

MEMO #7: FUTURE SERVICE DESIGN AND SUPPORTING PROGRAMS

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INTRODUCTION

This memorandum presents the evaluation of future service opportunities and recommendations for short-, medium-, and long-term service plans for Wasco County's Transit Development Plan (TDP). The memorandum builds on the transit-supportive land use policies outlined in *Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies*; the evaluation framework developed in *Memo #4: Evaluation Framework*; the service opportunities analysis provided in *Memo #5: Future Service Opportunities*; and goals, vision, and standards identified in *Memo 6: Updated Goals, Policies, and Practices*.

NEEDS IDENTIFICATION

The following improvements were identified in *Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies* 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 MCEDD's operations.

- Improve efficiency of deviated fixed-route service
- Increase service frequency, extend service hours, and provide weekend service
- Increase bus stop amenities and access
- Update vehicle fleet
- Provide additional education and marketing
- Update tools and technology

EVALUATION FRAMEWORK

Memo #4: Evaluation Framework presented evaluation criteria to (1) measure progress on The LINK's goals, policies, and practices; and (2) prioritize future service opportunities. Table 1 presents the evaluation criteria, their related goal area, and a description of each criterion. Service opportunities identified in *Memo #5: Future Service Opportunities* were evaluated according to these criteria to determine which opportunities should be advanced into the service plans described in this memo. The goals and vision for Wasco County's transit services were refined in *Memo #6: Updated Goals, Policies, and Practices*.

Table 1: Evaluation Criteria

Criterion	Description
Customer-Focused Services	
Service Frequency	Can be further distinguished by frequency during peak periods vs. off-peak
Service Span	Number of hours per weekday and weekend day service is provided
Geographic Coverage	Measures the amount of an area has access to transit, using proximity to bus stops and transit stations as well as temporal data (such as service frequency and span of demand-response services) as analysis parameters
Accessibility and Connectivity	
Bicycle and Pedestrian Connections	Considers existing and potentially improved bicycle and pedestrian connectivity to bus stops, measured by the percentage of stops with direct access to low-stress walking and biking facilities
Population within ¼ Mile of Transit Route or Service	Provides ridership proxy using population near stops or service
Employees within ¼ Mile of Transit Route or Service	Provides ridership proxy using employment near stops or service, and evaluates the connections to large employment centers
Transit-Dependent Populations within ¼ Mile of Transit Route or Service	Measure of access to transit for transit-dependent populations

Criterion	Description
Coordination	
Connections to Other Routes/Providers	Evaluates how well an alternative is integrated with other routes and mobility services
Health	
Access to Health-Supporting Destinations	Evaluates how many connections are made to grocery stores, parks, community spaces, health care, and social services
Sustainability	
Rides per Hour	Productivity measure comparing potential ridership to service hours provided
Cost per Ride	Evaluates the cost-efficiency of the system
Total Capital Costs	Provides capital costs needed to start a service alternative
Total Annual Operating Costs	Provides operating costs to maintain a service alternative

FUTURE SERVICE OPPORTUNITIES

This section describes future service opportunities that address transit efficiency, ridership, and coverage needs through information and technology, coordination, facilities, service enhancement, and routing opportunities. Future service opportunities related to service enhancement, coordination, information and technology, and facilities are more focused on improving current system efficiency, as opposed to enhancing coverage. Routing opportunities can improve both existing efficiency and geographic coverage. These opportunities were developed based on stakeholder input; population, employment, and land use growth forecasts; and existing and forecasted future transit demand.

Future service opportunities, listed generally from lower-cost to higher-cost, include:

- Marketing, education, and marketing, such as a branding overhaul with updated bus wraps and stop signage, can help inform the community about the location and availability of transit services.
- Information and technology improvements, such as automatic vehicle location (AVL), that can support vehicle dispatchers, provide schedule reliability data to inform service planning, and serve as the data source that can be used to provide riders with real-time arrival information.
- Coordination with other transit providers can improve efficiency by reducing transfer times and distances, while coordination with local governments in The Dalles, Warm Springs, Madras, Maupin, Mosier, Dufur, Shaniko, and Antelope can improve rider access to bus stops.
- Bus stop improvements can be a low-cost way to make riding transit more comfortable, increasing ridership amongst existing users, and making transit service more visible, attracting new riders.
- Modifications to regional and local routes can enhance geographic coverage and increase ridership by serving key activity centers and transit-dependent populations.
- Increasing service hours of existing routes, providing weekend service, and/or extending regional transit routes increases the number of trip types that transit can serve. Expanding service hours and providing weekend service is costly to implement.
- Implementing new regional routes can substantially increase geographic coverage and attract new ridership but is also costly to implement.

- Larger facility improvements, such as a secondary transit center in downtown The Dalles, can provide a landmark destination for transit service in Wasco County.

Service Opportunities Analysis

This section summarizes the identified service opportunities, which include **existing services, new services, information and technology improvements, and bus stop and facilities improvements**. These opportunities were developed based on stakeholder input; population, employment, and land use growth; and existing and estimated future transit demand.

The evaluation criteria primarily focus on existing service enhancements and new routing services. While information and technology improvements and bus stop and facilities improvements enhance the customer experience and encourage ridership, their costs, funding sources, and impacts to users vary greatly by transit provider. These opportunities are summarized, evaluated, and prioritized at a high level in this memorandum. Table 2 summarizes the future service opportunities related to routing and operating hours, including populations served and anticipated costs. Table 3 summarizes the benefits and considerations associated with information, technology, and facility opportunities. Further details about service opportunities are available in *Memo #5: Future Service Opportunities*.

Table 2: Summary of Future Service Opportunities

Service Opportunity	Travel Time (min.)	Population Served within ¼ Mile	Employment Served within ¼ Mile	Anticipated Net Annual Operating Cost ^{1,2}	Capital Needed
Add Stops to Blue Line	59	7,060	3,780	+\$0	13 new bus stops
Add Clockwise Blue Line	59	7,060	3,780	+\$346,800	13 new bus stops 1 new bus
Convert Blue Line to Figure-8 Loop	61	6,620	3,507	+\$0	8 new bus stops
Revise Blue Line for Future Transitional Housing	52	7,354	3,877	+0	13 new bus stops
Convert Blue Line Out-and-Back Route	56	5,385	1,589	+\$0	12 new bus stops
Convert Red Line Out-and-Back Route – Option A	73	6,263	3,189	+\$216,750	15 new bus stops 1 new bus
Convert Red Line Out-and-Back Route – Option B	96	7,095	3,683	+\$216,750	16 new bus stops 1 new bus
Extend The Dalles – Hood River Service to connect to CGCC	133	1,707	1,214	+26,000	1 new bus stop
New 10 th Street Route in The Dalles	43	4,309	1,558	+\$216,750	8 new bus stops 1 new bus
New 6 th Street and 7 th Street Route in The Dalles	31	3,639	2,453	+\$216,750	9 new bus stops 1 new bus
New Route to Madras (Two Times per Day, Twice per Week)	321	1,586	1,187	+\$112,000	11 new bus stops 1 new bus
New Route to Maupin (Two Times per Day, Twice per Week)	160	1,023	1,035	+\$55,000	7 new bus stops

Service Opportunity	Travel Time (min.)	Population Served within ¼ Mile	Employment Served within ¼ Mile	Anticipated Net Annual Operating Cost ^{1,2}	Capital Needed
New Route Connecting Warm Springs Reservation, Madras, Shaniko, and Antelope (Two Times per Day, Twice per Month)	197	569	154	+\$15,000	10 new bus stops
Expand Fixed Route Service Hours: Weekdays (6:00 a.m. to 8:00 p.m.)	—	—	—	+\$153,000	—
Expand Fixed Route Service Hours: All Days (6:00 a.m. to 8:00 p.m.)	—	—	—	+\$463,000	—
Expand Dial-a-Ride Service Hours: Weekdays (6:00 a.m. – 8:00 p.m.) & Saturday (9:00 a.m. – 11:00 p.m.)	—	—	—	+\$196,000	—
Expand Dial-a-Ride Service Hours: Monday – Thursday (6:00 a.m. – 8:00 p.m.) Friday (6:00 a.m. – 11:00 p.m.) Saturday (9:00 a.m. – 11:00 p.m.) Sunday (9:00 a.m. to 8:00 p.m.)	—	—	—	+\$327,000	—

¹This increase in cost assumes that the modified Red Line maintains the same frequency as the current Red Line and that the added version of the Blue Line (i.e., clockwise) is added with the same frequency as the current Blue Line. The new route via 10th Street and the new route via 6th Street and 7th Street are assumed to operate with one vehicle per hour for the same service period as the Red Line.

²The cost increase for expanding service hours assumes that The LINK maintains the same number of buses being operated per hour. If additional routes are added or the routes are converted to fixed route services requiring paratransit, the costs could be higher. Operating costs do not include capital costs, including vehicle replacement, amenity construction, etc.

Information & Technology Opportunities

Information and technology services can improve the existing ridership experience, attract new ridership by improving ease of transit use, and provide information to The LINK to help plan and operate transit service in the future. The following sections provide high-level cost estimates for and describe potential benefits of information and technology improvements, including real-time vehicle arrival information, fare payment options, and online/mobile trip planning tools. The impacts to transit ridership vary strongly by provider when implementing these services and thus changes in ridership are not explored for these improvements.

In addition to improving existing service, data gathered from technologies such as real-time vehicle arrival information and AVL can help in analyzing the performance of existing and future service opportunities. For example, AVL data could be assessed to adjust schedules based on delay points to improve transfer connections and maintain on-time performance.

Fare Payment Options

Fare payment technology options include smart card-based electronic fare collection systems, mobile ticketing, and more. The LINK currently provides mobile ticketing through The GORge Pass via Token Transit, and for The Link via the Hopthru app. Riders may also pay using cash, pre-purchased tickets, or via an account managed through the dispatch office. The LINK can increase the education and

marketing of fare payment options, and monitor interest in other fare payment options, such as contactless payment systems like bank cards and smartphone wallets.

Trip Planning Support

Online mobile trip planning tools can help the public get travel information at any day or time. While some providers create proprietary trip planning tools, free and readily available trip planning tools are more fitting to The LINK's size and needs. These tools include Google Maps, OneBusAway, Moovit, and Transit.¹ All of these tools depend on the open data format GTFS. In addition to using GTFS for scheduled stops and routes, The LINK could also pursue GTFS-flex, an emerging format for demand-response services, which can increase awareness and use of the overall transit system.

Real-Time Vehicle Arrival Information

The LINK posts schedules for all routes but does not currently provide real-time vehicle arrival information. Real-time information helps improve the ridership experience by reducing passenger wait times, providing confidence that a bus has not been missed, and generally creating a more informed and comfortable rider. This information can be made accessible via The LINK's website, smartphones, and through "push" technologies such as text messages. *TCRP Synthesis 48: Real-Time Bus Arrival Information Systems* reports costs for AVL system implementation for smaller systems (10–25 Automatic Vehicle Location [AVL]-equipped vehicles), with total capital cost between \$60,000 and \$171,000 and per-vehicle cost between \$3,000 and \$8,100. However, these cost data were collected when the technology was newer; improved system efficiencies have led to decreased costs. For example, South Clackamas Transportation District recently released an RFP for real-time vehicle arrival as a joint procurement with other rural Clackamas County providers. Cost estimates included a one-time upfront cost of \$2,000 per vehicle and ongoing software licensing and hosting of \$1,000 to 1,500 per year per vehicle, including tablets for passenger counting by drivers. These costs should be explored further with vendors. Oregon Department of Transportation (ODOT) encourages providers to buy systems that support GTFS-Realtime (GTFS-rt), allowing for up-to-date information on vehicle arrival to be pushed through the tools cited in the *Trip Planning Support* section.

¹ Each trip planning tool should be reviewed to ensure whether or not it is compatible with the region. Tools should be able to be embedded in the LINK's website and function as a stand-alone application.

Table 3: Information, Technology, and Facilities Summary

Opportunities		Connections to Other Routes/ Providers	Rides per Hour	Total Capital Costs	Total Annual Operating Costs	Rider Security	Environmental
Education and Marketing		Improves	Improves	Varies	Varies	Improves	--
Real-Time Vehicle Arrival Information		Improves	Improves	Varies	Varies	Improves	--
Monitor Interest in Fare Payment Options		--	--	Varies	Maintenance	--	--
Online/Mobile Trip Planning Tool		Improves	Improves	Varies	Maintenance	--	--
Radios and Dispatch Technologies		Improves	Improves	Varies	Varies	--	--
Operations and Maintenance Technologies (Passenger Counting, Scheduling, and Transit Signal Priority)		Improves	Improves	Varies	Varies	--	--
Bus Stops	Transit Centers & Major Transit Stops	Improves	--	Varies	Maintenance	Improves	--
	Signage	Improves	--	\$300 – \$1,000	Maintenance	--	--
	Shelters	--	--	\$6,000 + installation	Maintenance	--	--
	Benches	--	--	\$500 – \$1,500	Maintenance	--	--
Fleet	Fuel Types: Hybrid-Electric	--	--	\$150K – \$200K more than regular bus; charging facilities	25%-30% fuel cost decrease	--	Improves
	Fuel Types: CNG	--	--	\$25K – \$50K more than regular bus; dual-fuel facilities	25%-45% fuel cost decrease	--	Improves
	Low-Floor	--	--	No change from regular bus	No change from regular bus	--	--
Bicycle & Pedestrian Amenities		Improves	--	N/A; Not owned by The LINK		Improves	Improves
Park-and-Ride Lots		Improves	--	Varies	Maintenance	--	--

FISCALLY CONSTRAINED AND UNCONSTRAINED FUNDING

The intent of the Wasco County TDP is to outline ways that MCEDD can provide efficient, effective, safe, and accessible transit service to communities within Wasco County through 2040. Service recommendations to achieve this are organized into two categories:

- **Fiscally Constrained** – Considers service opportunities that could be implemented within existing budgetary conditions.
- **Fiscally Unconstrained** – Considers the ideal service in Wasco County where funding is not limited.

Fiscally Constrained Recommendations

In a constrained scenario, recommendations should balance the needs of service markets through the following actions:

- **Apply for grants to start new services** – Use Federal Lands Access Program (FLAP) grant and Statewide Transportation Improvement Fund (STIF) Intercommunity funds to provide additional services to South County, including a Madras route and/or a Maupin route.
- **Redistribute resources to utilize existing resources more effectively** – Update the Red Line and Blue Line to provide more efficient service that requires less out-of-direction travel for users.

Fiscally Unconstrained Recommendations

In an unconstrained scenario, provide service that meets the needs of all service markets through the following actions:

- **Enhance service within The Dalles** – Add a new route and update the Red Line and the Blue Line to provide more frequent service that requires less out-of-direction travel for users.
- **Provide a more inclusive schedule** – Expand service hours on weekdays and provide weekend service.
- **Provide additional connections throughout the region** – Add South County routes and increase service between The Dalles – Hood River.

The following section provides details about the short-, medium-, and long-term plans under constrained and unconstrained conditions.

SERVICE PLANS

Future routing service opportunities were prioritized by timeframe based on their evaluation results. Prioritization considers several factors, including evaluation results, funding availability, and other factors influencing decision-making, including other services and capital purchases.

Table 4 shows recommendations for short-term, mid-term, and long-term implementation of the recommended service opportunities.

- **Short-term (0-5 years) plan** includes items that are low-cost to implement, have high ridership potential, and improve connectivity to other providers. No new buses are needed for these opportunities.

- **Medium-term (5-15 years) plan** includes items that are low-to-medium cost and improve travel time, connectivity, and access. Some of these opportunities require purchasing additional buses.
- **Long-term (15+ years) plan** includes items that are medium-to-high cost to implement, have moderate to higher ridership potential, increase connectivity, and increase service availability and frequency.

The intent of these implementation tiers is to provide a plan for implementing service opportunities that considers the complexity and capital requirements. The **unconstrained** column in the table outlines additional opportunities The LINK could implement if and when additional funding becomes available.

Table 4: Recommended Service Opportunities

Route	Short-Term	Medium-Term	Long-Term	Unconstrained
Red Line	Convert the Red Line from a loop to an out-and-back line and add stops	--	Adjust route to serve future development near the Port	--
Blue Line	Add stops and reduce Blue Line frequency to allocate time to Red Line. Revise Blue Line for future development at the same time as converting the Red Line.	--	--	Add a clockwise version of the Blue Line
Downtown The Dalles Express Route	--	--	--	Create new out-and-back route in The Dalles (via 6th Street and 7 th Street)
Service Enhancements in The Dalles	Provide dial-a-ride service on Sundays		--	Extend service hours in The Dalles. Provide weekend service in The Dalles.
Hood River	Extend The Dalles – Hood River service to connect to CGCC	--	--	Increase service frequency between The Dalles and Hood River
South County – Maupin	Formalize South County route to Maupin, operating 2 days/week; 2 trips/day	--	--	--
South County – Madras	--	Create route to Madras, operating 2 days/week; 2 trips/day	--	Increase service frequency to more days per week
South County – Warm Springs Reservation, Madras, Shaniko, Antelope	--	Provide service 2 days/month; 2 trips/day	--	Increase frequency of service to more days per month

Route	Short-Term	Medium-Term	Long-Term	Unconstrained
Information and Technology	Provide real-time vehicle arrival information	Monitor the reliability of real-time vehicle arrival software and trip planning software. Monitor and consider implementing emerging technologies.		
Education and Marketing	Provide continued education and marketing; update Link branding on buses, stops and signs. Provide information about where the service goes, how to ride the bus/use stops, and how to pay fares.			--
Capital Plan	Add bus shelters and route information to bus stops. Replace vehicles at the end of service life.	Purchase new buses Electrify vehicle fleet	Purchase new buses. Add a second transit center in Downtown The Dalles.	--

Service Enhancements and Efficiencies

Potential needs for service enhancements were largely identified through surveys, outreach calls, and a review of existing service use. These needs include the following:

- Updating existing routes within The Dalles to better serve existing travel patterns and identified needs
- Expanding service hours, providing bus service earlier in the morning and later in the evening
- Adding a weekend deviated fixed-route within The Dalles
- Providing additional service to and around South County
- Improving coordination between transit providers, especially in such areas as system integration, fares, timetables, transportation planning efforts, and trip planning applications
- Improving bus stops with signage, benches, illumination, and/or shelters
- Updating vehicle fleet
- Working with local jurisdictions to identify right-of-way locations for bus stops and shelters
- Making transit easier to access via online tools and public information campaigns

Short-Term Service Plans

Short-term service plans include service opportunities that could be implemented within the next five years. Under the fiscally constrained scenario, The LINK cannot make changes that increase service costs in the short-term unless they receive STIF or FLAP funding for service to extend/expand South County. In the Dalles, changes can only reallocate existing resources and provide minimal increases to dial-a-ride service.

Update Existing Routes in The Dalles

Existing routes within The Dalles can be modified to better serve existing travel patterns and identified needs. Generally, these route modifications provide additional connections to/from employment and

residential areas. Recommended updates to the deviated-fixed route services are shown in Figure 1² and described below.

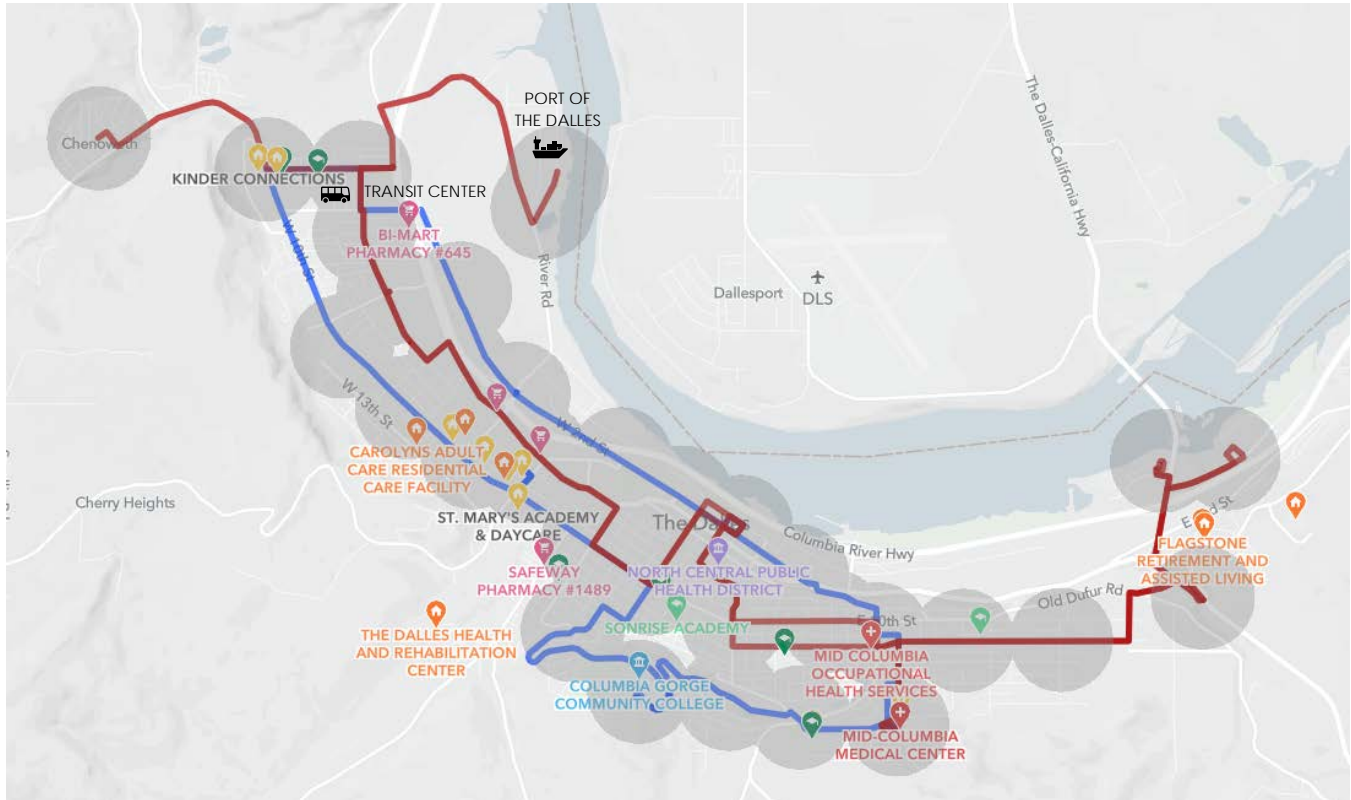
- Add stops to the Blue Line
 - The Blue Line is currently the more established deviated-fixed route within The Dalles. Maintaining the established route in the short-term can help decrease the impact changes have on existing ridership.
 - Frequent stops along the route can encourage riders to catch the bus at fixed stops rather than requesting deviations and using dial-a-ride. They also facilitate more frequent connections to other services.
- Convert the Red Line from a loop to an out-and-back route and revise the Blue Line to serve future transitional housing
 - Currently, both of The LINK's routes operate as counterclockwise loops. Converting the Red Line from a loop to an out-and-back route can facilitate direct travel through The Dalles and support faster connections to locations and other routes.
 - The route is intended to meet existing riders' need to travel between Water's Edge and the Transit Center/Chenoweth. To reduce travel time, the route alternates between stopping at the Port (which is located near a health clinic and current transitional housing) and stopping in Chenoweth. It also provides access to the high school, Mid-Columbia Medical Center, the Veterans Service Office, Goodwill, and neighborhoods throughout the city.
 - Once the Red Line is converted to an out-and-back route, the Blue Line can be modified to serve future transitional housing rather than the port. This change would increase the overall area served by transit while shortening the Blue Line's total length.
 - Frequent stops along the route can encourage riders to catch the bus at fixed stops rather than requesting deviations and using dial-a-ride. They also facilitate more frequent connections to other services.

Under a fiscally constrained scenario, these modifications require reallocating service from the Blue Line to the Red Line so that both routes can operate at hourly headways. Additionally, under a constrained scenario it would be feasible to provide dial-a-ride service on Sundays from 9:00 AM to 4:00 PM or to provide an additional hour of dial-a-ride service each weekday. Ground testing conceptual schedules to ensure timing and driver breaks, reworking staff schedules, and potential new staffing may be needed to make these changes.

Under a fiscally unconstrained scenario, the Blue Line could maintain its existing headway, which ranges between 30 and 60 minutes depending on the time of day. In addition, a clockwise version of the Blue Line could be added so that people could travel from the resource center located near the transit center back to transitional housing without having to take the full loop.

² The grey circles show a ¼-mile walking-distance radius around potential transit stop locations. Transit stops along the deviated fixed-route lines are needed every ¼ – ½ mile. Stop locations shown in the map are approximate and need to be further refined to confirm that there is available space for transit stop amenities and there is a safe place for a bus to stop.

Figure 1: Convert the Red Line from a Loop to an Out-and-Back Line and Revise Blue Line for Future Transitional Housing



Extend the Intercity Express between The Dalles and Hood River

Extending The Dalles–Hood River service to connect to Columbia Gorge Community College (CGCC), as shown in Figure 2, could help students, faculty, and staff use the intercity route to travel between campuses. This connection could also be achieved by interlining³ The Dalles – Hood River Intercity Express with the local fixed-route in Hood River and the Blue Line in The Dalles. Based on existing service hours and resources, under a fiscally constrained scenario, the college campuses would be served 4–5 times per day. Alternatively, this route could interline with local services to downtown instead or on alternating runs of the service, depending on connections with the Blue and Red Routes which serve CGCC and downtown, respectively.

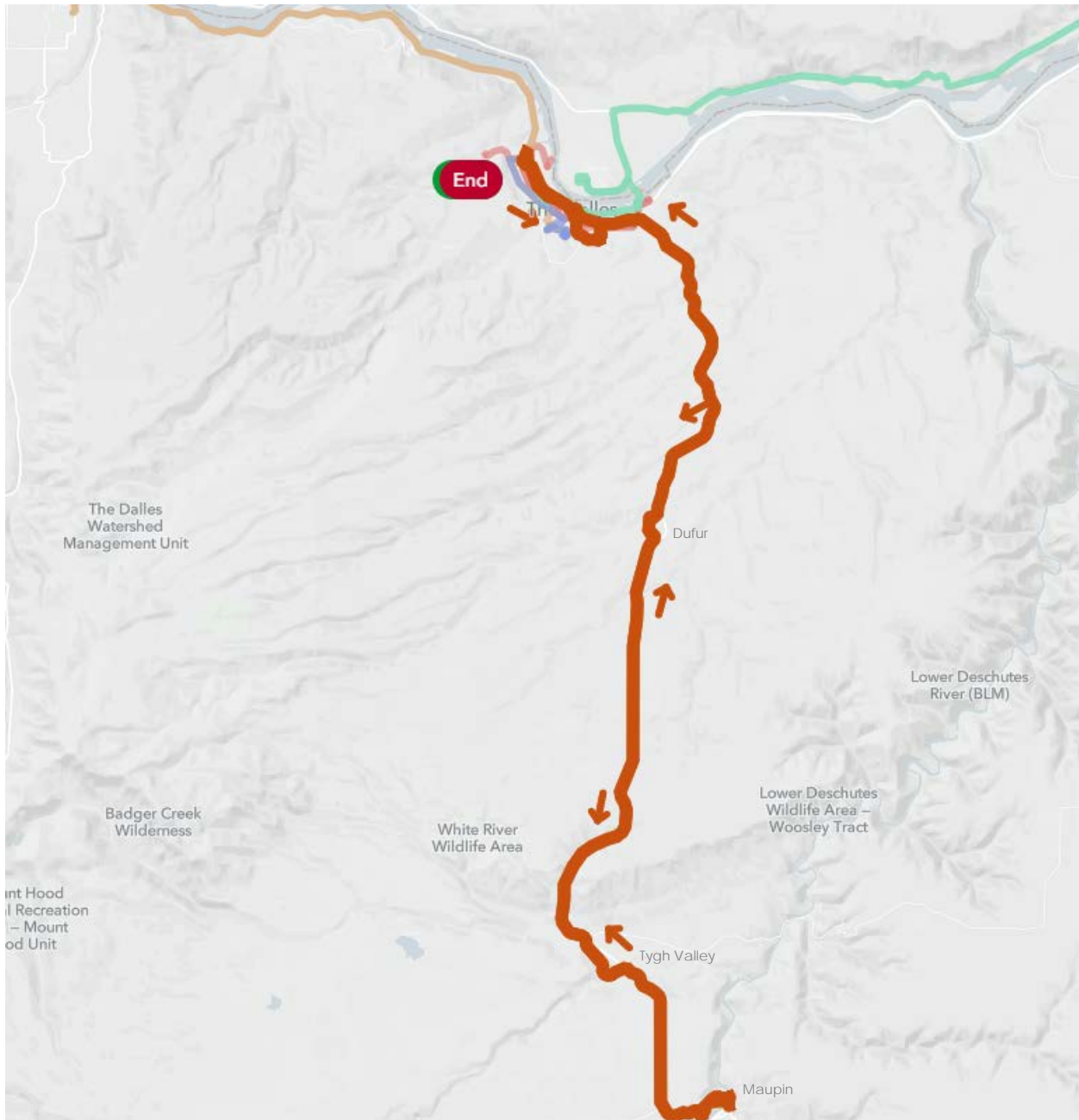
³ Interlining is using the same bus to travel to regional destinations, such as Hood River, after it completes the local route. Interlining can provide a one-seat ride and not require additional service or vehicles.

Figure 2: Extending The Dalles – Hood River Service to Connect to CGCC

Provide Additional Service to and Around South County

Deviated fixed-route transit service to South County could be formalized. Recommended short-term service expansions and updates are illustrated and described below.

- Replace the South County shuttle with a more formal intercity express route with stops in The Dalles, Dufur, Tygh Valley, and Maupin. The route is illustrated in Figure 3 below, and the formal stop locations are shown in *Memo #5: Future Service Opportunities*.
 - This route would have fixed timepoints and potential deviation areas or zones, reducing the resources needed to implement the route. Deviation areas or interlined local service can support a “dumbbell” route, providing both local and regional connectivity.
 - Operate the route two consecutive days per week, providing two trips per day. This schedule allows riders to complete their trip within a single day, or to return home on the following day when timing precludes a same-day return.

Figure 3: Formalize Out-and-Back Route to Maupin

Under a fiscally constrained scenario, where The LINK does not receive new STIF, FLAP, or other funding, The LINK could provide the route to Maupin by replacing the existing South County service and providing less dial-a-ride service to Maupin. The more consistent schedule would make it easier for people to plan trips, and deviations could occur for people unable to access the fixed stops.

Information & Technology Updates

In the short-term, the following information and technology updates are recommended:

- Enhance trip planning support.
 - Online mobile trip planning tools can help the public get travel information at any day or time. An issue with The LINK's GTFS feed is being resolved at present, as Google Maps and

other platforms misread the route and stop times. Monitoring Google Maps and checking the GTFS data set should be part of a regular routine to ensure that riders are able to utilize this tool to plan routes.

- Provide real-time vehicle arrival information.
 - Real-time information helps improve the ridership experience by reducing passenger wait times, providing confidence that a bus has not been missed, and generally creating a more informed, comfortable, and secure rider. This information can be made accessible via The LINK's website, smartphones, and through "push" technologies such as text messages.
- Provide continued education and marketing.
 - Provide information about where the service goes, how to ride the bus and use stops, and how to pay fares.
- Add bus shelters and route information to bus stops.

Vehicle Fleet Updates

In the short-term, replace vehicles according to their expected useful life.

- One additional operating vehicle would be needed for the fleet in the fiscally constrained scenario, should the South County service expansions receive funding. Additionally, The LINK would continue to need to replace approximately one vehicle a year, on average, based on anticipated mileage.
- Pursue charging and alternative fueling facilities to support the purchase of hybrid or fully electric vehicles in the medium-term.
- In the unconstrained scenario, additional vehicles or faster replacement may be needed, depending on frequency and/or added service hours and resulting mileage.

Short-Term System Maps and Conceptual Schedule

Table 5 shows a conceptual schedule for the services. Recommendations include shifting the departure times of The Dalles – Hood River route to allow for both the Blue Line and Red Line to complete all or part of their route, and return to the Transit Center for connections to Hood River. To allow enough time for South County residents to conduct errands and appointments in The Dalles, a South County or Madras service would depart The Dalles earlier than other fixed-route services. Alternatively, The LINK could partner with Cascades East Transit (CET) to alternate runs beginning in The Dalles versus Madras or Maupin. The conceptual schedule includes an additional hour of weekday dial-a-ride service (6:00 a.m. to 7:00 p.m.) to allow for transfers from the intercity routes back to the local routes. Alternatively, these transfers could be served by fixed-route, potentially reducing the costs of providing the last-mile connections depending on demand.

Table 5: Weekday Departure and Arrival Times at The Dalles Transit Center

Time of Day	The Dalles – Hood River	Madras	or	Maupin	Blue Line	Red Line	Dial-a-Ride
Est. Runtime ¹	60 minutes	320 minutes		160 minutes	60 minutes	100 minutes	-
Est. Headway ²	-	-		-	60 minutes	60 minutes	-
Early Morning		Departs: 6:00 a.m.					Begins: 6:00 a.m.
					7:00 a.m.	7:00 a.m.	~
	Departs: 8:00 a.m.			Departs: 8:00 a.m.	8:00 a.m.	8:00 a.m.	~
	Arrives: 9:00 a.m.				9:00 a.m.	9:00 a.m.	~
Late Morning	Departs: 10:00 a.m.			Arrives: 10:40 a.m.	10:00 a.m.	10:00 a.m.	~
	Arrives: 11:00 a.m.	Arrives: 11:20 a.m.			11:00 a.m.	11:00 a.m.	~
					12:00 p.m.	12:00 p.m.	~
Early Afternoon		Departs: 1:20 p.m.			1:00 p.m.	1:00 p.m.	~
				Departs: 2:20 p.m.	2:00 p.m.	2:00 p.m.	~
					3:00 p.m.	3:00 p.m.	~
Later Afternoon	Departs: 4:00 p.m.				4:00 p.m.	4:00 p.m.	~
	Arrives/Departs: 5:00 p.m.			Arrives: 5:00 p.m.	5:00 p.m.	5:00 p.m.	~
	Arrives: 6:00 p.m.	Arrives: 6:40 p.m.			6:00 p.m.	6:00 p.m.	~
							Ends: 7:00 p.m.

¹Runtime is the amount of time it takes a single bus to operate a route.

²Headway is the amount of time between transit vehicle arrivals at a stop.

Medium-Term Service Plans

Medium-term service plans include opportunities that could be implemented within the next 5–15 years. These plans include service expansions, which requires hiring additional staff.

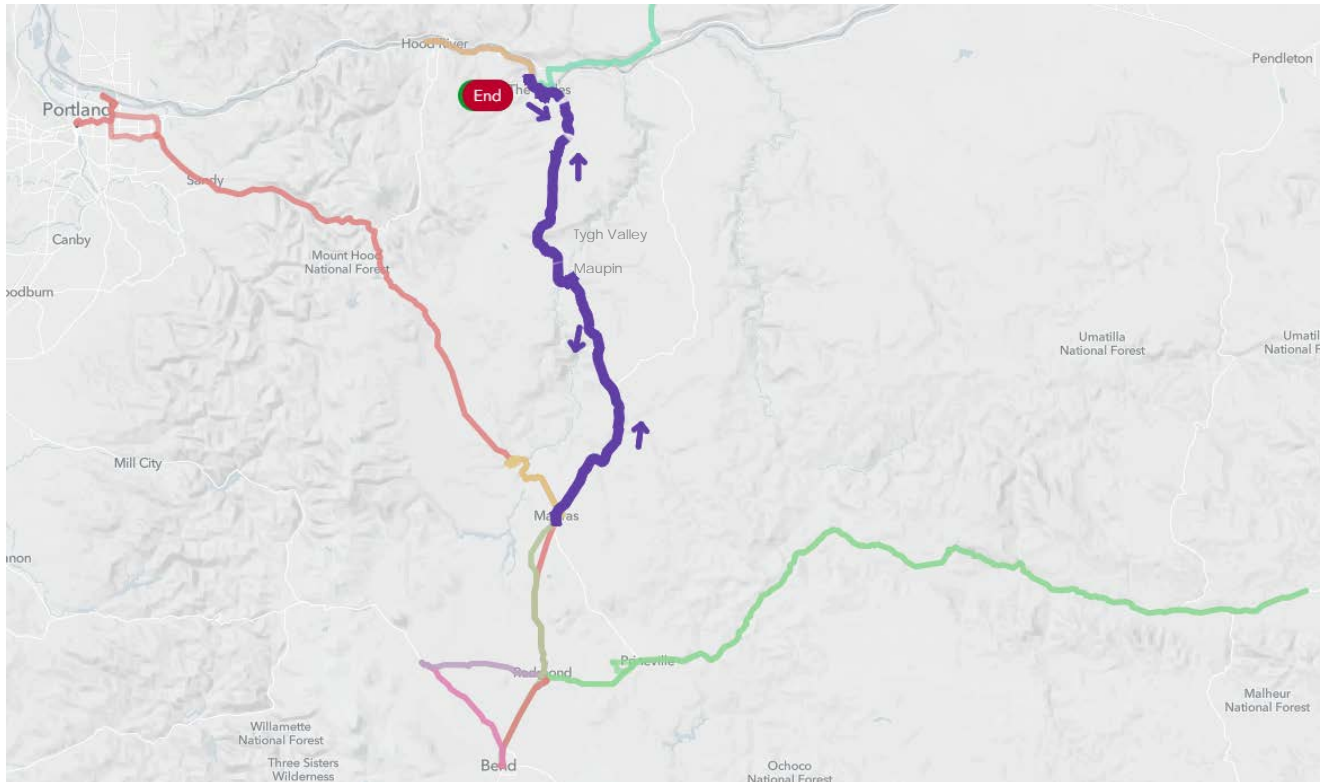
Provide Additional Service to and Around South County

Deviated fixed-route transit service to South County could be expanded to provide connections to around South County. Recommended medium-term service expansions are illustrated and described below.

- Provide a new intercity express route stops in Madras, Maupin, Tygh Valley, Dufur, and The Dalles (shown in Figure 4). Formal stop locations are shown in *Memo #5: Future Service Opportunities*.

- This route could be a modification to the South County Shuttle, with fixed time-points and potential deviation areas or zones, reducing the resources needed to implement the route. Deviation areas or interlined local service can support a “dumbbell” route, providing local and regional connectivity.
- Operate the route two consecutive days per week, providing two trips per day. This schedule allows riders to complete their trip within a single day, or to return home on the following day when timing precludes a same-day return.
- This service could support transfers to Cascades East Transit services in Warm Springs/Madras, Central Oregon Breeze, and deviated fixed-routes in The Dalles (shown in faded colors in the figure below), providing transit connections from Wasco County to central and eastern Oregon.
- Under an unconstrained scenario, where The LINK receives ample STIF and FLAP funding, The LINK could provide both the route to Maupin and the route to Madras, providing service to South County four days per week.

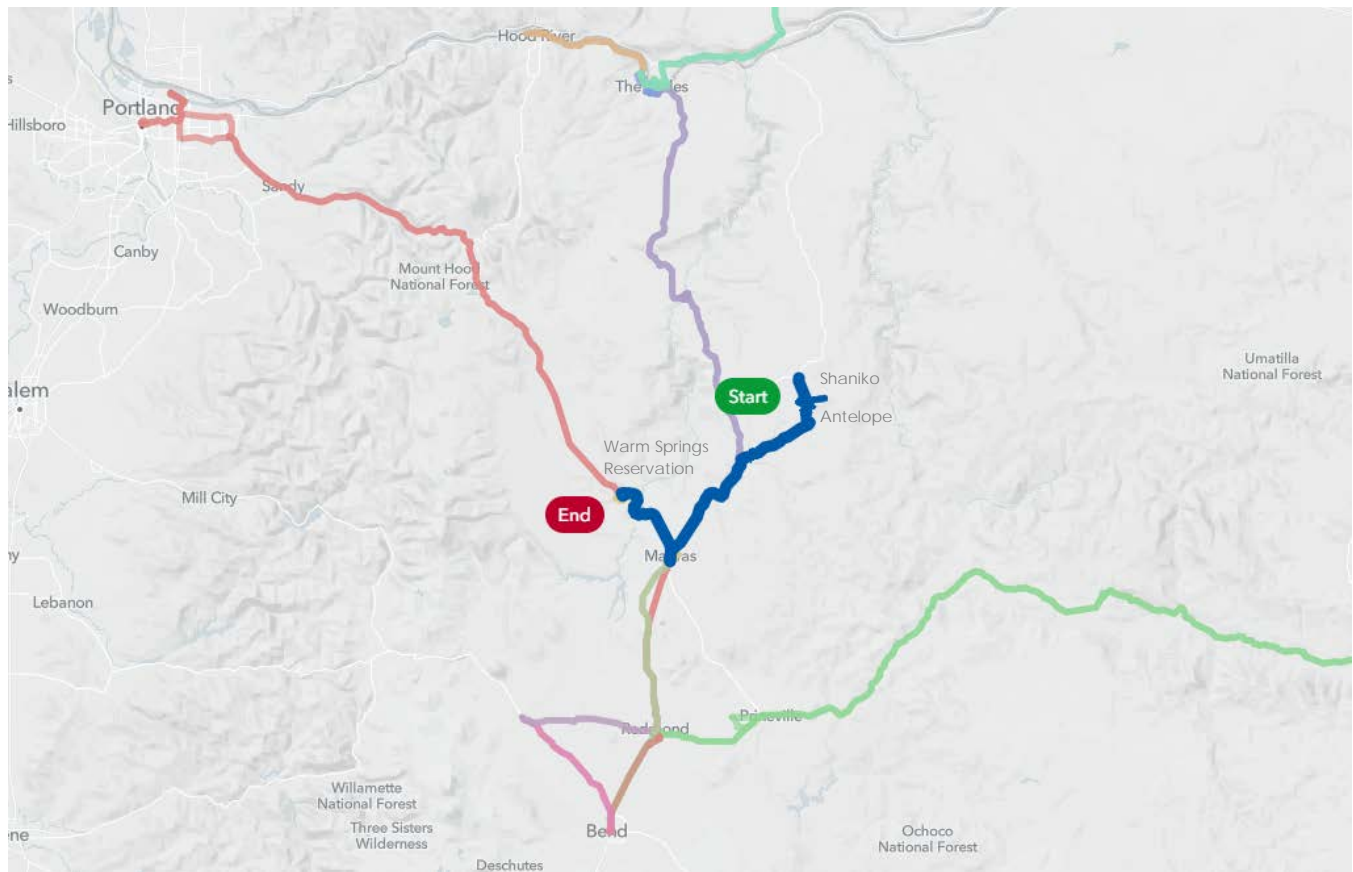
Figure 4: New Out-and-Back Route to Madras



- A new intercity route with stops in the Warm Springs Reservation, Madras, Antelope, and Shaniko, shown in Figure 5, could be provided. The route could be operated to provide two trips per day, two times per month. This route would need a bus to be based in this area to reduce deadheading, potentially through a partnership with CET. Given the low land use densities, deviations should be provided.
 - This service would only be feasible under the unconstrained scenario given the high cost and challenges associated with the distance from the Transit Center and the low population density in the vicinity of the route. It may also be feasible to pair this service with

the weekly service Wheeler County Community Transportation provides between The Dalles and Madras to help reduce costs and improve intercity connectivity.⁴

Figure 5: New Out-and-Back Route Connecting Warm Springs Reservation, Madras, Shaniko, and Antelope



Service Enhancements in The Dalles

There is an existing need for extended service hours and weekend service. Under a fiscally constrained scenario, it is not feasible to provide weekend service or extended service hours across all services.

Under a fiscally unconstrained scenario, The LINK should provide the following services:

- Extend service hours on all routes to provide deviated-fixed route service Monday – Thursday from 6:00 AM – 8:00 PM and Friday from 6:00 AM to 11:00 PM.
- Provide a modified version of a deviated fixed-route in The Dalles that serves stores, restaurants, and recreational locations in the Dalles.
- Extend dial-a-ride service hours to provide service Monday – Thursday from 6:00 AM – 8:00 PM, Friday from 6:00 AM to 11:00 PM, Saturday from 9:00 AM to 11:00 PM, and Sunday from 9:00 AM to 8:00 PM.

⁴ More information about this service is provided in the Wheeler County Coordinated Human Services Public Transportation Plan:

<https://digital.osl.state.or.us/islandora/object/osl%3A822851/datastream/OBJ/view>

Information and Technology Updates

In the medium-term, it is recommended that The LINK continue to monitor and check information and technology to ensure that riders are able to successfully utilize real-time vehicle arrival information and trip-planning tools.

Vehicle Fleet Updates

In the medium-term, hybrid or fully electric vehicles could be purchased, pending the availability of charging and alternative fueling facilities and funding grants in 5–10 years.

- Additionally, The LINK would continue to need to replace approximately one vehicle a year, on average, based on anticipated mileage.
- In the unconstrained scenario, additional vehicles or faster replacement may be needed, depending on frequency and/or added service hours and resulting mileage.

Long-Term Service Plans

Long-term service plans include opportunities that would likely take 15+ years to implement. These plans include projects that require large capital improvements.

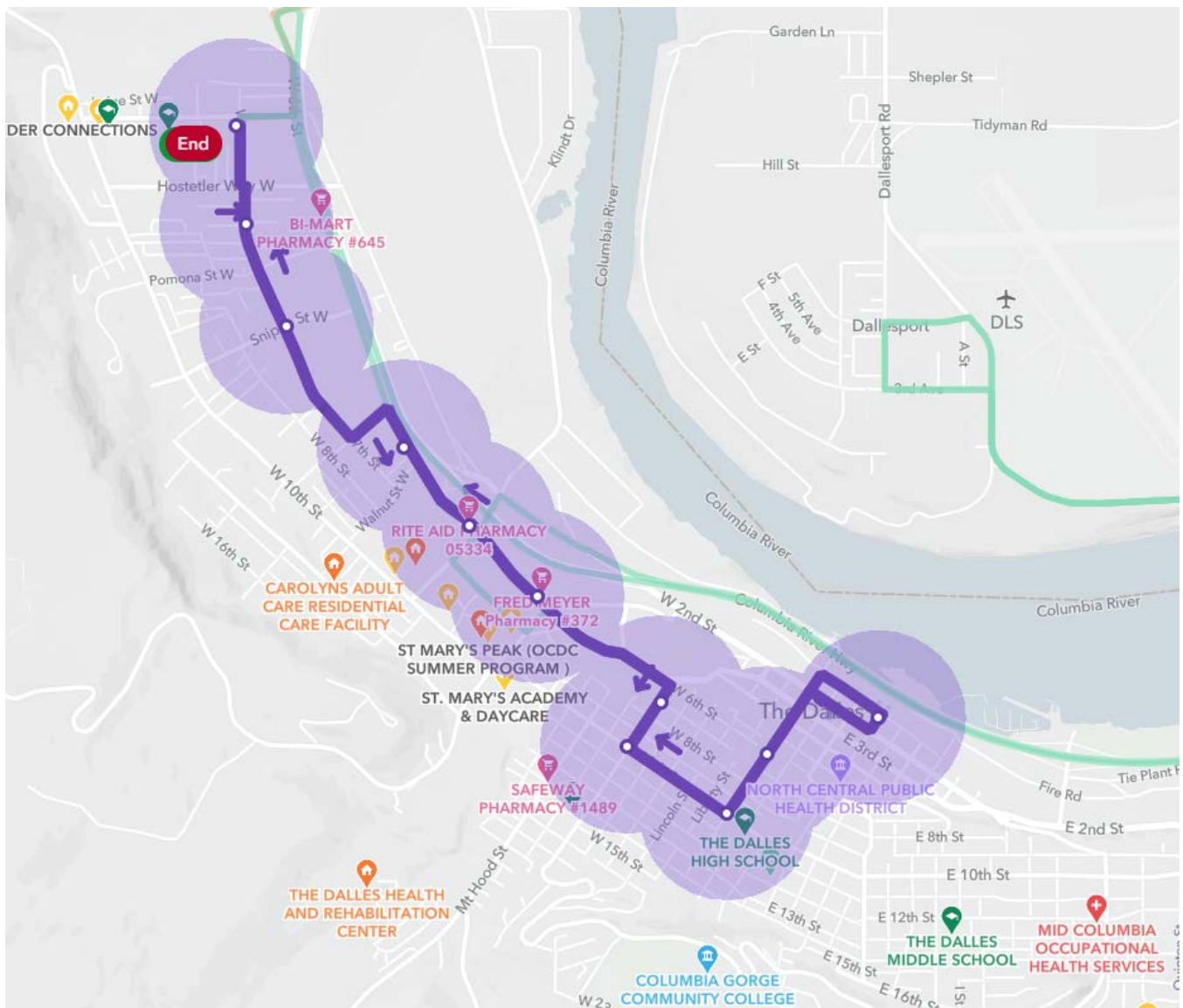
Revise the Red Line to Serve Future Development Near the Port

There is long-term development planned near the Port. As this development occurs, the Red Line should be revised so that stop(s) connects directly to the hub of this development. Under an unconstrained scenario, another bus should be added to the Red Line so that both Chenoweth and the Port can be served every run while maintaining hour headways or better.

Create a New Out-and-Back Route Serving Downtown The Dalles

Under a fiscally unconstrained scenario, a new out-and-back route on 6th Street and 7th Street, as shown in Figure 6, would directly connect major destinations located between the Transit Center and downtown. Major destinations would include neighborhoods, healthcare facilities, The Dalles High School, and grocery stores. This route would overlap with the modified Red Line shown in the short-term service plans, providing increased service frequency in the 6th/7th Street corridor during peak time periods and providing more frequent connections between downtown and the other transit services that connect at the Transit Center.

Figure 6: New Out-and-Back Route in The Dalles (via 6th Street and 7th Street)



Upgrading the Downtown Transit Stop to be a Transit Center

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, the only designated transit center is at the Transit Center, The LINK's facility in northwest The Dalles. In the long-term, upgrading the downtown stop to be a transit center, potentially at the Veteran's Services office in coordination with City of the Dalles First Street Project, could improve recognition of The LINK's services and enhance access to and from downtown The Dalles.

Service Enhancements in The Dalles

As noted in the medium-term service plan, there is a need for extended service hours and weekend service. Under a fiscally unconstrained scenario, The LINK should provide the following services:

- Extend service hours on all routes to provide deviated-fixed route service Monday – Thursday from 6:00 AM – 8:00 PM and Friday from 6:00 AM to 11:00 PM.
- Provide a modified version of a deviated fixed-route in The Dalles that serves stores, restaurants, and recreational locations in the Dalles on the weekends (determine routing based on feasible service hours). This route could be similar to the route shown in Figure 6, but would need to be modified to also serve residential areas on the eastern side of town. It may also need to provide access for students living on CGCC campus.
- Extend dial-a-ride service hours to provide service Monday – Thursday from 6:00 AM – 8:00 PM, Friday from 6:00 AM to 11:00 PM, Saturday from 9:00 AM to 11:00 PM and Sunday from 9:00 AM to 8:00 PM.

Intercity Service Enhancements

The need for extended service hours and weekend services includes for and to the communities and recreational areas throughout Wasco County. Under a fiscally unconstrained scenario, the following service enhancements could be made to intercity routes:

- Increase frequency of service between The Dalles and Hood River.
- Increase the number of days per week service is provided to Madras.
- Increase the number of days per month service is provided to Shaniko and Antelope.

Vehicle Fleet Updates

- No additional vehicles are needed in the fleet for the fiscally constrained scenario. As noted, The LINK will need to replace approximately one vehicle a year on average.
- In the unconstrained scenario, additional vehicles or faster replacement may be needed, depending on frequency and/or added service hours and resulting mileage.

Service Type

The LINK currently operates deviated fixed-route, dial-a-ride, and intercity express services. This service model continues to be recommended in the service plans described above. In the future, The LINK could provide fixed-route and complimentary ADA paratransit services instead of providing deviated fixed-route and dial-a-ride services in The Dalles. The remainder of Wasco County would still need to be served with dial-a-ride service due to the dispersed nature of the unincorporated areas and small cities.⁵

Table 5 shows trade-offs involved with providing deviated fixed-route and dial-a-ride services in Wasco County, compared to fixed-route and paratransit services.

⁵ Intercity express route do not trigger complementary ADA paratransit requirements.

Table 6. Differences between Deviated Fixed-Route and Fixed-Route Requirements

	Deviated Fixed-Route and Dial-a-Ride	Fixed-Route and Paratransit
Certification of Qualifying Riders	<ul style="list-style-type: none"> Certifications are optional 	<ul style="list-style-type: none"> Certifications are required for using ADA paratransit
Prioritization	<ul style="list-style-type: none"> Prioritization of dial-a-ride trips is optional. Recommended trip purpose priorities for dial-a-ride in descending order: medical, employment, education, nutrition, shopping, recreation, other, same-day medical, same-day non-medical. For dial-a-ride services, requests can be prioritized for people who meet ADA paratransit eligibility as well as other criteria set by the agency. Deviations on the fixed-route service must be first-come, first-serve and cannot be prioritized like dial-a-ride. 	<ul style="list-style-type: none"> Paratransit services are only available to people who are certified for meeting ADA paratransit eligibility⁶. Eligibility categories may include: <ol style="list-style-type: none"> Individuals who cannot board, ride, or disembark from an accessible vehicle. People who can use an accessible vehicle, but none is available on their desired route or time of trip. People who have specific impairment-related conditions that prevent their getting to or from a stop.
Ride Requests	<ul style="list-style-type: none"> Requests for dial-a-ride are typically required no later than the day before. 	<ul style="list-style-type: none"> Requests for paratransit must be honored, as long they occur no later than the previous business day.
Flexibility	<ul style="list-style-type: none"> Complimentary ADA paratransit service is not required under this model, and there is flexibility with where and how deviations are provided. Under this model, The LINK is allowed to deny deviation requests once the available capacity has been reached without the risk of displacing regularly scheduled trips. 	<ul style="list-style-type: none"> Although The LINK's dial-a-ride services meet the requirements for paratransit service necessary to switch to a fixed-route service, this switch would add potential liability to The LINK in cases where ride requests are denied due to capacity constraints, as denied trips will require an increase passenger-carrying capacity or a reduction in "subscription"/regularly scheduled trips for other passengers. Demand on paratransit would need to remain relatively low in order to meet the needs of frequent and infrequent riders.

The LINK could maintain a deviated-fixed route model while encouraging more use of fixed stops and less demand for deviations and dial-a-ride by implementing the following policies:

- Minimum deviation distance: at least ⅓ mile from the route.
- Maximum deviation distance: no more than ¼ mile from the fixed route.

⁶ Answers to frequently asked questions about paratransit eligibility, service, and regulations and guidelines are provided by the Federal Transit Administration here: <https://www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/frequently-asked-questions#2>

- Deviation zones:⁷ allow for deviations only at the endpoints of the routes, including Chenoweth, The Port, and Water's Edge, to reduce the impact deviations would have on the typical schedule while providing deviations in areas that would take additional time and resources to serve through dial-a-ride and are challenging to otherwise serve due to lower land use density and/or lack of sidewalks. However, passengers needing paratransit may still need to be served by dial-a-ride depending on the other end of their trip.
- Maximum deviations per trip: To be determined. Each route's schedule will build in time to accommodate the identified maximum number of deviations without affecting schedule reliability.

Other agencies in Oregon, such as Coos County Area Transportation District, South Clackamas Transit District (SCTD), and the Clackamas County Shuttles, have implemented deviated fixed-route models. These agencies have found that deviation requests are low when frequently spaced ($\frac{1}{2}$ mile or less) stops are provided, with SCTD noting 2–3 requests per month. The limited deviations allow for efficiency in serving infrequent requests, accommodate gaps in sidewalk networks and other challenges accessing bus stops, and free up dial-a-ride vehicles to serve areas unserved by fixed-route services. Triggers for The LINK to convert from deviated fixed-route to fixed-route may include:

- Deviations cause frequent (more than 1-2 runs per day) on-time performance issues
- Build-out of sidewalk networks allows for safe access to bus stops, where pedestrian connections may be limited today
- Deviations in designated zones are highly infrequent (less than 1 per month), and schedule time to accommodate potential deviations could be better used to provide increased fixed-route coverage, better-timed transfers to other services, shorter headways, etc.

Impacts to Transit Markets

Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies identified the needs of six transit markets in Wasco County. Table 7 summarizes the way that the service plans outlined above address the needs of each market.

Table 7: Impacts to Transit Markets

Transit Market	Transit Need Addressed
Existing Transit Users in The Dalles	The potential new stop locations could support a transition from deviated-fixed route to fixed-route without deviations, or with fewer deviations than currently made. Route updates better serve travel patterns of existing transit users without requiring deviations or transfers. Existing users need expanded service hours and weekend service, which requires additional funding.
Increasing Development in The Dalles	The route updates in the service plans can generally serve planned future development in The Dalles as they do existing transit users in The Dalles. However, the Red Line will be adjusted to serve growing development around the Port.

⁷ Complementary paratransit would still be required for any portion of the system that continues to operate as a fixed-route service (see <https://www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/paratransit-requirements-%C2%A75311-funded-fixed-route-service> for more details).

Transit Market	Transit Need Addressed
Transit-Dependent Populations in Rural Areas	<p>Continuing to provide shuttle services and demand-response services to rural areas is likely the most efficient way to meet the needs of this market. Formalizing the shuttle service to Maupin and adding service to Madras, Shaniko, Antelope, and the Warm Springs Reservation will help provide more consistent service opportunities. Formalizing services to and around South County require additional funding that may be provided by FLAP and STIF grants. Additional transit services to and within the Warm Springs Reservation can be supported by the Tribe's STIF funding.</p> <p>Reducing reliance on trip deviations and dial-a-ride within The Dalles would allow more resources to shift toward the rural communities.</p>
Growing Populations inside UGBs	<p>Improving coordination between transit providers – especially in such areas as system integration, fares, timetables, transportation planning efforts, and trip planning applications, and interlining service – could improve access between communities.</p>
Users Making Personal/Miscellaneous and Recreational Trips	<p>Improving coordination between transit providers – especially in such areas as system integration, fares, timetables, transportation planning efforts, and trip planning applications – can help people make recreational trips between communities.</p> <p>Adding stop locations and expanding service hours for existing services can improve access for users who want to make personal and recreational trips to locations within Wasco County outside of typical working hours. Increasing service hours requires additional funding.</p>
Tourism and Service Industry	<p>Expanding evening and weekend service supports the tourism and service industries within The Dalles. Providing this service requires additional funding; therefore, continuing to partner with the Business Alliance is the most realistic way to provide this service in the short-to-medium term and allows The LINK to leverage the funding as a local match towards providing more service.</p> <p>A downtown The Dalles Express Route could also provide more direct access for people accessing tourist and service destinations in and around downtown The Dalles.</p>

CAPITAL PLAN

MCEDD currently owns and operates eight buses and three minivans. In 2021, MCEDD purchased five new buses which will be used to replace four of the current buses and add one additional bus to the fleet. The average age of the active fleet is 7.0 years. Of the active fleet, six vehicles are in excellent condition, five are in good condition, two are in adequate condition, and one is in poor condition⁸. Five vehicles are beyond their expected useful lives (EUL) of four or five years; several of these are also past their EUL based on mileage. Table 8 summarizes the fleet information; including the conclusion that two vehicles need to be replaced in the short-term.

⁸ This vehicle has been replaced by newer vehicles and is planning on being sold. It is occasionally used while other vehicles are being serviced.

In fiscal year 2020, The LINK operated approximately 115,000 vehicle revenue miles, including deviated fixed-route and dial-a-ride services. Historically, The LINK operated approximately 170,000 vehicle revenue miles per year. With EULs of 150,000 miles for the type of vehicle used by The LINK, about one replacement vehicle is anticipated to be needed each year. Vehicles are typically purchased in batches. Therefore, The LINK should purchase three new vehicles every three years to maintain existing service.

In the medium and long-term, vehicles should be replaced with hybrid- or all-electric buses according to the regular vehicle replacement schedule. Higher-voltage electrical connections should be provided at the existing transit center and other major bus stops that connect between services. Other services should be partnered with to implement regional sharing of electric vehicle charging facilities. In the long-term, higher-voltage electrical connections should be included at a new transit center located downtown.⁹

⁹ A new transit center downtown is not intended to replace the existing transit center, but rather to provide covered parking spaces for transit vehicles, benches, park-and-ride access, a staff lounge, and other stop improvements in the vicinity of the plaza that the City is planning in the vicinity of the Wasco County Veterans Service Office.

Table 8: Transit Fleet¹

Asset Model	Year	Seats	Condition	Odometer	EUL Category	Replacement Need
Van #22	2011	7	Good	108,761	4 yrs/ 100,000 mi	--
Van #28	2012	7	Good	142,700	4 yrs/ 100,000 mi	--
Van #29	2018	4	Good	39,599	4 yrs/ 100,000 mi	--
Cutaway Bus #23	2011	16	Adequate	111,975	5 yrs/ 150,000 mi	Short-term
Cutaway Bus #24	2011	16	Poor	189,772	5 yrs/ 150,000 mi	**
Cutaway Bus #26	2014	12	Adequate	144,846	5 yrs/ 150,000 mi	Short-term
Cutaway Bus #30	2020	12	Good	47,477	5 yrs/ 150,000 mi	--
Cutaway Bus #31	2020	12	Good	21,297	5 yrs/ 150,000 mi	--
Cutaway Bus #32	2020	12	Excellent	24,647	5 yrs/ 150,000 mi	--
#33	2021	12/2	Excellent	13,687	5 yrs/ 150,000 mi	--
#34	2021	12/2	Excellent	12,976	5 yrs/ 150,000 mi	--
#35	2021	12/2	Excellent	11,693	5 yrs/ 150,000 mi	--
#36	2021	12/2	Excellent	11,698	5 yrs/ 150,000 mi	--
#37	2021	12/2	Excellent	9,276	5 yrs/ 150,000 mi	--

¹Transit Fleet data for Q2, 2022 (quarter ends 12/31/2021)

**This vehicle has been replaced by newer vehicles and is planning on being sold. It is occasionally used while other vehicles are being serviced.

Table 9 summarizes the number of operating vehicles and bus stops needed to provide for the short-term, medium-term, long-term, and unconstrained service plans described in the sections above.

Table 9: Capital Needs

Capital Needs	Short-Term	Medium-Term	Long-Term	Unconstrained
Vehicles	Replace 6 Vehicles	Purchase 3 vehicles/3 years	Purchase 3 vehicles/3 years	Additional vehicles will be needed based on the amount of additional service provided
Bus Stops	Construct approximately 25 new bus stops	Construct approximately 1 new stop	Create secondary transit center downtown	--

FINANCIAL PLAN

This section provides a financial plan based on funding scenarios associated with potential funding sources.

Funding Scenarios

The funding scenarios describe existing funding sources, potential new sources, and different funding scenarios using these sources. This section also considers the COVID-19 implications for funding. Funding sources and opportunities are available to The LINK at the federal, state, and local level.

Future funding scenarios consider relatively stable as well as uncertain funding sources. Though the COVID-19 pandemic has reduced ridership and ridership-related transit funding, other funding for transit has increased in recent years. This memorandum considers the following funding scenarios:

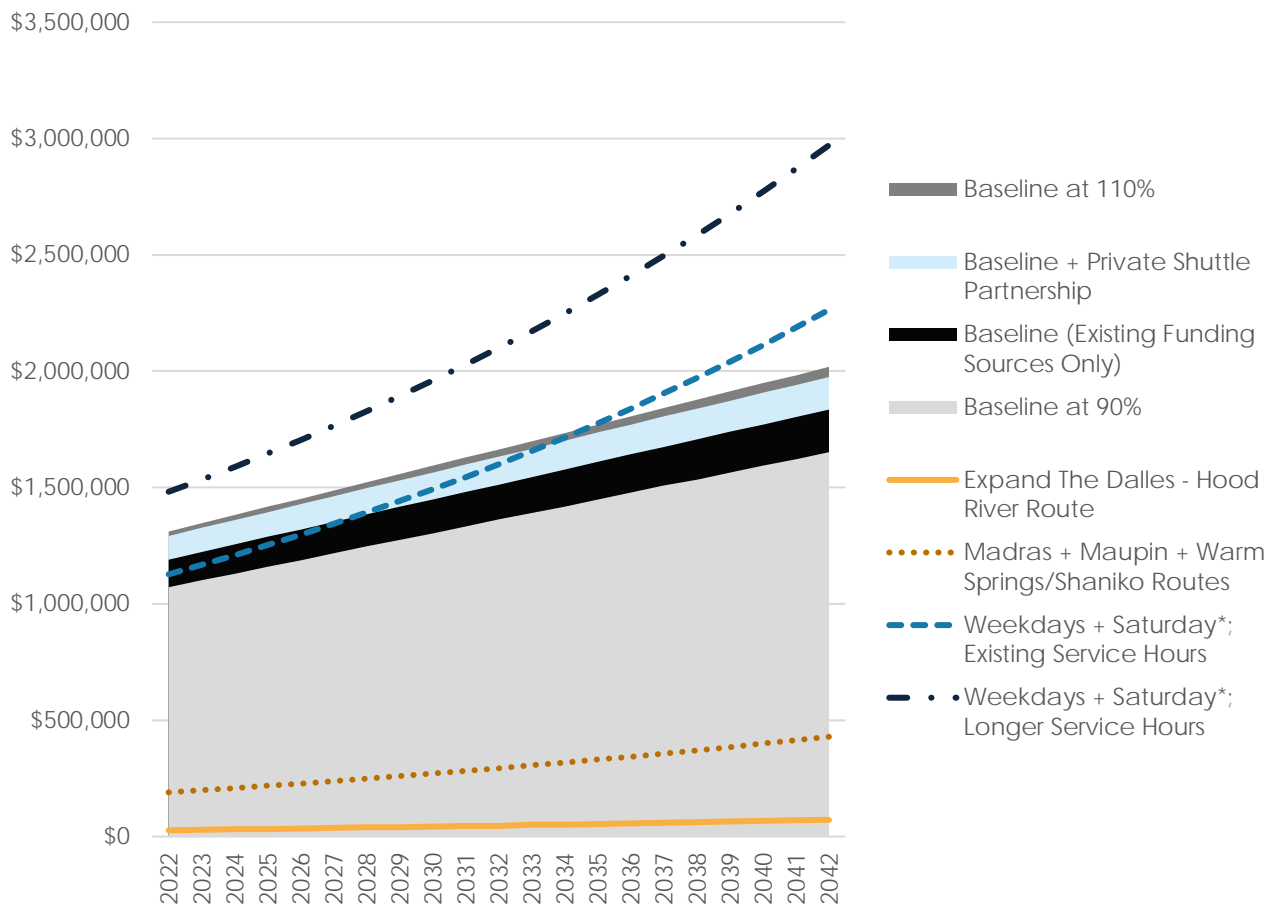
- **Baseline Funding:** This funding scenario projects existing funding sources at the historic rate.
- **Baseline at 90%:** This funding scenario assumes a 10% reduction in existing funding, projected forward at the historic rate. This scenario provides a proxy estimate of reduced ridership and its impacts on fare and formula fund loss, STIF projections, etc.
- **Baseline at 110%:** This funding scenario assumes a 10% increase in existing funding, projected forward at the historic rate. This scenario provides a proxy estimate of increased ridership, STIF projections, etc.
- **Baseline + STIF Intercommunity + FLAP Grant:** This funding scenario includes existing funding sources plus an additional \$300,000 in STIF Intercommunity and FLAP grant funding. It projects this funding forward at the historic rate. STIF Intercommunity and FLAP grant could be applied to enhancements to the Hood River service and implementation of the Madras and/or Maupin routes. The \$300,000 represents a typical operating funding amount for STIF Intercommunity.
- **Baseline + Private Shuttle Partnership:** This funding scenario includes existing funding sources plus an additional \$100,000 per year from a private shuttle partnership.¹⁰ This funding is projected forward at the historic rate.

¹⁰ Hotels are providing about \$250 per month for a private shuttle service. Assuming that 10 hotels pay this amount for six months of the year, there is an additional \$15,000 available to leverage as a local match. Many state and

- **Unconstrained:** This funding scenario is intended to describe what service opportunities The LINK should pursue where funding is not a limitation.

Figure 7 shows funding scenarios for Baseline, Baseline at 90%, Baseline at 110% scenarios, and Baseline + Private Shuttle Partnership (shown in the shaded areas). It also includes estimates for the cost of funding existing service, extended service hours, and weekend service (shown with lines).¹¹ Figure 7 is intended to give a rough idea of the costs to provide service and the potential funding sources, and not to prioritize alternatives. As shown, operating and capital costs are projected to increase at a faster rate than transit funding and additional funding would be needed to extend service hours or provide weekend service.

Figure 7: Funding Scenarios and Service Operating Scenarios¹



¹Existing Service Hours includes deviated fixed-route and dial-a-ride services. Existing shuttle services are assumed to be included with the cost of dial-a-ride services. Costs are based on an assumption of \$85/service hour/bus operating cost + cost/mile for vehicles assuming vehicle EUL of 150,000 miles and a vehicle match of \$18,400 per vehicle.

federal funding sources require a 10–20% local match to receive funding, so \$15,000 could leverage an additional \$75,000 to \$150,000 in state and federal funding. This analysis assumes \$100,000 of funding. Note that the \$15,000 local match is not included in The LINK's budget since it will go directly to paying for the private tourism shuttle service.

¹¹ Estimates assume an average of 2 dial-a-ride and 2.36 deviated fixed-route buses operating at a given time. Existing shuttle services (the Dalles and Hood River Shopping Bus and South County Shuttle) are assumed to run as part of the 2 dial-a-ride buses.

*Existing and Longer service hours on Saturdays is considered for dial-a-ride only. Providing service hours on all days includes Saturday and Sunday service for both dial-a-ride and Deviated Fixed-Route services. These costs do not include capital investments such as new vehicles, stops, etc.

Figure 8 shows the STIF Intercommunity and FLAP grant funding that could be obtained to run Madras and Maupin Routes two times per day twice a week each. The grey area is the potential funding revenue and the line shows the costs of service(s). It would be possible to run these routes more frequently if there is demand to do so, or funds may be used to expand The Dalles – Hood River service.

Figure 8: STIF and FLAP Funding for South County Routes

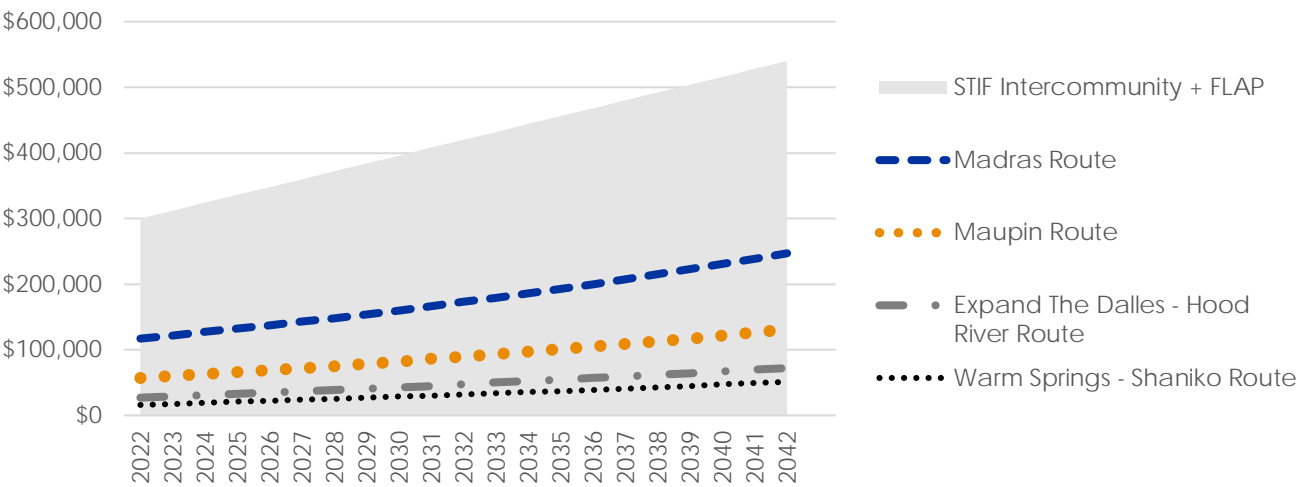


Table 10 shows the feasible short-term service opportunities The LINK could pursue by funding scenario. Funding could be increased in the short term by pursuing intercommunity, FLAP, and increased City contributions or new contributions from other local partners like Wasco County. Although the costs of providing services varies based on volatile fuel prices, electric vehicle fleets can reduce both maintenance and fueling costs and stabilize future funding.

Table 10: Feasible Service Opportunities based on Funding Scenario (Example Year 2022)

Scenario	Funding Amount	Existing Service Cost	Surplus/Deficiency	Feasible Service Opportunities and Capital Improvements ¹
Baseline Funding	\$1,191,000	\$1,127,000	\$64,000	<p>Providing dial-a-ride service on Sundays (operating one vehicle and one dispatcher, including operating costs and capital costs) would cost approximately \$34,000 for one dial-a-ride vehicle. Similarly, running one dial-a-ride or fixed-route vehicle an hour later each day would cost approximately \$27,000. Based on feedback to-date, it is recommended that The LINK add Sunday service.</p> <p>A bench and route signage could be provided at approximately 12 transit stops for \$30,000.³ Provide these improvements incrementally at all stops and then add transit shelters to high-use stops.</p>
Baseline at 90%	\$1,072,000		-\$55,000	Reduce service frequency on deviated-fixed routes/number of dial-a-ride vehicles operating at a time to accommodate funding reduction.
Baseline at 110%	\$1,310,000		\$183,000	<p>Provide dial-a-ride service on Sundays and run one dial-a-ride vehicle an hour later each day, as described above (cost: \$61,000).</p> <p>A bench, route signage, and transit shelter could be provided at approximately 14 transit stops for \$119,000.⁴ Provide these improvements at high-use transit stops and provide signage at all other transit stops.</p>
Baseline + Private Shuttle Partnership	\$1,291,000		\$164,000	<p>Provide dial-a-ride service on Sundays and run one dial-a-ride vehicle an hour later each day, as described above (cost: \$61,000).</p> <p>A bench, route signage, and transit shelter could be provided at approximately 12 transit stops for \$102,000. Provide these improvements at high-use transit stops and provide signage at all other transit stops.</p>
STIF Inter-community + FLAP²	Up to \$300,000	N/A	Up to \$300,000	<p>Pending total grant funding received, operate the new route to Madras and the new route to Maupin each two times per day two times per week. Operate the new route connecting Warm Springs Reservation, Madras, Shaniko, and Antelope two times per day, twice per month. Total projected cost is \$191,000. Use remaining funding to purchase an additional vehicle for the route and to provide a bench and route signage at all stops.</p>

Scenario	Funding Amount	Existing Service Cost	Surplus/Deficiency	Feasible Service Opportunities and Capital Improvements ¹
Unconstrained	Unconstrained	\$1,127,000	Unconstrained	Maintain existing headways on the Blue Line and run the Red Line at hourly headways. Expand both deviated fixed-route and dial-a-ride service hours to provide service Monday through Thursday 6:00 AM – 8:00 PM, Friday from 6:00 AM – 11:00 PM, Saturday 9:00 AM – 11:00 PM, and Sunday 9:00 AM – 8:00 PM.

¹ Funding estimates are based on average costs for providing service. Actual costs may vary as additional support staff, drivers, and vehicles may be needed to expand service hours.

² Funding for STIF Intercommunity + FLAP is noted separately from Baseline funding.

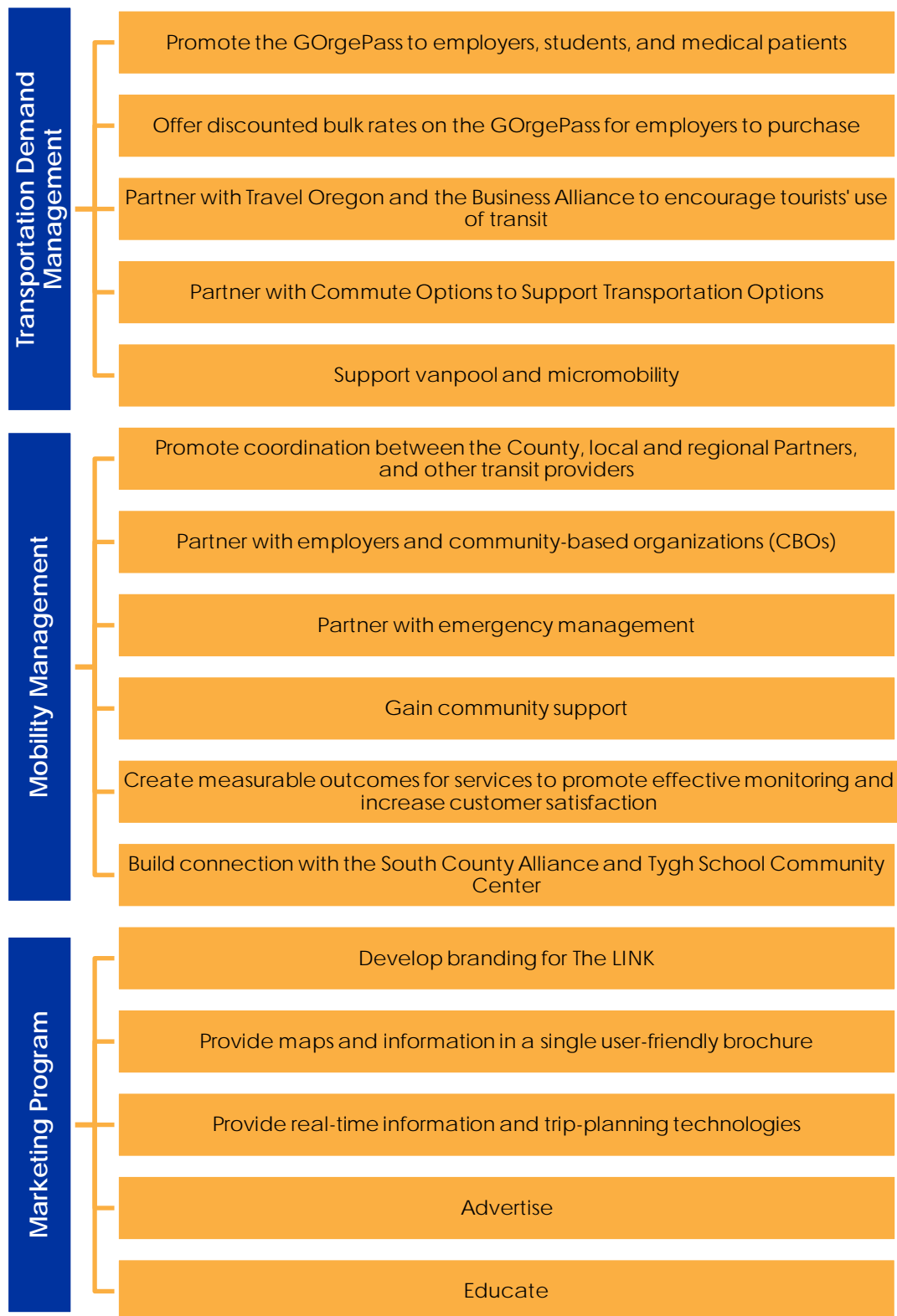
³ Installed benches vary in price between \$500 to \$1,500, depending on materials, the quality of the product, and the installation conditions. A new bus stop signage and pole, installed, can range from \$300 to \$1,000.

⁴ Shelters typically cost approximately \$6,000 plus installation. Installation costs can be reduced if improvements are coordinated with roadway improvements.

TRANSPORTATION DEMAND MANAGEMENT, MOBILITY MANAGEMENT, AND MARKETING PLAN

A coordinated, targeted, and effective public information and marketing campaign would help publicize and encourage people to use transit. This section provides transportation demand management, mobility management, and marketing program recommendations for The LINK, summarized in Figure 9.

Figure 9. Management and Marketing Summary



Transportation Demand Management Strategies

Transportation Demand Management (TDM) strategies aim to shift behavior towards more efficient use of transportation facilities. Target strategies for commuters and commute trips in light with ODOT's Transportation Options Program. The following strategies and partnerships can help shift behavior towards transit use:

- **Promote the GORgePass¹² to employers, employees, students, and medical patients.** Offering incentives to employees, students, and medical patients to take transit can increase awareness and decrease the cost of transit for routine trips. In turn, the number of single-occupancy vehicle trips and the number of parking spaces needed at employment centers, schools, and hospitals could be reduced.
- **Offer discounted bulk rates on the GORgePass for employers to purchase.** Offering discounted bulk rates and buy-one give-one offers on the GORgePass can encourage employers, schools, and hospitals to promote the GORgePass to employees, students, and medical patients. Table 11 provides a list of the largest employers in Wasco County that could be considered for partnerships.
- **Partner with Travel Oregon and the Business Alliance to encourage tourists' use of transit.** Partnering with tourist and business organizations informs and encourages tourists to use transit when they visit Wasco County. Provide information about the Business Alliance's shuttle on The LINK's website.
- **Partner with Commute Options to Support Transportation Options.** Commute Options is dedicated innovative transportation options that connect people of all ages to the places they go – employees to their workplaces, students to their schools, and neighbors within their communities. They champion active transportation and infrastructure improvements, fostering essential partnerships, and educating the community on transportation options and can be used as a resource to support Transportation Options¹³. Like MCEDD, other employers should be encouraged to provide employee benefits to take Commute Options.
- **Support Vanpool and Micromobility.** The LINK can access STIF funding to subsidize vanpools. Additionally, by encouraging micromobility (such as bike share), the LINK can support connections to transit services.

¹² The GORge Pass is an annual pass that provides unlimited rides on Columbia Area Transit, Mount Adams Transportation Service, Skamania County Transit, and The LINK.

¹³ The ODOT Transportation Options program will change in 2024, at this time The LINK could apply for grants to implement transportation options.

Table 11. Largest Employers in Wasco County

Employer Size	Employers
Over 500 Employees	Mid-Columbia Medical Center
251-500 Employees	Northern Wasco County School District 21, Oregon Cherry Growers, Fred Meyer
101-250 Employees	Oregon Veteran's Home, Columbia Gorge Community College, Azure Standard, Google, Wasco County, City of The Dalles
50 to 100 Employees	Cousin's Country Inn, Orchard View Farms, Columbia Basin Care Facility, Powder Pure, Mill Creek Point Assisted Living, Crestline Construction, Northwest Aluminum Specialties-Hydro, Bonneville Power Administration, One Community Health, Columbia Gorge Toyota/Honda Motors, Northern Wasco PUD
25-49 Employees	AmeriTies, Columbia State Bank, Goodwill Industries, Precision Lumber, Dufur School District, South Wasco County School District, Post Office, Sunshine Mill (includes vineyard), Younglife/Big Muddy, Flagstone Senior Center

Source: MCEDD May 2021 Report

Mobility Management Strategies

Management strategies are those that the County can conduct behind-the-scenes for effective implementation.

- Promote Coordination between the County, Local and Regional Partners, and other Transit Providers.** Coordination between the County and local partners – including other members of the Gorge TransLink and local jurisdictions – will lead to a comprehensive and efficient system in which users can travel seamlessly inter- and intra-regionally. Partner with Columbia Area Transit (CAT) to support needs for long-haul medical rides to Portland, such as connecting with CAT's hospital van shuttle.
- Partner with Employers and Community-Based Organizations (CBOs).** Continue to work with The Dalles Business Alliance and employers to identify needs and leverage local match opportunities to increase transit funding in Wasco County. Market existing services through employers and CBOs to encourage information-sharing not only to employees and community members, but feedback from transit users back to the County. Use partnerships to support transit access for low-wage workers to employment.
- Partner with Emergency Management.** Transportation is a critical component of responses to disasters such as wildfires and earthquakes, particularly for people without access to vehicles and who need mobility assistance or require other means to access essentials such as food and medical care. Join emergency operations team meetings to establish strategies for emergency response. As outlined in the Human Services Coordinated Plan, strategies to become a key stakeholder in Wasco County's Emergency Management planning, response, recovery, and mitigation activities include building relationships with the key emergency management officials, identify capabilities and limitations of services and resources, inventory residents and pockets of populations with special needs (physical disabilities, low income, LEP), and engage the organizations who serve those people with emergency planning efforts.
- Gain Community Support.** Gain community support by creating and supporting local programs, meeting the needs of many transit markets, promoting the service, and building consensus.

- **Create Measurable Outcomes for Services to Promote Effective Monitoring and Increase Customer Satisfaction.** The Monitoring Program section of this memo identifies ways to monitor performance over time to evaluate the outcomes of providing and expanding service. Engage community members to improve customer satisfaction, retain existing riders, and attract new riders.
- **Build Connection with the South County Alliance and Tygh School Community Center.** Leverage this connection to provide service to populations throughout Wasco County and to support access to service for individuals living in dispersed rural areas. Prioritize access for elderly and people with disabilities within the rural communities.

Marketing and Information Strategy

The following describes actions to improve customer service and information that can be implemented in the short-term and that should be maintained on a long-term basis:

- **Expand Branding for The LINK.** Branding is the foundation of the marketing strategy and provides an identity and image to potential customers. It helps create immediate recognition of all aspects of the service. Key elements of visible marketing tools include the name, logo, vehicle colors and graphics, and bus stop signage and facilities. It is important to be consistent with colors and graphics for maximum effect. A distinctive base color used consistently on transit vehicles and facilities becomes the “color of the bus” in the community. Vehicle graphics, bus stop signage, shelters, and benches enhance transit visibility throughout the community; their style, color, and quality should be consistent. Bus stops and shelters are a convenient place to provide additional information about routes, schedules, and deviation zones.
- **Provide Maps and Information in a Single User-Friendly Brochure.** Printed brochures and pamphlets can be designed and distributed to various target audiences to promote dial-a-ride and deviated fixed-route services. The main element of this kind of promotion is to vary the communication style for distinct target groups while encouraging all to use the same transit service. A printed brochure or pamphlet should include one or more route maps showing all routes with deviation zones, bus stop locations, landmarks, and key destinations clearly depicted. How-to-ride information should also be included, including but not limited to fares, fare media, and how to request a deviation. Contact information that includes a website address, telephone number, and reference to a trip planning app (when available) should be provided. *Example brochures for the North Hillsboro Link, showing the type of information to include on a deviated fixed-route service with a deviation zone, and for the Pacific City Shuttle, showing depictions of landmarks and park-and-ride options, are provided in Figure 10 and Figure 11.*
- **Provide Real-Time Information and Trip-Planning Technologies.** Real-time bus arrival and route information helps improve the ridership experience by reducing passenger wait times at the stop (passengers know when they should leave for the stop) and provides confidence that a bus has not been missed. With the introduction of deviated-route service, bus arrival times at stops become more approximate, depending on whether or not a deviation was made earlier in the trip. With longer headways creating long waits if a bus is missed, real-time information helps reassure riders that their bus is on the way. Information on all transit routes could be provided via The LINK’s and the Gorge TransLink’s websites, smartphones, “push” technologies such as text messages, and telephone support. ODOT provides support for converting real-time bus arrival information to be compatible with applications such as Google Maps and Transit.
- **Advertise.** Advertising via different media can help attract a range of riders. Display advertising of the dial-a-ride and deviated fixed-route services in free weekday shopping papers and other local

papers distributed in the community is a potential tool to introduce and promote service that can generate ridership. Other ways of promoting the service include radio spots; social media such as Facebook and Next Door; and email blasts. Partner with other members of the Gorge TransLink to support a marketing campaign for the GORge Pass and transit services.

- Educate.** MCEDD provides a Regional Mobility and Travel Training Program Manager that assists The LINK and CAT in teaching local, rural, and underserved populations how to use available public transit services in Wasco and Hood River counties. As outlined in the Coordinated Human Services Public Transportation Plan, there is a need to develop programs to teach both agency staff and riders how to use public transit (travel training and travel ambassadors). These programs need bicultural messaging and need to be carefully designed to support veteran, Native Americans, older adults and elders, youth, and people with developmental disabilities. The programs could engage people from these groups who are already using the bus system as travel trainers.

Figure 10. North Hillsboro Link Brochure Elements



ABOUT RIDING N.HILLSBORO LINK

FLAG STOPS

If you are along the route, and not near a designated stop, you can "flag" or simply wave to signal the bus driver to stop. Be sure to stand on the correct side of the road. Passengers may request on-route stops when boarding as well. Street and traffic conditions may make it unsafe for a driver to perform a flag stop where requested.

DEVIATIONS (OFF-ROUTE STOPS)

We will deviate off the route to pick you up or drop you off (see shaded areas on map). Off-route stop requests should be scheduled at least one day in advance. Only one scheduled deviation (pick-up or drop-off) is allowed per zone per trip. However, multiple passengers may use the same deviation.

To schedule a deviation, please call 503-226-0700 between 7:30am and 5:00pm Monday through Friday.

BIKE RACKS AND ACCESSIBILITY

All buses are accessible and equipped with bike racks and lifts.

SEVERE WEATHER

On days with severe weather such as ice or snow, N.Hillsboro Link schedules may follow snow routes or all service may be suspended until weather improves. If conditions warrant a closure or change in operations, information will be available on our website: www.rideconnection.org. You can also call 503-226-0700.

HOLIDAY CLOSURES

Service will not be available on: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

CUSTOMER COMMENTS

Your input is appreciated! Feel free to contact us: 503-226-0700 or info@rideconnection.org

WE RESPECT CIVIL RIGHTS. For a copy of our policy, please call 503-528-1721.

To request this brochure in an alternate format, call 503-528-1721.



The North Hillsboro Link is a free "deviated fixed-route" service linking Orenco MAX Station to suburban employment destinations in the North Hillsboro area. While specifically designed for transit-dependent employees, job-seekers, and low-income individuals, service is open to the public.

For service questions call: 503.226.0700 | TTY: 711

N.Hillsboro Link is operated by:

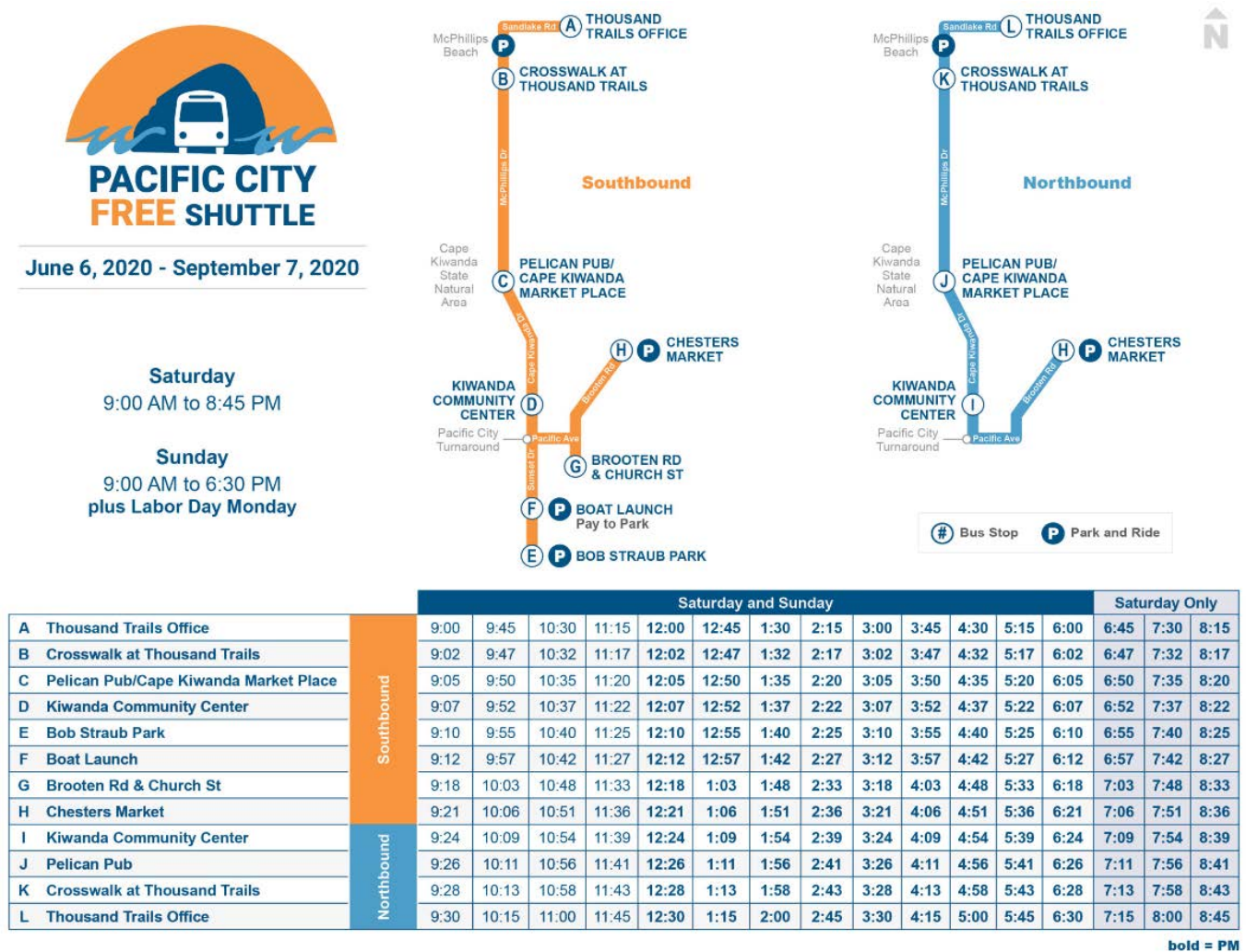


9955 NE Glisan St.
Portland, OR 97220
rideconnection.org

To link accessible, responsive transportation alternatives with individual and community needs.



Figure 11. Pacific City Shuttle Brochure Elements



POLICIES AND STANDARDS

This section compares the recommended service plans to the existing and future land uses in Wasco County. It also summarizes the transit-supportive strategies that were documented in *Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies* and *Memo #6: Updated Goals, Policies, and Practices*.

Land Use Recommendations

Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies included a summary of existing and future land use conditions in Wasco County. Key findings related to this analysis and the recommended service plans are as follows:

- The Dalles** – Existing developed lands in The Dalles are largely focused along the existing Blue Line and proposed revised Red Line in the short-term. Areas not served by these proposed routes include the Veteran's Affairs area, which can be served by dial-a-ride. In many cases, the veterans in this community have mobility impairments that make dial-a-ride a more favorable

option for them. The revised Red Line would also pass along partially vacant lands in the northwest and southeast corners of town, where growth can be prioritized. New growth is also anticipated near the Port area, and can be accommodated via the medium-term recommendation to revise the Blue Line for future transitional housing and long-term revisions to the Red Line as future development occurs. Affordable housing and services are planned for a site adjacent to the transit center, necessitating safe and direct access to the bus stop.

- **Mosier** – The existing transit stop for The Dalles – Hood River service is located toward the west end of Mosier. The location of the existing stop is challenging because there is no space for larger buses to turn around and sight lines are limited at the stop. A Gorge Hubs site is planned near the Historic Columbia River Highway, Oregon Street, and 2nd Avenue, which is more central in Mosier. Union Pacific Railroad (UPRR) lands, also more central in Mosier, are planned for a future civic center/joint use facility toward eastern Mosier. Shifting this stop in coordination with ODOT as these lands develop would be beneficial.
- **Maupin and Dufur** – South County service plans include recommendations for stops near the central parts of these communities, where future growth is planned. However, both communities include Enterprise Zones further away from planned services. These communities could encourage future development to prioritize higher densities near the proposed routes, or services could be modified to serve these locations upon development.
- **Antelope and Shaniko** – Antelope and Shaniko do not have land use plans and they are anticipated to continue to be small communities. Concentrating future development toward the center of town would allow for more efficient transit service.
- **Unincorporated Wasco County** – Population and employment in unincorporated Wasco County is anticipated to decrease. Unincorporated areas are intended to continue to be served by dial-a-ride services, with higher efficiency service in incorporated areas shifting other dial-a-ride users to fixed-route and relieving dial-a-ride demand.

Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies outlined the policies, development requirements, and bus stop design standards to encourage the use of transit systems in Wasco County. *Memo #6: Updated Goals, Policies, and Practices* re-visits work done earlier in this planning process related to local strategies and assesses current county and city development ordinance requirements against model transit-supportive language.

Transit-Supportive Policies

Comprehensive plan policies direct local jurisdictions' land use and transportation system planning and implementation. Model comprehensive plan policies have been developed consistent with the TDP objectives and the goal statements in *Memo #6: Updated Goals, Policies, and Practices*. The model policies are presented in Appendix A of *Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies* and will be used to evaluate locally adopted comprehensive plan policies in Wasco County, The Dalles, Mosier, Dufur, and Maupin and, where necessary, to propose policy revisions to be adopted into local plans to strengthen the usage of each community's transit service.

Transit-Supportive Development Requirements

Local development requirements are a key component to implementing the TDP over time, through the development approval process. Local land use codes and ordinances should be updated to ensure future development will support transit — particularly access to transit and coordination with the transit service provider. Transit-supportive code or ordinance concepts and "model" language have evolved through transit master planning processes throughout the state, drawing on sources such as the Oregon

Public Transportation Plan, Oregon Transportation Planning Rule (TPR), and the State of Oregon Transportation and Growth Management Model Development Code for Small Cities, 3rd Edition.

Transit-supportive concepts that can be locally codified are as follows.

- **Coordination** – Coordination between jurisdictions and transit service providers at the time new development is proposed is critical to ensuring that transit system needs are considered when new growth and re-development occurs. The periods when an applicant is preparing a development application and when that application is under review by the jurisdiction present key opportunities for this coordination.
- **Access to transit and transit-supportive improvements** – Providing safe and convenient access to transit and furnishing stops with supportive improvements (e.g., lighting and seating) makes transit easier to access and more attractive for the user.¹⁴ In addition to requiring “site access” (direct and safe routes from buildings on a site to an existing or planned transit stop), transit-supportive access also consists of “area access” by ensuring that the transportation network is sufficiently connected that potential users can safely and conveniently reach transit stops by walking and rolling (e.g., biking, scooting, and mobility devices). Development regulations can promote this connectivity through maximum block length standards and by requiring non-motorized access through long blocks.
- **Parking** – Local off-street parking requirements can impact the transit orientation of development in several ways. Capping the amount of vehicle parking permitted can help make alternatives to driving more attractive and create smaller parking areas for more pedestrian-oriented and transit-supportive development. The location and design of vehicle parking – 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 within an existing, underutilized footprint. Providing sufficient and well-designed bicycle parking supports connections from transit to destinations by bike.
- **Urban form** – Urban form created by development standards can be used to establish a pedestrian-friendly environment that also supports transit. Transit-supportive development standards include those that minimize the distance between buildings and the transit street, allow buildings to be set back from the street if pedestrian amenities are provided, and do not allow parking between the building and street.
- **Definitions** – Development ordinances and codes should include transit-related definitions in order to clarify and support transit-supportive development provisions.

Model development requirement language for all the concepts is provided in full in Appendix B of Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies. Memo #6: Updated Goals, Policies, and Procedures built on the foundation provided in Memo #3, presented an evaluation of local jurisdiction (Wasco County, The Dalles, Mosier, Dufur, and Maupin) development ordinances, and referred to model language to strengthen the transit-supportiveness of each jurisdiction’s development regulations. The evaluation and reference to model language were tailored to each community in an effort to be appropriate and applicable to the type of transit service recommended in

¹⁴ Transit stop design guidance is not typically codified. At a minimum, guidance will be provided in the TDP regarding design best practices, bus pullouts, stop location, and improvements appropriate for a stop’s ridership and level of activity. See the next section “Transit Stop and Facilities Design Guidance” as a preview of what may be included in the TDP. Local codes and ordinances can be updated to refer to the TDP’s guidance.

each community, community size, and level of urban development. The model language included in Appendix B of Memo #3 and Memo #6 is intended to be modified and used to update local ordinances in order to effectively implement the TDP and improve transit service in Wasco County.

Transit Stop and Facilities Design Guidance

Facilities improvements include transit centers and major stops, bus stops, bicycle and pedestrian amenities, park-and-ride lots, and other bus and administrative facilities. 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. *Memo #3: Unmet Transit Needs and Transit-Supportive Development Strategies* describes the activity thresholds, site and location guidance, potential implications and high-level cost estimates for facility improvements, but do not include ridership estimates as these vary significantly by provider and community. Memo #3 includes guidance for the following:

- Transit centers and major transit stops
- Bus stops, including shelters and benches
- Bicycle and pedestrian infrastructure and amenities
- Park-and-ride lots

MONITORING PROGRAM

Memo #6: Updated Goals, Policies, and Practices also provides proposed performance measures and benchmarks to monitor both transit performance and the outcomes of implementing the TDP's recommendations over time. The program is data-driven and is founded on performance measures that can be tracked on a regular basis through set benchmarks. In many cases, these performance measures are already tracked as part of Federal Transit Administration reporting requirements. This program enables a dynamic system where service adjustments can be implemented and justified following performance evaluations. To evaluate and improve the above service opportunities after implementation, The LINK should continue to monitor the following performance measures for each route:

- **Goal 1: Customer-Focused Services** – Provide services that are safe, attractive, and convenient for all riders.
 - Service frequency
 - Service span
 - Geographic coverage
 - On-time performance (Not currently available)
- **Goal 2: Accessibility and Connectivity** – Improve access and connections within and between communities in the service area as well as key destinations outside the service area.
 - Bus stop amenities
 - Bicycle and pedestrian connections
 - Population served
 - Employment served
 - Transit-dependent populations served

- Number of service request denials
- **Goal 3: Coordination** – Collaborate with public and private partners to maximize services.
 - Connections to other routes/providers
 - System ease of use
- **Goal 4: Health** – Foster public health by reducing vehicle emissions, increasing people’s use of active travel, and improving access to healthcare,
 - Access to health-supporting destinations
 - Fleet fuel efficiencies
- **Goal 5: Sustainability** – Foster environmental, economic, and fiscal sustainability through transit investments.
 - Rides per hour
 - Cost per ride
 - Cost per hour
 - Total capital costs
 - Total annual operating costs

As most metrics are already tracked as part of annual reporting or are otherwise unlikely to change regularly (e.g., fleet fuel efficiencies), all metrics are proposed to be monitored annually. More detail about the benchmarks for these measures can be found in *Memo #6: Updated Goals, Policies, and Practices*.

NEXT STEPS

The project team will use the information presented in this memo and prior memos to develop a draft TDP that includes a vision for future transit service and proposes a set of strategies to address unmet transit needs in Wasco County, drawing from and distilling materials from Memos #1-#7.