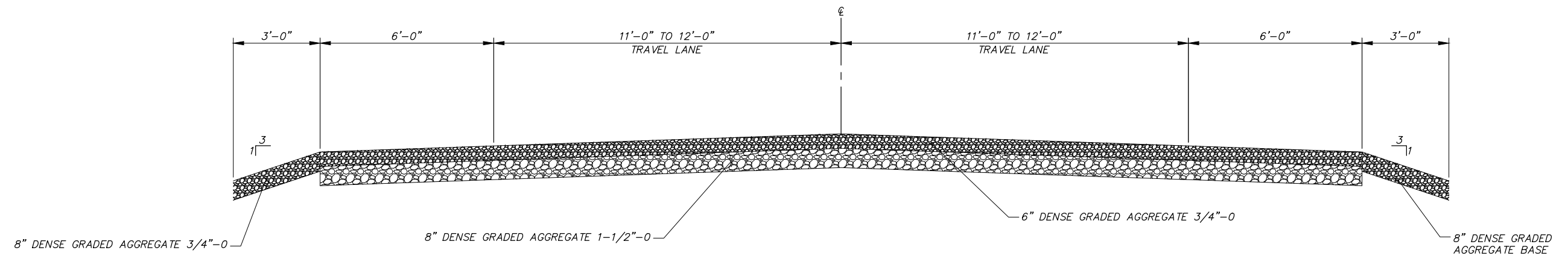
**Figure 15: Cross-section for Umatilla River Multi-use Path and Horse Trail**







**TYPICAL ROADWAY SECTION - ASPHALT**  
RURAL COLLECTOR  
N.T.S.



**TYPICAL ROADWAY SECTION - GRAVEL**  
RURAL COLLECTOR  
N.T.S.

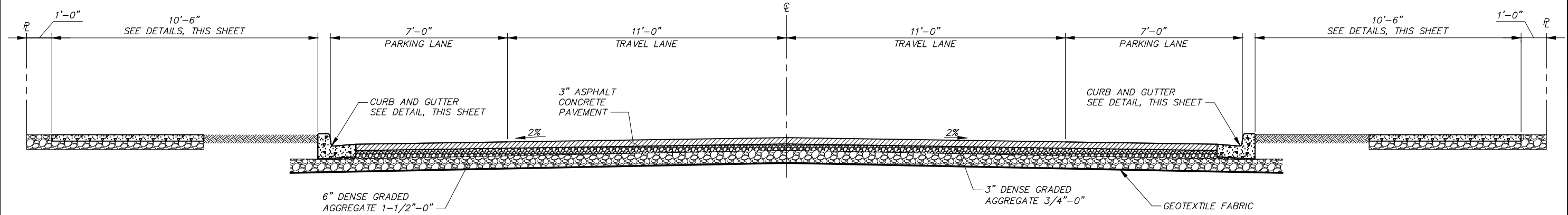


**CONFEDERATED TRIBES OF THE  
UMATILLA INDIAN RESERVATION  
STANDARD DETAILS**

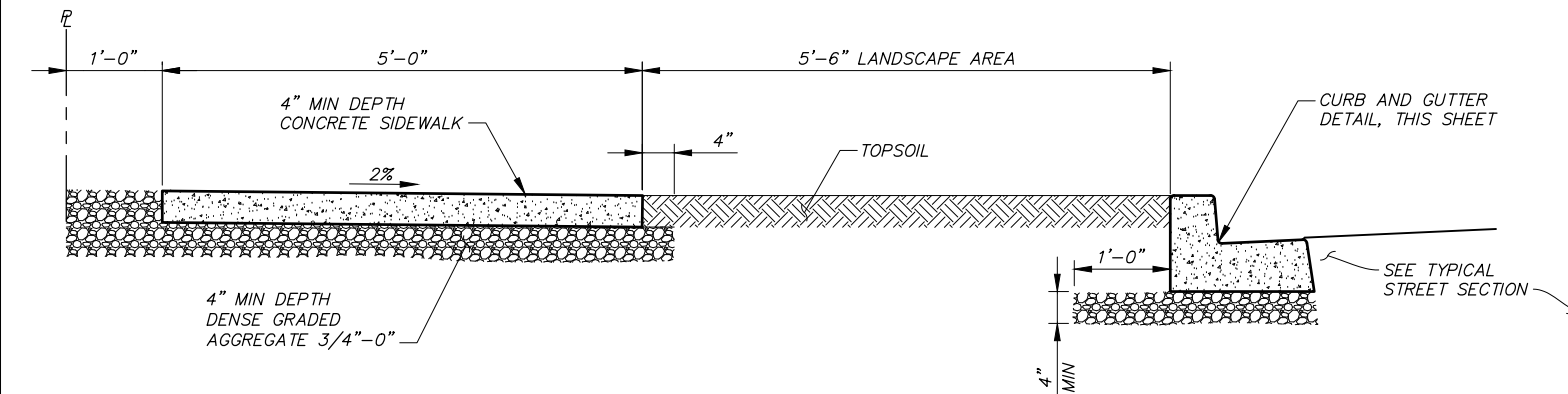
**TYPICAL ROADWAY SECTION  
RURAL COLLECTOR**

**FIGURE**

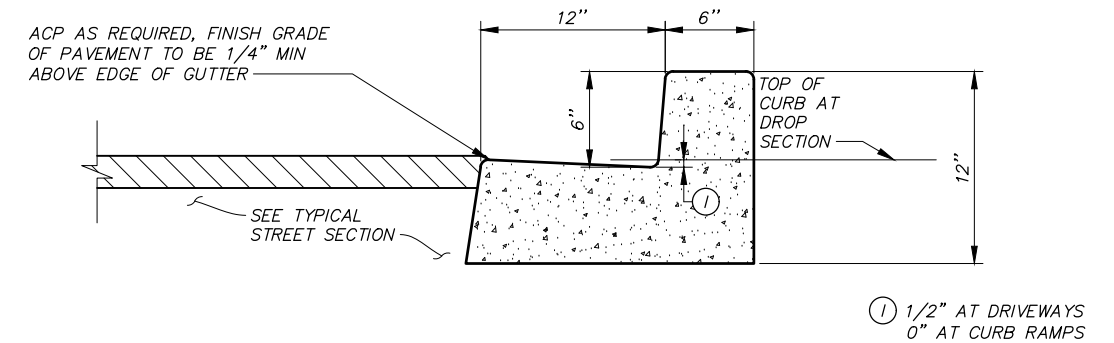
**16**



**TYPICAL ROADWAY SECTION**  
LOCAL RESIDENTIAL  
N.T.S.



**SIDEWALK/CURB AND GUTTER DETAIL**  
(FOR SETBACK SIDEWALK)  
N.T.S.



- NOTES**
1. ALL TOP EDGES HAVE 1/2" RADIUS, TYP.
  2. PROVIDE FULL SECTION EXPANSION JOINT AT 50' MIN SPACING FOR CONTINUOUS SECTIONS AND AT BEGINNING AND END OF CURVED SECTIONS.
  3. PROVIDE 1/2" DEPTH CONTRACTION JOINTS AT 10' SPACING.

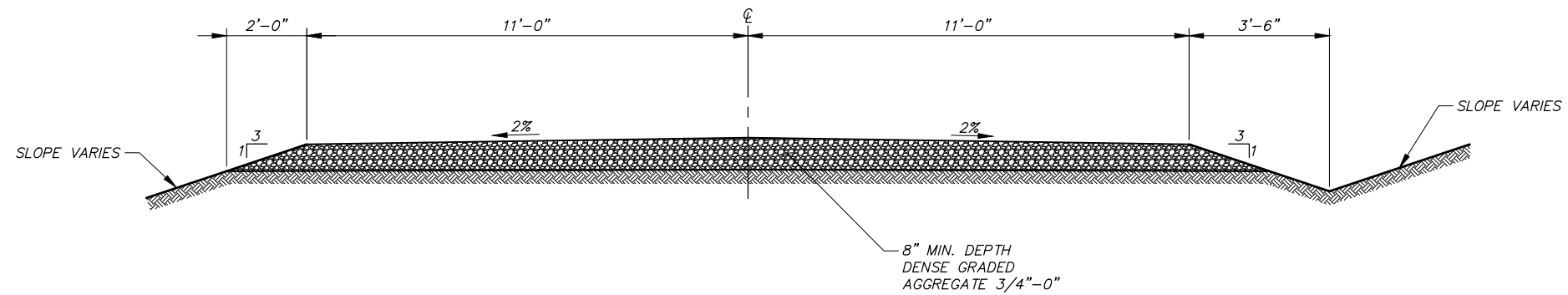
**CURB AND GUTTER DETAIL**  
N.T.S.



**CONFEDERATED TRIBES OF THE  
UMATILLA INDIAN RESERVATION  
STANDARD DETAILS**

**TYPICAL ROADWAY SECTION  
LOCAL RESIDENTIAL**

**FIGURE  
17**



**TYPICAL ROADWAY SECTION**  
**LOCAL RURAL STREET**  
*N. T.S.*

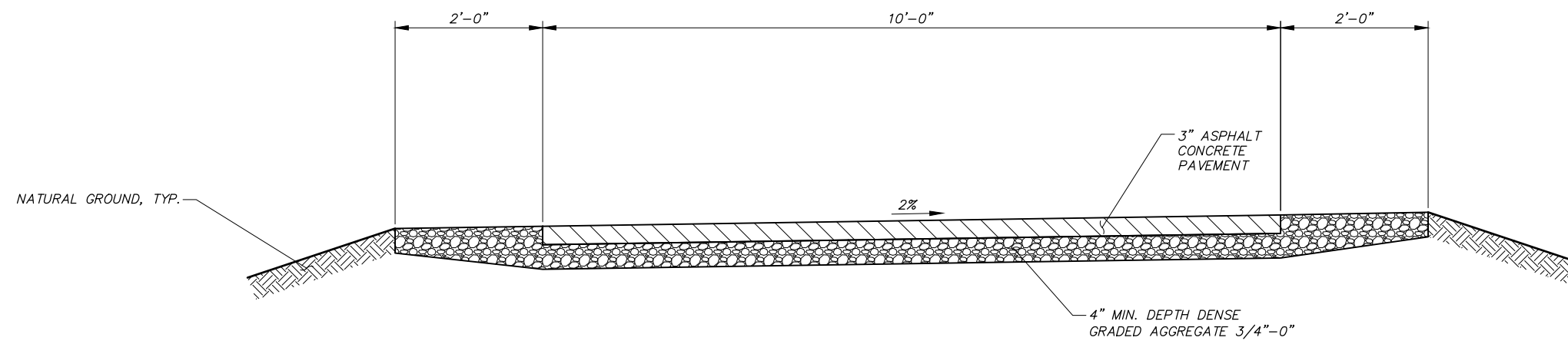


**CONFEDERATED TRIBES OF THE  
 UMATILLA INDIAN RESERVATION  
 STANDARD DETAILS**

**TYPICAL ROADWAY SECTION  
 LOCAL RURAL STREET**

**FIGURE**

**18**



**TYPICAL SECTION**  
**MULTI-USE PATHWAY**  
*N.T.S.*



**CONFEDERATED TRIBES OF THE  
 UMATILLA INDIAN RESERVATION  
 STANDARD DETAILS**

**TYPICAL SECTION  
 MULTI-USE PATHWAY**

**FIGURE  
 19**



Figure 20: Detailed Concept OR 331 from Wildhorse Boulevard to the I-84 Interchange



## PEDESTRIAN SYSTEM – WALKING AND ROLLING

The projects developed for the pedestrian system include sidewalk infill and reconstruction, new multi-use path connections, pedestrian crossing treatments, and more. Table 2 describes the projects for the pedestrian system. The priority levels shown in Table 2 are based on the project evaluation criteria as well as input from the project team. Prioritization has been updated based on input from the advisory committees and the community. Table 2 also shows if a project is within a 2-mile radius of the Nixyáawii Community School. If it was, the priority was increased one level, if possible. *Attachment E includes the CTUIR Safe Route to School Plan, which has been used to develop the projects shown in Table 2. Figure 21 illustrates the location of the projects. Attachment B includes assumptions used to develop the planning-level cost estimates shown in Table 2. Attachment C includes summary sheets for each of the high priority projects.*

**Table 2: Pedestrian System Projects**

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
P01	Mission Road	East of Huckleberry Street to Cedar Street	Install six-foot sidewalks along the north side of Mission Road from east of Huckleberry Street to Cedar Street. Consider incorporating bus pull-outs into the project design.	County	High	X	\$1,500,000
P02	Mission Road	Confederated Way (western intersection) to Confederated Way (eastern intersection)	Complete the sidewalk network along the south side of Mission Road from Confederated Way (western intersection) to Confederated Way (eastern intersection). Consider incorporating bus pull-outs into the project design.	County	High	X	\$680,000
P03	Mission Road	OR 331 to Confederated Way (western intersection)	Widen sidewalks to six feet on the south side of Mission Road from OR 331 to Confederated Way (western intersection) and address the existing mailbox obstructions. Consider incorporating bus pull-outs into the project design.	County	High	X	\$490,000
P04	Confederated Way	East of Whirlwind Drive to Cayuse Road	Complete the sidewalk network along the north side of Confederated Way from east of Whirlwind Drive to Cayuse Road.	BIA	High	X	\$435,000
P05	Cedar Street	Short Mile Road to Cayuse Road	Widen sidewalks to six feet wide on both sides of Cedar Street from Short Mile Road to Cayuse Road.	BIA	Medium	X	\$580,000
P06	Multi-use Path to	Purchase Lane to OR 331	Construct a multi-use path on the south side of Mission Road from Purchase Lane to OR 331. This project is the first	CTUIR	High	X	\$775,000



Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
	Pendleton (Phase I)		phase of a larger multi-use path connection to the City of Pendleton. Further study is needed to determine the ultimate alignment.				
P07	Multi-use Path to Pendleton (Phase II)	UIR western boundary to Purchase Lane	<p>Construct the second phase of the multi-use path to Pendleton, connecting at Purchase Lane. West of Purchase Lane, the alignment of the multi-use path connection may follow two potential alignments:</p> <p>1) Along the south side of the Umatilla River in parallel but offset from the river where applicable. If able, connect to Pendleton Riverwalk.</p> <p>OR</p> <p>2) Along the north or south side of Mission Road.</p> <p>Further study is needed to determine the ultimate alignment. Include benches, lighting, and safety amenities (such as emergency call boxes and security cameras).</p>	CTUIR/ County/ Pendleton	High	X	\$3,500,000
P08	Short Mile Road Multi-use Path	Mission Road to Cayuse Bridge	Construct a multi-use path along Short Mile Road to Sampson Lane adjacent to the Union Pacific Railroad maintenance road to River Road to North Cayuse Road Bridge.	CTUIR	Medium		\$3,900,000
P09	OR 331 Multi-use Path (Phase I)	Mission Road to Arrowhead Travel Plaza driveway	Construct a multi-use path along one or both sides of OR 331 from Mission Road to Arrowhead Travel Plaza driveway.	CTUIR	High		\$1,900,000
P10	OR 331 Multi-use Path (Phase II)	Kirkpatrick Road to Mission Road	Construct a multi-use path along one or both sides of OR 331 from Kirkpatrick Road to Mission Road, depending on feasible options for crossing the Umatilla River Bridge. River access could potentially be included as part of this project.	CTUIR	High	X	\$2,900,000



Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
P11	South Market Road Multi-use Path	Arrowhead Travel Plaza driveway to Tutuilla Church Road	Construct a multi-use path along one or both sides of OR 331-South Market Road from Arrowhead Travel Plaza driveway to Tutuilla Church Road. The Exit 216 overpass may need to be replaced to fit the desired facilities.	CTUIR	Medium		\$3,900,000
P12	Wildhorse Boulevard Multi-use Path	OR 331 to the Tamástslikt Trail	Construct a multi-use path along Wildhorse Boulevard, along the north side of the median or within the median.	CTUIR	Medium		\$675,000
P13	Parr Lane Multi-use Path	Umatilla River to Mission Road	Construct a multi-use path in the vicinity of Parr Lane and extending to the Umatilla River.	CTUIR	Low		\$305,000
P14	East-West Multi-use Path	OR 331 to Cayuse Road	Construct a multi-use path along the top of the bluff connecting OR 331 to Cayuse Road, intersecting the Tamástslikt Trail. Coordinate with Project P19 – OR 331/Timé Way pedestrian crossing and Project P23 - Cayuse Road/Cedar Street pedestrian crossing.	CTUIR	High	X	\$820,000
P15	Tamástslikt Trail Lighting	Confederated Way to Tamástslikt Cultural Institute	Install lighting and security cameras to existing multi-use path system.	CTUIR	High		\$530,000
P16	Timé Way Multi-use Path Lighting	Mission Road to OR 331	Install lighting and security cameras to existing multi-use path system.	CTUIR	Medium	X	\$320,000
P17	July Ground Multi-use Path System Lighting	n/a	Install lighting and security cameras to existing multi-use path system.	CTUIR	Medium	X	\$480,000
P18	Cayuse Road Lighting	Short Mile Road to Cedar Street	Install pedestrian-scale lighting.	County	High		\$195,000
P19	OR 331/ Timé Way	n/a	Install an enhanced pedestrian crossing. Treatment may include signalization or a pedestrian hybrid beacon (if warranted), rectangular rapid flashing beacons (RRFBs), or a grade separated undercrossing of OR 331.	ODOT	High	X	\$2,000,000

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
			Coordinate with Project P14 – East-West Multi-use Path.				
P20	Cayuse Road Mid-block Crossing	n/a	Install enhanced pedestrian crossing treatments at the existing mid-block crossing on Cayuse Road east of Short Mile Road. Treatment may include raised crosswalk, rectangular rapid flashing beacons (RRFBs), high visibility crosswalk markings, and/or curb extensions.	County	High	X	\$105,000
P21	OR 331/ Kusi Road	n/a	Install an enhanced pedestrian crossing. Treatment may include rectangular rapid flashing beacons (RRFBs), raised median island, high visibility crosswalk markings, and curb extensions.	ODOT	High		\$105,000
P22	Cayuse Road/ Confederated Way	n/a	Install an enhanced pedestrian crossing. Treatment may include raised crosswalk, rectangular rapid flashing beacons (RRFBs), high visibility crosswalk markings, and curb extensions.	County	High	X	\$105,000
P23	Cayuse Road/ Cedar Street	n/a	Install an enhanced pedestrian crossing. Treatment may include raised crosswalk, rectangular rapid flashing beacons (RRFBs), high visibility crosswalk markings, and curb extensions. Coordinate with Project P14 - East-West Multi-use Path.	County	High	X	\$105,000
Total High Priority Cost							\$16,145,000
Total Medium Priority Cost							\$9,855,000
Total Low Priority Cost							\$305,000
Total Cost							\$26,305,000

## Pedestrian Programs and Plans

In addition to identifying potential projects, the project team also identified potential pedestrian-related policy and programmatic direction to support the transportation system based on input from CTUIR staff. Through the TSP update process, the following items were identified for incorporation into CTUIR programs and plans:

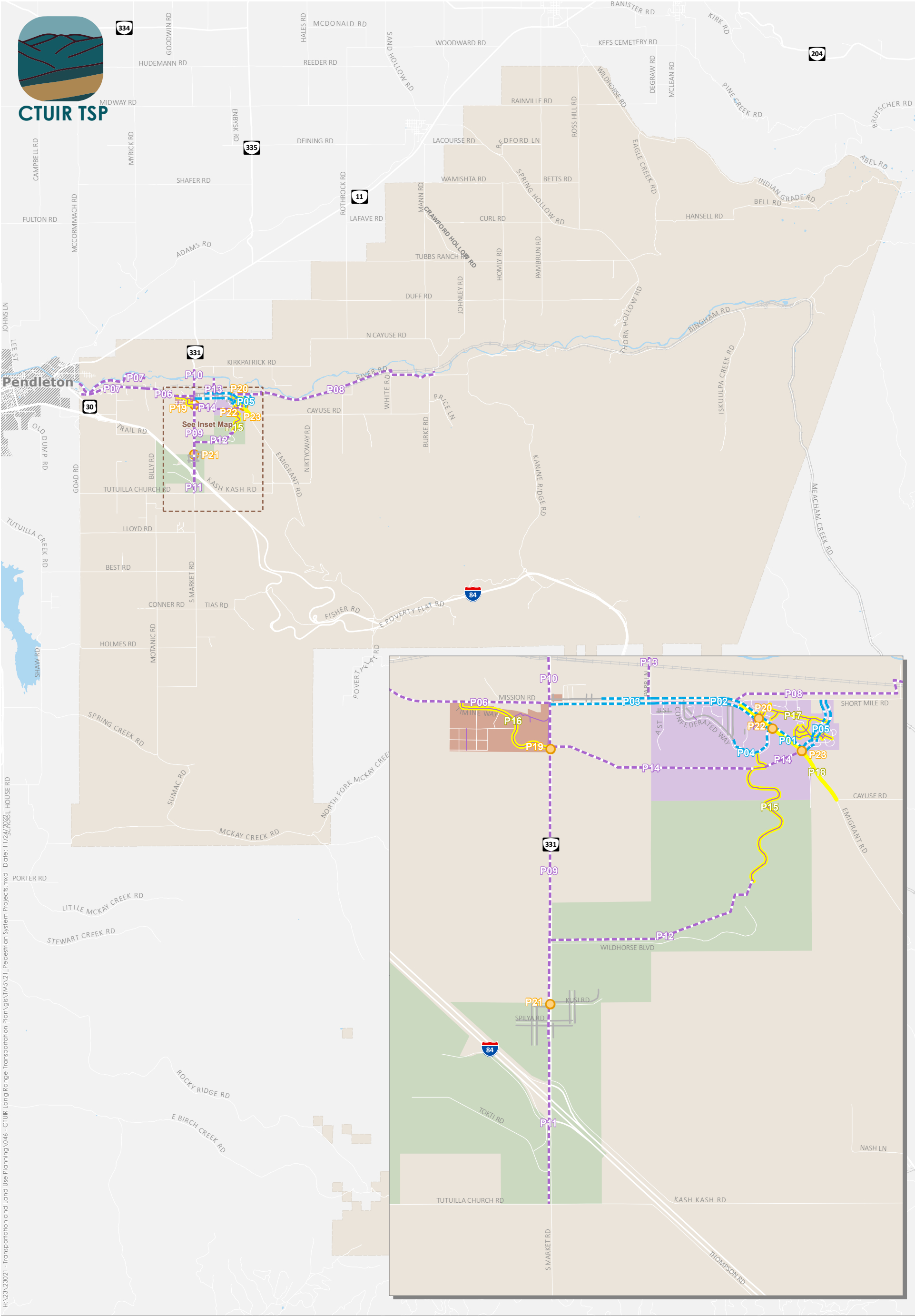
- New development within the Mission Hub should be required to include off-street multi-use paths to create a connected pathway system within the area.
- Parks and Transportation Coordinator



- ☐ Create a new CTUIR staff position to oversee and coordinate multi-use path maintenance and construction, park and river access, and park maintenance.
- ☐ Develop an Invasive Plant Management Plan for roads and multi-us paths in coordination with other CTUIR departments.
- Parks and River Access Plan
  - ☐ CTUIR is acquiring land impacted by the 2020 flooding, including areas near Cayuse River Road, Cayuse Road, and Sampson Lane. The plan will determine a vision for creating a park(s) with potential river access. Work with property owners adjacent to the river to gain access. Explore other river access locations including previous informal access points, such as Parr Lane and the swimming hole near the railroad bridge.

### **July Grounds Enhanced Pedestrian Crossing Detailed Concept Design Graphic**

The project team created a detailed concept design graphic for the July Grounds enhanced pedestrian crossing shown in Figure 22. This graphic incorporates the projects identified throughout this memorandum, not just pedestrian-related projects. The project team and CTUIR staff selected this location for one of the two detailed concept design graphics because it provides an example of what an enhanced crossing could look like within the UIR. This mid-block crossing is also a current barrier to the connectivity of the pedestrian and bicycle networks.



H:\23\23021 - Transportation and Land Use Planning\046 - CTUIR Long Range Transportation Plan\gis\TMS\21\_Pedestrian System Projects.mxd Date: 11/24/2022 11:24:22 AM

Existing Sidewalk  
Existing Multi-use Path  
Sidewalk Project  
Multi-use Path Project  
Lighting Project  
Pedestrian Crossing Project

Umatilla Indian Reservation Boundary  
Mission Hub  
July Grounds Hub  
Gateway Hub  
Pendleton UGB

0 3 Miles

Figure 21

**Pedestrian System Projects  
Umatilla Indian Reservation**



Figure 22: Detailed Concept for July Grounds Enhanced Pedestrian Crossing



## BICYCLE SYSTEM

The projects developed for the bicycle system include buffered bike lanes, shoulder bikeways, and shared roadways. Table 3 describes the projects for the bicycle system. The priority levels shown in Table 3 are based on the project evaluation criteria as well as input from the project team. Prioritization has been updated based on input from the advisory committees and the community. Table 3 also shows if a project is within a 2-mile radius of the Nixyáawii Community School. If it was, the priority was increased one level, if possible. *Attachment E includes the CTUIR Safe Route to School Plan, which has been used to develop the projects shown in Table 3.* Figure 23 illustrates the location of the projects. The figure also includes the multi-use path projects previously shown in the Pedestrian System section. *Attachment B includes assumptions used to develop the planning-level cost estimates shown in Table 3. Attachment C includes summary sheets for each of the high priority projects.*

**Table 3: Bicycle System Projects**

Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
<b>B01</b>	Mission Road	OR 331 to Cayuse Road	Widen Mission Road and install buffered or separated/ raised bicycle lanes along both sides of the roadway from OR 331 to Cayuse Road. Consider incorporating bus pull-outs into the project design.	County	High	X	\$4,200,000
<b>B02</b>	Kirkpatrick Road	OR 331 to McKinley Lane	Widen Kirkpatrick Road and install shoulder bikeways on both sides of the roadway from OR 331 to McKinley Lane.	County	Medium	X	\$2,400,000
<b>B03</b>	Cayuse Road	Emigrant Road to River Road	Widen Cayuse Road and install shoulder bikeways on both sides of the roadway from Emigrant Road to River Road.	County	Medium		\$6,800,000
<b>B04</b>	Confederated Way	Full roadway extents	Install shared roadway signage and/or striping (sharrows).	BIA	Medium	X	\$30,000
<b>B05</b>	Whirlwind Drive	Mission Road to Confederated Way	Install shared roadway signage and/or striping (sharrows).	BIA	Medium	X	\$5,000
<b>B06</b>	Cedar Street	Short Mile Road to Cayuse Road	Install shared roadway signage and/or striping (sharrows).	BIA	Medium	X	\$35,000
<b>B07</b>	Kusi Road	Full roadway extents	Install shared roadway signage and/or striping (sharrows).	CTUIR	Low		\$25,000
<b>B08</b>	Spilya Road	Full roadway extents	Install shared roadway signage and/or striping (sharrows).	CTUIR	Low		\$30,000
<b>B09</b>	Coyote Road	Full roadway extents	Install shared roadway signage and/or striping (sharrows).	CTUIR	Low		\$20,000
<b>B10</b>	Arrowhead Road	Full roadway extents	Install shared roadway signage and/or striping (sharrows).	CTUIR	Low		\$15,000

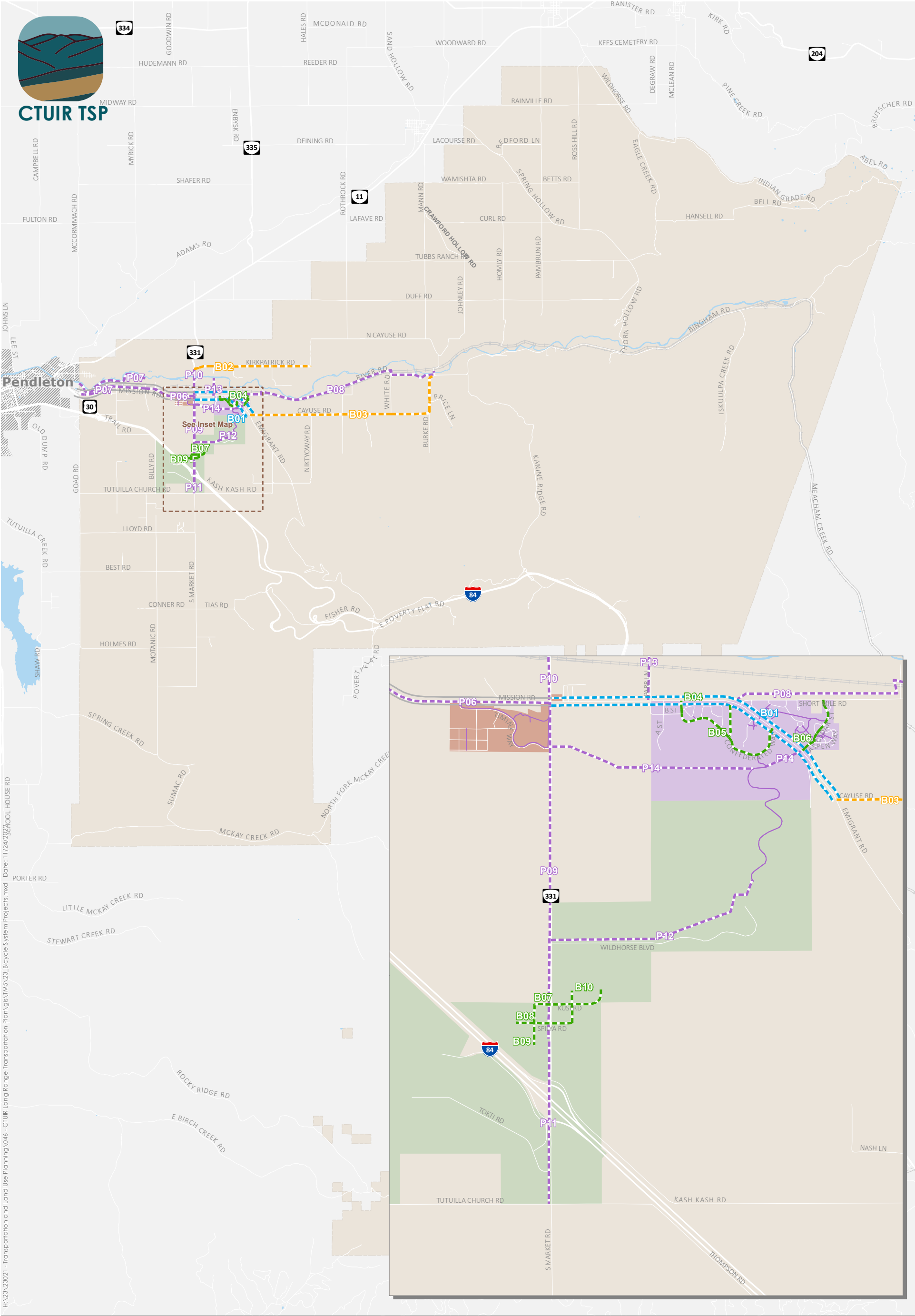
Project ID	Location/ Name	Extents	Description	Roadway Jurisdiction	Priority	Near a School	Cost
<b>B11</b> <sup>1</sup>	Bicycle Fix-it Stations	Within UIR boundaries	Evaluate where bicycle fix-it stations would be beneficial to install within the UIR, such as trailheads, community hubs, or the school.	CTUIR	High		\$10,000 per station
<b>Total High Priority Cost</b>							<b>\$4,200,000</b>
<b>Total Medium Priority Cost</b>							<b>\$9,270,000</b>
<b>Total Low Priority Cost</b>							<b>\$90,000</b>
<b>Total Cost</b>							<b>\$13,560,000</b>

<sup>1</sup> Project not shown on the project map.

## Bicycle Programs and Plans

In addition to identifying potential projects, the project team also identified the following potential bicycle-related item was identified for incorporation into CTUIR programs and plans:

- Coordinate installation of future bicycle fix-it stations as part of construction of projects that will attract bicycle activity, such as commercial development, parks, civic centers, transit hubs, multi-use paths, and bike lanes.



Existing Bike Lane  
Existing Multi-use Path  
Shoulder Bikeway (both sides of the roadway)  
Shared Roadway  
Widen and add buffered bike lanes  
Multi-use Path Project

Umatilla Indian Reservation Boundary  
Mission Hub  
July Grounds Hub  
Gateway Hub  
Pendleton UGB

0 3 Miles

Figure 23

**Bicycle System Projects  
Umatilla Indian Reservation**



## TRANSIT SYSTEM

The projects developed for the transit system include bus stop enhancements, modified service, and new service. Table 4 describes the projects for the transit system. The priority levels shown in Table 4 are based on the project evaluation criteria as well as input from the project team. Prioritization was updated based on input from the advisory committees and the community. Figure 24 illustrates the location of the projects. *Attachment B includes assumptions used to develop the planning-level cost estimates shown in Table 4. Attachment C includes summary sheets for each of the high priority projects.*

As CTUIR explores the transit system projects, coordination with other transit providers on or near the reservation will be needed. These other providers include Kayak, SafeT Transportation, Elite Taxi, WRC Shuttle, Greyhound, and YTHC CHR transportation.

**Table 4: Transit System Projects**

Project ID	Location/Name	Description	Priority	Cost
T01 <sup>1</sup>	Park-and-ride Locations	Coordinate with regional transit providers for park-and-ride locations that help facilitate the use of transit by community members and maximize regional connectivity.	High	TBD, depends on partnerships available
T02	Bus Stop Enhancements	Evaluate transit stops for additional amenity needs, such as shelters, lighting, and signage.	High	\$25,000 per bus stop
T03	OR 331 Transit Hub	Consolidate bus stops at Arrowhead Travel Plaza, Cayuse Holdings, and the Wildhorse Resort & Casino campus into one pair of transit hubs on OR 331 north of Spilya Road, reducing need for transit vehicles to turn to and from OR 331. Coordinate with Project T04 - Wildhorse Campus Shuttle. If a roundabout is constructed on OR 331 based on development-driven projects, a single transit hub on one side of OR 331 may be appropriate.	High	\$100,000
T04	Wildhorse Campus Shuttle	Partner with adjacent businesses to provide a shuttle to transport people from Arrowhead Travel Plaza, Cayuse Holdings, and the Wildhorse Resort & Casino campus to the OR 331 Transit Hub. Coordinate with Project T03 - OR 331 Transit Hub.	High	\$x
T05	Kayak Transit Hub Expansion	Install public restrooms for passengers at the Kayak Transit Hub.	Low	\$x
T06 <sup>1</sup>	Electric Vehicle and Shuttle Pilot	Acquire vehicles, install charging facilities, and begin electric vehicle service for the Metro and campus shuttle routes.	Medium	\$x
T07 <sup>1</sup>	More frequent transit service	Explore adding more trips per day on the highest ridership routes including Hopper, Whistler, and Metro.	Low	\$x
T08 <sup>1</sup>	Extended hours of service	Explore additional hours of service to serve the morning and evening shifts at Wildhorse Resort & Casino.	Medium	\$x
T09 <sup>1</sup>	Extended coverage	Explore extended coverage for transit services to reach residential area near Riverside Avenue, Pendleton Airport, and Walla Walla Airport. Coordinate with surrounding jurisdictions and transit agencies who already provide services to these areas. Coordinate	Medium	\$x

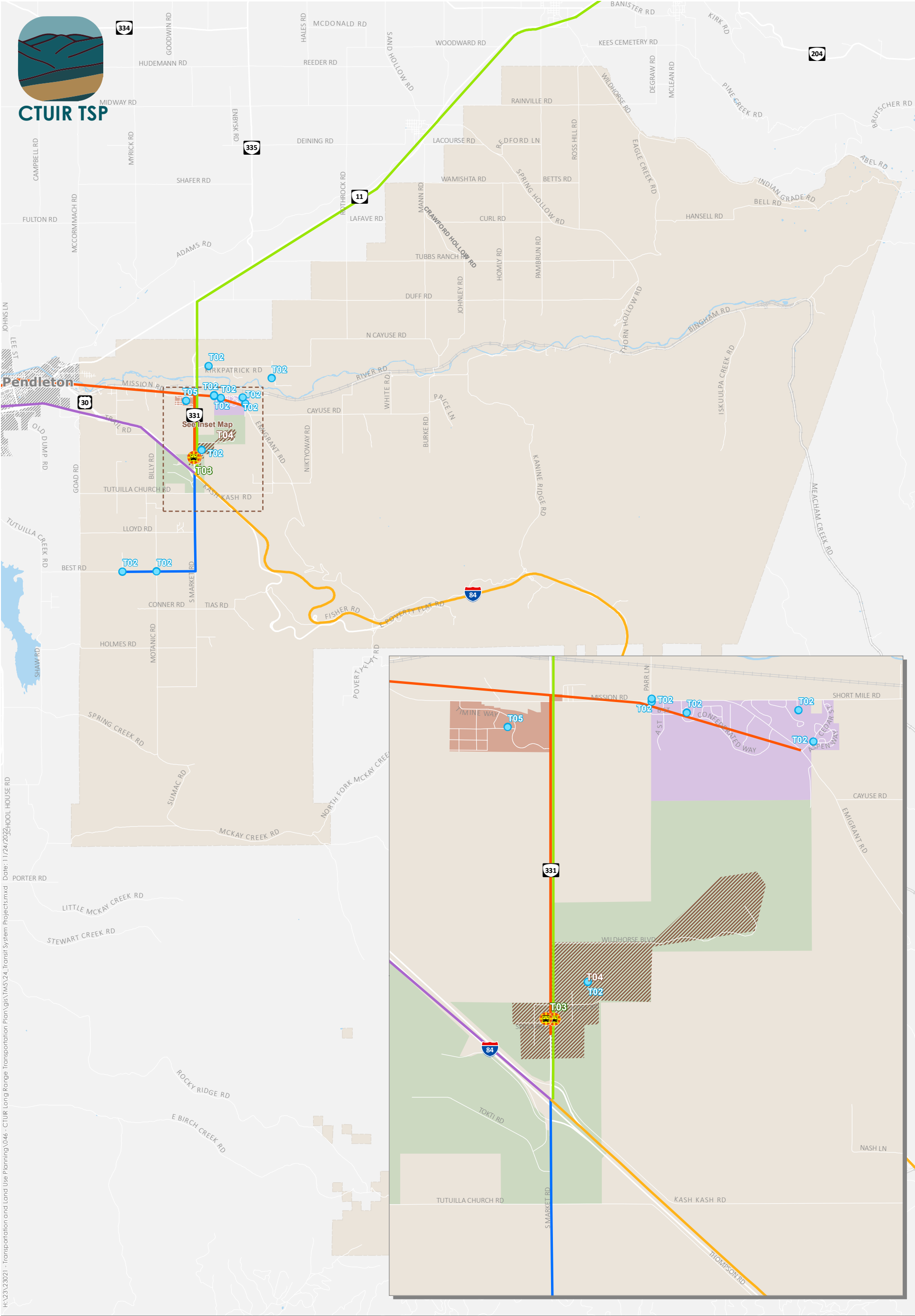
Project ID	Location/Name	Description	Priority	Cost
		with local health and fitness facilities when locating new bus stops.		
Total High Priority Cost				\$100,000
Total Medium Priority Cost				\$0
Total Low Priority Cost				\$0
Total Cost				\$100,000

<sup>1</sup> Project not shown on the project map.

## Transit Programs and Plans

In addition to identifying potential projects, the project team also identified potential transit-related policy and programmatic direction to support the transportation system based on input from CTUIR staff. Through the TSP update process, the following items were identified for incorporation into CTUIR programs and plans:

- Work with businesses adjacent to existing or planned transit stops to sponsor transit shelters at bus stops. Coordinate with businesses and the proposed Parks and Transportation Coordinator position to determine responsibility for maintenance of transit shelters.
- Work with partner jurisdictions and agencies to ensure that Kayak is part of the development review process where there may be opportunities for new transit facilities or impacts to existing transit service.



**Existing Kayak Bus Routes**

- Hopper
- Arrow
- Metro
- Rocket
- Tripper
- Whistler

- Bus Stop Enhancement
- Transit Hub
- Shuttle Service Area

- Umatilla Indian Reservation Boundary
- Mission Hub
- July Grounds Hub
- Gateway Hub
- Pendleton UGB



Figure 24

**Transit System Projects  
Umatilla Indian Reservation**



## RAIL SYSTEM

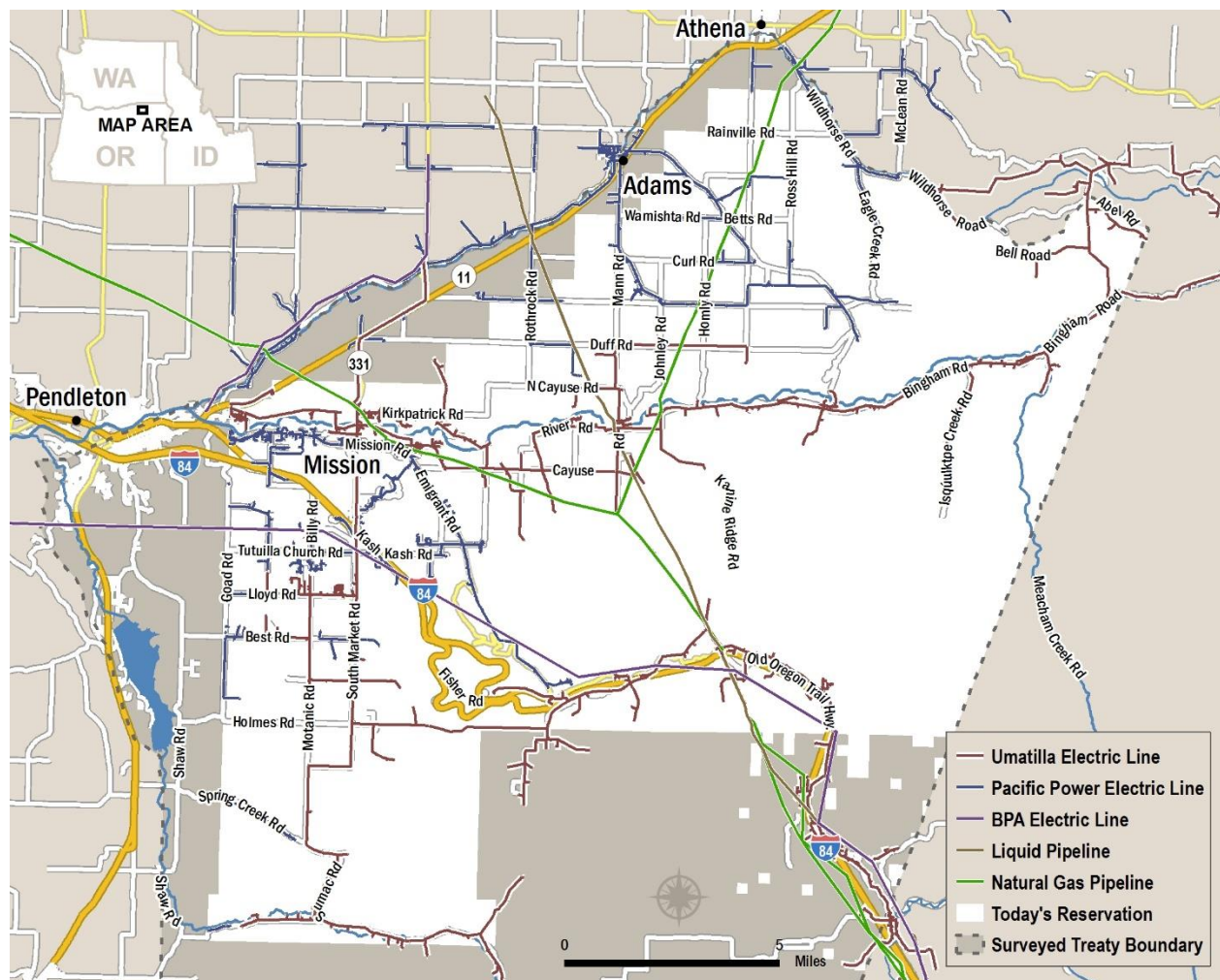
There is one Union Pacific rail line within the UIR boundary, connecting Pendleton and La Grande. The line runs east and west, parallel to Mission Road, Short Mile Road, Cayuse Road, and Bingham Roads before turning south along Meacham Creek Road and into the Blue Mountains. Although no projects were identified to support the rail system, the following plan was identified:

- Safe Rail Crossing Plan
  - Conduct a planning effort to establish a Quiet Zone Agreement for the Union Pacific railroad adjacent to the Mission area. The plan area would extend from the eastern boundary of the Community Water Sewer System service area to the UIR western boundary near Memory Lane.
  - The plan would include recommended safety upgrades for crossings in the plan area, including any recommended closures of specific crossings to enhance safety in the area.

## PIPELINE SYSTEM

There are liquid and natural gas pipelines within the UIR boundary. Figure 25 shows the existing pipeline system, in addition to other utility lines within the UIR. No future projects, programs, or plans were identified to support the pipeline system.

**Figure 25: Pipeline System (Image provided by CTUIR)**



## MODIFICATION OF PREVIOUS PLANNING DOCUMENTS

The proposed projects described in this memorandum represent modifications or elimination of the following projects currently found in the adopted 2001 CTUIR TSP, Mission Community Master Plan (MCMP), and the OR 331 Access Management Plan (AMP), described in Table 5. Table 5 does not include completed projects from these planning documents.

**Table 5: Modifications to Previous Planning Documents**

Planning Document(s)	Previous Project ID(s)	Location/Name	Description	Justification
<b>Roadway System</b>				
<b>2001 CTUIR TSP</b>	6	River Road	Widen, align, and add gravel from the railroad crossing east to White Road. CTUIR to take over ownership of two at-grade railroad crossings and pave crossings with asphalt.	CTUIR requested removal.
<b>2001 CTUIR TSP and OR 331 AMP</b>	9 and 14	Kash Kash Road	Kash Kash Road at Highway 331 – Close existing access to Highway 331 and reroute Kash Kash Road north to a new intersection with the highway. Add exclusive left-turn lanes on the highway approaches to new intersection. Also construct new driveway/street access on the west side of the intersection, opposite of Kash Kash Road. Install new traffic signal when warranted.	Edited project to focus only on Kash Kash Road realignment, since the other elements have mostly been completed
<b>2001 CTUIR TSP and OR 331 AMP</b>	10 and 8	OR 331	Highway 331 Median – Construct a non-traversable landscaped median along Highway 331 from the I-84 westbound ramps to the Wildhorse Resort Entrance Road. This project also includes bicycle/pedestrian improvements.	No longer desired for this roadway.
<b>2001 CTUIR TSP</b>	27	North-South Connector Road	North-South Connector Road – Construct a new north-south connector road from the Wildhorse Resort Entrance Road to “A” Street.	No longer desired by CTUIR. This area is difficult to develop because of cultural sites and topography.
<b>2001 CTUIR TSP</b>	28	East-West Connector Road (Phase II)	East-West Connector Road (Phase II) – Extend rural connector road from proposed North-South Connector Road to Highway 331. Timing for this project will be dictated by planned developments in the area.	No longer desired by CTUIR. This area is difficult to develop because of cultural sites and topography.
<b>2001 CTUIR TSP</b>	3	East-West Connector Road (Phase I)	East-West Connector Road (Phase I) – Construct a new urban/rural connector road from near Aspen Way to proposed North-South Connector Road. Timing for this project will be dictated by planned developments in the area (East Bench Subdivision).	No longer desired by CTUIR. This area is difficult to develop because of cultural sites and topography. MCMP shows a multi-use path instead
<b>2001 CTUIR TSP</b>	22	Wildhorse Creek Bridge	Replace County Bridge #59C401 along Wild Horse Road (County Road #685).	Not under CTUIR jurisdiction. CTUIR staff

Planning Document(s)	Previous Project ID(s)	Location/Name	Description	Justification
				requested removal from project list.
<b>2001 CTUIR TSP</b>	37	Tamástslikt Cultural Institute Connector Road	Tamástslikt Cultural Institute Connector Road – Construct a new connector road from the Tamástslikt Cultural Institute to the proposed east-west connector road, near the Cayuse Road/Emigrant Road intersection.	No longer desired by CTUIR. This area is difficult to develop because of cultural sites and topography.
<b>OR 331 AMP</b>	10	OR 331	Widen OR 331 to a five-lane cross-section in the vicinity of Spilya Road.	New cross-sections established in MCMP and through this TSP update process.
<b>OR 331 AMP</b>	13	Kusi Road	Extend Kusi Road and construct north-south local road for local circulation.	Edited to Spilya Road and without the additional north-south connection based on development that has occurred.
<b>Pedestrian System</b>				
<b>2001 CTUIR TSP</b>	26	Mission Road Bike/Ped Facility (Phase II)	Mission Road Bike/Ped Facility (Phase II) – Complete the extension of a bicycle/pedestrian facility to the City of Pendleton along Mission Road/US Highway 30.	Revised to have first phase along Mission Road and then two options to Pendleton: along Mission Road or along Umatilla River.
<b>2001 CTUIR TSP</b>	31	Highway 331 Sidewalk and Bike Lanes	Highway 331 Sidewalk and Bike Lanes – Provide bike lanes, curb and gutter, and sidewalks along Highway 331 from Mission Road to proposed East-West Connector Road.	Replaced by a multi-use path.
<b>2001 CTUIR TSP</b>	36	Path Across Umatilla River	Path Across Umatilla River – Construct a multi-use path in the vicinity of Parr Lane and extending across the Umatilla River to connect with Kirkpatrick Road.	Edited to remove bridge and only connect Parr Lane to the river based on input from CTUIR staff.
<b>MCMP, TAC1</b>	P2	Mission Road	Complete the sidewalk network along the south side of Mission Road from Confederated Way to Cedar Street. Widen existing sidewalks near the Four Corners area to six feet and address the existing mailbox obstructions located across from Lucky Seven.	Removed because the pedestrian crossing was moved north to Confederated Way, removing the need for sidewalks on both sides of the street to Cedar Street.
<b>MCMP</b>	P3	OR 331	Install sidewalks along the east and west sides of OR 331.	Replaced by a multi-use path.
<b>MCMP</b>	M5	Umatilla River Multi-use Path	Construct a new multi-use trail along the south side of the Umatilla River on in parallel but offset from the river where applicable. Connect to Pendleton Riverwalk.	Revised to have first phase along Mission Road and then two options to Pendleton: along Mission Road or along Umatilla River.

Planning Document(s)	Previous Project ID(s)	Location/Name	Description	Justification
<b>Bicycle System</b>				
<b>2001 CTUIR TSP</b>	32	OR 331	Highway 331 Shoulder Widening – Provide 8-foot paved shoulders along Highway 331 from Wildhorse Resort Entrance Road to proposed East-West Connector Road.	Replaced by a multi-use path.
<b>MCMP</b>	B3	OR 331	Install bicycle lanes along the east and west sides of OR 331.	Replaced by a multi-use path.
<b>Transit System</b>				
<b>MCMP</b>	T1	Multiple Locations	(For multiple locations) Install new transit amenities including new shelters with real-time transit tracking, benches, lighting, etc.	Replaced by more specific suggestions for the bus stop locations.