TECHNICAL MEMORANDUM #3: FUTURE SERVICE OPPORTUNITIES

Date:	March 7, 2023	Project #: 27387
To:	Project Management Team	
From:	Kittelson & Associates, Inc.	
Subject:	Future Service Opportunities (Task 1i)	

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Introduction

This memorandum recaps the transit needs for Umatilla County identified in *Technical Memorandum #1: Existing and Future Transit Needs,* describes service types that may address these needs, and begins to identify the service opportunities for each need. These future service opportunities will be evaluated and prioritized in *Technical Memorandum #4: Future Funding and Preferred Projects* according to funding constraints and the opportunities' alignment with the vision and goals.

Needs Summary

The following improvements were identified in *Technical Memorandum #1: Existing and Future Transit Needs* as needs not specific to geographic or demographic transit markets. These improvements could help improve existing rider experience, draw new ridership, and improve efficiencies of partnerships and operations.

- Provide additional or modified service in Hermiston and Pendleton
- Expand service to neighboring regions, especially the Tri-Cities in Washington and Boardman area in Morrow County
- Modify service between Umatilla County and the Walla Walla area
- Increase regional/long-distance service
- Serve growing populations inside Urban Growth Boundaries (UGBs) and large cities

- Enhance access for transit-dependent populations in rural and urban areas
- Increase service frequency, extend service hours, and provide weekend service
- Improve education, marketing, and partnerships
- Update vehicle fleet
- Improve bus stop amenities and access
- Update tools and technology

Additionally, new and/or modified transit routes and services can be tailored to serve a diverse set of transit markets in Umatilla County. Table 1 summarizes the existing and potential future service types to address transit market needs in the County. Further details about service types are available in *Memo #1: Existing and Future Transit Needs*.

Table 1. Service Types to Address Transit Market Needs

Transit Market	Local Fixed-Route	Shuttle/Deviated Fixed-Route	Intercity/ Express	Vanpool	Demand-Response
Provide additional or modified service in Hermiston and Pendleton	Existing	Existing	Existing	Potential	Existing
	Existing routes could be modified and/or new routes could be added to serve additional areas within Hermiston and Pendleton. Expanded service hours or changes to frequency may also address the transit gap. For work commutes, vanpool programs may be beneficial to serve these communities.				
Expand service to neighboring regions	—	Potential	Potential	Potential	—
	New routes to the Tri-Cities in Washington and Boardman area in Morrow County would capture not only commute, but shopping, medical, recreational, and intermodal (e.g., to train or airport) trips. The former Tri-Cities Trolley route was highly valued and demonstrated that intercity or express service is promising. Pairing this service type with vanpools or deviated fixed-routes could help address first-/last-mile access.				
Modify service between Umatilla County and the Walla Walla area	—	Potential	Existing	Potential	—
	Changes to existing route timing, frequency, and service span, or the addition of new service types may help fill the need for service between Umatilla County communities and the Walla Walla area.				
Increase regional/long-distance service	—	—	Existing	—	—
	Increasing frequency on long-distance services and establishing new connections is key to providing access to statewide and national destinations.				
Serve growing populations inside UGBs	Potential	Potential	Existing	Potential	Existing
	Expanding intracity and intercity services and encouraging use of vanpools can help serve growing populations in Umatilla County cities.				
Enhance access for transit-dependent populations in rural areas	—	Potential	Existing	—	Potential
	Expanding intercity rural transit and demand-response services or providing new shuttle services can help address the needs of transit-dependent populations in rural Umatilla County.				

Assumptions for Costs of Service Opportunities

Table 2 summarizes the cost per hour and rides per hour assumptions for various service types in Umatilla County, as established in *Memo #1: Existing and Future Transit Needs*.

Table 2. Cost and Ridership Assumptions

Services	Typical Operating Cost per Hour	Rides per Hour
Fixed-Route	$100/hour	5-7
Deviated Fixed-Route	$90/hour	3-5
Demand-Response	$70/hour	1-3
Shuttles	$80/hour	1-3
Vanpools	$80/hour	1-3
Rural Intercity Service	$100/hour	3-5
Express Service	$100/hour	1-3

Future Service Opportunities

This section describes future service opportunities that address transit needs through routing opportunities, service enhancements, coordination and consolidation, information & technology, and facilities. These opportunities were developed based on stakeholder input; population, employment, and land use growth forecasts; and existing and future transit demand.

Each service opportunity includes a description of the service change, changes to the number of operating buses (capital cost), annual operating cost, and estimated ridership. Information & technology improvements and bus stop & facilities improvements are described qualitatively with high-level cost estimates.

Table 3. Existing Regional Transit Service Summary

Transportation Provider	Route	Service Span	
		Weekdays	Saturdays
CTUIR – Kayak Public Transit	Local Fixed Route	5 a.m. – 7 p.m.	8:30 a.m. – 4 p.m.
	Commuter Bus Route	5 a.m. – 6 p.m.	9 a.m. – 4 p.m.
	ADA Paratransit (Mission)	7:30 a.m. – 4 p.m.	No service
City of Pendleton Let'er Bus	North-East Fixed Route	7 a.m. – 12 p.m. and 1 p.m. – 6 p.m.	No Service
	South-West Fixed Route	7 a.m. – 12 p.m. and 1:30 p.m. – 6 p.m.	No Service
	Demand-Response & Taxi Programs	7 a.m. – 7 p.m.	7 a.m. – 7 p.m.
City of Milton-Freewater	College Place & Walla Walla Fixed Route	8 a.m. – 1:30 p.m.	No Service
	Milton-Freewater Fixed Route	9 a.m. – 3 p.m.	No Service
	Dial-a-Ride (Paratransit Taxi)	7 a.m. – 4 p.m.	7 a.m. – 4 p.m.
City of Hermiston Taxi Programs	Employment Dial-a-Ride	Operates when taxi provider is operating: 18 hours a day for seven days a week (unless otherwise stated by the taxi provider)	
	Senior & Disabled Dial-a-Ride		
Morrow County The Loop	Dial-a-Ride	8 a.m. – 12 p.m. and 1 p.m. – 5 p.m.	No Service
Valley Transit/Valley Transit Plus	Fixed Route (7 Routes)	6:15 a.m. – 5:45 p.m. (FLEX routes 5:45 pm and 8:40)	FLEX routes Saturdays (10:45 am and 6:10 pm)
	Dial-a-Ride	6:15 a.m. – 5:45 p.m.	No Service
	Deviated Fixed-Route (2 Loops)	5:50 p.m. – 9:10 p.m.	10:45 a.m. – 6:10 p.m.
	Connector	5:45 p.m. – 8:40 p.m.	10:45 a.m. – 6:10 p.m.
	Job Access	Daily 5:00 a.m. – 11:30 p.m.	
Grant County People Mover (Oregon)	Deviated Fixed-Route	Tuesdays 5 a.m. – 8 p.m.	
Greyhound	Salt Lake City – Boise – Portland	Stops in Pendleton near 3:30 p.m. in the eastbound direction and near 12:30 p.m. in the westbound direction	
	Portland - Spokane	Stops in Pasco near 2:30 p.m. in the eastbound direction and near 1:30 p.m. in the westbound direction	
	Stanfield – Seattle	Stops in Stanfield near 1 p.m. in the eastbound direction and near 3 p.m. in the westbound direction	
CAPECO	Medicare and Medicaid	Tuesdays and Thursdays	No Service
Clearview Mediation and Disability Resource	Medicaid Rides	7 a.m. – 6 p.m.	Weekend and Nights by Appointment
Good Shephard Health Care System	Dial-A-Ride	8:30 a.m. – 6 p.m.	No Service
Hermiston Senior Center	Dial-A-Ride	Taxi WORC vouchers, service hours vary	

Table 4. Existing CTUIR - Kayak Public Transit Service Summary

Transportation Provider	Route	Service Span		Headway (hours)	Annual Service Hours	Annual Service Miles	Cost per Hour	Annual Operating Cost[1]
		Weekdays	Saturdays					
City of Milton-Freewater	Fixed Route	7:30 AM to 3:30 PM	None	2	1,530	24,259	$100	$153K
Walla Walla Whistler	Fixed Route (Commuter Bus)	4:30 AM to 8:00 PM	9:00 AM to 7:15 PM	4	4,080	88,710	$100	$408K
Hermiston Hopper	Fixed Route (Commuter Bus)	5:00 AM to 8:00 PM	8:30 AM to 7:10 PM	4	4,080	98,634	$100	$408K
Hermiston HART	Fixed Route	7:00 AM to 6:00 PM	None	2	2,550	36,822	$100	$255K
Hermiston WORC	Dial-a-Ride	18 hours/day; 7 days/week		N/A			$70	
Pendleton Let'er Bus	Fixed-Route (North-East Route)	7:00 AM to 12:00 PM 1:30 PM to 6:00 PM	None	1	2,805	41,122	$100	$280.5K
Pendleton Let'er Bus	Fixed-Route (South-West Route)	7:00 AM to 12:00 PM 1:30 PM to 6:00 PM	None	1	2,805	39,467	$100	$280.5K
La Grande Arrow	Fixed Route (Commuter Bus)	5:10 AM to 7:15 PM	None	4	3,060	85,658	$100	$306K
Mission Metro	Fixed Route	5:00 AM to 8:30 PM	None	2	3,060	63,174	$100	$306K
Pilot Rocket	Fixed Route (Commuter Bus)	6:00 AM to 6:30 PM	None	4	3,060	32,895	$100	$306K
Tutuilla Tripper	Fixed Route	7:00 AM to 5:00 PM	None	4	3,060	25,337	$100	$306K

[1]Annual operating cost per service was estimated by multiplying the cost per hour by the total annual service hours. Annual service hours are estimated based on the number of trips per day multiplied by the trip duration and the days per year of service.

Previously Planned Routes

Umatilla County, Morrow County, and Kayak Public Transit completed the Hermiston – Boardman Connector / Boardman – Port of Morrow Circular Report in June 2021. The report took the conceptual planned connection between Hermiston, Boardman, and communities in-between and the local Boardman service and identified preferred routing and schedules for these services. As such, this memorandum does not further evaluate connections between Hermiston and Boardman. Operations are intended to begin upon vehicle and driver procurement. These services should be monitored for potential refinement after implementation, as ridership patterns and feedback are gained.

Hermiston-Boardman Connector

The Hermiston – Boardman Connector is a fixed-route service planned to be provided by Kayak Public Transit. It loops clockwise and counterclockwise between Hermiston, Umatilla, Irrigon, and Boardman utilizing the I-84, Westland Road, US 395, and US 730 corridors. Locally, the service would connect to the planned Boardman – Port of Morrow Circular and the existing Hermiston HART service. It will also connect to the Hermiston Hopper, allowing the connection on to Pendleton and transfers to services such as Greyhound, Pendleton Let'er Bus, other Kayak Public Transit services. Figure 1 through Figure 4 show the early morning and regular versions of the route.

Figure 1. Hermiston–Boardman Connector Early AM Counterclockwise Route

Figure 2. Hermiston–Boardman Connector Early AM Clockwise Route

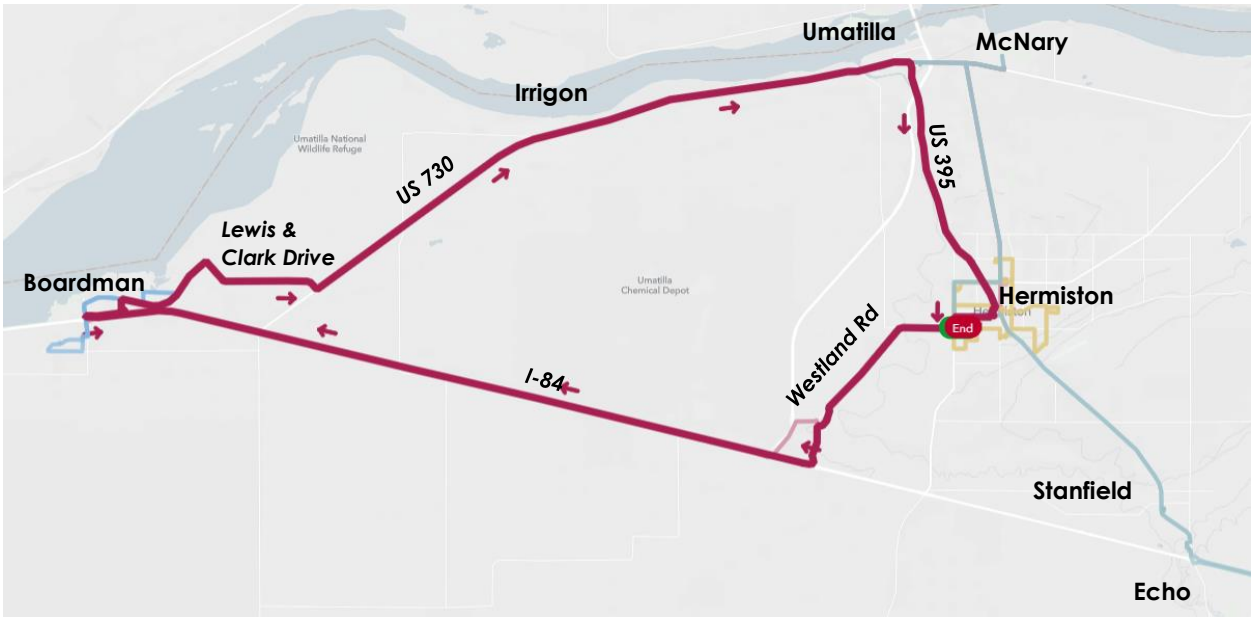


Figure 3. Hermiston – Boardman Connector Regular Counterclockwise Route

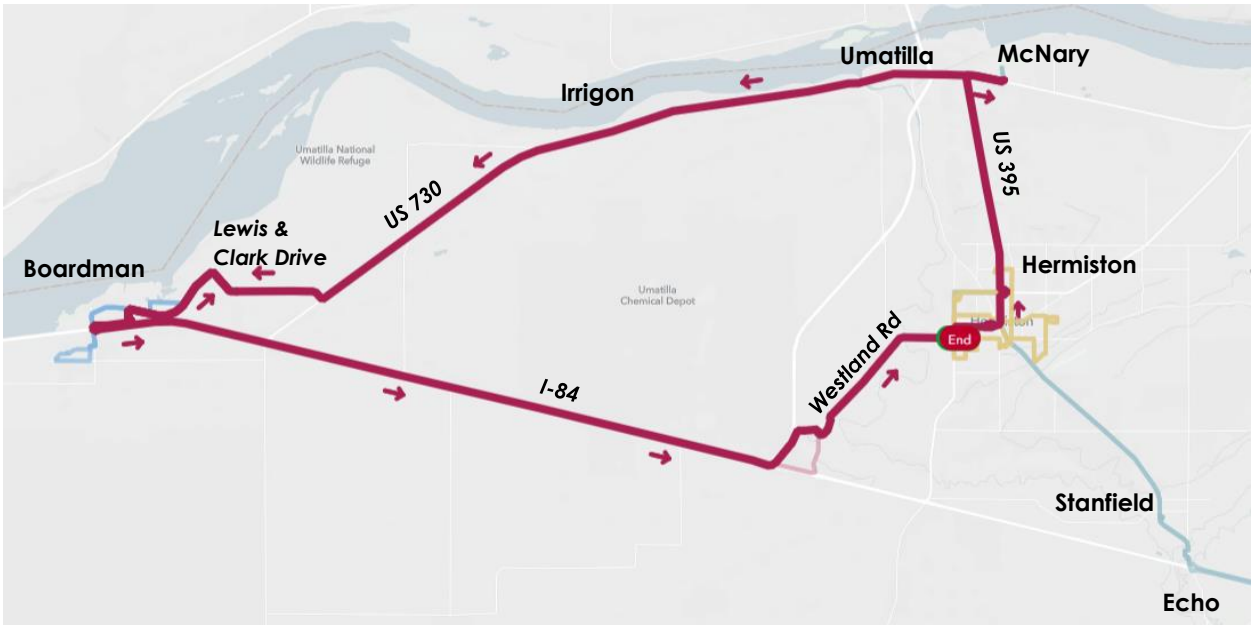


Figure 4. Hermiston – Boardman Connector Regular Clockwise Route

Boardman – Port of Morrow Circular

The Boardman – Port of Morrow Circular is a deviated fixed-route service planned to be operated by Morrow County's The Loop. It covers the Port of Morrow with a flexible deviation zone and the City of Boardman, along Columbia Avenue, Main Street, Wilson Lane, Boardman Avenue, and other local roadways. It connects to the Hermiston – Boardman Connector, allowing regional travel. Figure 5 and Figure 6 show the early morning and regular versions of the route.

Figure 5. Boardman – Port of Morrow Circular Early AM Route

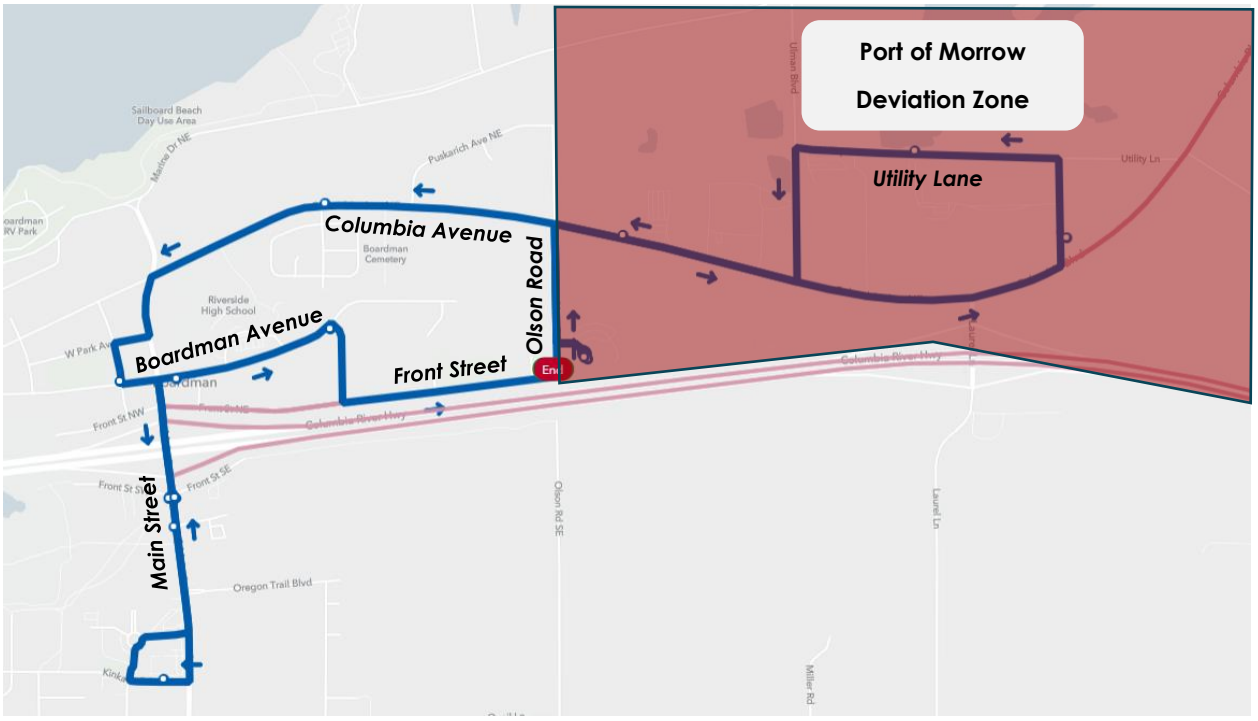
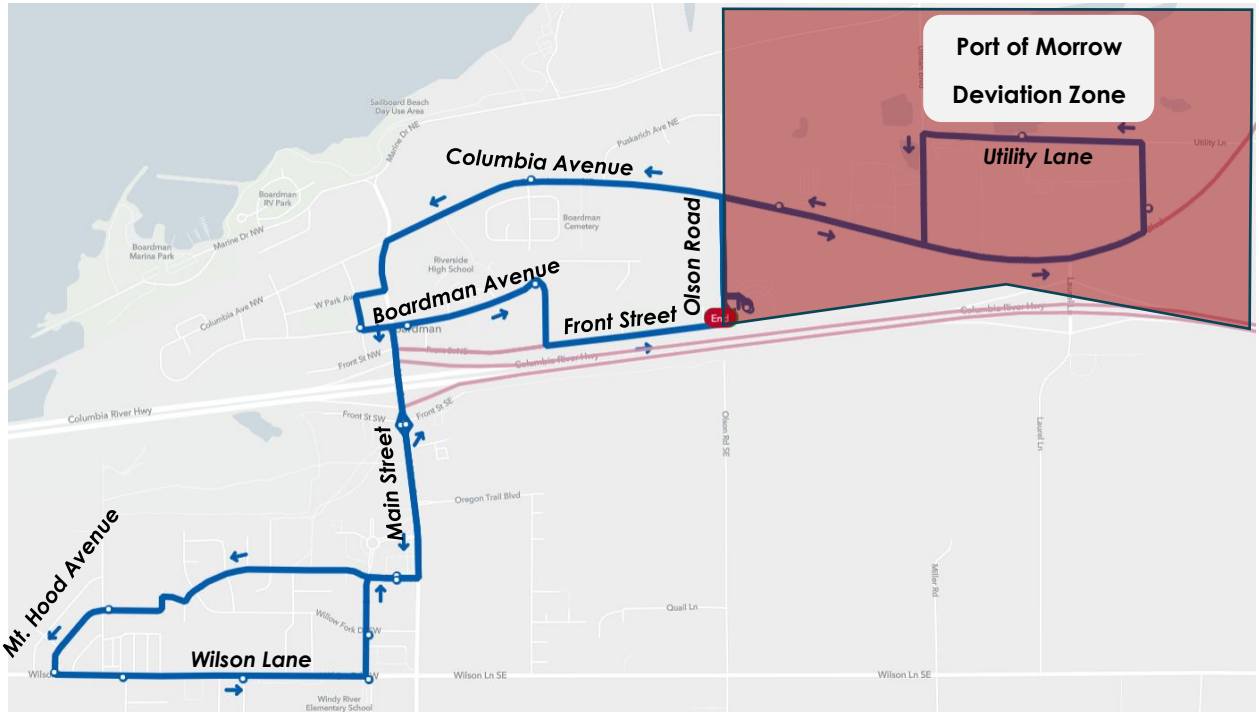


Figure 6. Boardman – Port of Morrow Circular Regular Route



Routing Opportunities

Routing opportunities include consolidating duplicate services, streamlining services with long runtimes, providing additional transit stops serving growing populations within Urban Growth Boundaries (UGBs) and large cities, and new routes that could replace or supplement existing routes. The following sections describe the route opportunities, including benefits, potential connections to other services, and approximate runtime[1].

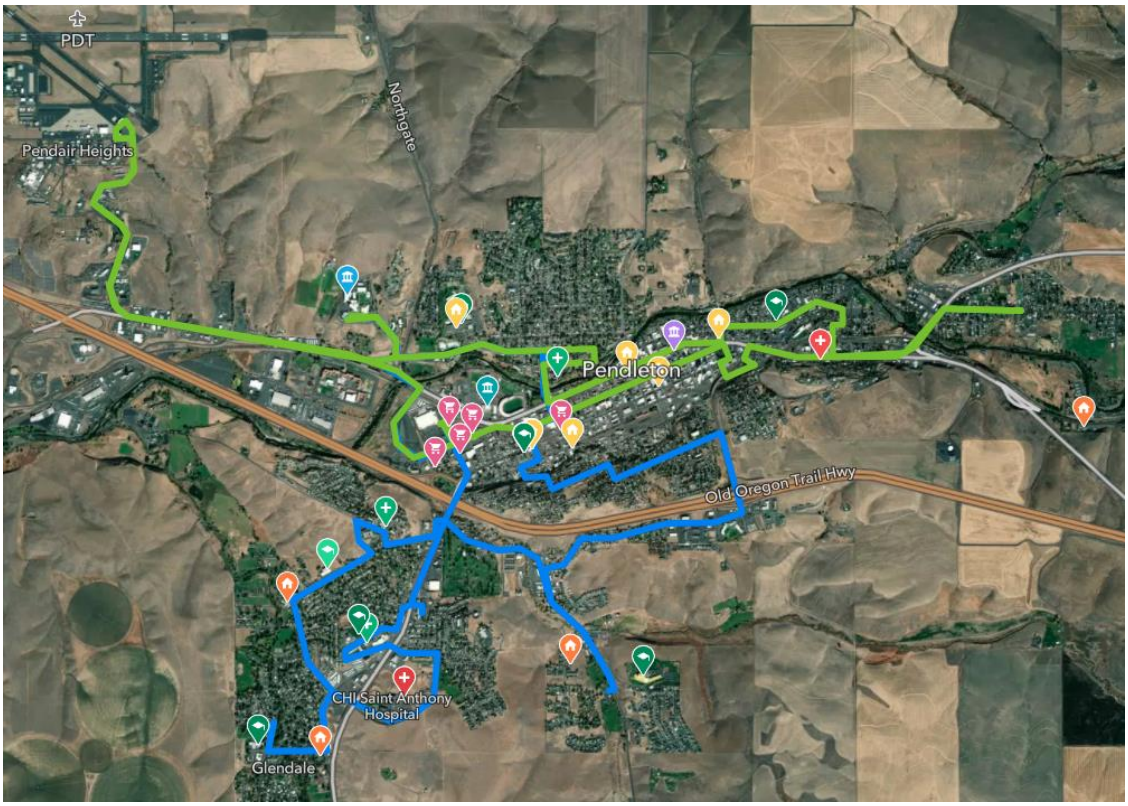
Provide additional or modified service in Hermiston and Pendleton

The analysis identified that ridership within Hermiston and Pendleton was relatively low compared to the expected travel demand. Although both cities have fixed-route and demand-response services, some ridership may be captured on Kayak Public Transit intercity services, which also serve parts of Hermiston and Pendleton. Compared to its peers, the Pendleton Let'er Bus serves fewer rides per hour but at a lower cost per hour. Lastly, several key activity centers in these communities are not served or are far from existing routes. Additional and/or modified service within these communities could help increase ridership.

Pendleton

Figure 7 shows the existing Pendleton Let'er Bus route. As shown, two services provide coverage for most of Pendleton on hourly headways. However, the routes are loops that result in out-of-direction travel. Additionally, the two routes require transfers to get between north and south Pendleton.

Figure 7. Existing Pendleton Let'er Bus (N-E and S-W Routes)

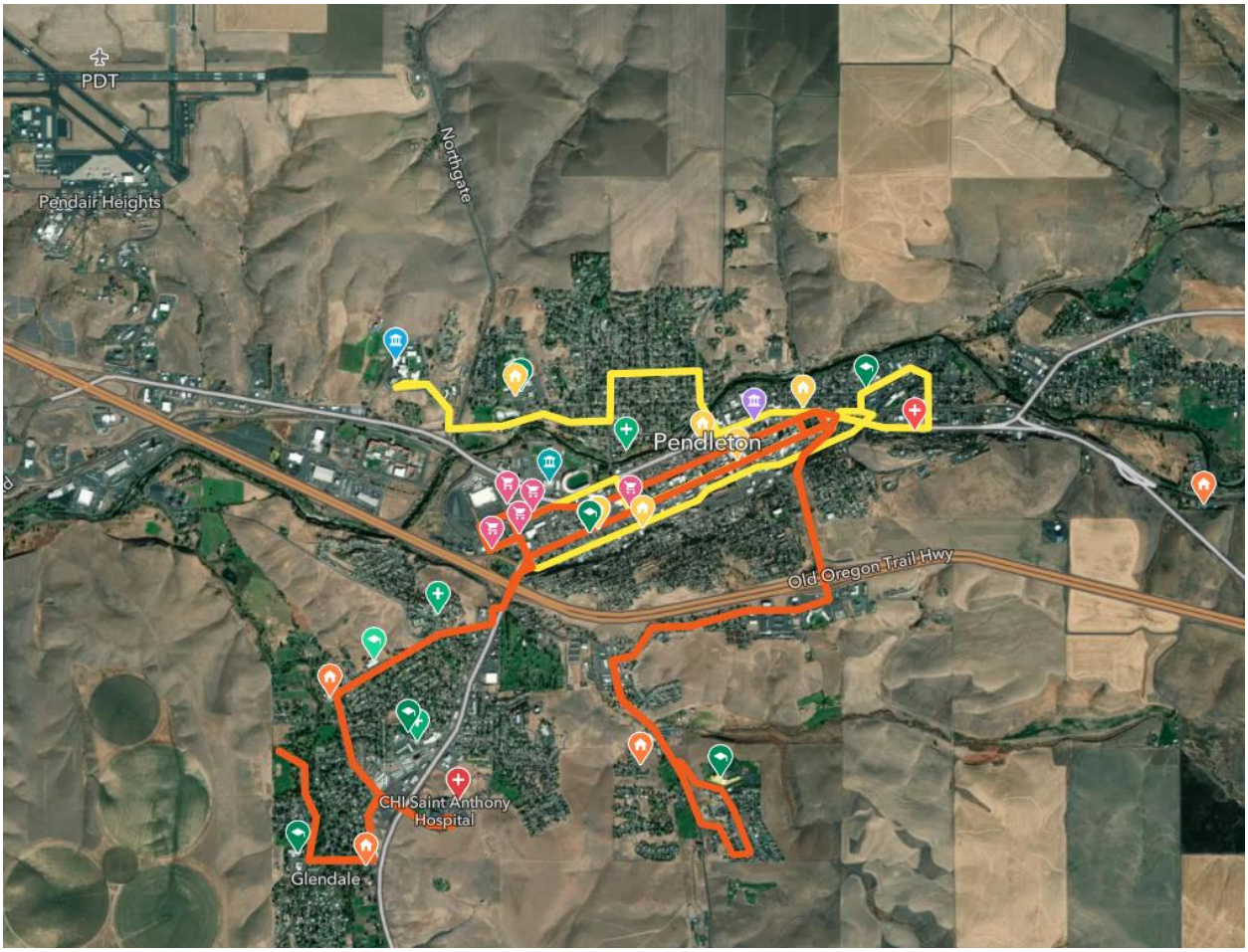


[1] Runtime estimates are based on Remix data, which reflects existing route and schedule times.

Figure 8 shows Alternative A for the Pendleton Let'er bus.

- The North route generally stays the same, maintaining the airport as a flag stop.
- The South route is modified to operate as a line route instead of a loop route, providing more direct trips for residents of southern Pendleton.
- The North route would maintain hourly headways, though the South route adds about 15 minutes onto the trip. This can pose challenges for transfers between the services.
- A modification of this alternative would be to "interline" the North and South route, so that the North route would begin operating the South route after completing its run at Walmart and vice versa. This would reduce the transfer friction between the two routes, but increase headways across the system.

Figure 8. Pendleton Let'er Bus Alternative A



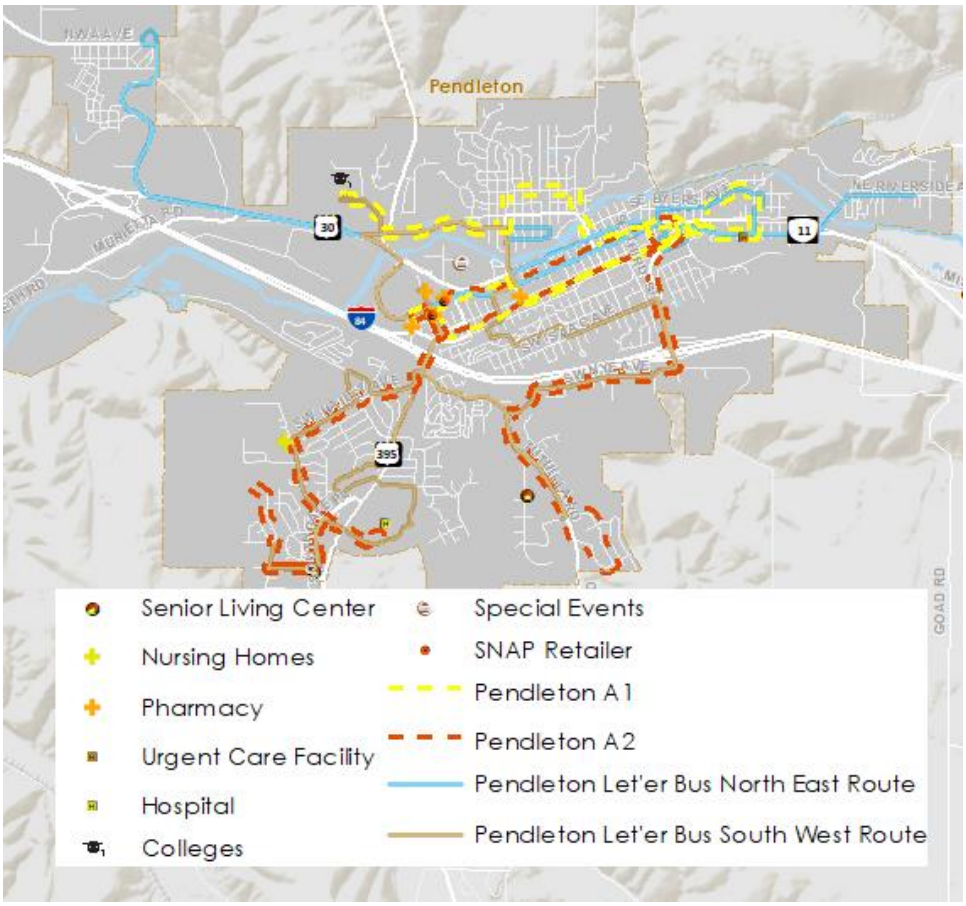
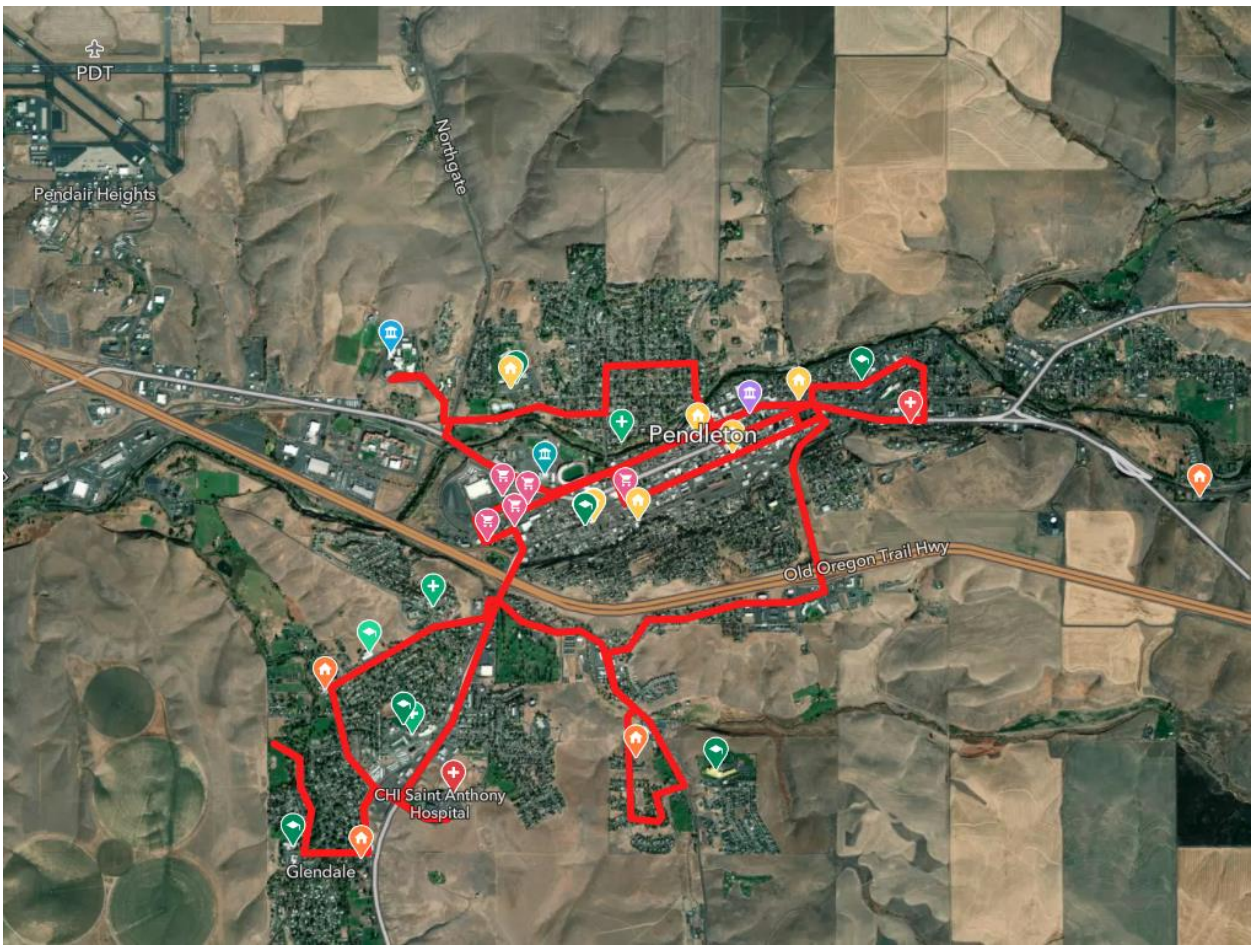

Pendleton
Senior Living Center
Nursing Homes
Pharmacy
Urgent Care Facility
Hospital
Colleges
Special Events
SNAP Retailer
Pendleton A1
Pendleton A2
Pendleton Let'er Bus North East Route
Pendleton Let'er Bus South West Route

Figure 9 shows Alternative B for the Pendleton Let'er bus.

- This alternative creates a loop route, operated in both directions. Using the loop may reduce confusion about transferring or interlining between the local services, which may be a current challenge for riders. As with the other options, the airport remains a flag stop.
- The total runtime in each direction is about 75 minutes, effectively adding about 15 minutes per trip compared to the two existing services.
- The different directions of the loop could be staggered so that each trip departs the same point about 40 minutes apart. This would give an additional opportunity for someone to take a transit trip, although they may be taking the side of the loop that results in a longer, out-of-direction trip for them.

Figure 9. Pendleton Let'er Bus Alternative B



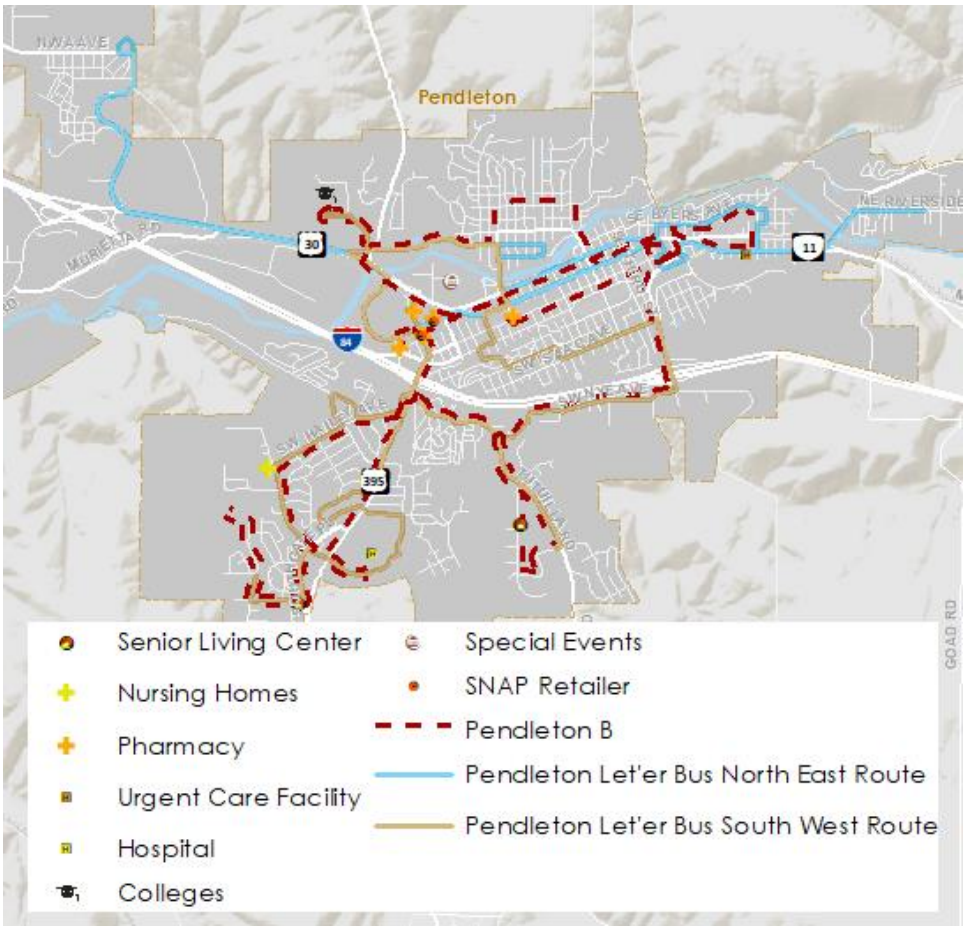

Pendleton
30
11
84
395
Senior Living Center
Nursing Homes
Pharmacy
Urgent Care Facility
Hospital
Colleges
Special Events
SNAP Retailer
Pendleton B
Pendleton Let'er Bus North East Route
Pendleton Let'er Bus South West Route

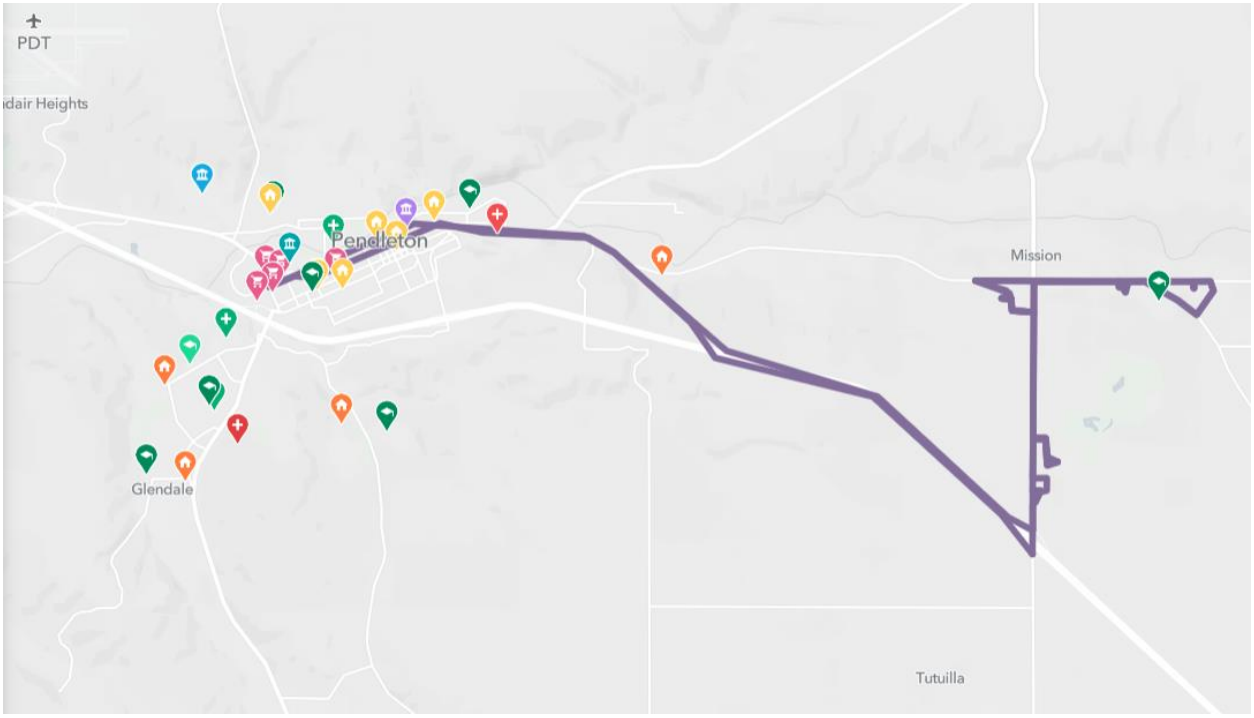
Figure 10 shows the existing Mission Metro route. As shown, the service currently provides connections to CHI Saint Anthony Hospital, social services offices, Blue Mountain Community College, Walmart, and more. The route takes approximately 2 hours.

Figure 10. Existing Mission Metro

Figure 11 shows Alternative A for the Mission Metro.

- The alternative reduces the number of stops in Pendleton, relying on the Let'er Bus services for local circulation.
- The route would transfer at the Walmart stop, which is also a high-activity stop as found in the public survey.
- The modification reduces the runtime to about 90 minutes,

Figure 11. Mission Metro Alternative A



Hermiston

Services within and into Hermiston are considered for modification. First, the Hermiston – Boardman Connector planning identified modifications to the Hermiston Hopper as a recommendation. As the Connector would be providing frequent service between Hermiston, Umatilla (city), and Irrigon, it was recommended that the Hopper terminate in Hermiston in the short-term. Figure 12 shows the existing route extents (to Irrigon twice per day) and Figure 13 shows the new extents. This saves approximately 30 minutes for each trip that currently goes to Umatilla (city) and 45 minutes for each trip that currently goes to Irrigon. As two trips per day go to Irrigon and another two trips per day go to Umatilla only, this saves about 2.5 hours per weekday. It saves about 1.5 hours on Saturdays.

Figure 12. Existing Hermiston Hopper (to Irrigon twice per day)

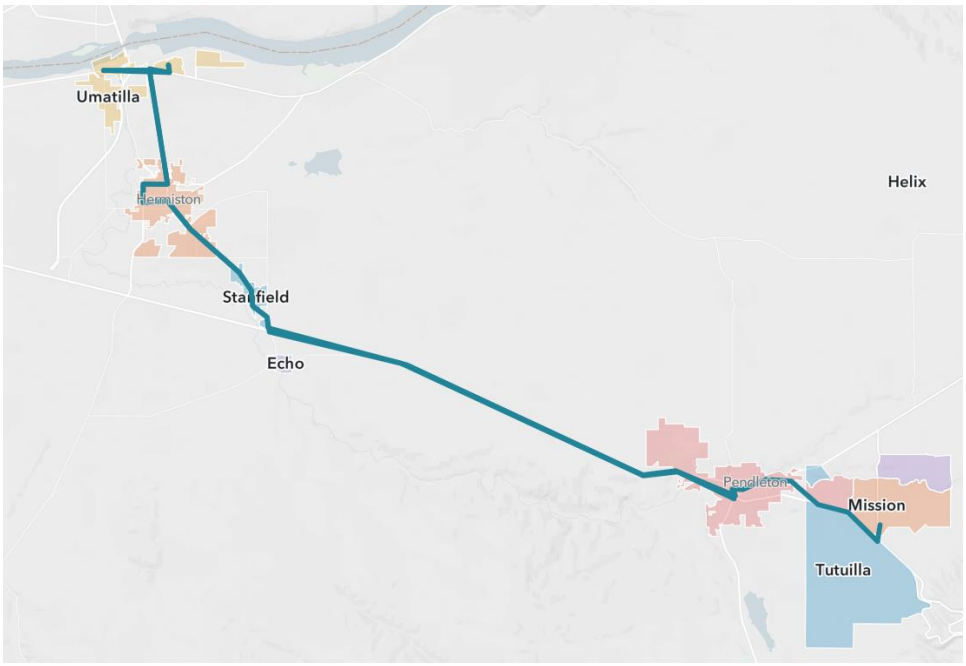


Figure 13. Hermiston Hopper Alternative A

Figure 14 shows the existing Hermiston HART route. As shown, the route provides coverage of most of Hermiston on hourly headways, though it includes several loops that may make a short transit trip difficult for riders. The route runs in one direction of the loop, then reverses and runs the other direction of the loop.

Figure 14. Existing Hermiston HART

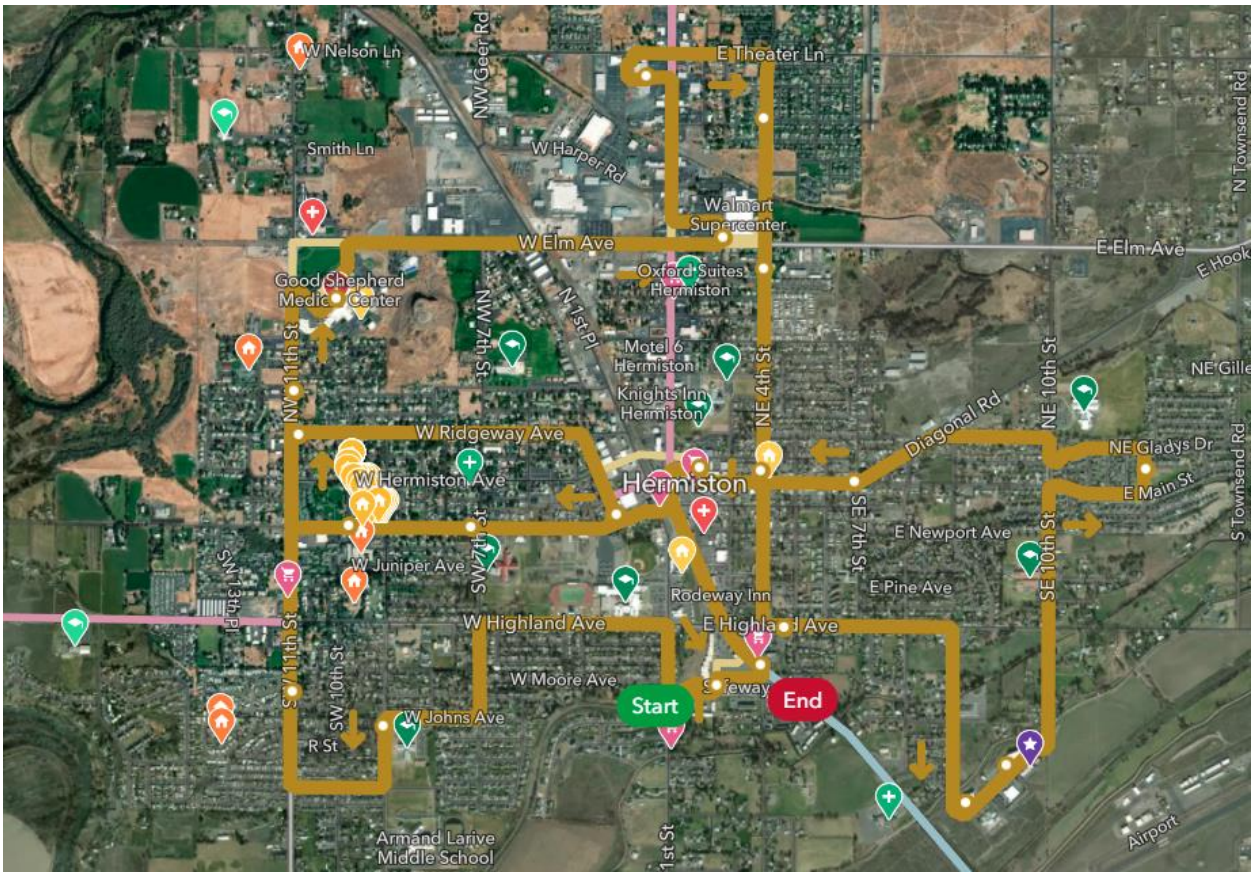
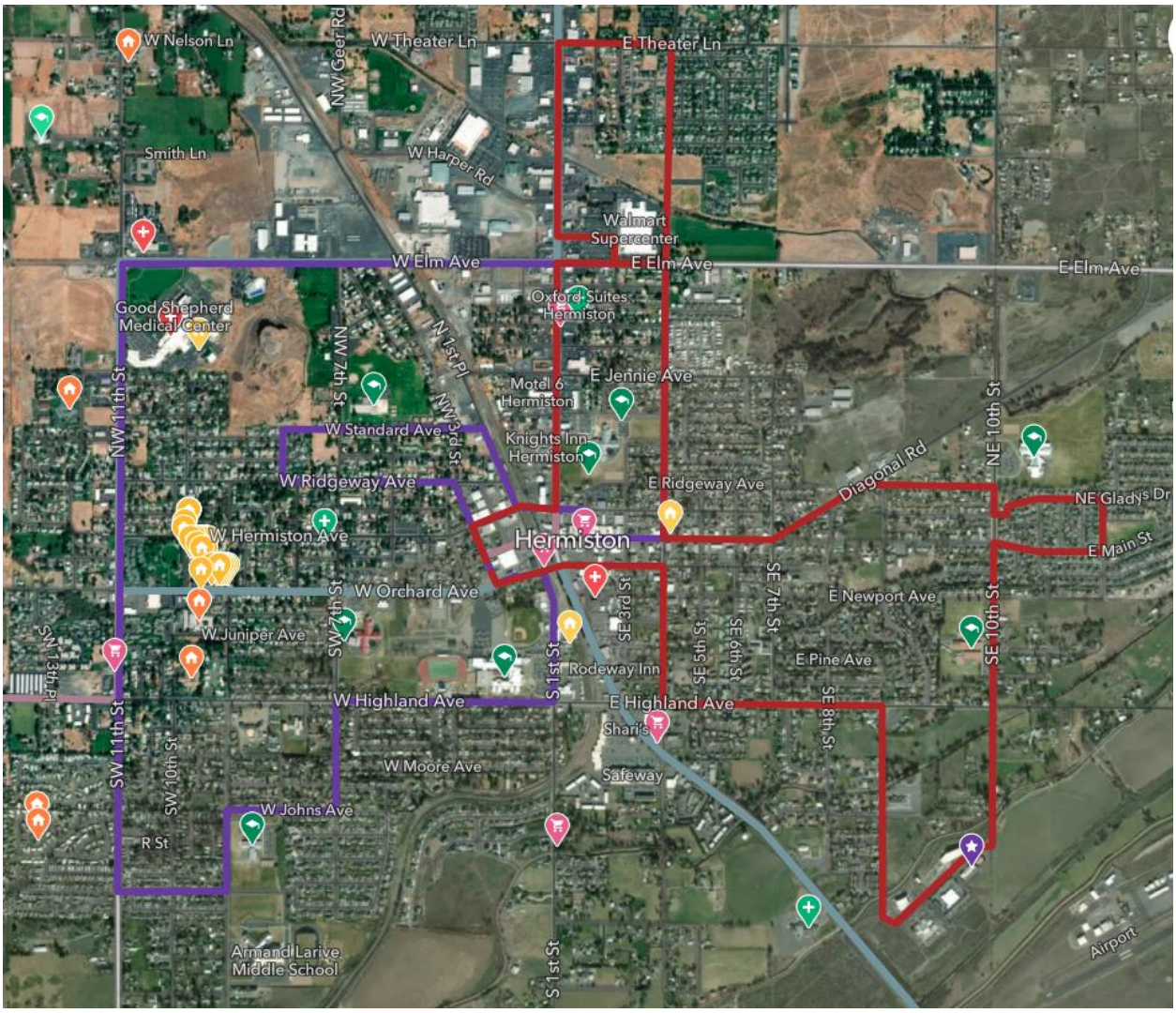
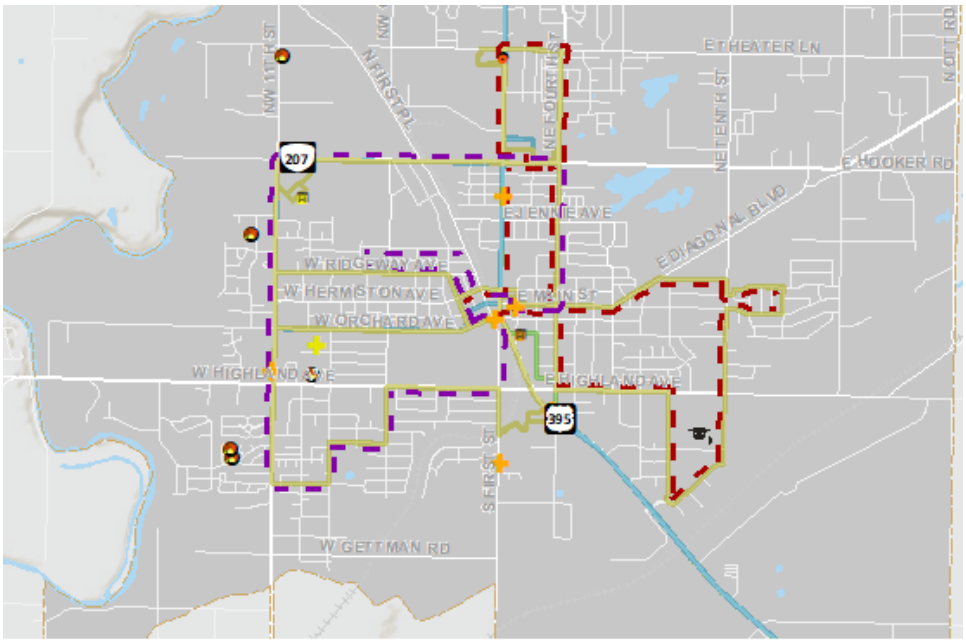


Figure 15 shows Alternative A for the Hermiston HART.

- This alternative creates two loop routes with transfer points near Walmart and the SW 3rd and Orchard stop. This may shorten trips for some riders, but would add a transfer for those looking to get east-west across town.
- The total runtime is about 30 minutes on the purple western loop and 32 minutes on the red eastern loop, potentially exceeding the existing time and resources allocated to the route.
- Similar to the existing route, these routes would be operated in both directions of the loop to reduce travel times.

Figure 15. Hermiston HART Alternative A





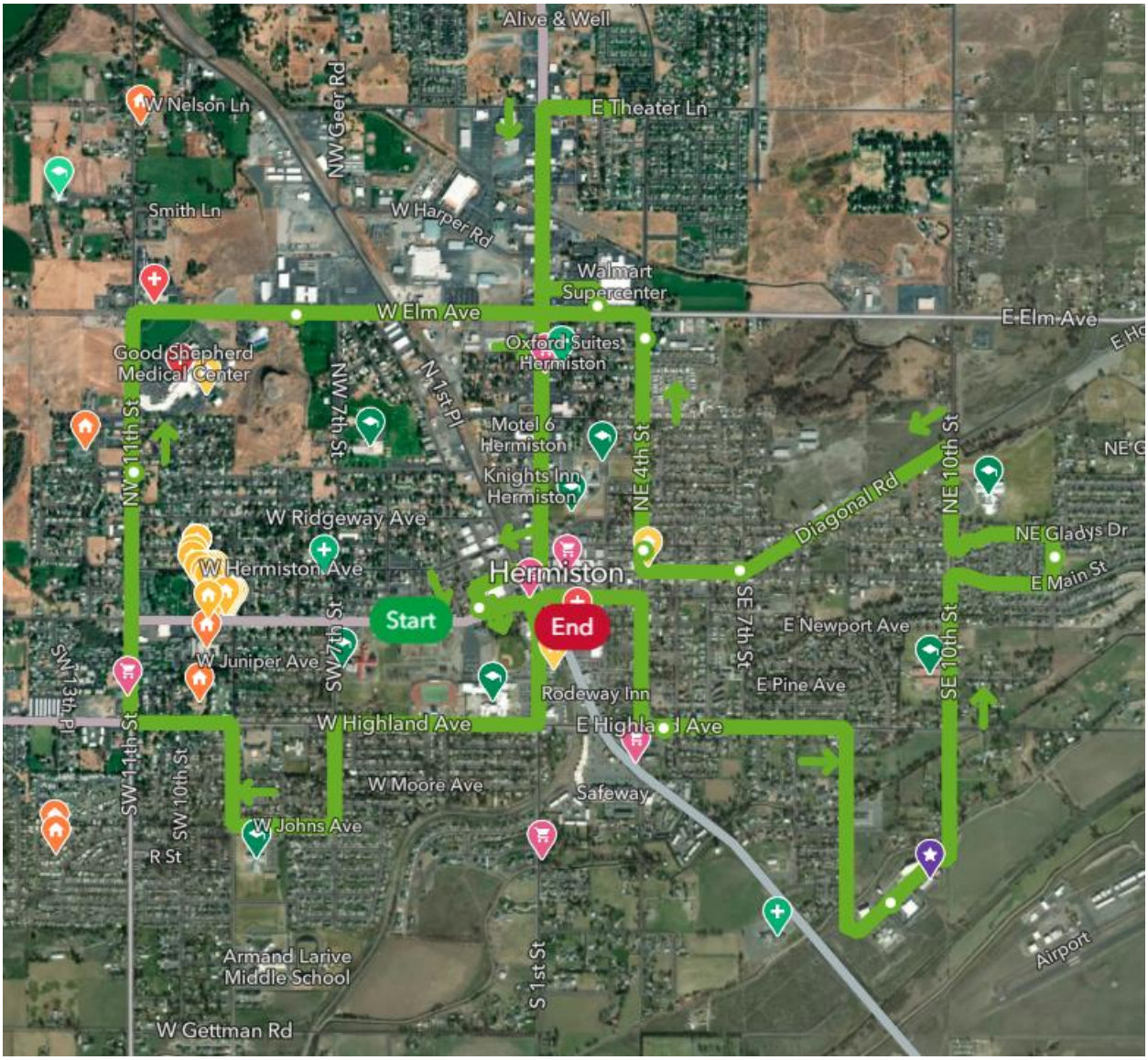
- SNAP Retailer
- Senior Living Center
- Nursing Homes
- Pharmacy
- Urgent Care Facility
- Hospital
- Colleges
- Hermiston A1
- Hermiston A2
- CTUIR Existing Hermiston Hart
- CTUIR Hermiston Hopper
- Amtrak Salt Lake City - Boise - Portland
- Amtrak Spokane - Portland

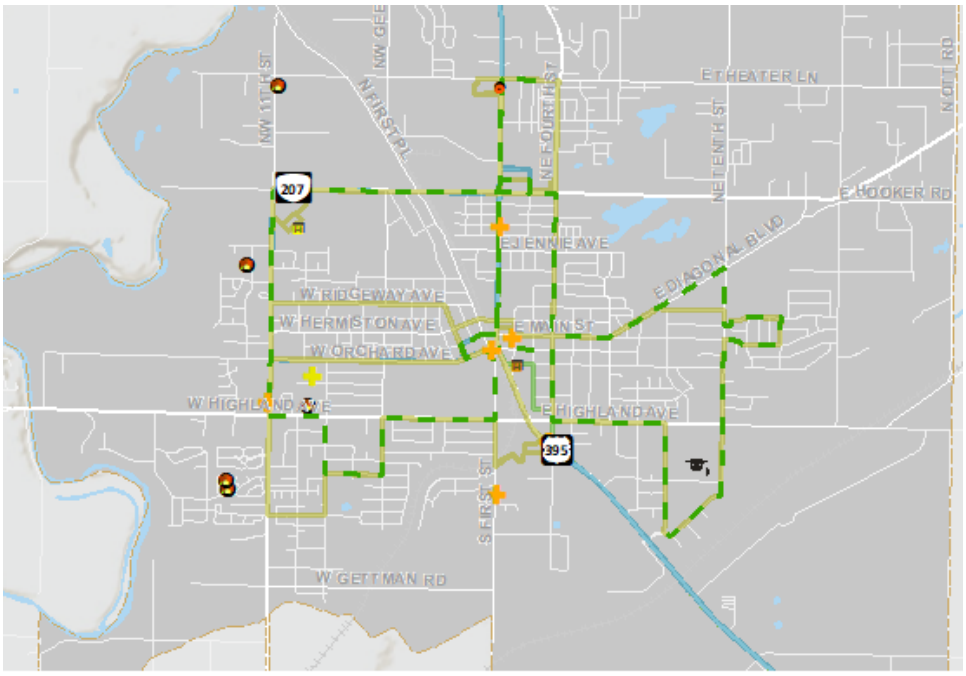
Similar to the existing route, these routes would be operated in both directions of the loop to reduce travel times.

Figure 16 shows Alternative B for the Hermiston HART.

- This alternative creates a simplified loop route that largely covers the extents of the existing HART. The route would take about 54 minutes, providing some time for the bus to potentially deviate. However, this route runs further away from several schools and low-income housing units.
- Similar to the existing route, these routes would be operated in both directions of the loop to reduce travel times.

Figure 16. Hermiston HART Alternative B





- SNAP Retailer
- Senior Living Center
- Nursing Homes
- Pharmacy
- Urgent Care Facility
- Hospital
- Colleges
- Hermiston B
- CTUIR Existing Hermiston Hart
- CTUIR Hermiston Hopper
- Amtrak Salt Lake City - Boise - Portland
- Amtrak Spokane - Portland

Expand Service to Neighboring Counties, Especially the Tri-Cities and Boardman Areas

The commute analysis saw heavy transit dependence in the Tri-Cities and Boardman areas. With most County growth focused in the northwest portion of the County, travel demand to these neighboring counties is expected to increase in addition to the existing demand.

Tri-Cities

Kayak Public Transit previously operated a route to the Tri-Cities area. Although cut due to funding, the service is highly requested by bus riders and travel demands to this area remains high. Currently, Pendleton residents would need to take the Walla Walla Whistler, then transfer to the Grapeline service to get to the Tri-Cities. Figure 11 shows a route connecting Hermiston to the Tri-Cities, increasing long-distance access.

- This potential route provides connections to cities such as Hermiston, Umatilla, and the Tri-Cities, as well as other services such as the Hermiston HART, Hermiston Hopper, the planned Hermiston – Boardman Connector, and services in Washington.
- This segment could be implemented as a stand-alone route, or an extension of the Hermiston Hopper. If an extension to the Hopper, this would reduce the number of transfers for travel between Pendleton and the Tri-Cities. However, the full Pendleton to Tri-Cities run would be lengthy, and increase the risk of keeping to the schedule or having vehicle breakdowns far from maintenance facilities.
- The average run time would be about 148 minutes.

Figure 17. Tri-Cities Alternative A

Boardman

As noted in the *Previously Planned Routes* section, the Hermiston – Boardman Connector was identified as the preferred service for providing connections between Umatilla County and Boardman. Monitoring this service after implementation will help to understand future needs and improvements.

Modify Service Between Umatilla County and the Walla Walla Area

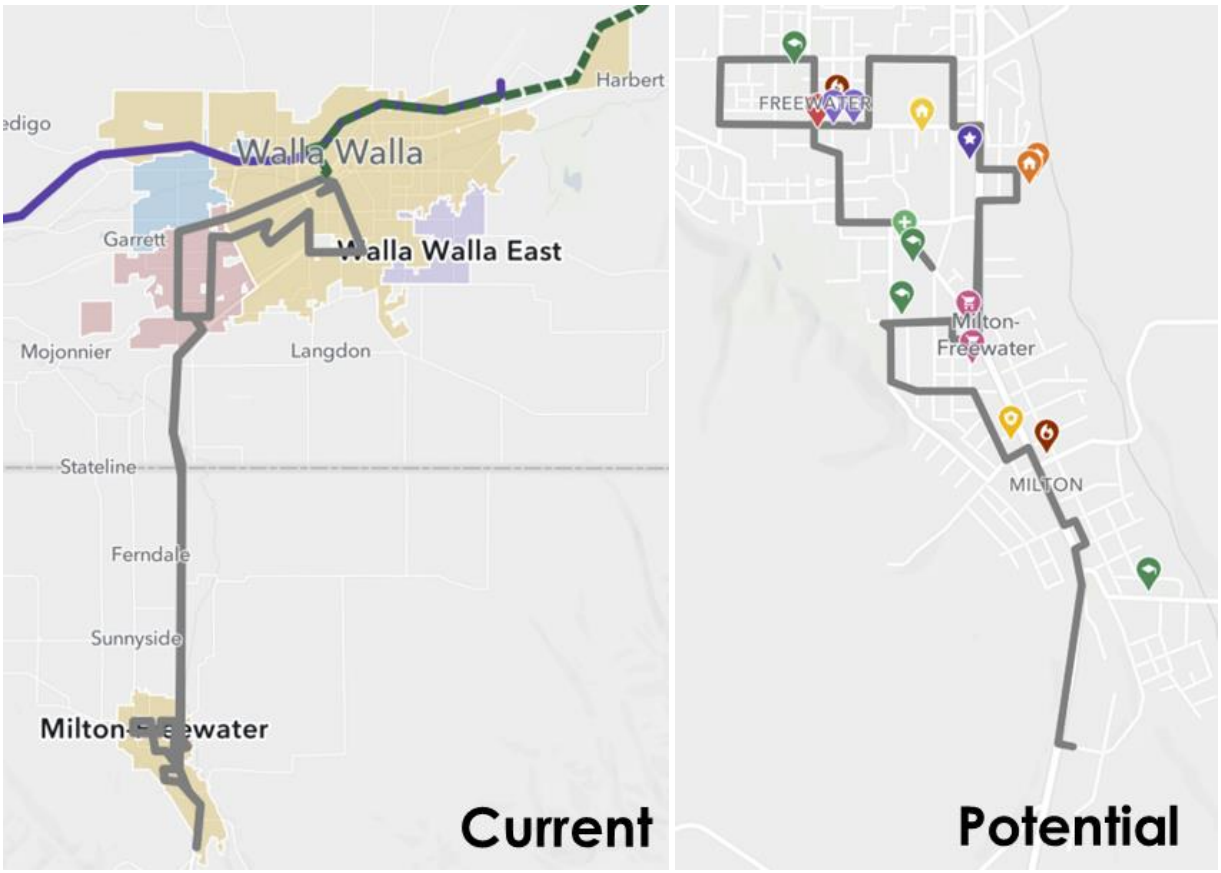
Projected growth in Milton-Freewater and Pendleton is anticipated to increase travel demand. Several agencies duplicate services on this corridor, including Kayak Public Transit's Walla Walla Whistler, the City of Milton-Freewater's service, and Grant County People Mover. Examining the timing and connections of these services may help to meet future demand and reduce duplication if it is occurring. While Grant County People Mover does provide coverage on this corridor, it is infrequent and provides critical long-distance connections, and modifications to it are not shown here.

City of Milton-Freewater Service

The existing City of Milton-Freewater service circulates in both Walla Walla and Milton-Freewater. It overlaps with the Walla Walla Whistler service. A potential modification to this route would be to limit its circulation to Milton-Freewater, and rely on the Whistler service for connections on to Walla Walla. Figure 18 shows the existing and potential route.

- Services provided by the City of Milton-Freewater would circulate around the city, relying on Kayak Public Transit to serve regional travel.
- The current and potential routes are similar within the City of Milton-Freewater. An exception is that the route currently travels on S Main Street between SE 8th Avenue and SE 3rd Avenue and on N Elizabeth Street between E Broadway and NE 5th Avenue. Removing these route segments would not affect any bus stops.
- With service focused only on Milton-Freewater, the average runtime would decrease from 95 minutes to 29 minutes, allowing frequency to be increased within Milton-Freewater.
- The more focused route would increase the number of bus trips per day by at least 3 trips, while decreasing the overall cost to operate the service.
- Alternatively, the service could slightly increase frequency and save the remaining time to provide deviations and alleviate dial-a-ride services.

Figure 18. Milton-Freewater Existing and Alternative A



Walla Walla Whistler Service

The Walla Walla Whistler was also examined for potential changes, as shown in Figure 19 and Figure 20.

- Both the current and potential routes travel to Pendleton, Mission, Athena, Weston, and Milton-Freewater via the Oregon Washington Highway. The changes in the potential route focus on Walla Walla.
- The potential route would cover the areas that the City of Milton-Freewater route currently serves, including the Jonathan Wainwright Memorial VA Medical Center, the Walla Walla Clinic, and St. Mary's Hospital. Additionally, the potential route could serve Walla Walla University, Walla Walla Community College, Walla Walla High School, Walla Walla County Courthouse, and grocery stores near the Walla Walla Country Club.
- Similar to the current route, the potential route could also connect to Valley Transit, Grapeline and Columbia County services. Note that the potential route duplicates service provided by Valley Transit (no GTFS data available, see Figure 21).
- Since the potential route is longer than the current route, the run time would increase to 185 minutes from 157 minutes.

Figure 19. Existing Walla Walla Whistler

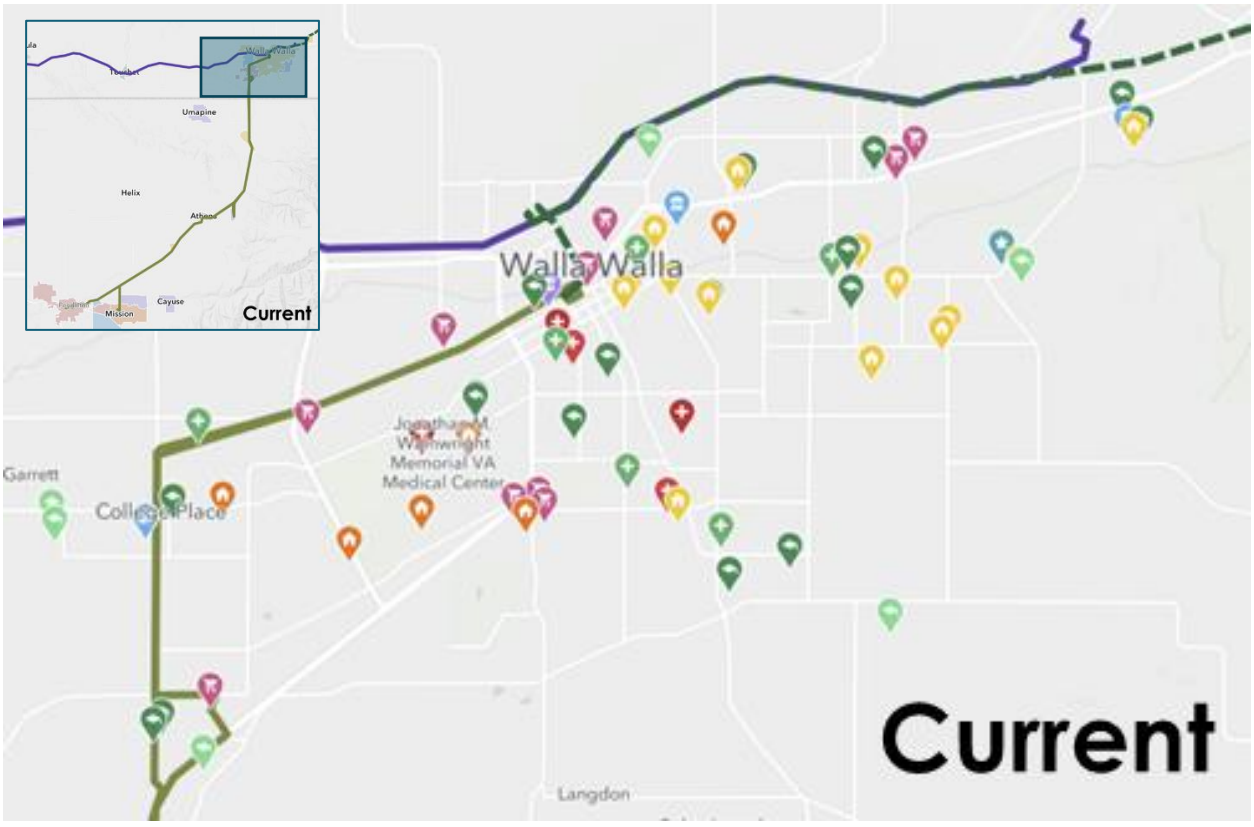


Figure 20. Walla Walla Whistler Alternative A

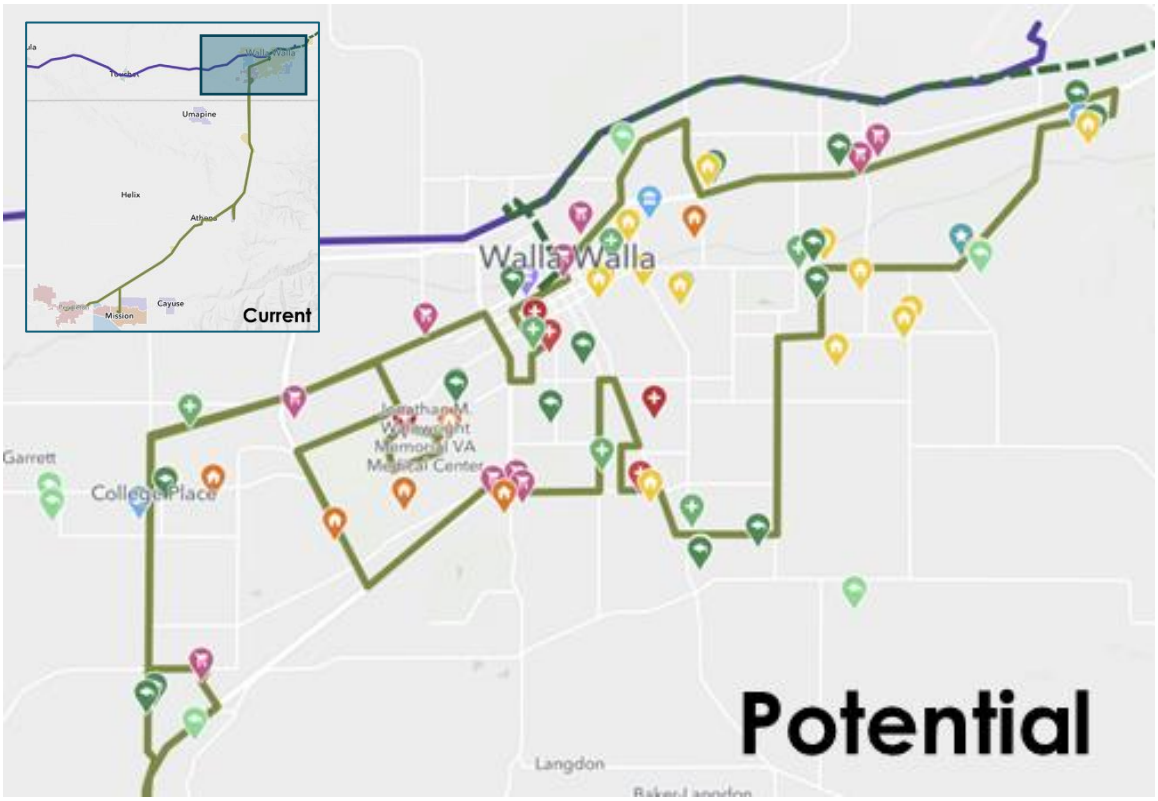
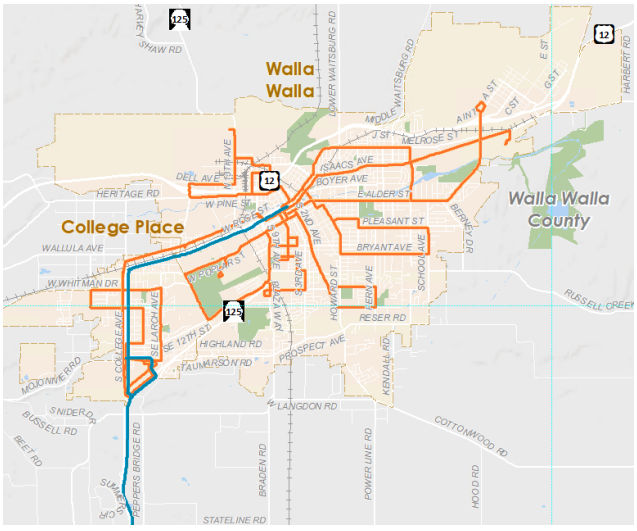


Figure 21. Valley Transit Service (Orange) and Existing Walla Walla Whistler (Blue)



Other Routing Enhancements

The above sections describe improvements that build-out the fixed-route coverage in Umatilla County. The next section describes enhancements that can further support these needs, as well as address the geographic need in increase regional/long-distance coverage and frequency, serve growing populations inside UGBs, and enhance access for transit-dependent populations in rural areas.

Service Enhancements

The following improvements were identified as needs not specific to geographic or demographic transit markets. These improvements could help improve existing rider experience, draw new ridership, and improve efficiencies of partnerships and Umatilla County's operations.

» **Increase service frequency, extend service hours, and provide weekend service:** Several transit providers in the County do not currently operate or have limited operations on weekends, leaving a temporal gap in the network. Ridership on several services does not meet the expected demand, as shown in Table 5, which may be a factor of service frequency or service hours not capturing the times when people need to travel. Additionally, the increase in service through 2019 showed an increase in rides per hour, indicating that more service drives increased rides per hour.

Table 5. Commuter Ridership Data (2019)

Services	Existing Annual Ridership (1-way passenger trips)	TCRP Report 161 Annual Demand (1-way passenger trips)	Weekend Service
Hermiston HART	5,978	32,400	No
Pendleton Let'er Bus + Mission Metro	34,005	65,300	No
Hermiston Hopper	32,010	33,900	**Yes**
La Grande Arrow	10,682	1,500	No
Pilot Rocket	5,642	2,600	No
Tutuilla Tripper	2,750	500	No
Walla Walla Whistler	23,652	19,100	**Yes**

- The Hermiston Hopper and the Walla Walla Whistler are the only fixed-route services that provide weekend service. The Hermiston Hopper comes within 5% of meeting estimated demand. The Walla Walla Whistler exceeds annual ridership demand. Increasing weekend service could be a means of drawing increased ridership.
- According to the survey responses, riders generally want extended service hours both in the AM and PM and weekend service. Riders are also looking for more service frequency, making commutes shorter and more convenient.
- Increasing the service hours, weekend service, and frequency are included for each existing route in the *Future Routing Service Opportunity Summary* section.

» **Improve education, marketing, and partnerships:** Compared to several peer services, Kayak Public Transit and the City of Pendleton provide fewer rides per hour. Lower efficiency may be an outcome of the geographic and demographic layout of the community (such as the long-distance travel needs), but looking toward other transit providers can help to highlight marketing opportunities that could draw increased rides. Improved partnership and marketing may help boost transit ridership.

» **Vanpool programs:** Vanpool programs are well-suited to commute trips between clustered residences and job locations. Valley Transit currently facilitates vanpool services, but Umatilla County's public providers do not currently provide vanpool

services. However, vanpools could be used to serve some of the commute demand from Umatilla County to specific employers in Boardman, Irrigon, Walla Walla, and the Tri-Cities.

- **Demand-response service:** High proportions of potential transit-dependent populations live in both rural and urban areas in Umatilla County; many of these areas do not have access to fixed-route transit. The county's rural nature (e.g., low-density land use, limited roadway connections) makes these populations hard to serve efficiently with fixed-route transit services. Demand-response services could be increased, such as those provided by the Hermiston taxi and Pendleton service programs, to enhance service access. Providing a 10-hour (8 AM to 6 PM) service window on weekdays would cost approximately $178,500 per vehicle annually.
- **Update vehicle fleet:** To provide increased service, Umatilla County transit providers will need to expand their vehicle fleets. Additionally, the rising cost of fuel and maintenance can be a burden to tight operating budgets. Pursuing electrification or other alternative fuels can help to stabilize operating costs. However, the current electric vehicle market is limited for long-distance route needs. A plan for fleet replacement, considering turnover, charging infrastructure, and advances to vehicle technology is needed.
- **Improve bus stop amenities and access:** Individual bus stops could be improved with amenities, sidewalk access, bike facility access, and more. Specific improvements identified through outreach included shelters, updated information boards, and benches. Additionally, park-and-ride facilities may be beneficial for the long-distance services Umatilla County transit providers offer, especially as gas prices increase and community members seek cheaper transportation alternatives. Park-and-ride facilities could include bus storage facilities to allow routes to start and end in other communities.
- **Centralized Pendleton Transit Center:** While many services provide transfers in downtown Pendleton, shifting the main vehicle storage and staff offices toward downtown Pendleton can reduce the duplication of service between Pendleton and Mission. This segment takes approximately 20 minutes per route per direction. This concept may be best implemented alongside a consolidated Regional Transit Authority (see *Coordination and Consolidation* section). Further evaluation of travel patterns between Pendleton and Mission should be explored before this option is implemented.
- **Update tools and technology:** Transit providers in the region are joining together as part of iTransitNW to establish a one-stop shop for transit resources. Continuing to support this implementation and seeking ways to provide both back-end management and data tracking and front-end customer benefits is critical to the region and the many transit providers who operate within it.

Coordination and Consolidation

Improving coordination with other providers in the region and between services in Umatilla County can improve the efficiency and effectiveness of transit services. Methods of coordination include:

- **Pulsing** – Timing transfers so that all buses meet at the same stop at the same time. Advertising pulsed services can assure riders that transferring between local and regional

services will be easy, and connections will not be missed. Pulsing requires adequate bus bays for vehicles to arrive simultaneously.

- **Interlining** – Using the same bus to travel to regional destinations after it completes the local route, and vice versa. Interlining can provide a one-seat ride without requiring additional service or vehicles. Interlining can make fare collection more complex, which should be planned for before implementation. In Umatilla County's case, free services remove this barrier.
- **Regional Transit Consolidation** – The range of transportation operators in Umatilla County may lead to duplicated efforts or institutional barriers to providing a seamless transit system. The transportation operators could look toward a range of consolidated efforts, including:
  - Shared maintenance agreements - allowing providers to use each others' services. This can be particularly helpful for regional transit services, where vehicle breakdowns may occur far from a providers' maintenance facilities.
  - Coordinated public involvement - allowing the public to provide feedback on any services and increasing the efficiency and reach of engagement. This could also include consolidated marketing efforts.
  - Agency consolidation – Providers in the County could pursue a Regional Transit Authority, combining transportation resources and operations. This governmental formation and process should be explored further to understand impacts to funding sources, staffing structures, taxing authority, etc. A Regional Transit Authority could potentially include neighboring counties, such as Morrow or Union.

Facilities

Facilities improvements include bus stop improvements, fleet improvements, bicycle and pedestrian amenities, and park-and-ride lots. Similar to information and technology improvements, safe and comfortable facilities can improve the ridership experience and increase ridership by improving stop visibility, providing protection from poor weather, and improving access to transit.

Bus Stops

Waiting at a bus stop is generally the first part of a rider's journey on a fixed-route transit system, and a comfortable and safe stop helps enhance the transit system. Bus stops range in cost, with a bench costing the least and a new bus stop with an ADA-complaint landing pad and a shelter costing more.

Benches

An alternative to a shelter for a stop that has less ridership is a bench. Benches should be considered for stops with at least three boardings per day, although other factors, such as the proximity to senior housing and nearby businesses willing to contribute to the costs, should be factored into the decision as well. Benches that attach to the bus stop pole, such as the Simmi-Seat (see Figure 1) take up very little space, have low maintenance, and are relatively inexpensive. Benches with backs and wider seating can be more comfortable for the elderly and people with disabilities. Installed benches vary in price from $500 to $1,500, depending on materials, the quality of the product, and the installation conditions.

Figure 22. Simmi Seat

Shelters

Passenger shelters add to the comfort of using transit and are generally very popular with riders. An "off-the-shelf" passenger shelter (there are several companies that provide them) typically costs approximately $6,000 plus installation. In addition to initial capital costs, passenger shelters will incur maintenance costs, both for routine ongoing cleaning and repair and replacement as needed. The primary maintenance issues for shelters, apart from the routine cleaning, are vandalism and fading/clouding of the windscreen. For routine cleaning, trash receptacles, if included, would dictate the frequency that the shelter should be serviced. If trash receptacles are not provided, the regular cleaning and servicing of shelters can be as low as once per month.

Passenger shelters must be designed to meet the requirements of the Americans with Disabilities Act (ADA) and should be located so as to provide safe and convenient pedestrian connections with nearby destinations. Coordination of shelter placement with sidewalk and other pedestrian improvements projects planned by Oregon Department of Transportation (ODOT) or local agencies is encouraged. In addition to the overhead protection (roof), shelter amenities can include:

- Windscreens
- Benches
- Trash receptacles
- Passenger information

Passenger shelters are recommended at high use stops and all transit centers. The condition of existing shelters at these locations should be reviewed and additional amenities considered, although the final prioritization will depend on the future service plan.

There is a tradeoff between the level of wind/weather protection provided using windscreens and an open shelter design, without a windscreen, that reduces maintenance costs. If vandalism is not a major problem, windscreens are recommended for shelters both to address winds and because infrequent service can lead to longer wait times, which suggests the need for a higher level of protection from the weather. Glass in lieu of acrylic should be considered to address weathering and fading issues.

New Bus Stop

The cost for building a new bus stop with an ADA-compliant landing pad and space for a shelter is approximately $15,000 per location. Designated bus stops have the following advantages:

- They provide awareness of the service, improving the visibility of transit service in the community.
- The stop can be located to assure safe bus and passenger access.
- The stop can include a paved, ADA compliant landing pad, to facilitate access by riders needing to use the bus lift or ramp.
- They can consolidate access, reducing the number of stops a bus makes.
- They can help communicate service information such as route numbers if included on the signs.

New bus stop signage on a pole, installed, can range from $300 to $1,000, depending on the material and the installation conditions. It is recommended that route names be placed on signs to assist riders in identifying the service. Bus stop displays with specific route, schedule, and fare information can also be very helpful, though they require updating when there are services or fare changes, which adds to operating cost. If service and fare changes are relatively infrequent, providing more-specific rider information at high-use bus stops is recommended. This option is especially important in areas where visitors tend to use transit service, because they are less likely to be familiar with the fares, routes, and schedules.

Bus stops should be located to allow for safe bus and passenger access. Where possible, bus stops would be located at locations that have existing or planned sidewalks or other pedestrian connections, and that allow for safe pedestrian crossing of the street. On major roadways with speeds of 35 mph or more, such as state highways, transit agencies may consider bus stops that allow the bus to stop out of the traffic lane to avoid rear-end collisions and to discourage unsafe passing of the bus by motorists.[2] At intersections, locating a bus stop on the far side of the street helps maintain pedestrian visibility at crosswalks and allows buses to reenter the travel lane more easily. Major bus stops should have some lighting and provide bicycle parking accommodations such as racks.

Bicycle and Pedestrian Infrastructure and Amenities

Bicycle and pedestrian access are very important to transit. Virtually every bus rider is also a pedestrian, and bicycles provide an important "last mile" option for transit, particularly for a system such as Umatilla County that serves low-density and rural communities. While Umatilla County is not able to provide safe and convenient pedestrian access to transit stops on its own, Umatilla County can work with local cities and ODOT to prioritize pedestrian improvements that serve transit stops. In addition, pedestrian improvements in the immediate vicinity of a transit center or shelter can sometimes be funded by other projects.

It is of particular importance and a legal requirement to provide access for persons with disabilities. Transit centers, shelters, and new or relocated bus stops should be designed to meet

[2] Source: https://nacto.org/publication/transit-street-design-guide/stations-stops/stop-configurations/curbside-pull-stop/

the requirements of the ADA. It is recommended that cities, the county, and ODOT prioritize street corners near transit centers and shelters for ADA ramps.

The bicycle/transit connection can be facilitated by providing bike parking at transit centers and, space permitting, at major bus stops. All Umatilla County buses (not vans) have the capability to carry bikes, and the agency should make this information more prominent on its website and other promotional materials.

Park-and-Ride Lots

Park-and-ride lots are typically feasible in situations where there is either a parking charge or parking shortages at the rider's destination, or if there is a substantial savings in travel cost or time by using transit. There are no formal park-and-rides in Umatilla County, but there are plans for assessing potential locations throughout the county. It may not make sense for Umatilla County to invest in a large park-and-ride program, as parking in many areas is free and widely available. Instead, agreements with local business, local government, and community organizations that allow use of a few spaces for "informal" park-and-ride usage is recommended.

Transit Centers and Major Transit Stops

Transit centers provide a transfer point for bus routes, while major transit stops are typically provided at major activity centers. In addition to providing greater passenger amenities that improve rider comfort, transit centers and major transit stops provide visibility for the transit service, reminding residents and visitors of the availability of the service within their community. Currently, Pendleton is the designated transit center in the Umatilla County service area. The Walmart in Pendleton and Hermiston, Til Taylor Park, and the 3rd/Orchard stop could be considered major bus stops.

- The location of the stop or transit center should consider pedestrian access to nearby destinations, ease of bus access to reduce out-of-direction travel and allow for safe bus operations, and visibility, both to publicize the service and to enhance rider security.
- The stop or transit center should be sized to accommodate planned growth, both in terms of the number of buses accommodated and the size of rider amenities, such as a passenger shelter.
- Materials used should consider life-cycle costing, which usually points toward high-quality, long-lasting materials that have lower ongoing maintenance costs.
- The stop or transit center design should use Crime Prevention Through Environmental Design (CPTED) principles to improve rider security. CPTED principles include maintaining clear sight lines into and across the station, eliminating "hiding" spots, and providing adequate lighting.
- Public art should be considered for transit centers. Art has been shown to discourage vandalism and can also be used to involve the local art community in a transit center project. Regulations now require that public art funded through the Federal Transit Administration (FTA) be "functional." Art associated with railings, benches, pavement, windscreens, or any other element of the shelter would meet the FTA requirement. Free-standing art, such as a sculpture, would not.
- Information cases should be located at transit centers and at some major stops to provide general schedule and overall system information.

Current bus stops that have more than ten boardings a day should be considered major stops, and merit consideration for a higher level of improvement (relative to the base-level amenities found at all bus stops), such as a shelter or information case. Final decisions about transit center locations and other stop improvements will depend on the final service network.

Policy and Code Amendments

This section identifies potential transit-supportive land use implementation strategies for jurisdictions in Umatilla County. Land uses, development density, transportation system connectivity and access, parking requirements, and urban form (e.g., building setbacks) are all regulatory elements and code strategies related to development that affect how supportive an area is for transit service. The resulting set of transit-supportive code strategies is presented in Table 6.

- **Coordination** – Coordination between jurisdictions and transit service providers regarding proposed development is critical to ensuring transit-supportive development occurs. The periods during which an applicant is preparing a development application and when that application is under review by the jurisdiction present key opportunities for this coordination.
- **Uses** – The general idea behind use-related transit-supportive strategies is: (a) to encourage uses that support a high number and density of potential transit riders; and (b) to discourage uses that do not provide many riders or that do not promote a pedestrian-oriented environment that supports safe, convenient, and attractive transit access. Therefore, use regulations proposed in Table 6 promote a variety of uses and high trip generation as well as limit auto-oriented uses that detract from a pedestrian-oriented environment.
- **Development Standards** – Development standards address the intensity and form that development takes. Like use regulations, development standards can be used to promote higher densities of riders near transit, establish a pedestrian-friendly environment, and support transit. Particular transit-supportive development standards that are recommended in Table 6 include those that require minimum levels of residential and employment density, bring buildings closer to transit streets and connect them to transit stops, and create visual interest and pedestrian amenities along transit street-facing building fronts.
- **Access** – Providing safe and convenient access to transit is critical to its robust use. In addition to requiring access directly from buildings on a site to an existing or planned transit stop, transit-supportive access ensures that transportation network connectivity is high enough to easily reach transit stops by walking and rolling (e.g., biking, scooting, mobility devices). Strategies proposed in Table 6 promote this connectivity through maximum block length standards and required non-motorized access through long blocks.[3]

[3] Projects that improve pedestrian and bicycling infrastructure and connections to transit streets are also vital to supporting transit. These types of projects fall within the purview of transportation system planning. Jurisdictions within Douglas County vary as to how recently their transportation system plans have been updated and when they next expect to conduct an update.

- **Parking** – Parking affects the transit orientation of development in several ways. Capping the amount of vehicle parking permitted can help make alternatives to driving more attractive. Providing sufficient and well-designed bicycle parking supports bike connections from transit to destinations. The location and design of parking lots – e.g., restricting parking between buildings and the street, and requiring landscaping and walkways – play a significant role in making pedestrian access to transit attractive and convenient. Parking areas also provide potential locations for transit stops, park-and-rides, and ridesharing.

Table 6. Transit-Supportive Land Use Strategies

Transit-Supportive Code Strategy	Notes
Coordination	
Coordination with Transit Provider	Require or support involvement of transit provider in pre-application conference and/or application review for development applications. Require notice of development application hearings be sent to transit provider
Transit Stop Improvements/Amenities	Work with transit provider to provide seating, lighting, etc. consistent with their development and master plans
Uses	
Accessory Dwelling Units	Allow a minimum of one accessory dwelling unit (ADU)
Mixed Use	Allow or require mixed uses
Major Trip Generator	Allow uses that offer goods or services that attract large numbers of employees or members of the public, such as: » Institutional Uses for the Public » Neighborhood Commercial Uses » Major Employment Generating Uses » Major User-Generating Uses
Non-Transit-Supportive: Auto-Oriented and Auto-Dependent Uses	Prohibit or restrict auto-oriented and auto-dependent uses, including uses that provide goods and services for vehicles and uses (e.g., distribution facilities) where vehicles are a primary and integral part of operations
Non-Transit-Supportive: Drive-Throughs	Restrict or prohibit drive-throughs
Development Standards	
Residential Density	Establish minimum density consistent with local transit service guidelines
Minimum Floor Area Ratio (FAR) or Lot Coverage	Establish, e.g., a FAR of 1:1 to 2:1 or no maximum lot coverage
Max. Front Yard Setbacks	Establish, e.g., no minimum setback and maximum 10-foot setback
Pedestrian Amenities in Front Setback	Allow for greater front setback when pedestrian and bicycle space (seating, parking, wider sidewalks, enhanced bicycle facilities, etc.) provided, e.g., up to 20 feet of setback for up to 50% of building face

Transit-Supportive Code Strategy	Notes
Pedestrian Orientation (Basic)	Require primary entrance oriented to street and pedestrian connection from building(s) to street (transit stop) Encourage pedestrian amenities (in front setback)
Pedestrian Orientation (Enhanced)	Require building articulation, minimum ground floor windows, and weather protection (e.g., awnings), e.g., windows for minimum 50% of length and minimum 60% of area of street-facing wall; weather protection for minimum 50% of length of street-facing wall and over street-facing entries Require integration of two or more other pedestrian-oriented design features including human-scale building lighting, wayfinding elements, signs, and horizontal/vertical elements (e.g., cornice, columns, transoms)
Additional Height for Housing	Allow for additional building height (up to an alternative maximum) when housing provided, possibly with design requirements such as stepbacks
Access	
Block Length	Establish maximum block length standards consistent with State of Oregon Transportation & Growth Management Model Development Code for Small Cities, 3rd Edition ("Model Code")[4]
Accessways Through Long Blocks	Require non-motorized accessways consistent with the Oregon Transportation Planning Rule
Parking	
No Vehicle Parking/ Circulation in Front Setback	Prohibit parking and circulation in front setback Related to maximum front setback
Parking Maximums	Potential reduction of existing maximums
Parking Reductions for Transit	Establish reductions (including maximum % reduction) for locations within specified distance of transit
Parking Management Strategy	Consider developing a Parking Management Strategy to evaluate parking needs and manage supply (for integration into future code requirements and/or policy adopted related to the UPTD Transit Master Plan)
Landscaping and Walkways in Parking Lots	Set minimum standards for perimeter landscaping, landscaping islands, and walkways through parking lots
Transit-Related Uses in Parking Lots	Allow for redevelopment of existing parking lots to accommodate transit-related uses (e.g., stops, park-and-rides, transit-oriented buildings), provided that other minimum parking standards can be met and the location of the use is appropriate and safe
Preferential Parking for Ridesharing	Require location of rideshare (carpool) parking required to be closest to primary entrance, aside from Americans with Disabilities Act (ADA)-accessible parking
Bicycle Parking	Establish minimum bicycle parking space and design requirements consistent with the Oregon Transportation Planning Rule

[4] https://www.oregon.gov/LCD/TGM/Pages/Model-Code.aspx

Future Routing Service Opportunity Summary

Table 7 summarizes the future routing opportunities, including populations served and anticipated costs. The service enhancements and demand-response services will also be evaluated in the next memorandum, alongside these routing opportunities.

Table 7. Summary of Future Service Opportunities

Alternative	Travel Time (minutes)	Population Served within ¼ Mile	Employment Served within ¼ Mile	Annual Service Hours	Annual Operating Cost	Change in Net Annual Operating Cost[1]	Capital Needed
Pendleton Let'er Bus							
Existing N-E (1 of 2 routes)	59	7,200	4,600	2,805	$280,500	-	-
Existing S-W (1 of 2 routes)	57			2,805	$280,500	-	-
Alternative A (2 routes)	121	6,200	3,800	6,452	$645,150	$84,150	5 new stops
Alternative B (1 loop)	74	5,900	3,700	6,215	$621,500	$60,500	6 new stops
Add Saturday Service	116	7,200	4,600	6,820	$682,000	$121,000	-
Add Weekend Service	116	7,200	4,600	6,452	$645,150	$84,150	-
Hermiston Hopper							
Existing	141	3,200	4,800	4,850	$485,000	-	-
Alternative A	116	2,400	3,400	4,850	$485,000	$0	-
Increase Saturday Service	141	3,200	4,800	5,620	$562,000	$77,000	-
Add Sunday Service	141	3,200	4,800	7,160	$716,000	$231,000	-
Double Frequency (~2 hour headways)	141	3,200	4,800	8,930	$893,000	$408,000	1 new bus
Hermiston HART							
Existing (1 bidirectional loop)	123	6,500	4,500	2,550	$255,000	-	-
Alternative A (2 bidirectional loops)	62	5,800	3,100	2,550	$255,000	$0	-
Alternative B (1 bidirectional loop)	54	3,400	2,600	2,550	$255,000	$0	-
Add Saturday Service	123	6,500	4,500	3,100	$310,000	$55,000	-
Add Weekend Service	123	6,500	4,500	3,650	$365,000	$110,000	-
Double Frequency (~1 hour headways)	123	6,500	4,500	5,100	$510,000	$255,000	1 new bus
Tri-Cities							
Alternative A	148	900	900	1,275	$127,500	$127,500	1 new bus
City of Milton Freewater							
Existing	95	8,500	4,200	1,530	$153,000	-	-
Alternative A	29	3,800	1,400	1,530	$153,000	$0	-
Add Saturday Service	95	8,500	4,200	1,860	$186,000	$33,000	-
Add Weekend Service	95	8,500	4,200	2,190	$219,000	$66,000	-

Alternative	Travel Time (minutes)	Population Served within ¼ Mile	Employment Served within ¼ Mile	Annual Service Hours	Annual Operating Cost	Change in Net Annual Operating Cost[1]	Capital Needed
Walla Walla Whistler							
Existing	157	4,000	3,800	4,850	$485,000	-	-
Alternative A	185	9,000	6,100	4,850	$485,000	$0	5 new bus stops
Increase Saturday Service	157	4,000	3,800	5,620	$562,000	$77,000	-
Add Sunday Service	157	4,000	3,800	7,160	$716,000	$231,000	-
Double Frequency (~2 hour headways)	157	4,000	3,800	8,930	$893,000	$408,000	1 new bus
La Grande Arrow							
Existing	148	3,200	3,100	3,060	$306,000	-	-
Add Saturday Service	148	3,200	3,100	3,720	$372,000	$66,000	-
Add Weekend Service	148	3,200	3,100	4,380	$438,000	$132,000	-
Double Frequency (~3 hour headways)	148	3,200	3,100	6,120	$612,000	$306,000	1 new bus
Mission Metro							
Existing	120	3,900	4,300	3,060	$306,000	-	-
Alternative A	89	2,600	3,000	2,295	$230,000	-$76,000	-
Add Saturday Service	120	3,900	4,300	3,720	$372,000	$66,000	-
Add Weekend Service	120	3,900	4,300	4,380	$438,000	$132,000	-
Double Frequency (~1 hour headways)	120	3,900	4,300	6,120	$612,000	$174,000	1 new bus
Pilot Rocket							
Existing	78	1,700	2,500	3,060	$306,000	-	-
Add Saturday Service	78	1,700	2,500	3,720	$372,000	$66,000	-
Add Weekday Service	78	1,700	2,500	4,380	$438,000	$132,000	-
Double Frequency (~3 hour headways)	78	1,700	2,500	6,120	$612,000	$174,000	1 new bus
Tutuilla Tripper							
Existing	110	1,700	2,500	3,060	$306,000	-	-
Add Saturday Service	110	1,700	2,500	3,720	$372,000	$66,000	-
Add Weekend Service	110	1,700	2,500	4,380	$438,000	$132,000	-
Double Frequency (~3 hour headways)	110	1,700	2,500	6,120	$612,000	$306,000	1 new bus

[1]Anticipated Net Annual Operating Cost was estimated as the difference between the existing service and the potential service.

Next Steps

These future service opportunities will be evaluated and prioritized according to funding constraints and alignment with the vision and goals in *Technical Memorandum #4: Future Funding and Preferred Projects.*