YOUR *Safety*

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IDAHO **PUBLIC TRANSPORTATION** PLAN

Appendix E

Transit Toolbox

Final April 2018

Idaho Public Transportation Plan

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Introduction

The Idaho Public Transportation Plan evaluates local public transportation services across a broad range of service types, service areas and rider markets. There is no "one-size-fits-all" approach to identifying strategies and solutions to help local communities meet their public transportation needs. Demands change and each community has a unique combination of resources to deliver and maintain public transportation services.

This appendix describes a "transit toolbox" of possible solutions for policymakers, stakeholders and transit managers to consider. The toolbox offers information that—along with estimates of future needs and agency assessments—can be used to engage stakeholders in meaningful conversations about the types of services best suited to their communities. Engaging state and local partners can help ensure that resources are strategically applied and build sustainable public transportation systems.

The toolbox includes both service design options, and program approaches. Some tools are grouped and described together for clarity. The tools can be combined in many implementation scenarios, and are not mutually exclusive.

The transit toolbox includes four main families of service: fixed-routes, demand-response, flexible routes, and intercity service. The programs and policies section describes non-traditional transit services, including:

- Vanpool
- Park-and-Ride, Kiss-and-Ride, and Park-and-Pool
- Private shuttles
- Taxi vouchers
- Shared mobility
- Dynamic rideshare
- Ride-sourcing / ride-hailing

The information included in the toolbox provides descriptions useful for broad planning and discussions about future needs. The information is based on industry best practices and generalized applications, and does not represent an exhaustive list.

Transit Toolbox

The transit tools are described below in Figure 1 through Figure 4. Each table provides an overview of a transit service type, including variants or closely related service types. The tools include a description, a list of benefits and challenges, typical service applications, and order-of-magnitude expected performance metrics including efficiency (cost per ride) and effectiveness (passengers per hour).

Figure 1   **Fixed-Route Transit Service**

Fixed-Route		
Description	Fixed routes serve set stops along an advertised set alignment. Routes are open to the general public and typically operate along arterials or collector roads. Fixed routes serving areas with medium to high density development can be very productive and reach high ridership counts relative to other service types or areas. Local circulator routes are fixed-routes that generally provide local connections between key destinations in a small service area. These routes can provide first- and last-mile connections, circulate through business or office park districts, or shuttle people back and forth between parking lots and a major destination (e.g. sports shuttles). The routes often employ loop, or circular routes to get riders as close as possible to their destinations. Local business or employers may subsidize a local circulator route to incentivize transit alternatives in places such as universities and downtowns.	
Benefits	▪ Provide customers a predictable route service model ▪ Efficient service when minimizing travel time between points ▪ Cost effective (cost per ride) when serving high ridership corridors.	
Challenges	▪ Not well suited to serving large service areas or dispersed origins and destinations ▪ Requires ADA complementary paratransit service (demand-response) within ¾-mile of fixed-route operating during the same days and hours	
Service applications	▪ Frequent service on medium to high density stop areas or corridors ▪ Urban area route design mixes grid, hub-and-spoke, or hybrid pattern ▪ Downtown, shopping, business, or university districts	▪ Regular, reliable service providing independent travel in rural and urban communities ▪ First-/last-mile connection to local or intercity transit hubs ▪ See also: Intercity transit, deviated fixed-route, shuttle, ADA paratransit
Average performance	Cost per trip $	Passengers per hour 10-20
		Transit Toolbox

Figure 2   **Demand-Response Service**

Demand --Response	
Description	**Demand-response** public transportation, also known as Dial-A-Ride, provides curb-to-curb, door-to-door, or door-through-door trips within a specified service area. Demand-response service is applicable in all development types, whether urban or rural. In rural areas, demand-response is often the most efficient type of service given dispersed origins and destinations. The service may be open to the general public or just to older adults or people with disabilities. In more suburban or urban areas, demand-response may be provided as a supplement to fixed-route services. Demand-response service areas may cover entire counties or jurisdictions, or in some cases may be limited to particular areas of a community. Some communities use demand-response zones to transport customers to fixed-route transit, a model known as "feeder service." Riders must book trips ahead of time. The service is typically provided with sedans, vans or cutaway buses (buses and vans allow for wheelchair lifts). Due to the high level of trip customization, demand-response fares are typically higher than fixed-route fares. Transit agencies, non-profits, or community organizations (e.g. senior centers) can all provide demand-response service. **ADA complementary paratransit** is an origin to destination demand-response service required to operate when and where (within ¾ mile) fixed-routes are provided. Passengers must be certified as eligible riders and fares can be no more than twice the fixed-route fare. **Volunteer driver programs** transport customers using the volunteer's personal vehicle. These can be cost-effective ways to engage community members while providing vital travel connections to local services.
Benefits	▪ Supports dispersed locations, large geographic areas, and client-specific trips ▪ Can be tailored to serve older adults and people with disabilities ▪ Flexible and innovative applications for any size community.
Challenges	▪ High cost per passenger ▪ Varied customer needs and/or long trip lengths can limit capacity and productivity
Service applications	▪ Unique (unshared) origins and destinations ▪ Passenger requires travel assistance ▪ Fixed route ADA Complementary Paratransit ▪ Human services client transportation ▪ Feeder route connecting riders to fixed-routes ▪ Volunteer driver programs ▪ Low-demand areas ▪ See also: deviated fixed-route, shopper shuttle, shared mobility
Average performance	Cost per trip $$-$$$ Passengers per hour 2-5
	Transit Toolbox

Figure 3   **Flexible Route Transit**

Flexible Route | Deviated Fixed Route | Anchored Flex Route	

Description	Deviated route – or flex service – is a hybrid of fixed-route and demand-response public transportation. There are many models of flexible service ranging from fixed-routes with limited deviations, to demand-response zones with fixed time points. All are designed to combine productive fixed-routes with low transit demand areas that have consistent rider markets but do not warrant regular fixed-route service.
	Deviated fixed-routes can offer the predictability of a fixed-route with the customized trips from demand-response service. Typically, a section of the route or the entire route is advertised as flexible. Anyone wanting a pick-up away from the set route must call in advance for a pickup. The transit agency decides on the distance it is willing to deviate. The agency will accommodate as many deviations as it can while still staying on schedule. Since the fixed-route is specified, the bus must return to the route and the next scheduled stop after a deviation, also called an out-and-back deviation.
	Anchored flexible routes have several fixed timepoints, usually at activity centers or transit hubs. Passengers who live between the time points may call to request a curbside pick-up. The deviation zone may be a fixed distance or flexible. Drivers must serve timepoints, but do not necessarily adhere to a set alignment. Thus if a passenger requests a deviation, the driver may return to the typical route path via the most convenient streets.
Benefits	▪ Provide customers flexibility within a predictable fixed-route service model
	▪ Enables agency to serve low-demand (e.g. rural, suburban) markets with limited resources
	▪ Meets ADA Complementary Paratransit requirements as long as schedules build in additional time for deviations and service is open to the general public
Challenges	▪ Deviations add travel time and may affect on-time performance
	▪ Travel times longer than taking the most direct route can discourage ridership from choice riders
	▪ Providing clear guidelines for customers and operators on when and how to deviate
Service applications	▪ Minimal unique (unshared) origins or destinations ▪ Provide curb-to-curb service where complementary paratransit may be financially unsustainable
	▪ Multiple deviations or anchored timepoints to support operational and customer needs. ▪ See also: demand-response, fixed-route, shopper shuttle, shared mobility
	▪ Supplement low or infrequent demand routes
Average performance	Cost per trip $-$$ Passengers per hour 3-8
	Transit Toolbox

Figure 4   **Intercity Transit**

Intercity Transit | Express Bus | Commuter Bus

Description	**Intercity transit** routes provide direct service along major travel corridors with limited stops. These routes (or segments of routes) typically serve longer distances than local fixed-routes. Between destinations, intercity services typically operate on arterials or interstate roadways. Intercity transit fares are typically higher than other service types, and may require reservations where seating capacity nears rider demand. They may be operated using coach buses with wireless internet and other passenger amenities. Intercity services may provide some circulation through a community before heading to the next destination. In other cases, the bus leaves from one or two downtown central locations. Park and ride facilities provided at departure points may make intercity services more attractive to certain passengers. **Express and commuter** fixed-routes are terms used for services catering to daily workers at centralized locations with travel needs at typical peak traffic times (e.g. 7 a.m. to 9 a.m.). These routes typically serve major employment centers, transit centers, and park & ride facilities. These routes may operate only on weekdays or during morning and evening peak periods only. Express or commuter fares are higher than other fixed-routes. Some commuter shuttle fares are subsidized by major employers or institutions.
Benefits	- Provide customers a predictable route service model - Efficient service minimizing travel time between points - Cost effective (cost per ride) when serving high ridership corridors. - Vehicle type may allow for on-board amenities such as wireless internet or padded seats
Challenges	- Limited stops can leave riders with first/last mile travel gaps - Traveling long distances on major arterials may subject buses to traffic delays - Balancing needs of transit dependent and choice riders
Service applications	- Frequent service between medium to high density activity centers - Peak period work trip services - Recreational or multipurpose intercity routes - Reliable, comfortable service providing connections between rural and urban communities - See also: Fixed route, deviated fixed-route, park and ride
Average performance	Cost per trip $$ Passengers per hour 8-10

Transit Toolbox

Figure 5 summarizes public transportation policies and programs that communities can use to address public transportation needs. The policies and programs can be used in place of or to augment public transit service strategies described in the Transit Toolbox. The policies and programs include a brief description and considerations about roles that government agencies may have in implementing the strategy.

Figure 5   Public Transportation Policies and Programs

Category	Program	Description	State role
Commuter services	Vanpool	Vanpool programs typically serve commuters in areas where fixed-route transportation is not viable or not fully meeting demand. A group of people who live near each other join together and travel via one van to their common destination. Vanpool members drive the van. Vans can be owned by the transit agency or state and leased out to qualifying non-profits, public agencies, or directly to riders. Vanpools are usually pre-scheduled based on the locations and time of travel. Some vanpool services can be funded by the Federal Transit Administration.	Program funding Program management Technical support Buy and manage vehicle fleet
	Park-and-Ride / Kiss-and-Ride/ Park-and-Pool	Park-and-rides offer access to transit or carpool service. People drive or ride private vehicles to the location and park or are dropped off. They then take transit, carpool, or vanpool to their destinations. These facilities benefit from regular maintenance, safety features, and customer amenities such as shelters, seating and lighting. Parking facilities may be separately located, or part of a shared parking agreement with local facility owners.	Facility construction Facility operation Location information
	Shuttle	Similar to publicly operated on-demand shuttles, shuttles provide a flexible end-to-end transit option that can be more cost efficient than providing fixed-route service for last-mile trips. Some shuttles may include extra passenger amenities to attract riders, particularly when operated in competition with other services. Some flexible shuttles have been accessed by smart-phone enabled dynamic routing.	Technical support
On-Demand	Taxi vouchers	Taxi services are generally available even in very rural communities, but the fare is a financial challenge to many riders. A taxicab voucher is a reimbursement process that effectively lowers the trip price for the individual rider. The service may be provided to the general public or to specific eligible markets, depending on the program goals. Funds for the subsidy can come from a variety of sources, including local taxes or social service agency program funds. This can be a cost effective way to provide curb-to-curb transportation. Some taxi agencies also have lift-equipped vehicles.	Funding programs Multi-agency coordination Enabling policy or regulation
	Flexible vouchers	Flexible vouchers (also called flex vouchers) can be issued or sold to eligible individuals and used to purchase trips from public or private transportation providers, taxicabs, or to reimburse friends/family members and volunteer drivers. Typically, sponsoring agencies subsidize the cost of the trips, so that riders are able to receive service at a reduced cost. Eligibility is based on age, disability, income criteria, or the need for a specific type of trip, such as employment transportation. Flex voucher programs, particularly those that may be used with any type of service and recognize family members or friends as eligible providers of service, can fill temporal and geographic gaps in fixed-route and demand-response service by providing an affordable and	Funding programs Technical support

		convenient option. Such programs also expand the number of volunteer drivers that are available through other programs to provide rides for eligible individuals.	
	Volunteer driver programs	Individuals may be reimbursed by a transportation provider, human service agency, or other entity for using their own vehicles to provide trips for older adults or people with disabilities. A transportation provider may utilize volunteers to drive its buses, vans, or cars. Volunteers may also be used by a transportation provider as call-takers, schedulers, or dispatchers. Volunteer drivers typically, but not always, receive reimbursement for mileage, making this a very cost-effective way of meeting needs when other alternatives are not available, for long-distance or out-of-area trips, or when riders need assistance.	Funding programs Technical support
	Shared mobility	Shared mobility ranges from services that are publicly provided and available to the general public to services that are privately provided with exclusive access. As the shared mobility market expands, public agencies have begun reaching out to private companies like Lyft and Uber for partnerships that enhance mobility options. For example, the Dallas, Texas transit agency has integrated Uber into its trip planning app. In other cases, public agencies are beginning to explore subsidizing Lyft fares as a way to transport ambulatory clients (those who do not need a wheelchair lift).	Enabling policy or regulation
	Dynamic rideshare	On-demand dynamic rideshare services provide a carpool-like arrangement that does not require pre-scheduling. The services offer a customer-focused, on-demand ride for passengers and sometimes drivers making the same or similar trips. Riders typically use smart phones to schedule and get customized pick-up/ drop-off points.	Enabling policy or regulation Technical support
	Ride-sourcing / Ride-hailing	Ride-sourcing or ride-hailing services are on-demand, point-to-point transportation. Ride-source companies are similar to taxis and provide on-demand transportation services for compensation. These companies use an online-enabled application or platform (such as smart phone application). Passengers are connected to drivers who use their personal vehicles rather than vehicles in association with a taxi company.	Enabling policy or regulation Technical support

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