

Spotlight

Connecting Community Transportation: A Roadmap for Implementation

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Widespread adoption of the transactional data specification (TDS) for demand-responsive transportation (DRT) relies on several key considerations from both public- and private-sector partners. These considerations are important when implementing any technology solution and are particularly salient for the TDS. The following steps outline some of the planning, design, and implementation considerations for agencies interested in data standardization and TDS solutions. The roadmap steps overlap, and the order should be viewed as a suggested path. This roadmap is not exhaustive and should be adapted to fit each unique TDS implementation. This is a time- and resource-intensive, iterative process involving multiple stakeholders at every stage. A local champion committed to improving access to and coordination of DRT service is critical to implementing the TDS or other open-source solutions. Riders are at the center of this process and should be involved early and throughout the TDS **planning, design, and implementation**. This roadmap also recognizes the need for **recurring** activity throughout a project.

Planning

Identify customer transportation needs

Transportation providers should understand rider needs and develop technology solutions that meet those needs. Each community is unique, and the needs of one do not always directly translate to those of others. This is particularly important for TDS implementation, as the populations the TDS

aims to serve are often older adults and people with physical or cognitive disabilities. Transit technology plans should explicitly address how these populations' needs will be met. A community mobility needs assessment is a good strategy for understanding the local mobility landscape.

Understand agency operations and technical capacity

Careful consideration of agency operations, the current mobility landscape, and technical capacity is necessary before identifying solutions. Recognizing the types of mobility services an agency is operating, the scale of operations, and the technology infrastructure behind those operations determines the best course of action for implementation.

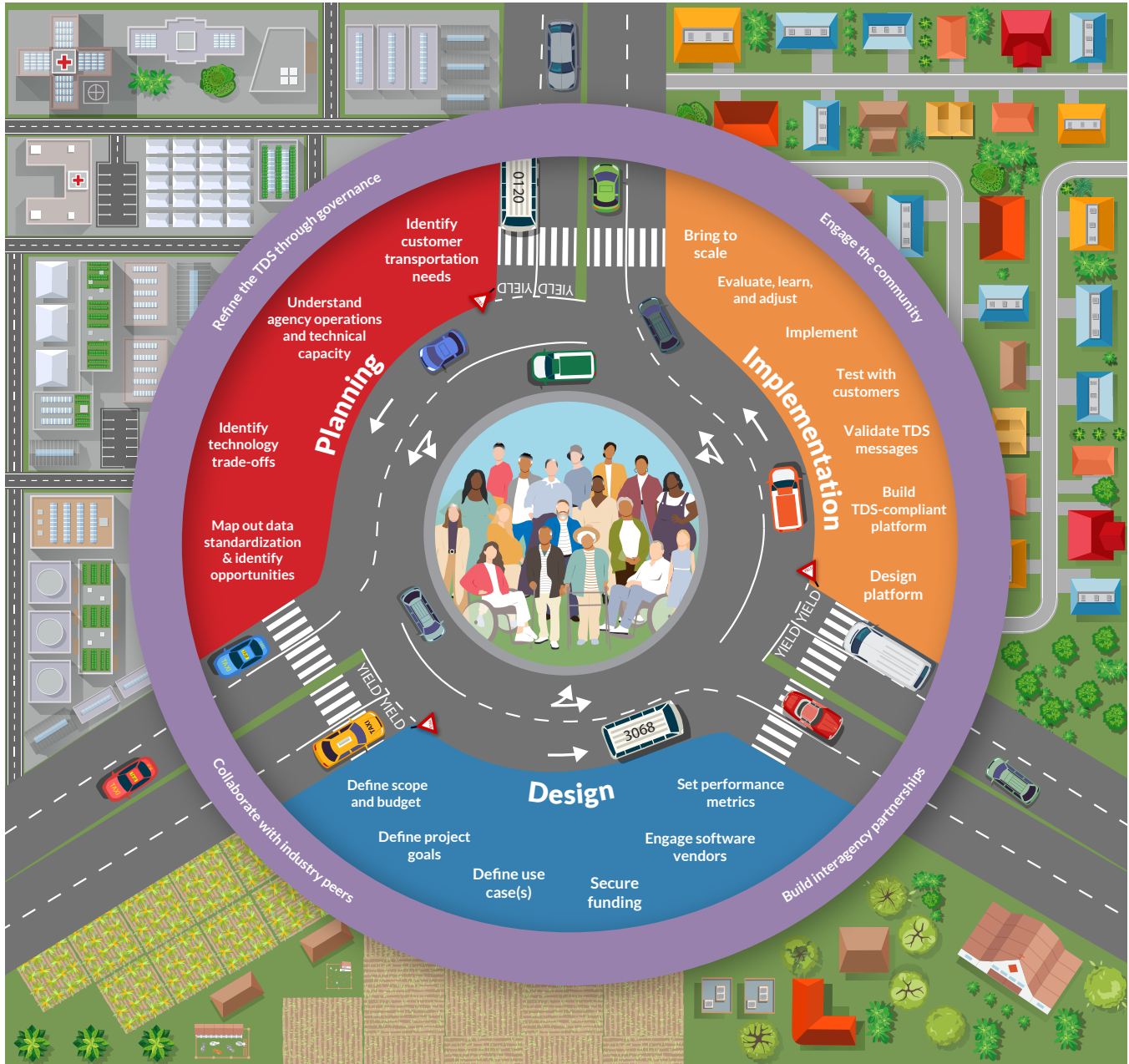
Identify technology trade-offs

There will be trade-offs between automating systems and maintaining rider relationships, and those considerations need to be factored into decisions. For instance, a provider who relies very little on technology and largely handles operations with pen and paper may be reluctant to implement automated trip planning or scheduling. Furthermore, very few human service transportation providers are willing to fully relinquish customer interaction to a computer system. Understanding the technology needs in these instances involves recognizing the necessary balance between human coordination and automation in trip planning. Each of the demonstration projects discussed in the accompanying paper "Connecting Community Transportation"

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The transactional data specification (TDS) supports coordination among multiple demand-responsive transportation providers by facilitating trip information exchange using standardized application programming interfaces (APIs). This roadmap is not exhaustive and should be adapted to fit each unique TDS project. Enter the roadmap from the top to begin planning, but recognize

that many activities are iterative and require multiple stakeholders and dedicated resources at every stage. For more information, please see the companion publication to this roadmap, *Connecting Community Transportation: Lessons Learned from Transactional Data Specification Demonstration Projects*.



in collaboration with



To download the full graphic, visit <https://learn.sharedusemobilitycenter.org/overview/tds-infographic/>.

provides agency personnel insight into every stage of booking and trip delivery, allowing staff to intercede when needed with a personal phone call to a client.

Map out data standardization and identify opportunities

Understanding the current data standardization practices across a city or region will help identify what assistance is needed in deploying the TDS. This work will also help identify standardization opportunities to meet the needs ascertained through community engagement. Agency personnel already familiar with the GTFS and GTFS-Flex will be able to grasp the concept of transactional data standards more readily than those who are not yet aware of the opportunity of data standardization for their sector.

Design

Define the demonstration area, target population, scope, and budget.

While keeping the larger vision and data interoperability goals in mind, the design of a project should start small and create a technology and interoperability expansion plan. The demonstration area should be manageable and limit the number of private software vendors. Similarly, early design should include input from a small target population of riders to learn from their real-world experience with the demonstration. Their feedback can aid in the development of a more robust interoperable DRT framework. Recognizing upfront that ongoing steps like understanding transit needs and opportunities takes time and resources goes a long way toward ensuring a sustainable mobility solution. Managing the scope and budget will help ensure that the demonstration project succeeds. Project leaders should look for federal and state funding to support open-source solutions and make sure they are reflected in the regional Coordinated Public Transit-Human Services Transportation Plan, required by the Federal Transit Administration (FTA) prior to disbursement of Section 5310:

Enhanced Mobility for Seniors and Individuals with Disabilities.

Define project goals

Project goals clearly outline what a project aims to achieve. A demonstration project can have multiple goals. For example, one goal could be to expand mobility in the region, while another goal might be to promote equitable mobility solutions. The project goals help to show a demonstration project's impact and return on investment.

Define the use case(s)

The use case offers details on carrying out the project goal(s). The demonstration projects reviewed in the accompanying paper offer examples of a project's goals and use cases. RideNoCo, for example, has three use cases (customer referrals, trip referrals, and trip coordination) with the goal of improving service for riders by streamlining how customer information and trip requests get shared among the regional call center and volunteer driver programs. Clearly defining the use case will help to frame the demonstration project steps.

Secure funding

The demonstration projects mentioned in the accompanying paper use a range of federal and state funding sources, such as FTA's Research and Innovation grants. There are currently 11 federal agencies that administer grant funds that can support human services transportation. FTA allows Section 5310 dollars for mobility management, for which technology systems quality. The Department of Health and Human Services offers programs such as the Title IIIB funding for older adult supportive services and the anti-poverty Community Services Block Grants. Local employers can receive no-interest loans from the United States Department of Agriculture for projects that create and retain employment in rural areas. Other local sources of funding could come from the United Way. This list is by no means exhaustive. The likelihood of

securing funding is closely tied to partnership building and creativity.

Engage software vendors and other private-sector partners

Procuring services from private software vendors is a necessary step to carry out TDS demonstration projects. Look to forward-thinking private partners that can both support this work and understand its limitations and scalability. Also consider software vendors with a demonstrated willingness to participate in open-source projects and are comfortable sharing the TDS refinements and platform development work with other agencies and software developers who can adapt and build from the work. This collaboration will ultimately lead to better human services transportation across the United States.

In the short term, agencies that wish to create a network of TDS-compliant transportation providers will need to persuade these companies on the merits. Technology contracts should outline important details but offer room for adaptation, and the budget should reflect these considerations. Given that the TDS is in its early stages, plan for unexpected development costs.

Set performance metrics

Performance metrics identify how to evaluate the demonstration project. They include what information will be measured to capture the impact of the demonstration project in meeting its goals. Identify the qualitative and quantitative data and sources needed to evaluate a project's impact.¹ When using rider data, be sure to anonymize them and develop a plan to protect personal identifiable information.

Implementation

Design platform

Building the TDS should be iterative and tie back to other road map considerations noted earlier. The technical development of the TDS should begin with its design, based on what was learned from community engagement, transit customer needs, and geographic service area.

How will agencies and/or riders access the DRT information? Will it be a back-end spreadsheet (like RideSheet), or will there be a user-facing app (like MnDOT's trip planning platform)? If there is a customer-facing app, then it must be accessible to all user groups. Some additional considerations include other available data solutions and whether the TDS will build on them, how private mobility providers will interact with and use the TDS platform, and what mobility services the TDS demonstration will include.

Build TDS-compliant platform

Based on the local context, define the TDS messages needed to satisfy your use case. Besides pulling directly from the TDS, consider additions to other demonstration experiences and new needs or requirements. The demonstration projects reviewed in this paper offer context on TDS functionality in different geographies.

Test and validate TDS messages

Because the TDS is refined for a given local context, its messages need to be tested and validated to ensure they function as intended. This is typically an iterative process.

Test with customers

Working with riders should happen throughout the development of the TDS—from understanding mobility needs to how riders interact with the TDS solution. When there is a customer-facing app or website to access the

¹ https://learn.sharedusemobilitycenter.org/learning_module/setting-project-goals-and-performance-metrics

DRT trip information, test it with customers to ensure usability and accessibility.

Implement in the demonstration area

Start small to pilot the TDS solution. In coordination with local community engagement, a smaller geography will help to build capacity, make it easier to understand how the TDS is working, and eventually support a larger TDS rollout. Creative marketing with transit agencies, private transportation providers, and community groups can broaden the use of the TDS solution and help to demonstrate its applications.

Evaluate, learn, and adjust

Use the qualitative and quantitative data collected to measure the impact of the project against the performance metrics and stated goal(s). The lessons learned from the TDS demonstration project should be fed back into the project design and adjustments made as needed.

Bring to scale

Coordination across regional transportation providers will build support for scaling to a larger TDS rollout that expands the service area and number of participating providers. The lessons learned from the demonstration project should be used to inform the TDS expansion.

Recurring

Engage the community

Community engagement should happen throughout the project and involve community stakeholders in the decision-making process. Working with community partners helps build trust with riders, helps implementers better understand riders' travel needs, and builds awareness for transportation services and the TDS. Early and ongoing community engagement is crucial for building support for projects and creating a solid user base and a market for further technology solutions. An

explicit budget for resources to engage the community and collaborate with industry peers is optimal for these projects to succeed.

Build interagency partnerships

A precursor to digital coordination is institutional coordination among the agencies working to build a network of services. Partnership building involves working with neighboring transportation providers; understanding their technical capacity, needs, and operations; and ensuring that the necessary public and private stakeholders have a voice at the table. Larger public agencies can assist smaller agencies with less technical expertise, helping delineate the benefits of and explaining how to build open-source solutions. All project partners must fully understand what the TDS is and what it can offer for interoperable systems.

Collaborate with industry peers

Collaboration should be pursued through knowledge sharing. Connecting with other transportation providers to observe their implementation of the TDS can highlight interagency partnerships, build on others' work, and further mobility data interoperability throughout the industry. These interactions bring the TDS closer to a governance model and facilitate consensus-based TDS refinement. Funding constraints, siloing, personnel capacity issues, technology gaps, and competing interests can hinder collaboration. Therefore, it's critical to consider allocating resources in the TDS demonstration project budget to facilitate collaboration among the public agencies and private software vendors involved in both a particular demonstration project and among other demonstration projects in the country. Industry peers need to understand what has been accomplished to date and document how they addressed their local use case(s). This collaboration should inform refinement of the TDS. The DRT Data Specification Working Group, co-hosted by the Shared-Use Mobility Center and AARP, offers a good starting point.

Refine the TDS through governance

The TDS is striving for a governance framework to organize this collaboration among industry peers—with an eye toward development and adoption of a unified standard that addresses the diversity of local contexts and forms of DRT. A governance model offers a framework for how a data specification or standard is maintained and updated. Public agencies, community representatives, and software vendors all should be involved in this work, but governance should be led by an independent, impartial organization that engages all stakeholders—most notably, software vendors that will be called upon to implement the TDS within their platforms.

This roadmap by Al Benedict and Hani Shamat (Shared Use Mobility Center) and Jana Lynott (AARP Public Policy Institute) is a companion document to the publication “Connecting Community Transportation: Lessons Learned from Transactional Data Specification Demonstration Projects.”

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