



# JOSEPHINE COUNTY ON DEMAND TRANSPORTATION SERVICE SOLUTIONS

Prepared for:  
Josephine Community Transit

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FEHR PEERS



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# EXECUTIVE SUMMARY

This report recommends the implementation of three different types of on demand transportation service in Grants Pass. The following document describes the operations, marketing, evaluation and economic benefits of the proposed on demand transportation services to complement Josephine Community Transit's (JCT) existing fixed route service. The documented analysis in this report describes how the services being recommended will provide reliable, comprehensive and cost-effective transportation options in the Grants Pass area for a wider range of users. The three different proposed services outlined in this report are:

- 1. First last mile service (FLM)** – This service provides riders with access between bus stops/stations and any location within the designated service area. This service would operate concurrently with JCT service, from 6:30 am to 6:30 pm. This service will help residents, visitors and employees who are too far from bus stops to access fixed route transit.
- 2. Point to point daytime service (P2P daytime)** – This service provides riders with access between any two points within the designated service area. This service would operate concurrently with JCT service, from 6:30 am to 6:30 pm. This service will help those that want to travel within Grants Pass where transit does not currently operate.
- 3. Point to point evening service (P2P evening)** – This service provides riders with access between any two points within the designated service area after JCT operating hours, from 6:30 pm to 9:30 pm. This service will provide transportation to those who need to travel in the evening after fixed route services stop operating.

In order to inform the operations model and characteristics of these services, an existing conditions analysis of Josephine County was performed to assess demographic and built environment factors as well as map how residents and visitors currently travel within the county by analyzing big data of smart phone locations purchased from StreetLight Data, Inc.. This analysis provides insight into the potential demand for an on demand transit service—both from users currently taking other modes and trips not being made (latent demand). This analyses revealed that most (94 percent) of trips in the region have an origin and/or destination in Grants Pass. The specific volumes were used to determine ridership estimates of the proposed services.

Best practices were also researched through a literature review and case studies of communities with peer on demand transportation services. A review of the literature provided insight into wait times, costs, destination types, ADA and non-smart phone use as well as potential long-term risks. The case studies of four communities' peer on demand services revealed the importance of marketing these services, collecting and evaluating data, and integrating on demand services with the existing fixed route transit system.

These three services are proposed under two different provider models—operated by a Transportation Network Company (TNC) or operated by Josephine Community Transit (JCT). A third provider model, run by existing contractors who provide non-emergency medical transportation, is also a possible model. It is described at the end of this section, but not covered in detail in this report.

This report outlines the pros and cons of the two provider models including the costs, risks, long-term considerations and legal components. A service area is defined for all three service types, determined based on key destinations, demand, and cost-effectiveness.

A summary of the forecasted ridership and costs for each service type, discussed in detail in **Appendix A**, are summarized here. It is important to estimate



ridership demand to determine the potential benefits of this program, estimate the costs and calculate the cost-effectiveness.

This report also provides recommendations and guidance on details of the operations of these services including how users will book a trip, recommended fare for users, and how to enforce compliance with the intended trip types and eligibility. This includes specific recommendations on implementation such as funding sources, how to phase from a pilot to permanent program, and accompanying projects such as curbside management and wayfinding.

A benefit-cost analysis was also conducted, which assesses the costs in relation to an estimation of the monetized direct and indirect benefits of these three service types. This analysis reveals that the benefits outweigh the costs for the upper ridership range of all services.

Lastly, this report includes a Marketing Plan and Evaluation Plan for the proposed services. The Marketing Plan emphasizes the importance of branding, signing and promoting these services through key outreach events, media and information distribution to target audiences that will benefit most from the pilot. The Evaluation Plan defines the goals of the pilot and identifies corresponding performance measures and data points to those goals, in order to be able to assess the success of the services during and at the end of the pilot.



# INTRODUCTION

The goal of the proposed on demand transportation programs is to provide increased access to jobs and services for residents, visitors and employees of Grants Pass. These recommendations apply innovative and emerging transportation solutions that are cost-effective and complementary to Josephine Community Transit's existing fixed route transit network.

On demand transportation services are an effective solution to mobility challenges in Grants Pass and an ideal complement to the fixed route network for a number of reasons:

1. These services are door-to-door—providing access to users who live in less dense areas of the region or those with mobility impairments.
2. These services are on demand (drivers are dispatched upon the request of riders)—driver supply is able to more closely match demand and wait time is a monitored metric.
3. Point to point evening service expands the hours in which users have access to transit.

The operational details of the proposed services are laid out in this report.

# EXISTING CONDITIONS

An existing conditions analysis was performed to understand demographics of likely transit users and to map how residents and visitors currently travel within Josephine County. This analysis provides insight into the potential demand for an on demand transit service—both from users currently taking other modes and from trips not being made (latent demand). These demographic and travel patterns were used to inform the development of

the operational model presented in this report. **Appendix C** provides additional detail on how this analysis was conducted.

# DEMOGRAPHIC ANALYSIS

A spatial analysis of Josephine County was created to determine the areas of the county that would benefit most from an on demand transportation service. This analysis is composed of two maps—one to represent areas for pick-ups (or trip origins) and the other to represent drop-offs (or trip destinations).

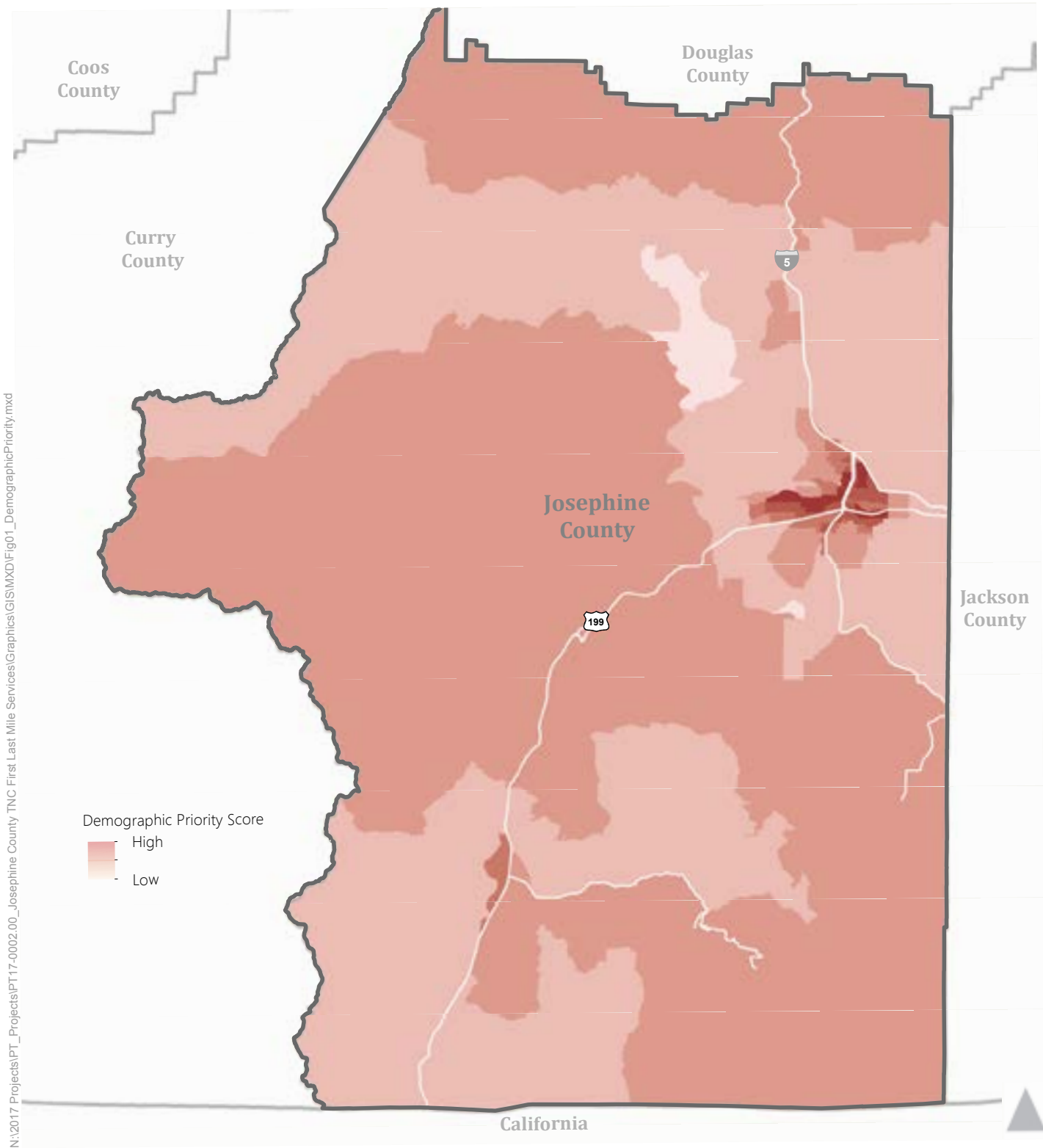
The origin demand model was developed using land use and demographic factors that are associated with barriers to accessing private auto or transit travel. A total of seven inputs derived from US Census data were used:

- Population density (population per acre)
- Employment Density (employees per acre)
- Children (share of population under age 18)
- Older adults (share of population over age 62)
- People with limited mobility (share of population who are non-ambulatory)
- Low income residents (share of population below poverty level)
- Low vehicle access (share of households with no vehicles)

Census blocks within Josephine County were assigned a composite score that represents the potential demand for on demand services based on all seven input factors. These scores are shown in the map in **Figure 1**.



Figure 1: Origin Demand Map



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The destination demand model was developed using key destinations throughout the county, based on data provided by Rogue Valley Council of Governments (RVCOG) and Josephine Community Transit (JCT). Five inputs were used to assign destination scores throughout Josephine County:

- Schools
- Parks
- Hospitals
- Bus stop locations
- Top transit destinations (based on JCT rider survey)

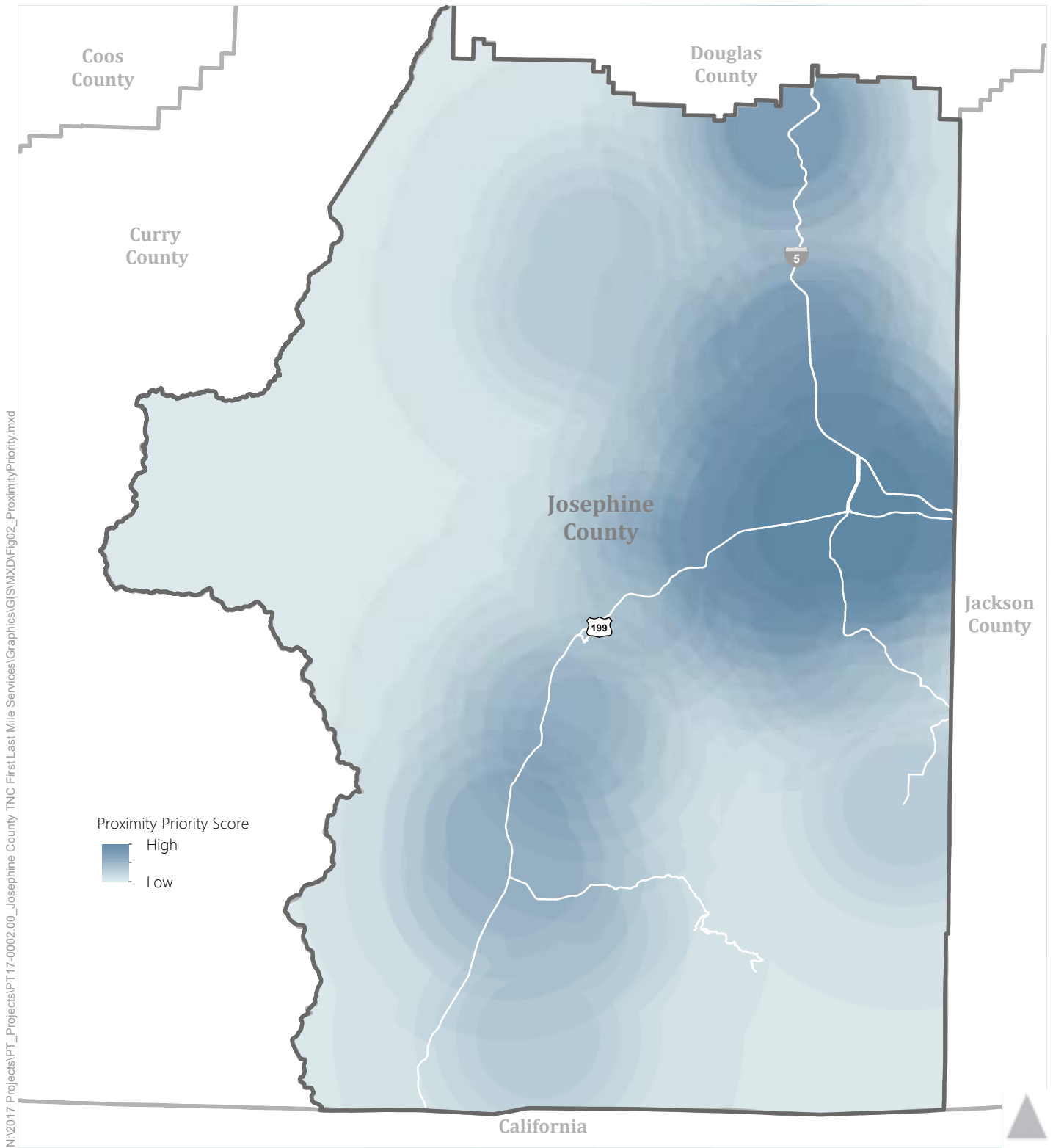
The score for areas within three miles of a key destination received 100 points, as this shorter distance is most cost effective and efficient for running an on demand service at the county-level. The score of an area decreased from 100 points to zero points as distance from the key destination increased from three miles to ten miles. The map from this analysis is shown in **Figure 2**.

## FINDINGS

In reviewing Figures 1 and 2, it is clear that the majority of the on demand origin and destination demand within the study area is concentrated in the Grants Pass area. Cave Junction, Wolf Creek, and Merlin are other lower-scoring nodes in the County.



Figure 2: Destination Demand Map





## TRAVEL PATTERN ANALYSIS

An origin-destination study of vehicle trips in Josephine County and between Josephine County and Medford was completed to understand existing travel occurring within the areas served by Josephine Community Transit (JCT).

## METHODS

Anonymized origin-destination data from smartphones was used to assess existing travel patterns. Smartphones collect location data based on their internal GPS when people use certain applications; the data does not indicate whether people are traveling in private automobiles, on transit, walking, or biking. The origin-destination data analyzed for this study only includes trips whose origin and/or destination is within Josephine County, including trips between Josephine County and Medford. Trips with an origin and destination outside of Josephine County (external-external trips) are not considered part of JCT's potential market. While it is not a perfectly representative dataset, data from smartphones provides the best empirical measure of travel patterns that is currently available.

## KEY FINDINGS

The analysis looked at trips during three time periods: daily trips, morning peak period trips (6-9 AM), and afternoon peak period trips (3-6 PM). Trips were analyzed based on where they start (origin), where they end (destination), and when they occur. The analysis identified several key patterns:

- 94 percent of all trips in the JCT service area have either an origin or destination in the Grants Pass, with 69 percent of all trips occurring entirely within Grants Pass.
- The greatest number of trips start or end in Grants Pass in the areas immediately east and west of Hwy 99 and immediately north of Hwy 199. This areas shows an inflow during the morning peak period and an outflow during the afternoon peak period.

- Twelve percent of all trips are between Grants Pass and unincorporated areas of Josephine County, including the Selma and Wilderville (1.8%) area and the Merlin, Three Pines, and Wolf Creek area (10.4%).
- Nine percent of all trips are between Josephine County (including Grants Pass) and Medford; another four percent of trips travel between Josephine County and the unincorporated areas of Rogue River and Gold Hill in Jackson County.

## CONCLUSIONS

Existing trip making and demographic patterns in Josephine County provide insight into the potential demand for on demand transit service—both from users currently taking other modes and trips not being made (latent demand).

An analysis of demographic factors (population density, employment density, and the concentration of demographic groups with limited mobility) shows potential ridership for on demand service in Grants Pass and Cave Junction. Demographic data considered in the context of existing and forecasted travel behavior informs the ridership and cost estimates presented in this report and detailed in **Appendix A**.

This demographic analysis was supplemented with smartphone location data to consider where current trips are being made. Likely destinations for these riders are concentrated in and around Grants Pass, with smaller centers of demand located south along Hwy 199 between Grants Pass and Cave Junction and north along I-5 near Wolf Creek. Current trip making behavior documented by smartphone data indicates that most trips taken in JCT's service area start or end in Grants Pass, with about two-thirds of all trips occurring entirely within Grants Pass.

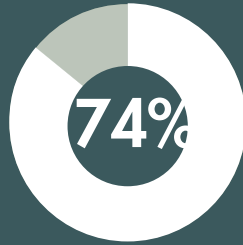
Taken together, these analyses identify travel within Grants Pass as the largest single travel market in Josephine County, presenting an opportunity for on demand transit to expand access to people who cannot access a vehicle.

# JCT RIDER SURVEY

In addition to the demographic and travel pattern analysis, data from Josephine Community Transit's November 2015 rider survey was used to develop ridership estimates and the on demand operations plan. Key takeaways from the rider survey for this analysis include (all numbers displayed below are percentages):



47% of all trips are to or from work or school, with many people traveling to Rogue Community College

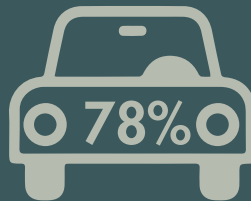
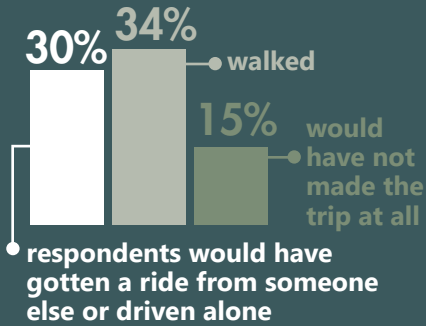


- 74% of transit riders walk to the bus stop
- 20% walk 12 minutes or more

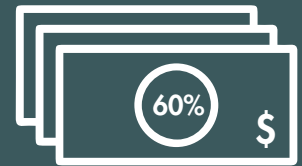


60% use JCT at least twice per week

If transit were not available...



78% NO CAR AVAILABLE FOR THEIR TRANSIT TRIP

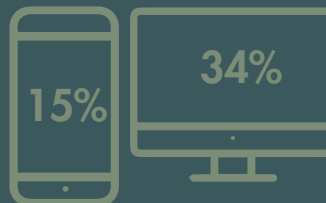


vs.



29% of riders would use JCT more often if later evening service were offered

How riders get transit information



About half of respondents (49%) have incomes below the federal poverty level; 85% of respondents have incomes below the Grants Pass average



## LITERATURE REVIEW

On demand service has had an increasingly prominent presence in our transportation landscape. TNCs have only been in the market for a decade but have quickly become a disruptive force in the transportation system. While they offer new mobility options in under-served areas and more flexibility than fixed service transit, they also have the potential to take ridership from transit and active transportation modes and cause induced demand, resulting in an increase in vehicle miles traveled. The following review of current on demand/transit partnership pilot programs and the most recent academic studies on the topic offers insight into the potential benefits and risks to Josephine Community Transit as it considers a partnership with TNCs or expanding their on demand services. The full Literature Review and list of references can be found in **Appendix B**.

## TNC'S AS FIRST-LAST MILE CONNECTIONS

Multiple studies have been conducted to determine what role TNCs currently play in passenger pick-ups and drops-offs at major transit stations, as well as pilot studies that examine the effectiveness of a TNC/transit partnership. During the Go Centennial first-last mile pilot study (referenced in the case study section that follows), ridership at the Dry Creek station increased by 11.6% over the six-month study period, which was a larger increase than the nearby stations. While park-n-ride use also increased, it was at a much lower rate than nearby stations. There was also a 95% decrease in passenger wait time from booking with the available Call-n-Ride service to using Lyft, and a 78% reduction in total cost (user fee plus subsidy) (Fehr & Peers 2017, 27). Overall, it was found that stations using TNCs as a first/last mile connection saw increased ridership, decreased wait times, and decreased cost to the transit agency or city when dial-a-ride service was replaced with on demand service.

## TNC'S AS POINT TO POINT TRANSIT PROVIDERS

TNC's can act as point to point transit providers for evening trips, to replace low performing routes, as a complement to paratransit, or to serve specific populations such as senior citizens. There is a consensus among researchers that ride hailing is more commonly used for recreational trips than for everyday commuting. Ride-hailing use peaks between 10 p.m. and 4 a.m., with weekday peak-hour trips only making up 20% to 27% of total TNC trip volume for the week (Feigon and Murphy 2018, 11). This TNC activity would complement regular transit service as buses usually run less frequently or are not available in the late evening and very early morning. Similarly, suburban and rural areas may find that it is not financially feasible to serve low-density areas so TNCs can serve customers in these areas without needing to establish fixed route service.

Point to point ride hailing services can also serve paratransit users or seniors. Per federal law, transit agencies must provide paratransit service that meets ADA requirements, but agencies also have the option to provide supplemental same-day service that could potentially be provided through a partnership with TNCs. While there are some barriers to adoption, aging residents with limited ability to drive themselves could benefit from point to point TNC service. This can complement paratransit service, as seniors that qualify for paratransit but do not need accessible vehicles can use this program and free up space on paratransit (Blodgett 18).

## CURBSIDE MANAGEMENT AND PARKING

Many uses compete for curb space, and communities must manage this limited commodity to accommodate parking, freight loading, passenger pick-ups/drop-offs, bicycle and pedestrian activity, and transit. Curb space management is an emerging issue for local governments working with on demand services that need safe passenger pick-up and



drop-off zones. The shift to more on demand mobility services also has impacts on communities' parking needs and allocation. BART's 2015 Station Access Study found that from 2008 to 2015 there was an 8% increase in drop-off arrivals (including drop offs by private vehicles, taxis, and TNCs) and a 7% decrease in other transit modes used to access the stations. While Josephine County does not currently have any transit centers, on demand services could change the parking and curb space needs of the region.

## RISK ASSESSMENT

Declining transit ridership has raised the question of whether TNCs are luring people away from public transit. Clewlow and Mishra's 2017 study concluded that 49% to 61% of the ride hailing trips they examined would not have been made at all or would have been made by walking, biking, or transit (2). In a study in 2018, Feigon and Murphy found that shorter travel times and wait times were the top reasons for choosing TNCs over transit. To stay competitive with driving and ride hailing options, transit must find ways to be both time and cost competitive.

There are both risks and benefits to partnering with a private TNC company. TNCs can remove some risk and cost burden from transit agencies through reduced insurance needs, privatized marketing costs, and technology development. However, TNCs must be monitored to ensure they provide a high quality service that meets the transit agency's standards for vehicle maintenance, response time, customer service, equitable coverage in low-income neighborhoods, and ADA compliance. There is also a risk that service will be lost if the TNC provider decides to leave the area or does not renew the partnership. All of these factors must be examined to determine if a TNC/transit partnership is the best option for on demand service.

## EQUITY CONCERNS

On demand service can help provide access to jobs and services that would otherwise cause undue burden on

residents or not be possible. After their initial pilot study, PSTA in Pinellas County launched a program called TD Late Night. The program provides low-income residents with 23 free rides per month between the hours of 9 p.m. and 6 a.m. to help third-shift workers find a safe ride to and from work (Blodgett 4). These services can still be cost competitive with fixed route transit service while providing transportation options to users that need it most. However, TNC service needs to be monitored to ensure equitable service coverage in low income and minority areas of the city. Most TNC providers require a smartphone and a bank account, which may exclude certain groups, so alternative booking and payment methods should be available for on demand services. Oversight is needed to make sure the on demand service is adequately serving the populations that may need it the most.

### questions TO CONSIDER

1. Will on demand service reduce user cost, travel time, or wait times? If not will it provide access to jobs and services or increase the convenience of getting to these destinations?
2. Should the program focus on residential connections to transit (the 'first mile'), or transit connections to businesses and jobs (the 'last mile')?
3. Will TNCs provide the same level of service as the transit agency, especially for passengers with disabilities and seniors?
4. Could commercial destinations be redesigned to accommodate more curbside drop-offs and less parking?
5. How are current riders getting to transit and is there potential for TNCs to reduce active modes?
6. What are the benefits and risks to the transit agency in a partnership with TNCs?
7. Where and who are the area's most vulnerable populations and how could they be accommodated in an on demand/transit partnership?



## CASE STUDIES

As a part of the research on best practices for Josephine County's on demand transportation service, we interviewed four jurisdictions and agencies that have implemented pilot programs of public private partnerships with on demand providers. These case studies consist of: Centennial, Colorado; Dublin, California; Tampa, Florida; and Philadelphia, Pennsylvania. These interviews discussed the operations model, successes, lessons learned and long-term implementation plan for the on demand public private partnership in each community. The full case studies memo can be found in **Appendix B**.

The Centennial pilot, GoCentennial, was the first program in the county to fully subsidize first last mile trips provided by a private provider (Lyft). This program incorporated a concierge service for non-smart phone users to book trips, ADA service provided through the Lyft platform, and a trip planning app that made booking a ride easy. Although ridership was low, this program was generally seen as a successful experimentation with public-private partnerships. There were also a number of lessons learned, given that this was the first program of its kind, including: better integrating with the fixed route system, increased marketing, more intuitive service area boundaries, pilot duration longer than six months, and formalized pickup/drop off areas.

Go Dublin is an on demand service in Dublin, California that is partially subsidized by Wheels—the transit agency in the San Joaquin Valley that works with three providers (Uber, Lyft and a cab company) to allow users to go anywhere in the City of Dublin, with a subsidy of half the fare, up to \$5. Lessons learned from this pilot are receiving enough and appropriate data for grant acquisition and evaluation, acquiring contact information to collect data not through the provider, eliminate in-app marketing through TNC provider and determine the impact of the pilot on fixed route ridership.

Pinellas Suncoast Transit Authority (PSTA) serves all of

Pinellas County fixed route service. The agency runs (or is preparing to run) three innovative programs in addition to their fixed route service: Direct Connect is a first last mile service that subsidizes the first \$5 of a user's Uber or Taxi trip; TD Late shift allows users with 2 or more jobs traveling between 10 pm and 6 am to purchase a package of Uber rides at a reduced price; and on demand paratransit service for ADA and non-ADA users. PSTA is expanding these services by incorporating them into mobile ticketing pass, market through the app with qualifying locations and developing a call center to book trips for non-smart phone users.

SEPTA and Uber together created a model where Uber provided discount trips to and from 11 different regional rail stations to address the first last mile challenge; with SEPTA contributing no financial assistance, only marketing. This pilot ended in 2016, but the agencies is looking into opportunities for another public private partnership that financially sustainable.

## PROVIDER MODELS

One of the most important components to the success of this pilot is determining who will provide the on demand services. The provider will be responsible for the majority of the pilot components outlined in this Operations Plan including:

- the fleet of vehicles
- the drivers
- a trip-booking mechanism
- the technology that will dispatch ride requests to drivers
- managing payment
- determining eligibility through a geofence
- providing wheelchair accessible vehicles
- other customer experience factors such as the wait time
- collecting and providing data of the services provided

This Operations Plan describes the various components of this pilots under two different provider models—services run by Transportation Network Company or services run





by Josephine Community Transit. The assumptions and general characteristics of each model are described in the following sections. This Operations Plan builds on ridership and cost analyses for each service type, which are summarized below and discussed in detail in **Appendix A**.

## TRANSPORTATION NETWORK COMPANY-OPERATED

One provider option is to form a public private partnership between the transit agency and a Transportation Network Company (TNC). A TNC is a company or organization that provides rides by pairing passengers with independent drivers via websites or apps. Lyft and Uber are the two largest TNC companies in the country, with Uber having the only local presence (they currently operate in Medford, OR) during the time of this study. Therefore, Uber is used as the assumed TNC provider in this Operations Plan. It is assumed that Uber will apply their traditional model of using their own ride booking platform, dispatch model, and drivers to provide this service. Because Uber does not guarantee a wheelchair accessible vehicle in the region currently, this model may include the leasing of a wheelchair accessible vehicle for Uber drivers to operate under the traditional Uber platform.<sup>1</sup> Another potential concern is having a sufficient supply of drivers to meet the demand throughout the day—Uber drivers are independent contractors and can work the hours of their choice. This risk can be addressed by providing interested drivers with a fixed salary in exchange for guaranteeing their ability to drive a certain amount of time.

**It is important to work closely with Uber, or the chosen TNC, to form a contract that encompasses all of the elements in this Operation Plan. The contract should clearly outline the level of service, payment and data**

<sup>1</sup>Uber does offer wheelchair accessible vans in other areas where they operate, so this accommodation is built into their app platform. If a van is leased, JCT will have to work out terms of who actually leases, maintains, and insures the van since Uber does not typically own/manage any of the vehicles on their platform.

**to be exchanged. A close and trusted working relationship will be essential throughout the execution of the contract in order to work closely throughout the pilot and evolve the program as needed.**

The literature review and case studies tech memo in **Appendix B** contains greater detail on how TNCs have operated in public private partnerships with transit agencies to serve on demand trips.

## JOSEPHINE COMMUNITY TRANSIT-OPERATED

The other provider model is to run the service(s) in-house through Josephine Community Transit (JCT). This model would consist of JCT leasing/purchasing additional fleet vehicles (as identified in the ridership and cost forecasts in **Appendix A**) and operating them through their own labor pool or a contracted third party (if the current labor agreement allows this). This service could potentially replace the existing Dial-a-Ride service. JCT currently uses a technology called RouteMatch that, with minor modifications, would be able to book and dispatch on demand rides.

## PROS AND CONS OF PROVIDER MODELS

**Table 1** provides a qualitative summary of the pros and cons of these two models in order to help decision-makers select a provider that can most effectively operate one or more of the proposed on demand services. The green and red faces in the table represent a generally positive or negative outlook, respectively, on how each provider model operates in that category relative to the other. A more nuanced and detailed assessment of the different factors are discussed in other sections of the Operation Plan.





## COST

The cost to provide the services through TNCs is estimated to be significantly lower. However, because TNCs are still highly subsidized by investors, this cost might change into the future as the financial models and market for TNCs evolves in the region and around the country. Additionally, there could be up front and ongoing costs to get Uber to enter the Grants Pass market and maintain adequate service levels. This can be addressed by setting a contract with the provider that provides a fixed fee or at least addresses the unpredictability of a potential increase in prices in the long term and surge pricing in the short term. If TNCs provide the service, they can also save the agency money by providing some of the marketing due to their national recognition and ability to send notifications through the app to users.



Table 1: Pros and cons of different providers

	FACTORS	TRANSPORTATION NETWORK COMPANY (TNC)	JOSEPHINE COMMUNITY TRANSIT (JCT)
COST	Cost	✓	✗
	Longer term predictability and stability of cost	✗	✓
	Potential privatization of marketing costs	✓	✗
DRIVER SUPPLY	Flexibility/agility of vehicle and driver supply with changes in demand (such as during events, or peak periods)	✓	—
	Predictability of supply of drivers	✗	✓
USER EXPERIENCE	Coordination and integration with the fixed route service	✗	✓
	Ease of payment (cash, reduced fare, etc)	✗	✓
FLEET AND DRIVER REGULATIONS	ADA accommodation	—	✓
	Flexibility of employees/bargaining agreement of unionized employees	✓	—
	Reduced insurance needs	✓	✗
	Potential concerns on standards for vehicle maintenance, driver background checks, response time, customer service, and equitable coverage	✗	✓
OTHER	Data availability and ease of access	✗	✓



## DRIVER SUPPLY

The supply of drivers is less flexible and agile under the JCT model, because they are subject to the existing bargaining agreement for unionized employees that requires drivers to operate 20 hours per week averaged over a six month period, at a minimum of a two hour period. This is a disadvantage in that the driver supply has to be large enough to meet peak demand, but cannot drop as quickly when demand drops. This means that drivers and fleet may be underutilized during certain times of day, which increases the cost per trip of the service. The TNC model also allows an increase of drivers during peak times like rush hour or events, but that supply can drop quickly when demand drops. The TNC company can market to drivers and run promotional programs to increase the number of drivers during certain times and at certain locations. On the other hand, the unpredictability of driver supply may mean that it is more challenging for the pilot to guarantee that there is sufficient supply of drivers to meet demand and to provide acceptable wait times for the customers. In summary, the JCT model is built around meeting peak demand, but has higher off-peak costs and inefficiencies; the TNC model is optimized to minimize costs, but the driver pool is unpredictable which can result in long waiting times.

## USER EXPERIENCE

The user experience in terms of integrating with the existing fixed route system and payment could be more positive under the JCT model. This is because there can be greater consistency between services when the provider is the same. The fares and pricing structure are also more straightforward when the transit agency doesn't have to serve as a middle man between the user and the provider.

## FLEET AND DRIVER REGULATIONS

ADA accommodation is more challenging under the TNC model, but there are ways to work around this. Under

the current TNC model, ADA accommodation is not guaranteed, but there is an opportunity for JCT to lease a vehicle to address this weakness. Under the JCT model, ADA accommodation is guaranteed, but comes as a high cost. Since all vehicles that JCT operates have to be wheelchair-accessible, this guarantees that all rides are ADA accessible.

Similar to the advantages/disadvantages with driver supply, the labor agreement with the bargaining unit may result in underutilization of drivers during times of decreased demand. The TNC model has also already addressed all insurance needs, which reduces the costs and resources of this model. Because the TNC model is out of house, there is less control over variables such as standards for vehicle maintenance, driver background checks, response time, customer service, and equitable coverage. The TNC model does address each of these, but with less transparency and potentially lower standards compared against JCT as the operator.

## OTHER

Lastly, collecting and distributing data is much easier and guaranteed when JCT is the operator. As discussed in the literature review and case studies, other agencies have faced challenges in receiving data in a timely and detailed manner when working with TNCs such as Uber.

## CONTRACTOR-OPERATED

In addition to the two provider options outlined previously, a third option that combines elements of these two options is also a possibility. This option utilizes existing non-emergency medical transportation (NEMT) providers in the region to provide on demand transportation services. There are currently about 20 vehicles in the Grants Pass area. There is a brokerage company that dispatches rides to one of the many providers present in the region based on cost and reliability. Each provider sets the terms of the ride, but most meet ADA requirements. Each provider also provides sets their own cost for ambulatory and non-ambulatory services, including a base fee plus



a per mile fee. The average base is fee is around \$8 for ambulatory users and \$17.50 for non-ambulatory users, with an additional \$1.50 per mile for all users. There is currently a high level of oversight and scrutiny of providers including proof of annual training, background checks and vehicle condition.

If NEMT providers were to operate the proposed on demand services, the existing model would need to be modified slightly. Modifications would need to ensure that:

- Maximum wait time between ride request and passenger pick up criteria are met
- Cost and fare for the services were consistent and met the expectations of JCT
- The supply of drivers and vehicles is adequate
- The dispatching system was using appropriate technology for on demand, user friendly ride requests
- Providers are integrated so that the service operates seamlessly for users
- The rider experience in the vehicles is similar to what would be offered by a TNC or JCT vehicle

This third provider model should be considered in the context of the factors in the second column of Table 1 as well as the modifications to the existing operations, as identified in this section.

## OTHER STAKEHOLDERS AND PARTNERS

In addition to the ultimate providers of the fleet and drivers as well as Josephine Community Transit, the cooperation and collaboration of a number of other stakeholders in the region will be important for the successful launch and continuation of this pilot. These stakeholders and their roles are outlined as follows:

- **Grants Pass Department of Public Safety and Josephine County Sheriffs Office-** to provide data on collisions and personal safety and help with enforcement of the program
- **Grant Pass Public Works-** to provide curbside management in dense areas and designated pick-up drop-

off locations at bus stops

- **Grants Pass Economic Development-** to coordinate with tourism to ensure that visitors are aware of these service options
- **Contract/legal team-** to assist in the contractual agreements with any collaborating companies
- **Oregon Department of Transportation (ODOT)-** to provide feedback and determine feasibility in other regions in the state
- **Rogue Valley Council of Governments (RVCOG) and Middle Rogue Metropolitan Planning Area (MRMPO)-** to provide feedback and determine feasibility in other regions in the state and potential for funding and inclusion in regional transportation planning
- **Other regional hubs including Gold Hill, Wolf Creek, Rogue River, Cave Junction-** to coordinate and provide on demand service so users accessing the commuter lines can address the first/last mile gap at the other end of their trip
- **Marketing firm-** to provide marketing services before and during the launch of the services
- **Evaluation firm-** to collect and analyze data form the services to track and evaluate the success of the program, make recommendations to better align with travel preferences
- **Technology companies-** to potentially create a trip planning app or provide a dispatch service and payment integration to make the service more user friendly
- **Large employers/Rogue Community College/ residential hubs-** to potentially be sponsors or contributors to the services, help market the service

## SERVICE AREA

Separate service areas, shown in **Figure 1** and **Figure 2**, were developed for the proposed first-last mile and point to point service models. The approach to developing the service areas is described below.

## FIRST-LAST MILE

A service area was determined for the proposed first-



last mile service by creating a 3-mile buffer around all bus stops in Grants Pass. Buffers were drawn along the roadway network, not as a straight line distance, to more accurately depict the travel distance. During implementation this boundary should be smoothed to reduce small gaps in the service area that might cause confusion among users. The 3-mile buffer was determined based on an effective distance that would provide a transportation option to a number of residents while still being cost effective and a quick turnaround of vehicles accommodating a 15 to 30 minute wait time. This service area is shown in **Figure 1**.





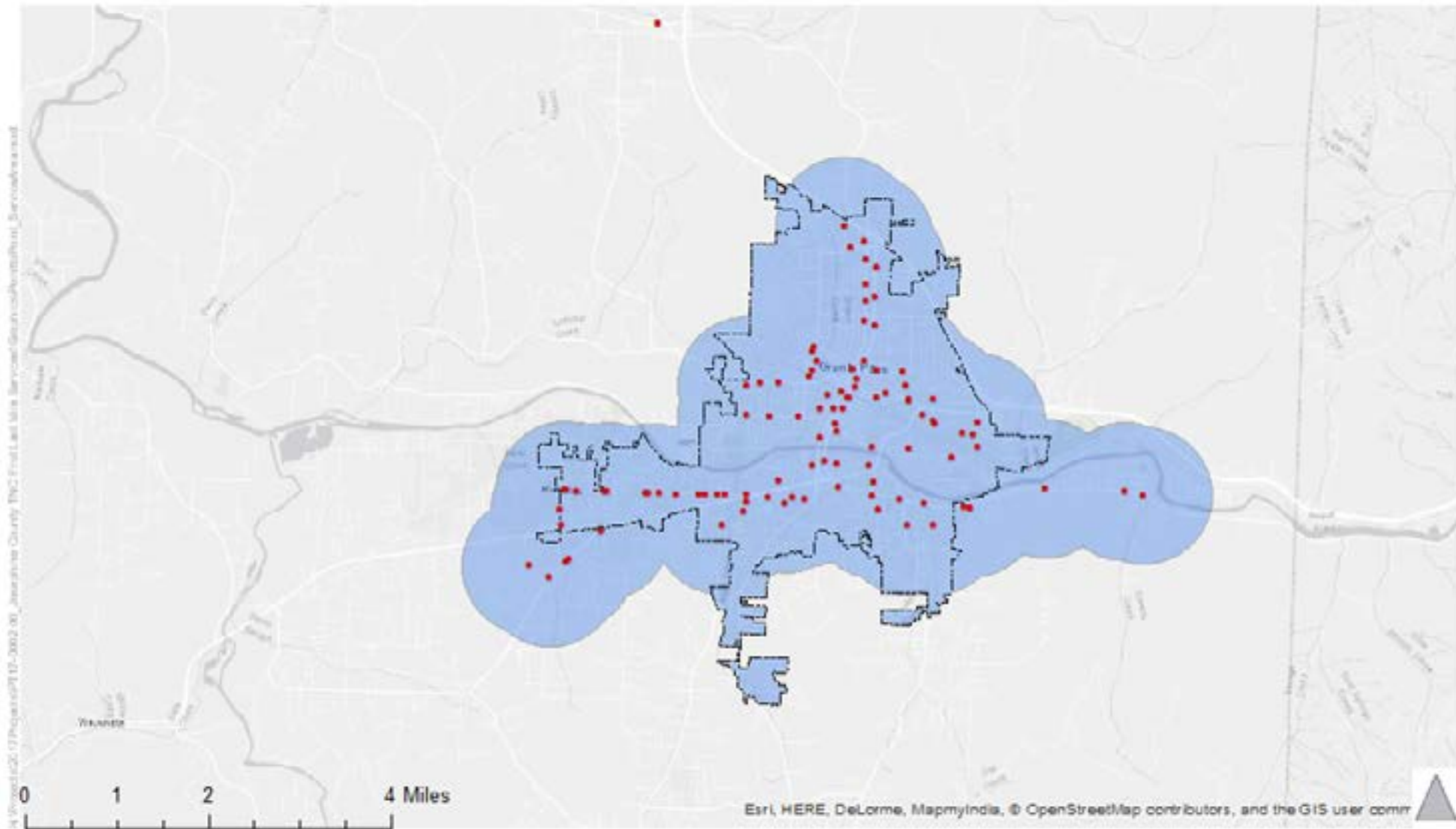
## POINT TO POINT SERVICE (DAYTIME)

A service area was determined for the proposed point to point service by overlaying the Grants Pass city boundary and the polygon for Dial-a-Ride service within Grants Pass (3/4-mile from any bus stop within Grants Pass). The 3/4 mile buffer around bus stops was created as a straight line buffer to match that of the current Dial-a-Ride service area and to make it easier for residents to determine if they are in the service area. These two polygons were superimposed to create the point to point service area. This service area is smaller than the first-last mile service area as users can use the point to point service to cross the city while the first-last mile service is only to a nearby bus stop, effectively keeping the average trip length in both services similar. This new point to point service area is shown in **Figure 2**.

## POINT TO POINT SERVICE (EVENING)

The same service area in the point to point daytime service was used for the point to point evening service. Instead of examining ridership from 6:30 am to 6:30 pm concurrent with JCT fixed route service, this scenario estimates the ridership demand if a point to point service operated from 6:30 pm to 9:30 pm. There is no fixed route service running during the evening hours, but in the on-board passenger survey a majority of riders expressed interest in later service hours.





- Josephine Community Transit Stops
- ▭ Grants Pass City Limits
- ▭ Point to Point Service Area



Figure 2  
Point to Point Service Area





# EXPECTED RIDERSHIP

Expected ridership was based on the almost 163,000 current annual boardings on JCT fixed route service. This current ridership is only for the routes that circulate within Grants Pass – routes 10, 20, 35, and 40 – and excludes commuter routes. This may slightly underestimate first-last mile ridership as some residents may use the service to access the commuter route stops that are within the service area. Separate ridership estimates were developed for the three proposed service models. The approach taken to develop each estimate is described below.

## FIRST-LAST MILE SERVICE

Low and high first-last mile ridership estimates were based on assessing who might find this service most beneficial. At a minimum, riders who currently walk long distances to transit are likely to use a first-last mile service that could save them time and effort. A first-last mile service also effectively expands the range of transit, making it accessible to people who do not currently use transit. Therefore, a low end for potential ridership can be defined as those riders who already walk more than 1/2 mile to access transit, and a high end can be defined as people who live within the proposed first-last mile service area and who would be likely to use transit if they had access to it.

To further refine the ridership estimates, the change in travel time from the current service to new service was calculated and a travel time elasticity applied to the high estimate. In other words, the high end ridership estimate also takes into account the time savings that riders would experience from the first-last mile service, which research shows encourages people to make more trips. The ridership for both low and high ends was adjusted downward with a fare elasticity (the sensitivity to a change in price from a \$1 bus fare

to an additional \$1 for the new service) and the percentage of the population who have access to a smartphone or who would use a call in booking service. Both low and high estimates assume an average wait time of 15 minutes between hailing the ride and being picked up.

For both low and high end estimates, average weekday and annual ridership estimates (for all the JCT routes that serve Grants Pass) were prepared. Separate estimates were prepared based on the total, low-income, and low-vehicle access populations, and then averaged together for the final ridership estimate seen in **Table 2**. Detailed ridership calculations for all three service types can be found in **Appendix A**.

*Table 2: First Last Mile Ridership Estimate*

	LOW ESTIMATE	HIGH ESTIMATE
<b>ANNUAL BOARDINGS</b>	14,620 (+9%)	51,371 (+32%)
<b>DAILY BOARDINGS</b>	58	205
<b>PEAK HOUR BOARDINGS</b>	5	16

With implementation of a first-last mile service in Grants Pass there will be an estimated 14,620 to 51,371 annual boardings of the on demand service. This represents a 9 percent to 32 percent increase over current annual boardings on JCT fixed route service in Grants Pass. While there is a difference of 36,000 annual riders between the low and high estimates, this represents the uncertainty in estimating the demand for a new service with no standardized methodology. Additionally, in the limited number of similar services currently offered around the country, the degree of adoption by customers has varied considerably. Part of the differences in adoption rates can be explained by marketing (as is described later in this report), but other reasons for why the adoption rate differs so much are not yet known.



## POINT TO POINT SERVICE (DAYTIME)

For both low and high end estimates, average and annual ridership estimates were prepared for daytime point to point service. Separate estimates were prepared based on the total, low-income, and low-vehicle access populations, and then averaged together. It was assumed that the current transit fare is \$1 and the new on demand fare is \$2 per trip (the next section outlines the potential fare structure).

- **Low end** – Assumes that people are equally likely to use point to point service as fixed-route service (e.g., mode share for transit is unchanged)
- **High end** – This assumes that there is 15 percent induced demand due to the convenience of having point to point service available; the induced demand factor is based on the trips that would not have been made if JCT transit was not available, as reported in the on-board passenger survey

The methodology for both the high and low estimates was the same excluding this induced demand variable. Ridership for both the high and low ends was adjusted based on travel time elasticity, fare elasticity, and the population with access to a smartphone or who would call in to a booking service. Both low and high estimates assume an average wait time of 15 minutes between hailing the ride and being picked up. **Table 3** details the point to point ridership estimates.

*Table 3: Point to Point Daytime Ridership Estimate*

	LOW ESTIMATE	HIGH ESTIMATE
TOTAL ANNUAL RIDERS	30,000 (+18%)	47,000 (+29%)
TOTAL DAILY RIDERS	119	188
TOTAL PEAK HOUR RIDERS	9	15

Point to point daytime service is estimated to have an 18 percent to 29 percent increase over current fixed route bus boardings on the Grants Pass routes. This service would likely have slightly higher ridership than a first-last mile service due to the convenience of door-to-door service and overall lower travel time. It is also possible that a point to point service running concurrently with JCT fixed route service will take some ridership from the fixed route service, though the number of riders that switch is difficult to determine and is not factored into the analysis. Further pilot studies could better inform this mode shift, but it can be expected that lower-productivity and longer headway routes serving lower density destinations would see the greatest decrease in demand.



## POINT TO POINT SERVICE (EVENING)

Both the service area and low and high end assumptions are the same in the evening point to point service as the daytime service. The methodology for estimating ridership for this service also takes into account the fact that evening ridership is usually lower than daytime ridership. A ratio of evening to daytime trips was applied to both low and high estimates, along with travel time elasticity and the percentage of people with access to a smartphone or who would call in to a booking service. Induced demand of 15 percent was applied to only the high estimate. Both low and high estimates assume an average wait time of 15 minutes between hailing the ride and being picked up.

One factor that was not taken into account in the evening point to point ridership estimation is the fact that TNCs (based on anecdotal evidence) have their highest demand during the evenings to serve passengers going to social or recreational venues. If the point to point model captures some of these people who would have traditionally driven their car to their destination, the ridership levels could be greater than the high estimate shown below. The point to point evening ridership estimate can be seen in **Table 4**.

*Table 4: Point to Point Evening Ridership Estimate*

	LOW ESTIMATE	HIGH ESTIMATE
TOTAL ANNUAL RIDERS	19,712 (+12%)	22,684 (+14%)
TOTAL DAILY RIDERS	79	91
TOTAL PEAK HOUR RIDERS	35	40

The addition of point to point evening service would mean a 12 percent to 14 percent increase in ridership over current fixed route service in Grants Pass. There are a number of assumptions incorporated into the ridership forecasts. Transportation and mobility options are also quickly evolving in ways that will likely have significant

impacts on travel behavior. It is important to consider these results in those contexts as well as to provide updates to these analyses as additional information becomes available. For example, if and when a pilot program is launched, ridership data can be used to calibrate and validate the methodologies applied.

Ridership results inform development of the operations model for these recommended services, forecasted costs and comparison of costs and benefits to the existing fixed route and Dial-a-Ride services.

## BOOKING MECHANISMS

Two booking mechanisms will be provided for on demand service users: a smart phone application and a concierge service. Both booking mechanisms will use the same back end system to assign trip requests to drivers, route trips to their destinations, enforce service area and usage limits, and collect usage data. While the service is designed to be on demand, the operator can also permit users to reserve rides in advance. Currently, private TNC operators allow users to reserve a ride up to seven days in advance. To meet ADA requirements, the smart phone application and concierge service, taken together, must be accessible to people with visual, auditory, and/or cognitive disabilities. Both booking mechanisms would result in a wait time of 1 to 30 minutes, with an average wait time assumed to be 15 minutes.

## SMART PHONE APPLICATION

Using either the private operator's existing app (such as the Uber app), or a stand-alone trip planning app, the user will enter their origin and destination and receive an estimated pickup time for their trip. Both approaches have been used in previous pilots, such as in the GoCentennial program where first/last mile trips could be booked through the TNC partner's app or through a stand-alone app used to plan mobility throughout the Denver region. Users must be registered to use the app; this will allow for



the collection of usage data, saved preferences such as pre-set home and work destinations, and usage limits, if the service provider imposes them.

## CONCIERGE SERVICE

Regardless of the provider model used, on demand service must be available to people who do not use smart phones in order to adequately serve all its potential riders. Josephine Community Transit’s existing customer service line will provide ride booking assistance for riders who do not use smart phones. As with the smartphone application, users must be registered to book a ride and provide their registration information to the dispatcher when booking. The dispatcher will then use an enterprise version of the smart phone application to book a ride for the user.

## PRICING AND PAYMENT

Several potential pricing structures could be applied to the on demand service. These options, along with

### rider COST

The current full priced fare for transit within Grants Pass is \$1 per ride. When adding a first/last mile service this cost will be added to the rider’s normal bus fare. It was determined that a first/last mile cost of \$1 per ride will cause some decrease in potential ridership but not impose an undue cost burden on those using the service. For a point to point service the rider saves the \$1 transit fare and pays only the on demand fare. A per trip cost of \$2 keeps the total trip cost the same as the first-last mile cost of \$1 per ride plus \$1 per bus fare. Again this \$2 fare for daytime and evening point to point service may discourage riders who are sensitive to price but it still provides mobility options to Grants Pass residents and visitors at a reasonable cost (which is considerably less than private taxi or TNC fares).

considerations such as the cost to riders and payment options, are described below.

## POTENTIAL PRICING STRUCTURES

There are three different ways that other agencies have structured their first-last mile trip pricing: fully-subsidized, subsidizing a percentage of the cost, and subsidizing a flat dollar amount for each ride. These options are detailed below.

### FULLY SUBSIDIZED FARE

In some first-last mile pilots, the transit agency completely subsidized the cost for riders. The Go Centennial pilot program fully subsidized fares during the six month first-last mile program, with a per-trip Lyft Line cost of \$4.70. This program did require that riders use a shared ride, but as it was the first of its kind, the agency negotiated with Lyft for a flat fare without surge pricing so this per-trip cost was likely lower than normal. While a free first-last mile or point to point service would likely result in higher ridership, it would also have a large financial impact on JCT. Free service could cause high enough demand that it could exceed the ability of the program to meet minimum wait times, resulting in customer frustration.

### SUBSIDY AS A PERCENTAGE OF COST

Another option is for JCT to subsidize a percentage of each ride up to a certain cap. The Go Dublin pilot utilized this pricing structure and offered riders a subsidy of half the trip fare up to \$5. They did want to mirror the \$2 cost of fixed route bus fare but with uncertainty in demand and the possibility of surge pricing they did not want to expose the agency to high costs. The Southeastern Pennsylvania Transportation Authority (SEPTA) had a similar pricing structure for their first-last mile program but the cost was born by Uber. Uber gave a 40% discount for trips to or from certain transit stations with a cap of \$10 per



ride. This form of pricing structure limits the potential financial burden on the transit agency but it can be more complicated to calculate and leaves riders unsure of what they may have to pay for each ride. If this on demand program aims to keep user costs comparable to current transit while serving under-served populations then controlling the rider's share of the price is important.

## FLAT FEE SUBSIDY

The third option is for JCT to charge riders a flat cost for each ride. The Massachusetts Bay Transportation Authority (MBTA) currently has a partnership with Lyft and Uber where users pay the first \$2 for an accessible ride and MBTA pays up to \$40 of the remainder. A fixed subsidy is a simpler calculation, while also discouraging riders from abusing the service as could be the case with a free service. Riders know how much they will need to pay for their trip while the agency can still cap their financial contribution per ride, lowering their financial risk. This pricing structure is recommended for Josephine County so that the cost per on demand trip is kept comparable to current transit fares, but JCT can also minimize their financial burden.

An average ride on Josephine Community Transit buses currently costs the agency \$5.14 (which factors in the fare payment). At an average cost of \$8.07 per first-last mile TNC trip, this would mean a rider cost of \$1 and JCT subsidy of \$7.07 on average, two dollars more than the current subsidy. If the first-last mile service is provided by JCT instead of a TNC company it would increase the JCT subsidy to \$13.30 to \$16.58 per ride. It is worth pointing out that any new first-last mile rider would cost the agency for the trip to the bus, but the bus ride itself would not increase the marginal costs of the fixed route service (it is running anyway). This would reduce the cost per trip of the fixed route system since first-last mile customers would be paying the fare but not increasing the cost of the service.

For the point to point daytime service, the average cost per trip is \$9.08 in a TNC and \$15.00 to \$15.60 if service is provided by JCT. With the discussed \$2 rider fare per trip this would mean a JCT subsidy of \$7.08 under the TNC

model or \$13.00 to \$13.60 under the JCT model. The cost under the TNC model is the same for both first-last mile and point to point daytime service, while point to point is slightly cheaper than first-last mile service provided by JCT. In this case where there is the potential for the point to point service to attract fixed route riders, the cost per trip for JCT's fixed routes could increase in this model since the buses would still run, but they would have fewer fares to offset the fixed costs.

Evening point to point service would be the same \$9.08 per TNC trip as daytime service, while the cost would drop to \$10.51 to \$10.89 for the JCT model. This is due to the higher volume of riders (fixed route bus service is not available so the on demand service would serve all trips) and subsequent ability for ride sharing. The JCT subsidy cost for this service would be \$7.08 for TNC trips and \$8.51 to \$8.89 for JCT provided trips.

## REDUCED FARES

Josephine Community Transit offers reduced fare prices for seniors, children ages 6-16, riders with disabilities, and those on Medicare. Those riders currently eligible for reduced fares on JCT buses could also receive reduced fare rides on the on demand service.

## PAYMENT OPTIONS

According to the on-board passenger survey, 60% of riders pay with a cash fare. While private TNC services are generally booked and paid for through a smartphone app, this on demand service will allow cash payments so as to equitably serve all users. Uber services in other countries allow for cash payments, and other pilot programs in the United States have set up similar payment systems.

If JCT has plans in the future to switch to a tap card system for bus fares it would make sense to also use this type of system for on demand fares on a service provided by JCT. In this fare system users can load money onto a card either through their smartphone or with cash at local retailers. They then tap this preloaded card when boarding the bus



or on demand ride and the fare is automatically deducted from their card. Transfer passes are automatically saved on the card, the agency can alert riders if their balance is low, and the balance is protected if the card is lost. This would also help JCT to track ridership information for meeting performance goals. Many transit agencies have adopted this system for fixed route fares, including Rogue Valley Transportation District in Medford, so adaptation for an on demand service may be possible.

## ADA CONSIDERATIONS

The Americans with Disabilities Act (ADA) prohibits discrimination against people with disabilities and guarantees that they have equal access to employment, goods, and services. The U.S. Department of Transportation develops ADA regulations for public transit service providers, including the operators of on demand (“demand responsive”) services and contractors to public transit agencies. These rules affect how the on demand service would operate in two ways:

- It must provide equivalent service to individuals with disabilities (including wheelchair users) and other individuals. The service provided to people with disabilities must be equivalent with respect to response time, fares, coverage area and hours of service, access to reservations and information, restrictions on use, and overall capacity and availability of service.<sup>2</sup>
- While the on demand vehicle fleet may include some non-accessible vehicles, the fleet as a whole must provide an equivalent level of service to riders who use wheelchairs as it does to other riders.<sup>3</sup>

The general requirement for accessible service applies not only to using the service but also to booking the service. These requirements do not apply to individual contractors under the service: for example, one contractor may have only vehicles that are not wheelchair accessible, while another may have only wheelchair accessible vehicles or a mix of accessible and non-accessible vehicles. Additional guidance for on demand service operators can be found

in chapter 7 of *FTA Circular 4710.1: Americans With Disabilities Act Guidance*.

## ENFORCEMENT

To ensure that the on demand service operates as a supplement to existing transit, limits must be enforced on where and potentially how much service can be used. These considerations are discussed below.

## GEOFENCING

To operate effectively, the on demand service must be geographically defined, or geofenced, within the ride hailing and routing apps used to operate the service. Both the first-last mile and point to point services will operate within defined service areas, as shown in **Figure 1** (first-last mile) and **Figure 2** (point to point). The first-last mile service will also require that trips either start or end at a bus stop. Since bus stops are frequently occupied by buses, the bus stop area can be defined as a radius around the bus stop (e.g. 200 feet) that provides enough space to load and unload on demand passengers without interfering with bus operations.

## SERVICE ELIGIBILITY

Use of the on demand service will be limited to registered users making trips within the service areas. While the first-last mile service requires that one trip end be located at a bus stop, some users may travel to or from a bus stop within walking distance of their final origin or destination. Enforcing a requirement that users transfer to and from buses when using the first-last mile service would be technically challenging and may discourage ridership. Given the wait times associated with requesting an on demand trip, it is unlikely that the service will be used by people without a valid need to travel.

<sup>2</sup> Transportation, 49 C.F.R. §37.77 (c) (2018).

<sup>3</sup> Transportation, 49 C.F.R. §37.77 (b) (2018).





## USE LIMITATIONS

Depending on budgetary constraints and priorities, JCT may choose to limit the use of the on demand service. If on demand service is provided via private contractors or TNCs, the cost to JCT will increase directly with the number of trips served. While there is not necessarily a need to limit the number of total users, JCT may choose to limit the number of trips each user may take within a specific time period. Since the point to point service competes most directly with private auto trips, it is more likely to see an unsustainable increase than the first-last mile service. The limit should be no lower than two trips per day, to allow users with origins or destinations that are far from bus routes to complete at least one round trip each day. Anecdotal evidence suggests that there are a small number of high-demand users and many occasional users of point to point services. Another option is to set a relatively low number of daily trips (two or four per day) and selectively monitor and cap usage from people who consistently are generating a large number of trips (e.g., the occasional person who makes a lot of trips shouldn't be discouraged from using the service). This model is frequently used in the private sector to allow people flexibility using the service, but to have a mechanism to stop outright abuse or excessive use.

## RIDER REGISTRATION AND USER ID'S

Riders will be required to register for the on demand service, either through the smartphone app, over the phone using JCT's concierge line, or in person where they would purchase a bus pass. The registration process would assign a unique ID to the user and would be required to hail a ride using the smartphone app or concierge service. This ID could be tied to a rolling payment mechanism, such as a credit or debit card, or to a virtual wallet specific to the on demand service, allowing users to pre-pay for rides in cash or using a card. This type of virtual wallet is common among mobility services such as TriMet's HopCard or bikeshare apps, and can be set up to alert users when

funds are low and/or to automatically refill if linked to a debit or credit card. The user ID can also be attached to data that make the user experience more convenient. For example, a user ID can indicate whether the user needs a wheelchair accessible vehicle or can be tied to the specific user's frequent destinations, such as their home, work, etc.

## USE TRACKING

When each user registers, their user ID can be tied to anonymous user data tracked by JCT and/or its contractors. This data can be used to evaluate the program, manage its performance, and improve implementation over the long term. For example, anonymized usage data can show whether most users ride once per day or once per month or where regular versus infrequent users are most likely to travel.

The user ID can be also be used to track how many trips a single user makes per day, week, or month. This is critical if JCT seeks to contain costs by limiting the number of trips each person can take using the on demand service (for example, two trips per day or ten trips per week).

## EXPECTED BUDGET

**Table 5** and **Table 6** show the cost for both the TNC-operated model and JCT-operated model for all three service types. Since the cost varies based on ridership, the cost is shown for the low and high bound ridership estimate.

## TRANSPORTATION NETWORK COMPANY-OPERATED

**Table 5** summarizes annual costs for TNC-operated services. The variable cost per rider is based on the Uber formula for trips using the estimated average trip distance and time. The ridership cost is the cost to JCT, so the \$1 fare for first-last mile service and \$2 fare for point to point service is subtracted from the cost per ride. Cost is based on ridership, but because TNCs are not currently prevalent



in the area, a baseline cost will be incurred to ensure a basic level of service. This means that there will be a minimum cost of about 30% of the high ridership cost to provide a guaranteed wage to TNC drivers, regardless of ridership. This cost may not be necessary if driver supply and rider demand is sufficient, but should be assumed as a conservative estimate. Since Uber and other TNCs often do not guarantee a wheelchair accessible vehicle, this budget includes the leasing of a wheelchair accessible vehicle to be operated by Uber drivers under the Uber platform. This additional fee would not apply to the point to point evening service, if it is implemented in tandem with the daytime service, as they could use the same vehicle. The marketing fee is also listed separately for each service, but if all three services are implemented, the marketing costs would be reduced to about \$200,000 for the services combined. Similarly, the service plan update to incorporate elements from Title VI and other state and federal requirements will cost \$75,000 whether it is being done for one service or all three services. Lastly, the concierge service is available for users with questions or without a smartphone who want to book a trip. JCT already has a concierge service available during their normal operating hours (6:30 am – 6:30 pm), so there would be no additional cost for the first-last mile and point to point daytime service. However, the P2P evening service would require the hiring of an additional part time (20 hours/week) employee.

*Table 5: Annual Costs for TNC-operated services*

COST INPUTS		FLM	P2P	P2P EVENING
RIDERSHIP (COST MINUS FARE) <sup>1</sup>	Low	\$103,363	\$210,290	\$139,462
	High	\$363,193	\$332,030	\$160,482
ADA VEHICLE	Low	\$3,600	\$3,600	\$3,600
	High	\$7,200	\$7,200	\$3,600
MARKETING		\$80,000	\$80,000	\$80,000
SERVICE PLAN UPDATE		\$75,000	\$75,000	\$75,000
CONCIERGE SERVICE		\$30,000	\$30,000	\$30,000
TOTAL	Low	<b>\$291,963</b>	<b>\$398,890</b>	<b>\$328,062</b>
	High	<b>\$555,393</b>	<b>\$524,230</b>	<b>\$349,082</b>

<sup>1</sup> Costs are dependent on ridership, but will have a minimum cost regardless of ridership to provide a basic level of service through a guaranteed wage to TNC drivers. These contingency costs should be at 30% of the high ridership costs.

## JOSEPHINE COMMUNITY TRANSIT-OPERATED

The line items for the JCT-operated services are similar to the TNC-operated services. The cost for ridership was estimated based on the total cost each service, divided by the estimated ridership, as summarized in **Table 6** and detailed in **Appendix A**. This cost also includes the leasing of a spare vehicle for each service in case one of the vehicles needed to meet the anticipated demand breaks down. This will allow a guarantee of the maximum wait time with the anticipated demand.

Like TNC-operated service, the marketing fee is listed separately for each service, but if all three services are to be implemented, the marketing costs would be reduced to about \$200,000 for the services combined. The service plan





update is also the same as the TNC-operated service in that it will cost \$75,000 whether it is being done for one service or all three services. Lastly, the concierge service is available for users with questions or without a smartphone who want to book a trip. JCT already has a concierge service available from 8 am to 5 pm but would require the hiring of an additional part time (20 hours/week) employee to accommodate these proposed services.

*Table 6: Annual Costs for JCT-operated services*

COST INPUTS		FLM	P2P	P2P EVENING
RIDERSHIP (COST MINUS FARE) <sup>1</sup>	Low	\$242,450	\$386,329	\$175,285
	High	\$683,370	\$638,058	\$192,955
SPARE VEHICLE		\$3,600	\$3,600	\$3,600
MARKETING		\$80,000	\$80,000	\$80,000
SERVICE PLAN UPDATE		\$75,000	\$75,000	\$75,000
CONCIERGE SERVICE		\$30,000	\$30,000	\$30,000
TECHNOLOGY		\$10,000	\$10,000	\$10,000
TOTAL	Low	<b>\$441,050</b>	<b>\$584,929</b>	<b>\$373,885</b>
	High	<b>\$881,970</b>	<b>\$836,658</b>	<b>\$391,555</b>

## LONG TERM COSTS

The costs described in **Table 5 and Table 6** are costs that will be endured in the first year of the service, because the services are being proposed as an initial one year pilot. The service plan update and technology costs will not be endured after the first year of the program and the costs for marketing will be reduced. If the pilot is to be extended after the first year, these costs will be amortized over time. In addition, if this program is successful, it could replace the Dial-a-Ride program that currently offers the same service, though JCT would need to ensure that all ADA requirements for paratransit are met. It is recommended to slowly phase out this program for users who require additional time to transition travel behaviors. For the TNC model, the cost to provide minimum service levels is likely to decrease over time.

It is important to continue to evaluate the pilot to determine where costs can be reduced or reallocated.



# ECONOMIC BENEFITS

People who use transit in Josephine County tend to have limited access to opportunities and resources and limited mobility. Many of the benefits of this service can't be fully qualified, but we can estimate the value of travel time savings, jobs/school access, and expanded employment for passenger transport operators. This can help JCT understand how the benefits of this on demand service will offset the costs, even if it is not in direct revenue to the agency.

## TRAVEL TIME SAVINGS

Commute and personal travel time savings are commonly calculated by assuming an hour lost by an employee is equivalent to losing 50 percent of one hour of wages<sup>4</sup>. According to the Bureau of Labor Statistics, wages and salaries make up 66.5 percent of hourly cost to the employer with benefits accounting for the other 33.5 percent<sup>5</sup>. Utilizing Oregon's minimum wage of \$10.25 an hour, benefits would cost an additional \$5.16 an hour for a total hourly employee cost of \$15.41. The commute and personal value of travel time fraction of wages is then \$7.70 per hour. The travel time savings for each service are:

- **First last mile service** - Riders who currently walk more than 17 minutes to transit will see a travel time savings with on demand service. For the low ridership estimate this would be 63% of all riders, and for the high estimate this would be 14% of all riders.
- **Point to point daytime service** - There is an average 11.4 minute savings per rider on the point to point service compared to the fixed route bus service, as calculated in the ridership estimates in **Appendix A**.
- **Point to point evening service** - a new service, there is no travel time savings to compare this to. For people who are mode shifting from a car, it would likely not provide a travel time savings (but would offer other benefits)

Point to point daytime service was found to have between a \$43,000 and \$69,000 savings annually depending on ridership, as shown in **Table 7** (on next page).

<sup>4</sup> <http://bca.transportationeconomics.org/benefits/travel-time/categories-of-travel-time>

<sup>5</sup> [https://www.bls.gov/regions/southwest/news-release/employercostsforemployeecomensation\\_regions.htm](https://www.bls.gov/regions/southwest/news-release/employercostsforemployeecomensation_regions.htm)



Table 7: Economic Benefits of Travel Time Savings

SERVICE		ANNUAL RIDERSHIP	TIME SAVINGS PER RIDER (MIN)	TOTAL HOURS OF EMPLOYEE TIME SAVED	EMPLOYEE COST PER HOUR (EMPLOYEE WAGES + BENEFITS)	VALUE OF TIME COST (50% OF COST)	TOTAL TRAVEL TIME SAVINGS
FIRST-LAST MILE	Low	14,620	94.5 (10%) 28.5 (53%)	5,983.2	\$15.41	\$7.70	\$46,100
	High	51,371	94.5 (2%) 28.5 (12%)	4,546.3	\$15.41	\$7.70	\$35,000
POINT TO POINT (DAYTIME)	Low	29,723	11.4	5,647.4	\$15.41	\$7.70	\$43,500
	High	46,930	11.4	8,916.7	\$15.41	\$7.70	\$68,700
POINT TO POINT (EVENING)	Low	New service, no transit service to compare to					
	High						

## INCREASED ACCESS TO JOBS AND SERVICES

Expanded on demand transit service will increase access to jobs and services in Grants Pass. Residents will have access to jobs they may not have had before, or they may have additional higher paying job choices due to increased transit service. People can also get to essential services, health care, and schools, all of which increase quality of life and can be quantified by a value of time. Businesses will also benefit from a more qualified pool of employees and higher foot traffic. While some of these trips will be current transit riders or commuters switching travel modes, there is an estimated 15 percent induced demand in the high ridership estimates for each service which captures new trips that would not have been made if the proposed on demand service was not available. This induced demand is related to the fact that if travel (by any mode) is easier and more convenient, people tend to travel more and take on more activities.

The calculated benefit of increased access to jobs and services for induced riders is broken down by expected trip purpose (work, school, and recreation or social trips) as detailed in the 2016 JCT on-board survey. The value of a work trip can be estimated as the \$15.41 wage and benefit costs for eight hours a day (this is based on a minimum wage job, so is therefore conservative). School trips are valued as the potential for future earnings due to increased educational attainment. This was determined to be equal to the wage and benefit costs of a full time employee, assuming that school is a full time occupation leading to future job earnings. Recreational trips are valued at the 50% wage cost of \$7.70, as calculated in the travel time savings section previously. An employment multiplier captures the additional indirect jobs supported by new industry, such as government and service workers, and the resulting cash flow through the economy as workers spend their money at local businesses. An average multiplier of 1.2 (reflecting averages for retail, health service, and business service industries) was used.<sup>6</sup> **Table 8** shows the total benefits associated with increased access to jobs and services.

<sup>6</sup> Updated Employment Multipliers for the U.S. Economy. Bivens, Josh. (2003)

Table 8: Economic Benefits of Access to Jobs and Services

SERVICE		ANNUAL INDUCED RIDERSHIP	TRIP PURPOSE	HOURS PER TRIP	VALUE OF TRIP	TOTAL VALUE OF RIDERS	WITH MULTIPLIER (1.2)	SERVICE TOTAL
FIRST-LAST MILE	High	7,706	24% work	8	\$14.77	\$218,530	\$262,200	\$455,200
			21% school	4	\$14.77	\$95,607	\$114,700	
			55% recreation/social	2	\$7.70	\$65,270	\$78,300	
POINT TO POINT (DAYTIME)	High	17,207	24% work	8	\$14.77	\$487,963	\$585,600	\$1,016,700
			21% school	4	\$14.77	\$213,484	\$256,200	
			55% recreation/social	2	\$7.70	\$145,743	\$174,900	
POINT TO POINT (EVENING)	High	2,957	24% work	8	\$14.77	\$83,856	\$100,600	\$174,700
			21% school	4	\$14.77	\$36,687	\$44,000	
			55% recreation/social	2	\$7.70	\$25,046	\$30,100	



## INCREASED TRANSIT FARES

Increased connections to transit through the first-last mile service will increase the fare revenue on JCT fixed route buses. Increased ridership will also make more efficient use of the agency’s seating space and thus reduce the cost per passenger mile of providing fixed route service. Higher fixed route ridership may also lead to expanded service routes or hours and an improved commuting experience. Based on the ridership assumptions for first-last mile service, the low estimate for ridership will have no economic benefit as it assumes that there are no new fixed route riders and riders are just switching modes used to access the bus stop. For the high bound estimates, however, there is an assumption of increased fixed route ridership. The daytime point to point service runs concurrently to bus service so there would be little increase in transit fares. **Table 9** presents the potential increase in fare revenue for fixed-route transit that could result from operating a first-last mile service.

*Table 9: Potential Increased Fare Revenue*

		ANNUAL RIDERSHIP	WEIGHTED AVERAGE FARE PER RIDER	TOTAL INCREASED FARE REVENUE
FIRST-LAST MILE	Low	14,620	\$0	\$0
	High	51,371	\$0.78	\$40,100

## JOB CREATION

When operating the proposed on demand service, there will be new jobs and associated wages for drivers of the new service, whether these programs operate under the TNC or JCT provider model.

To estimate the benefit of employing TNC drivers, this analysis applies data on taxi drivers from the Bureau of Labor Statistics (BLS)<sup>7</sup>. There is no separate BLS information for TNC drivers so the taxi wages were considered as comparable. The mean hourly wage for from this source is \$13.21; benefits were not included since TNC drivers do not receive a benefit package. With a 15-minute wait time and six minute average travel time, the cycle for each vehicle is about 20 minutes, or three times within an hour. Using annual ridership estimates, this analysis calculates the number of driving hours needed to meet demand, and multiplying this by driver wages results in an estimate of total wages paid to drivers for the new on demand services. Finally, an employment multiplier captures the impact of driver wages being distributed through the local economy. For passenger transportation services, one job supports an additional 1.368 indirect jobs in other sectors. This results in a total economic benefit of \$88,000 to \$310,000 depending on the ridership and service type. **Table 10** presents a summary of potential job creation benefits under the TNC operating model.

<sup>7</sup> <https://www.bls.gov/oes/current/oes533041.htm>



*Table 10: Job Creation Benefits under the TNC Operating Model*

		ANNUAL RIDERSHIP	ANNUAL HOURS OF DRIVING	COST PER HOUR EMPLOYEE WAGES)	TOTAL DRIVER WAGES	EMPLOYMENT MULTIPLIER	TOTAL ECONOMIC IMPACT
FIRST-LAST MILE	Low	14,620	5,500	\$13.21	\$72,655	1.368	\$99,400
	High	51,371	18,750	\$13.21	\$247,688	1.368	\$338,800
POINT TO POINT (DAYTIME)	Low	29,723	11,250	\$13.21	\$148,613	1.368	\$203,300
	High	46,930	17,750	\$13.21	\$234,478	1.368	\$320,800
POINT TO POINT (EVENING)	Low	19,712	6,750	\$13.21	\$89,168	1.368	\$122,000
	High	22,683	7,500	\$13.21	\$99,075	1.368	\$135,500

If operating under the JCT provider model, the annual salary and benefits for a full time transit operator at JCT is \$53,667. This breaks down to an hourly wage and benefits cost of \$25.80. The number of vehicle hours in this model is higher due to standards for drivers minimum hours, as discussed in the cost estimations in **Appendix A**. Similar to the TNC model, this was also multiplied by the 1.368 employment multiplier for an economic benefit of \$238,000 to \$812,000. **Table 11** presents a summary of potential job creation benefits under the JCT operating model.

*Table 11: Job Creation Benefits under the JCT Operating Model*

		ANNUAL RIDERSHIP	VEHICLE HOURS PER YEAR	HOURLY DRIVER COST	TOTAL DRIVER WAGES AND BENEFITS	EMPLOYMENT MULTIPLIER	TOTAL ECONOMIC IMPACT
FIRST-LAST MILE	Low	14,620	8,000	\$25.80	\$206,400	1.368	\$282,400
	High	51,371	23,000	\$25.80	\$593,400	1.368	\$811,800
POINT TO POINT (DAYTIME)	Low	29,723	14,000	\$25.80	\$361,200	1.368	\$494,100
	High	46,930	23,300	\$25.80	\$593,400	1.368	\$811,800
POINT TO POINT (EVENING)	Low	19,712	6,750	\$25.80	\$174,150	1.368	\$238,200
	High	22,683	7,500	\$25.80	\$193,500	1.368	\$264,700

Due to the increased vehicle hours, higher wages and inclusion of benefits, the JCT model results in a higher economic benefit than the TNC model.



## OTHER BENEFITS

There are many other potential economic benefits of the on demand service that cannot be easily quantified. Implementation of evening point to point service can reduce the risk of people drinking and driving. It also gives late night workers and those out recreationally a safe option for getting home if they are not comfortable walking in the dark. Workers who may have chosen not to work evening shifts due to safety concerns could expand their job options.

While access to school opportunities is quantified in the previous sections, it is a conservative estimate that class time is valued the same as a working employee's time. According to a comprehensive study by Georgetown University, a new college graduate earns \$11,000 more annually than a high school graduate. Over time, this gap continues to increase and can be estimated as an additional \$994,000 in wages over a lifetime, excluding any interest gains. These earned wages are based on a student completing a four-year degree and starting a paid career in their industry so it is difficult to estimate how many students would meet this criteria; however, there is potential for greater economic benefits to the student and society than is quantified here.

Improved access to medical services can lead to overall improved public health and higher productivity. Improved commuting experiences can also increase well-being and productivity.

The total quantified benefits from travel time savings, fare revenue, new jobs for drivers, and increased access to jobs and services is found in **Table 12**. While this attempts to capture the many positive outcomes of implementing an on demand service it is difficult to put a dollar amount on improving access and mobility options for Grants Pass residents and visitors.

*Table 12: Total Quantified Economic Benefits*

		TOTAL TRAVEL TIME SAVINGS	TOTAL INCREASED FARE REVENUE	TNC-DRIVER JOBS	JCT-DRIVER JOBS	ACCESS TO JOBS AND SERVICES	TOTAL WITH A TNC PROVIDER MODEL	TOTAL WITH A JCT PROVIDER MODEL
FIRST-LAST MILE	Low	\$46,100	-	\$99,400	\$282,400	-	\$99,400	\$328,500
	High	\$35,000	\$40,100	\$338,800	\$811,800	\$455,200	\$834,100	\$1,342,100
POINT TO POINT (DAYTIME)	Low	\$43,500	-	\$203,300	\$494,100	-	\$246,800	\$537,600
	High	\$68,700	-	\$320,800	\$811,800	\$1,016,700	\$1,406,200	\$1,897,200
POINT TO POINT (EVENING)	Low	-	-	\$122,000	\$238,200	-	\$122,000	\$238,200
	High	-	-	\$135,500	\$264,700	\$174,700	\$310,200	\$439,400

# RETURN ON INVESTMENT

The benefits described in this section were summed and the costs calculated previously were documented in **Table 13**. The benefits were divided by the costs to show the ratios for all three service types, under both operations models for the low and high bound of ridership estimates. A benefit/cost ratio of greater than one shows that the value exceeds the cost. The upper end of the range of benefit/cost ratio for all service types and providers, except point to point (evening) with a TNC provider, exceed one. Given that these costs are conservative and assume a duplication of costs with the implementation of each service individually, costs will likely decrease after the first year and with the implementation of all three service types. This ratio should continue to be updated and tracked as additional data is available.

*Table 13: Benefit to Cost Ratio Analysis*

	FIRST-LAST MILE				POINT TO POINT (DAYTIME)				POINT TO POINT (EVENING)			
	JCT PROVIDER		TNC PROVIDER		JCT PROVIDER		TNC PROVIDER		JCT PROVIDER		TNC PROVIDER	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
<b>BENEFITS</b>	\$328,500	\$1,342,100	\$145,500	\$869,100	\$537,600	\$1,897,200	\$246,800	\$1,406,200	\$238,200	\$439,400	\$122,000	\$310,200
<b>COSTS</b>	\$411,050	\$851,970	\$261,963	\$525,393	\$554,929	\$806,658	\$368,890	\$494,230	\$373,885	\$391,555	\$328,062	\$39,82
<b>BENEFIT/COST RATIO</b>	0.80	1.58	0.56	1.65	0.97	2.35	0.67	2.85	0.64	1.12	0.37	0.89





# IMPLEMENTATION FUNDING

There are a variety of funding measures that Josephine Community Transit can pursue to support the on demand program implementation and operations. Oregon is one of only a few states that does not have a sales tax and that restricts fuel taxes and vehicles fees exclusively for roadway uses. This means that transit agencies must find other ways in which to fund their service. Josephine Community Transit is currently funded by federal grants (59.7%), state grants (20.3%), local partners (10.3%), and farebox and advertising revenue (9.7%)<sup>8</sup>. Federal funds are usually in the form of grants, while state funds come from the general fund, taxes, and fees. Local funds usually come from farebox revenue and local property tax levies.

## FEDERAL GRANTS

There are a variety of grants that could be used to fund the new first-last mile and point to point services. Grants are split into two categories – formula grants and discretionary grants. Formula grants are awarded based on a formula, usually allocated according to population, ridership and/or system extent, and are not competitive. Discretionary grants are awarded through a competitive application process which funds specific projects for a specific period. A discretionary grants have a downside in that they are time-limited and competitive. There is no guarantee that the County will receive replacement federal funding once the grant expires. Thus, discretionary grants are best for one-time costs like service planning or purchasing new vehicles rather than ongoing operating expenses.

Grants that the County has already received and would be a good candidate for additional funding in the future:

- **5310 Enhanced Mobility of Seniors and Individuals with Disabilities Discretionary Program**

<sup>8</sup>Josephine Community Transit Current and Potential Funding Memo. Plangineering. January 5, 2017

This discretionary program is aimed to help groups in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. This program supports transportation services planned, designed, and carried out to meet the special transportation needs of seniors and individuals with disabilities in all areas while expanding transportation mobility options. Funds are apportioned based on each state’s share of the population for these two groups.

Federal share may not exceed 80% of eligible capital costs, 50% of operating assistance

- **5310 Enhanced Mobility of Seniors and Individuals with Disabilities**

This formula fund supports public transportation for seniors and individuals with disabilities by funding eligible capital, purchased service, and preventive maintenance projects for transportation providers. Eligible projects include vehicle purchases, passenger shelters, purchased services, preventive maintenance, travel training, marketing programs, development of centralized call centers, and other equipment that supports transportation to meet the special needs of seniors and individuals with disabilities.

- **5307 Formula Grants for Urbanized Areas**

These grants support transit in urbanized areas with populations over 50,000 by financing operations, capital, project administration, and preventive maintenance projects.

Federal share may not exceed 80% of eligible capital costs, 90% of vehicle related equipment in compliance with ADA and Clean Air Act, 50% of operating assistance

- **5311 Formula Grants for Rural Areas**

These grants support rural public transportation providers operating in areas with populations less than 50,000 by financing operations, capital, project administration, and preventive maintenance projects.

Federal share may not exceed 80% of eligible capital costs, 80% of ADA non-fixed route paratransit, 50% of operating assistance



• **5311 Transit Network and Intercity Program**

The Transit Network and Intercity Program supports and provides capital assistance (buses and shelters) for regional connector services, including planning, marketing, coordination, preventive maintenance, projects that support key transit hubs.

Other potential federal grant opportunities include:

• **FTA Mobility On Demand Sandbox Program**

The MOD program envisions a multimodal, integrated, automated, accessible, and connected transportation system in which personalized mobility is a key feature. The Sandbox Demonstration Program seeks to fund project teams to innovate, explore partnerships, develop new business models, integrate transit and MOD solutions, and investigate new, enabling technical capabilities such as integrated payment systems, decision support, and incentives for traveler choices. \$8 million was allocated in 2016.

• **US DOT’s Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants (formerly TIGER grants)**

This formula grant program funds investments in transportation infrastructure, including transit, and currently plans to focus a greater share of funding to projects in rural areas. Projects are evaluated based on merit criteria that include safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation, partnership, and additional non-Federal revenue for future transportation infrastructure investments. \$1.5 billion in funding is available through September 2020. While technically eligible for this grant program, our team has not seen a successful BUILD grant application for a first-last mile or point to point transit project.

• **Congestion Mitigation Air Quality (CMAQ)**

Congestion Mitigation Air Quality (CMAQ) funding aims to reduce traffic congestion and improve air quality in areas that do not meet air quality standards. CMAQ grants fund a wide variety of transit capital projects and operations at

the capital match rate, though the service can’t be used to supplant existing routes.

• **ODOT Transportation and Growth Management Program**

Primarily funded by federal funds, TGM discretionary grants support planning efforts to expand transportation choices. Projects should result in the development of an adoption-ready plan or land use regulation or amendments to an existing plan or land use regulation. TGM grants cannot fund projects that are primarily for research purposes, or those for preliminary engineering, engineering, or construction work.

• **Surface Transportation Block Grant**

A formula grant distributed to states who then distribute it through discretionary grants. Primarily funds capital improvements.

• **Public Transportation Innovation Program**

The program is a competitive grant process that provides funding to develop innovative products and services assisting transit agencies in better meeting the needs of their customers. It funds research, development, demonstration and deployment projects, and evaluation of technology of national significance to public transportation.

## STATE FUNDING

The passage of HB 2017 in July of 2017 meant a new source of stable funding for transit programs in Oregon. It establishes a 0.1% payroll tax to generate an estimated \$115 million a year for public transit through the Statewide Transportation Improvement Fund, along with other measures to fund multimodal projects throughout the state. Grant agreements will start in 2019.



• **Statewide Transportation Improvement Fund (STIF)**

Passed in 2017, the Statewide Transportation Improvement Fund provides a new dedicated source of funding to expand public transportation throughout Oregon. Funds may be used for improvements to public transportation service (excluding light rail); planning, deployment, operation, and administration of STIF projects; or as a local match for federal transit funds. 90 percent of the fund is distributed based on taxes paid in the district, while the rest is a competitive grant process. It is expected to generate \$115 million per year.

• **Special Transportation Fund**

This state fund uses a cigarette tax, non-highway use gas tax, ID card revenues, and the general fund to support public transportation services for seniors and people with disabilities. It is split into two programs, the STF Formula Program and STF Discretionary Grant Account. Funds may be used for any purpose directly related to transportation services, including transit operations, capital equipment, planning, travel training and other transit-related purposes. They are intended to be used to provide transportation services needed to access health, education, work, and social/recreational opportunities so that seniors and people with disabilities may live as independently and productively as possible.

## LOCAL FUNDING

While Josephine Community Transit is primarily funded through state and federal source, local funding options are also available.

• **Farebox Revenue and Advertisements**

These are direct revenues from bus fares and from advertisements on buses or shelters. Raising transit fares would increase income from this source but may lead to decreased ridership and reduced mobility options for underserved populations. Increasing advertisement options could increase revenue from local sources.

• **Local Property Taxes**

Cities and counties may levy property taxes to support transit. These can either be permanent or a local option tax that is subject to voter approval. Rogue Valley Transportation District currently levies a property tax for transit. While this has been used in many places it does need public support.

• *community* PARTNERS

JCT does currently receive some income from Rogue Community College and human services agencies. It is possible that other large employers in Grants Pass or interested community partners could contribute to the on demand program as it serves their users and provides better access to their services. These local partners may gift funds to the program or they could help to subsidize trips for their employees or students. Other similar entities that fund transit in other areas include chambers of commerce or business improvement districts.

• **Local Payroll Tax**

It is an option to assess a local payroll tax on employers or employees. This can raise funds but can also burden low-income workers and may not have public support.

• **Transportation Utility Fees**

Grants Pass assesses a monthly street utility fee but it currently does not fund transit operations.

Other funding options that could be considered with further analysis are formulation of a transit district with taxing authority, parking fees, transportation impact fees, and special assessments.



## PHASING OPERATIONS

Communication throughout the pilot program is very important. JCT needs to let people know that this is a “live test” and they need to be patient with technical glitches and operational changes. Communicating and sharing data with the public when things aren’t working right allows for public sympathy rather than assumptions that the pilot or agency failed.

The next step in this process would be to implement a pilot program. As learned from other similar pilots, a six month pilot does not give adequate time to see a significant shift in travel behavior so it is recommended that the pilot program run for at least a year to allow time for greater adoption of the program and more accurate evaluation of the results. Toward the end of the pilot JCT should perform a return on investment (ROI) evaluation and benchmark against set goals as described in this operation plan to determine if long-term implementation is appropriate. If the program has adequately met the goals set by this plan, service should continue uninterrupted in the transition from the pilot to full implementation so as not to lose ridership or confuse users.

## WAYFINDING

The use of wayfinding signage can make the transition from on demand vehicle to bus less confusing for riders. Designated loading/unloading spots near key bus stops can be employed as both marketing opportunities with

prominent signage as well as a place to implement wayfinding information to the nearest bus stop.

Designated on demand zones also make it possible to include wayfinding information at the nearby bus stops to direct people to the on demand vehicle.

## CURBSIDE MANAGEMENT

Curbspace is a limited commodity. It can be used for parking, bike lanes, bus loading/unloading, and freight loading. While there is not currently a high level of competition for curbspace in Grants Pass, the addition of a first-last mile service will increase demand and there is the potential for conflicts between the different curb users. Throughout the program, JCT should evaluate and track conflicts at the curb to see if designated curbspace is necessary given demand. A way to minimize these conflicts would be setting designated locations for pick ups and drop offs, either along the curb near major bus stops or in parking lots nearby. These locations should be chosen so that on demand drivers do not impede established bike lanes or encourage pedestrians to cross busy streets so as to lower the chances of a collision. If on demand service is implemented it should be monitored to ensure it is not causing undue congestion at the curb and is operating safely around other users.



# MARKETING PLAN

This marketing plan serves as a strategic plan for the marketing and branding of JCT's adoption of on demand first-last mile and point to point transit (daytime and evening) services. It aims to ensure the success of these services in coordination with the Operations Plan. Of the lessons learned in the pilot programs examined in the best practices and literature review, it is crucial that potential customers know about an on demand transit service and their expanded set of transportation options.

## MARKETING GOALS AND OBJECTIVES

The primary goal of the Marketing Plan is the successful launch and implementation of Josephine County's on demand service, along with sufficient and cost effective ridership that creates a sustainable program. The objectives of this marketing plan are to:

- Build awareness of the new service and a positive image in line with that of current Josephine Community Transit
- Educate the community about the benefits of this new service and how to use it in conjunction with existing transit service
- Promote ridership of the on demand service among current fixed route transit users and new users
- Conduct targeted marketing efforts for key rider populations
- Build support for the new service and address rider concerns
- Develop a strong customer relationship and high level of satisfaction with the new service
- Show seamless integration with the existing fixed route transit system
- Improve the ease of understanding, eligibility and use of first-last mile and point to point services

## TARGET MARKETS

The target populations in the expanded service area with the highest ridership potential are those similar to the current ridership base. This plan identifies key users based on the 2016 JCT On-Board Passenger Survey and information assembled from peer transit agencies and public private partnerships. Most of the marketing strategies in this plan are efforts to address all or many of these target groups.

### • **Low-Income Families**

The on-board survey found that 49% of riders surveyed had an annual household income under \$10,000. A total of 85% of riders had a household income under the Grants Pass average annual household income of \$33,240. A low cost, reliable on demand service that connects low-income families and individuals with jobs and city services is an important mobility option for these riders.

### • **Transit Dependent Households with Limited Access to a Vehicle**

A majority (78%) of Josephine Community Transit fixed route riders stated that they do not have access to a vehicle. An additional 13% stated that a car was available but with inconvenience to others. Furthermore, 15% stated that had fixed route transit not been available, they would not have made their trip. By expanding transit service areas and operating hours, JCT offers mobility options to those who would otherwise have a difficult time accessing the places that they need.

### • **Commuters**

The majority of trips on JCT are trips that service commuting trips to school or work (44%). Additionally 60% of riders are employed or go to school (full or part time). These trips to school or work are essential to meeting the basic needs of these individuals and are a priority trip-type.

### • **Elderly Residents and Visitors**

<sup>9</sup><https://web.roguecc.edu/about-rcc/rcc-glance>

<sup>10</sup><https://www.grantspass.k12.or.us/domain/991>



Riders age 62 and over make up 10% of fixed route riders and 14% of total boardings. Additionally, those aged 62 and over are eligible for the current JCT Dial-a-Ride service, though it is dependent on available space once all ADA eligible riders have been accommodated. If the proposed services will ultimately replace the Dial-a-Ride, serving this group is important. These groups may also be slower to change their travel behavior and require a greater amount of education and guidance on new service types.

#### • **Downtown Shoppers and Diners**

After-work trips, recreational and shopping trips (21%) are the second most frequent trip type reported use of the JCT fixed route system. Additionally, if JCT adopts extended evening hours in the point to point service, this trip share may increase as residents use it for dining and shopping after work.

#### • **Rogue Community College (RCC) Students and Employees**

Students make up 20% of fixed route users, of which 96% stated that they attend an RCC campus. RCC has 16,379 students, of which over 4,000 attend campuses in Grants Pass<sup>9</sup>.

#### • **Young Users**

Students ages 17-18 make up 7% of riders. These riders may not have a driver's license or access to a vehicle, and may be a market for increased ridership. Grants Pass High School has approximately 1,900 students currently enrolled in grades 9 through 12<sup>10</sup>. Young users may be more open to app-based on demand services than other user groups.

#### • **Limited Mobility Users (current and potential Dial-a-Ride users)**

In 2017, JCT Dial-a-Ride (DAR) provided an average of 51 trips per day. To use the DAR service, riders must show proof of eligibility under ADA requirements or be over the age of 62. Those residents that don't meet DAR eligibility requirements or who do not need the specialized vehicle accommodation could potentially use the new on demand service instead.

#### • **Potential TNC Drivers**

To provide the level of service promised, there needs to be enough TNC drivers to service the demand. JCT could potentially offer incentives for residents to sign up as drivers and target drivers for specific marketing campaigns.

#### • **New Transit Users**

Many residents that don't currently use transit may find the new on demand service appealing if it is easy to understand and use. The market for evening point to point travel is likely to be most attractive to people who do not take transit now.

## MARKETING STRATEGIES

### BRANDING

Branding the new first-last mile and point to point transit service will increase visibility, awareness, and recognition. It will apply a uniform color scheme and logo to all marketing efforts for the service, including the service name, logo, and associated graphics. It should also tie into and build off JCT's current branding to illustrate the integration of the two services. Uniform branding can increase ease of use for residents and visitors and promote instant recognition of the connection to existing JCT service.

### SIGNAGE

Signage at key transit stops, on and in transit vehicles, and at pick up/drop off locations will increase awareness of the new service among current and potential riders. Signs should all include branding elements and speak to a variety of key market groups. Signage content and design can vary be targeted depending on the location. For example, in areas with dining and shopping, it can emphasize the advantage of evening service, while signage at RCC can appeal to students.

Setting designated pick up and drop off locations for





near fixed route bus stops can help reduce confusion for new riders who are not sure where to go. These are prime spots for signage that explain the service, has wayfinding to/from the bus stop and key destinations, and is highly visible to increase recognition and reinforce the brand for residents passing by. The future planned transit center near the Ann Basker Auditorium stop should incorporate pick up/drop off locations and signage for the service as well.

## MEDIA ADVERTISEMENTS AND INFORMATION

There are a range of media outlets that can be used to increase awareness and understanding of the proposed first-last mile and point to point services. Newspaper, radio, and TV are all standard locations for advertisements with a range of costs. Printed flyers, mailers, and utility bill inserts in multiple languages can be used to share information on the service area, eligibility requirements, connection to current transit routes, and fare information. In the JCT on-board survey results from 2016, 38% of riders used printed media to find information about transit. Adding information about the new service to printed transit schedules, plus printed guides on how to use the service and the app technology is important for education and ease of use. In addition, 15% of riders stated they used the customer service telephone line to get information about transit, so it important to ensure that the operators are well-informed about the proposed on demand services as well.

Social media and the community website are also a way to reach other audiences, especially those that are comfortable with technology and may be more inclined to use the app-based on demand service. Target websites include the city's site [www.grantspassoregon.gov](http://www.grantspassoregon.gov), the Josephine Community Website, and RCC website. These websites can share the same information as printed media: how to use the service, who is eligible, fare information, and how to use the app technology (and concierge service for non-smartphone users). Email lists and newsletters from these sites can also disseminate information. Social

media platforms like Facebook and Twitter are free options that can provide real-time information to the public as well. Links to trip planning information on the JCT website would also be useful, along with contact information for user questions and concerns. One lesson learned from the Go Dublin pilot of on demand service in Dublin, California was to eliminate in-app marketing through Uber/Lyft as this likely results in the subsidy of on demand trips that were going to take place anyway.

## FARE PROMOTION

The proposed first-last mile service will cost users \$1 a trip, while the proposed point to point service (daytime hours and evening hours) will cost users \$2 a trip. To encourage early enrollment and use of the new program, it is recommended that the program open as a free service for the first one to three months. JCT may choose to limit the number of free rides per person or designate the first people who sign up to receive free rides, but overall the promotion should create excitement around the program and encourage people to become familiar with the new service.

## OUTREACH

On-going outreach to current and potential riders, potential TNC drivers (if that provider model is chosen), employers, 'gatekeepers', and members of the public will further the goals of this marketing plan. 'Gatekeepers' are organizations and their employees that often help their clients to identify transportation options. These can include:

- Social service agencies and human service organizations
- Employment programs
- Senior centers and complexes
- Schools and colleges
- Youth programs
- Support organizations for persons with disabilities
- Medical clinics and facilities
- Large employers

<sup>11</sup><http://nationalrtap.org/marketingtoolkit/How-To-Guide-for-Marketing-Transit>





- Mobile home parks

In-person training and informational events can be held with gatekeepers, large employers in the city, business and economic groups, RCC staff, and civic organizations. Public workshops and booths at community events will create more recognition and allow the interested public to ask questions and give comments on the service. Low income, senior, and transit dependent households may be better accessed through community organizations such as churches, schools, and libraries.

For a TNC-operated program to be successful, there have to be enough TNC drivers to meet the promised level of service and keep wait times low. As there are not any TNCs regularly operating in Grants Pass, targeting outreach and marketing campaigns to potential drivers is key. JCT can consider offering bonuses for new drivers, guaranteeing a minimum number of rides or income to drivers, or leasing vehicles for drivers that do not own a car.

## BUDGET AND STAFFING

A general rule of thumb is that a small transit system should spend about 1-2% of its annual operating budget

on marketing<sup>11</sup>. With a 2018-2019 estimated budget of almost \$4 million, this would mean a marketing budget of \$80,000 annually; however, the current marketing budget is \$7,000-\$8,000 a year. JCT would need to examine both internal and external funding sources to determine if it can spend the amount needed to successfully market the new program. Spending closer to 5% of the annual budget, a total of \$200,000 a year, on this program would ensure a greater level of success on launch if the funding can be secured. Marketing dollars could likely decrease after the first year of the pilot if the program is continued, assuming that the branding, ridership and reputation have been established and the service performance remains strong.

As learned in many of the pilot programs around the country, insufficient marketing of new on demand services can lead to slow uptake and lower ridership than needed to keep the program cost-effective and operating. This slow start, combined with a short pilot period can deal a fatal blow to a new on demand service. It is recommended that the County hire a professional marketing firm to implement the planning, branding, and implementation of marketing efforts to better reach the key market segments outlined in this plan.



# EVALUATION PLAN

The Josephine Community Transit on demand services aim to leverage the door-to-door, on demand, demand-responsive capabilities of ridesharing platforms to enhance the effectiveness and ridership of transit systems and expansion of transportation options for low-income individuals. These goals apply not only to Grants Pass, but to the state of Oregon and to transit ridesheds nationwide. In addition to providing on demand service to users in Grants Pass, these services will test a new booking platform, a new way to access fixed route transit, expansion of service hours, and a model to provide ADA service. These tests require close attention to data and performance measures. This document lays out a plan for determining the success of the JCT on demand pilot that may help the pilot expand beyond its initial geography and timeline.

If JCT moves forward with this project, it will be a pioneer in the realm of emerging mobility and on demand service for rural counties in Oregon. Given this position, it is critical to develop and implement a plan for measuring its success of the pilot. As such, ongoing data collection, data analysis and evaluation of the pilot are important components of this program. Appropriately framing success is important given that this program is intended to be a pilot and dynamic in nature as qualitative and quantitative feedback is received.

This Evaluation Plan lays out a strategy for using data to monitor key goals and performance measures. By monitoring the success of the pilot, this evaluation effort may help the short and long-term success of this pilot in several ways:

- Measure and track the achievement of the goals of the service
- Allow JCT to improve service during the duration of the pilot
- Inform modifications to the program for long-term implementation and sustainability

- Determine the program’s long-term financial sustainability
- Help secure additional funding to extend the pilot beyond its initially determined timeframe
- Compare and potentially replace Dial-a-Ride
- Allow the program to expand to other regions in Oregon

## GOALS, PERFORMANCE MEASURES AND DATA SOURCES

Goals for the pilot were identified as a part of the Evaluation Plan. These goals were born from the ODOT Transit Network Program grant, Josephine Community Transit Master Plan (May 2018), priorities identified by Josephine County and the transit agency, residents through the survey associated with this plan and the On-Board Passenger Survey Data Analysis (April 2016), and conclusions as a part of the existing conditions assessment of this planning process in **Appendix C**. These goals are shown in the first column of **Table 14**. Performance measures were tied to each goal; these performance measures track and evaluate the performance in each goal area. These performance measures were set based on survey responses from current users of the fixed route service. **Table 14** also connects each goal with a performance target and a source of data for measuring performance in each area. The Data Collection Plan section of this document expands upon the data sources listed in this table.



*Table 14: Goals of the Pilot with Performance Targets and Data Sources*

GOAL	PERFORMANCE MEASURE	DATA SOURCE	FREQUENCY OF MEASUREMENT
Provide a transportation option that effectively serves Grants Pass residents, visitors and employees	Average daily ridership of at least: -FLM: 60 -P2P (daytime): 120 -P2P (evening): 80	Pilot ridership data	Monthly
FLM (only): Enhance the fixed route transit system in Grants Pass	FLM (only): Increase JCT fixed route ridership on Grants Pass routes: - 10% increase	JCT ridership data	Monthly
FLM (only): Enhance the fixed route transit system in the Middle Rogue Region [FLM service only]	FLM (only): Increase JCT fixed route ridership on Rogue Valley Commuter routes: - 5% increase	JCT ridership data	Monthly
Expand and provide transportation options for low-income residents	75% of trips are from users who have household income below \$20,000 (short survey responses)	Survey for new service users	Monthly
Provide a reliable service that increases access to jobs	At least 45% of respondents to the short survey say they used this service to get to work or school	Survey for new service users	Monthly
Increase coverage of the transit network	At least 60 first-last mile service users daily that take the on demand service to access fixed route service	Survey for new service users in combination with pilot ridership data	Monthly
Provide a safe travel option for users	No collisions or personal security incidents related to the program	Police reports from Grants Pass Department of Public Safety and Josephine County Sheriffs Office	Ongoing
Ensure customer satisfaction	90% of long survey respondents report being 'satisfied' or 'highly satisfied' with on demand service	Survey for new service users	Monthly
Create a cost-effective provider model for on demand service	All-inclusive cost per ride is less than the current Dial-a-Ride service of \$71.86	Costs for pilot	Monthly
Provide a high return on investment for Josephine County	Benefit/cost ratio of greater than 1.0 for Josephine Community Transit	Benefit/cost ratio calculation: cost divided by methodology in economic benefits section as the benefit value	End of pilot



## REPORTING STRATEGY

Josephine Community Transit is responsible for ensuring the performance tracking for the pilot once it is implemented. In that role, JCT will monitor the performance measures listed in **Table 14** and coordinate with the various data providers according to the frequency required of each measure.

JCT should collect and evaluate data monthly in order to use this information to make minor adjustments during the pilot as necessary. These adjustments may include efforts such as improvements to the user interface or user experience, additional marketing to boost or maintain ridership, changes to the service area or changes to the user fare.

At the end of the pilot period, JCT should work with its partners to compile the data associated with each performance measure from the full extent of the pilot in the form of a final report where it will be determined whether the program achieved the goals in Table 14. JCT should assign a rating to each measure, such as “Satisfied,” “Not Satisfied,” or “Partially Satisfied.” The report should summarize these ratings and present implications for the continuation and extension of one or more of the service types described in the Operations Plan. This report can be presented to the Board of County Commissioners, ODOT, Grants Pass advisory groups and other key stakeholder groups interested in the continuation or expansion of these services.

## DATA COLLECTION PLAN

In order to provide the most value, data should be collected in a consistent and reliable manner. Data can be expensive and labor-intensive to collect, but by setting up the right mechanisms early on, this process can be streamlined and ensure a greater level of accuracy.

## DATA TO COLLECT

In order to complete the evaluation outlined in Table 14 as well as gather enough information to modify the pilot based on more detailed information, a full list of data to collect is outlined in this section. JCT should work with the provider (either within the agency for a JCT-operated service or an outside provider) to collect the following data points, organized by service type (FLM, P2P daytime, or P2P evening):

- Contact information for all users through a registration (name, phone number, email, address)
- Trip origins
- Trip destinations
- Trip cost
- Fare paid by users
- Date and time of each trip
- Time of each trip (minutes)
- Length of each trip (miles)
- Wait time for the service
- Average passenger load of each trip
- Wheelchair user or not

In addition to collaboration with the chosen provider, JCT will need to coordinate internally as well as with other stakeholders and partners to collect additional data. These additional data points and sources include:

- Police reports from Grants Pass Department of Public Safety and Josephine County Sheriffs Office
- Number of calls to book trips through the JCT concierge service
- Number and types of calls to ask questions through the JCT concierge service
- Ridership on JCT fixed routes

## SURVEYS

Two surveys to collect both qualitative and quantitative data from on demand service users should be conducted.



A short survey should be distributed to a randomized sample after each ride is booked. A long survey should be distributed to each user after six-months of the service. The short survey should be offered to all users of the program, through a medium that is convenient and effective depending on the booking mechanism used. For those that book through a mobile phone, the survey should be offered through the mobile device after a ride is booked during the waiting period. For rides booked through the concierge service, the survey should be conducted over the phone. The list of questions for both survey types below should serve as a guide but be expanded and tweaked as the service is finalized.

*The short survey should consist of at least the following four questions:*

1. What is the purpose of your trip?
  - a. Travel to work
  - b. Errands/shopping
  - c. Travel to friends and family
  - d. Other
2. What transportation mode would you have used if this service was not available?
  - a. JCT bus within Grants Pass (routes 10, 20, 35, 40)
  - b. Commuter Line bus (routes 50, 80, RVCL)
  - c. Walk
  - d. Bike
  - e. Carpool
  - f. Drive alone
  - g. I would not have made this trip
  - h. Other
3. What is your household income?
  - a. Under \$10K
  - b. \$10K-\$19K
  - c. \$20K-\$29K
  - d. \$30K-\$39K
  - e. \$40K-\$49K
  - f. Over \$50K

4. What service did you use (this question may not be necessary if only FLM is implemented)?
  - a. First last mile
  - b. Point to point during daytime hours
  - c. Point to point during evening hours

The long survey will more extensively address travel behavior and satisfaction with the service(s) over a longer period of time. This survey should be conducted via email if an email address is available, and via phone or mail, if an email address is not available. This contact information will be collected at the time that a user registers to use the service. Questions that should be included in the long survey are:

1. What is your age?
  - a. Under 16
  - b. 17-18
  - c. 19-22
  - d. 23-34
  - e. 35-49
  - f. 50-62
  - g. 62+
2. How often did you use one of the services during the extent of the pilot?
  - a. I did not use the service
  - b. A couple of times
  - c. About once a month
  - d. About once a week
  - e. Multiple times a week
  - f. Every weekday
3. Do you generally have access to a car?
  - a. No
  - b. Yes, but it is inconvenient
  - c. Yes
4. What improvements would have helped you choose to ride JCT more?
  - a. Easier access without a smart phone
  - b. Shorter wait times
  - c. Later evening service



- d. Lower fare for the service
- e. Expanded service area
- f. Easier means to book and pay for a trip
- g. Other: \_\_\_\_\_

5. How satisfied were you with this service?

- a. Highly satisfied
- b. Satisfied
- c. Don't know/indifferent
- d. Unsatisfied
- e. High unsatisfied

## CONCLUSION

This Operations Plan is intended to serve as a guide for the final service(s) recommendation and successful launch of a pilot program. If successful, these services offer the potential for cost-effective transportation services for residents, employees and visitors of Grants Pass in order to provide access to jobs and goods that the fixed route transit system currently does not adequately serve.

Due to the only recently emerging and innovative nature of the proposed services, these recommendations are intended to be dynamic as the service provider is finalized, input is received from key stakeholders and data is gathered and evaluated.