IMPLEMENTATION PLAN

GWAAR TMCC of Southwestern Wisconsin

Norah Cashin
Susan Hessel
Brian Hill
Sky Van Rossum
Carrie Diamond

Table of Contents

Table of Contents 2

1.0 INTRODUCTION 4

1.1 Plan Purpose 4

1.2 Agencies and Stakeholders 4

1.3 Summary of Stakeholder Engagement 5

1.4 System Overview 6

1.4.2 Data Sharing 7

1.4.3 Roles and Permissions 7

1.4.4 Open Source License 7

1.4.5 Web-based Architecture 8

1.4.6 Hosting 8

2.0 SYSTEM STRUCTURE AND MAJOR SUBSYSTEMS/COMPONENTS 9

2.1 Mobility Management Office Suite 9

2.1.1 Overview 9

2.1.2 Functional Elements 10

2.1.3 Anticipated Impact on Business Processes and Roles/Responsibilities 10

2.1.4 Agency/Stakeholder Resource Requirements 10

2.1.5 Training Requirements 11

2.2 Transportation Provider Suite 11

2.2.1 Overview 11

2.2.2 Functional Elements 12

2.2.3 Anticipated Impact on Business Processes and Roles/Responsibilities 12

2.2.4 Agency/Stakeholder Resource Requirements 12

2.2.5 Training Requirements 12

2.3 Transportation Provider Driver Module 13

2.3.1 Overview 13

2.3.2 Functional elements 13

2.3.3 Anticipated Impact on Business Processes and Roles/Responsibilities 13

2.3.4 Agency/Stakeholder Resource Requirements 13

2.3.5 Training Requirements 14

2.4 API Facade Service 14
2.4.1 Overview 14
2.4.2 Anticipated Impact on Business Processes and Roles/Responsibilities 14
2.4.3 Training Requirement 14
3.0 IMPLEMENTATION 15
3.1 Phase One Details 16
3.1.1 Major Tasks 16
3.1.2 Descriptions of Tasks 16
3.1.3 Phase 1 Implementation Estimate 17
3.2 Phase 2 18
3.2.1 Major Tasks 18
3.2.2 Descriptions of Tasks 18
3.2.3 Phase 2 Implementation Estimate 19
3.3 Phase 3 19
3.3.1 Major Tasks 20
3.3.2 Descriptions of Tasks 20
3.3.3 Phase 3 Implementation Estimate 20
3.4 Phase 4 21
3.4.1 Major Tasks 21
3.4.2 One-time cut-over 21
APPENDIX A Stakeholder Consortium 22

1.0 INTRODUCTION

1.1 Plan Purpose

The following document provides a proposed phased implementation plan for the deployment of multiple modules of a cooperatively-developed web-based technical solution which will facilitate transportation coordination across an 11-county region in southern Wisconsin. The recommendations are built on industry standards for collaborative technical development, mobility management practice, and customer relations management. Further, the project proposes an on-going Stakeholder Consortium to address implementation and continue the work of developing collaborative agreements among agencies, counties, healthcare facilities and other stakeholders. The project leverages the impact of Wisconsin's outstanding network of mobility managers, which has been in the vanguard of development of the practice since 2008, and the members of whom have negotiated numerous cross-jurisdictional agreements. Finally, the Plan will provide an in-depth background on the proposed web application, proposed pilot deployment, and proposed plan to extend to a more comprehensive Travel Management Coordination Center (TMCC).

1.2 Agencies and Stakeholders

Upon award of a 2016 Mobility Services for All Americans grant for the Federal Transit Administration, the Greater Wisconsin Agency on Aging Resources, Inc. (GWAAR), in cooperation with municipal, county, and regional transportation and planning agencies, private and non-profit transportation providers, and user groups, has undertaken planning for development of a proposed phased implementation plan for a collaboratively-developed technology solution to facilitate coordination across programs and jurisdictions in southern Wisconsin. Key stakeholders include:

- Greater Wisconsin Agency on Aging Resources, Inc. (GWAAR) - Lead Agency
- Abby Vans, Inc.
- Brown Cab, Inc. (representing Edgerton, Fort Atkinson, Jefferson, Lake Mills, Monroe, and Whitewater Shared Ride Taxis [SRTs])
- Columbia County Aging and Disability Resource Center (ADRC)
- Dane County Department of Human Services
- Dodge County ADRC
- East Central Wisconsin Regional Planning Commission (RPC)
- Grant County ADRC
- Green County ADRC
- Hodan Center, Inc.
- Iowa County ADRC
- Jefferson County ADRC
- Lancaster County ADRC
- LIFT Program, Southwestern Wisconsin Community Action Program
- Retired and Senior Volunteer Program of Dane County
- Richland Center ADRC
- Rock County Commission on Aging
- Running, Inc., (representing Beaver Dam, Platteville, Portage, Richland Center, Stoughton and Sun Prairie SRTs)
- Southwestern Wisconsin RPC

- Southwest Wisconsin Opportunity Center
- Transit Solutions, Inc.
- Walworth County Mobility Manager

1.3 Summary of Stakeholder Engagement

The Concept of Operations, Design Plan, and Implementation Plan have been developed with extensive involvement of stakeholders, whose identified needs and requirements informed every stage of the project process.

Goals Identified: As identified by stakeholders, integral to the design process are the goals of modularity, scalability, interoperability with existing software systems, adaptability to areas with limited 4G infrastructure, ease of use for participants, and low cost of entry for all.

Current System: Surveys of the current system show that it is fragmented, and consists of disparate systems: some counties (6) adapting spreadsheets, a few (4) employing small-scale transportation-specific computerized systems, and one using a large commercial software application. Most of the counties running computerized systems are dissatisfied with existing functionality, and/or are unable to attain needed features and functionality from the proprietary software owners. Even with software support, six counties first record incoming requests on paper and transfer details by hand to and from driver run sheets, requiring data to be redundantly entered and creating multiple opportunities for errors. One county has invested in a large commercial system and is paying significant software subscription fees for component features that are unusable at their scale of operations; this expense diminishes their ability to maintain or expand necessary services. None of these systems in any way facilitate even basic information sharing or collaboration among counties.

Both telephone and in-person interviews were conducted with project stakeholders throughout Summer 2017 to create a map of each stakeholder's current operations, coordination environments and available assets. A second round of in-person interviews was conducted in the fall of 2017 to generate more in- depth information about current stakeholder processes, technology needs, and coordination barriers. Based on analysis of stakeholder interviews, four major categories of issues were identified as stakeholder priorities. A full-day design sprint exercise with the stakeholders explored these categories in more detail, as well as engaging in group brainstorming activities to identify additional user needs.

Modifications to Proposed Plan: One of the outcomes of the design sprint was the admission by virtually all stakeholders that, often due to the limited ability to share information given current technology systems (or the lack thereof), they were not ready to create formal coordination agreements either at the programmatic or operational levels (although all parties report informally coordinating rides on an ad-hoc basis, where possible). Stakeholders firmly committed to the collaborative development of a shared, interoperable software application as the foundational step in building a TMCC.

Further Stakeholder Activities: Stakeholder involvement since the submission of the Concept of Operations has continued with interviews with agencies newly expressing interest in involvement. On February 6, a second in-person design sprint was held. Stakeholders participated live demonstrations of prototyped interfaces of the proposed system, and gave written and verbal feedback on proposed ideas of modifications, strengths, and concerns (forms for written comments were provided, and verbal

discussion was documented by the graphic recorder; see Appendix A Stakeholder Engagement for images of feedback tools and summaries of verbal and written responses). Stakeholders also discussed anticipated deployment issues such as cost, licensing and hosting concerns, and data sharing and privacy concerns. Finally, plans for an on-going consortium to address implementation were formulated. Stakeholder requirements and concerns are detailed in Section 1.4.

1.4 System Overview

Through significant stakeholder engagement, key functional areas (KFAs) were identified for a common system. In addition, KFAs were identified for increased collaborations across jurisdictions and among agencies and providers.

1.4.1 Key Functional Areas

Key functional areas desired by system stakeholders:

- Client Information Management
- Driver Information Management
- Provider Information Management
- Funder Information Management
- Computer Assisted Ride Requests & Scheduling
- Computer Assisted Driver Management & Scheduling
- Computer Assisted Dispatch
- Web-Based Trip Offer Board with SMS and email notification options
- Provider Integration (Including “no tech” providers and those with proprietary software)
- Computer Assisted Driver Integration via Desktop and/or Mobile Device
- Computer Assisted MCO Authorization Management
- Reporting and Analytics
- Web-Based Reservation Requests
- Automated Appointment Reminders via Call, SMS or email.
- Map-based Display of Rider & Driver Information
- Real Time Information
- Permissions-based Access Control Lists (ACLs) to throttle data sharing
- Security and Privacy

Key functional areas identified as needed to increase collaboration across agencies and providers:

- Shared Volunteer Driver Recruitment, Onboarding, Training Materials & Recognition
- Shared Resource Listings
- Shared Eligibility Determination
- Shared Sample Agreements: Contracts with MCOs, Inter-Jurisdictional MOUs, etc.
- Shared Real Time Information
- Computer Assisted Provider Assignment and Transportation Referrals
- Computer Assisted Cooperation for Regional Trip Planning
- Computer Assisted Cost Allocation and Invoicing for Shared Rides
- Regional Data Exchange and Transportation Analytics

Several requirements, both functional and non-functional, were discussed in detail at the second design

sprint; key issues identified were:

1.4.2 Data Sharing

The data collected in the integrated modules shall utilize permissions-based ACLs, allowing participants and providers who adopt the modules to completely control which data points to share and with whom to share them. These permissions can be set up generally or be tightly tailored to throttle data sharing with individual parties, for example, sharing trip offers with some integrated providers, but not others.

1.4.3 Roles and Permissions

The system shall provide basic user roles per module (as described below), with standard Create, Write, Update, and Delete, (CRUD) permissions. In addition, the system shall provide a facility to create custom user roles with flexibly assigned module- and field-level permissions that reflect the work and organization data of each unique agency. Default system roles should include:

- System Administrator
- Reservationist/Scheduler
- Accounting/Reporting
- Rider
- Dispatcher
- Driver

1.4.4 Open Source License

Due to limited fiscal resources, a very low cost of entry was identified as a priority requirement by most stakeholders -- rural county agencies, SRTs and mom-and-pop providers who operate with a minimal net margin. Therefore, the cost of original development as well as necessary upgrades must be kept low and, as much as possible, distributed across stakeholders. To best achieve this requirement, stakeholder consensus is that the software developed shall be released under an open source license, allowing anyone to download it and use it, even customize it.

Stakeholder consensus also addresses the issue of public funds used for publicly-owned benefits. Most open source licenses have restrictions on reselling the code, even after it has been modified or improved; in this way the improvements become part of the commons, or public property, as well as the original code, making innovative customizations that other agencies develop available to the whole community of users at no additional coding cost.

Stakeholders expressed fear of having to invest in features beyond the scope of what they are able utilize in their operations. With an open-source application, stakeholders are able to prioritize their own agenda for improvements to the system. Vendor lock-in is averted. Also, as agency operations expand, the cost of the software need only increase in proportion to the added computing power and bandwidth required.

Also, those stakeholders who have invested in small proprietary systems expressed frustration with the high cost and/or impossibility of updating or adding new features. An open source license allows stakeholders to commission updates and new features at will. This licensing, in addition, meets stakeholders' requirement that they be able to consolidate their resources to procure desired updates and features cooperatively, thereby reducing costs. It was noted by participants that such collaboration is an additional incentive towards regional cooperation - indeed, that cooperation which begins as a cost-sharing venture is an "easy sell" to local decision-makers, and paves the way for further collaboration.

Finally, those stakeholders with small proprietary systems, or those with programs developed by their in-house Information Technology (IT) departments, expressed frustration with slow responsiveness with regard to software bugs. Code errors in open source code tend to get fixed more quickly since a whole community of coders can respond to issues, and independent organizations rising from the open source community to support the system are incentivized to respond quickly to Service Level Agreements (SLAs) that sustain their small businesses. Finally, agencies and providers may rely on their own IT staff to whatever degree the skill set and time of the staff will allow, possibly creating additional cost reductions.

1.4.5 Web-based Architecture

Stakeholder consensus is that the system shall use a web-based architecture. This architecture reduces the cost of development and implementation. The system is developed for just one operating system, that of the server, and the costs of computing are consolidated on the server side of the client-server equation (desktop computers, the clients in this equation, do not need to have so much computing power, but only the capacity to run a standards-compliant web browser).

The application interface shall be developed so as to automatically resize to conform to the screen-size of the device on which it is viewed.

Representational State Transfer (REST), the best practice for implementation for web-based architecture, facilitates integration, interoperability and scalability (fulfilling the stakeholder goals of modularity, scalability, interoperability with existing software systems, and low cost of entry for all).

1.4.6 Hosting

A web-based architecture combined with an open source license offers stakeholders the maximum options for system hosting and tenancy scenarios. Agencies with county data center services may use their own facilities to host the system.

Stakeholders may choose to host their system in the cloud. Cloud computing offers ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.[1] Utilizing these services, systems can ensure high availability by clustering servers across multiple regional data centers. In this way downtime is minimized by ensuring there is always an instance of the service up and running somewhere.

Cloud hosted systems may be single or multi-tenant. Stakeholders expressed considerable interest in the option for agencies with low- volume operations and minimal IT budgets to choose to collaborate to share hosting costs on a multi-tenant cloud service while still maintaining a secure and private data set and operations.

Partners in the open source project community may offer the system to interested parties on a Software as a Service (SaaS) basis. SaaS provides a complete software solution typically for a low- cost fixed setup fee followed by a monthly subscription fee required for an agreed on number of years. Some stakeholders may find this low up front cost appealing.

[1] https://csrc.nist.gov/publications/detail/sp/800-145/final

2.0 SYSTEM STRUCTURE AND MAJOR SUBSYSTEMS/COMPONENTS

Following stakeholder interviews, multi-stakeholder design workshops, and requirements prototyping/feedback iterations, a minimum viable product (MVP) has begun to take shape. The MVP should provide an end-to-end solution for the mobility management office: client, driver, provider, and funder information management; computer assisted ride requests and scheduling, driver management and scheduling, provider integration, dispatch, driver integration, MCO authorization management; reporting and analytics capacities; real-time GIS for rides and drivers; ACL-style permissions for data sharing; and system and data security and privacy.

The MVP delivers the smallest valuable feature set that can be deployed to the customer to collect feedback. Feedback drives the implementation of additional functionality through a "build-measure-learn" loop. An improved version of the feature set is deployed after each iteration of the loop. This incremental development process delivers increasing value to the customer in rapid fashion, while ensuring the system developed is the system the customer wants and needs. Agile development methodologies are recommended for this approach.

The following overview provides a high-level description of the four integrated modules of the MVP available to system participants which incorporate all the major features and functionality required by county mobility management offices and their providers for day-to-day operations. The four integrated modules of the proposed MVP are:

- Mobility Management Office Suite
- Transportation Provider Suite
- Transportation Provider Driver Module
- API Facade Service

Since most participating agencies in the 11 counties also manage their own paid and volunteer fleets of drivers, all four modules might be used by participating agencies. All the modules share a common data set and user authentication system.

2.1 Mobility Management Office Suite

2.1.1 Overview

The mobility management office application provides a CRM-like call center interface to log contact with riders and caseworkers, to manage MCO authorizations for rider trips, and to provide tools for invoice reconciliation and cost tracking.

It integrates providers, managing their information, offering trips and tracking the details of accepted trips. If the provider and/or driver applications are integrated, real time GIS information may be displayed for trips. Provider-facing pages allow "no tech" providers to enter required trip data directly to the agency's software and for transportation providers who use proprietary third-party software to batch upload data exported from their own systems.

The MM Office Suite manages funder information, funding requirements and reporting. It provides a facility for public-facing web pages on which to apply for eligibility, request ride reservations, and identify regional transportation resources. It offers a facility for custom reporting and analytics.

2.1.2 Functional Elements

The identified functional elements of this module are detailed in the Common Fleet Information Platform deliverable. These include:

- Login Authentication
- Create, View, Edit riders
- Create, View, Edit reservations (with GIS)
- Create, View, Edit funding sources
- Create, View, Edit accounts
- Create, View, Edit vendors
- Record/Lookup MCO authorizations
- Log contacts with riders and caseworkers
- Create, View, Edit Invoices
- Add/Remove data sharing permissions
- Generate standard, exception, funding, and custom reports
- Offer/Assign trips to providers
- Accept form data from "no tech" providers
- Accept batch upload data from providers with proprietary software
- Accept ride request form data from riders
- Accept eligibility application form data from riders
- Display regional transportation resources
- Dispatch and monitor performance
- Report and bill on transportation performed with strong exception reporting capabilities

2.1.3 Anticipated Impact on Business Processes and Roles/Responsibilities

In order to maximize the ease of adoption and usefulness, particularly by users new to automated transportation tools, the system will primarily automate current basic business processes and current roles/responsibilities.

Responsibilities are encoded as access permissions to data and system methods. Permissions are assigned to roles. Default system roles are listed in Section 1.4.3 Roles and Permissions.

Implementation of the system will create efficiencies and increase accuracy by eliminating redundant data entry, implementing data validation checks on data entered, creating facilities for riders and providers to enter their own data, and outputting data in formatted reports.

Implementation of the system will advantage cooperation across jurisdictions and among agencies and providers, by creating and storing records electronically (a more easily shared format than sticky notes), and creating opportunities for integration and/or interoperable operations.

2.1.4 Agency/Stakeholder Resource Requirements

As the resources of stakeholders are limited, the proposed system requires a low cost-of-entry. Most stakeholders have the necessary infrastructure to support access to a web-based application. At a minimum they may need to update a web browser or upgrade an existing broadband connection; at most an upgrade of desktop computers to run a standards-compliant web browser may be necessary. The system must be hosted on some sort of server. Multiple low cost hosting options are detailed in Section 1.4.6 Hosting.

GIS Map functions integrated into this module may require agencies to contract with a GIS service provider. This module will incorporate a wrapper API that allows an agency to switch between various GIS service providers. Prices in this market are volatile, but at current pricing levels and stakeholders' current business volume, no fees are likely to be incurred (for instance Google's MAP API is currently free for the first 25,000 lookups per day, and 50¢ per each additional 1000 lookups).

2.1.5 Training Requirements

As noted above (Sections 1.1 Plan Purpose and 1.3 Summary of Stakeholder Engagement), the second stakeholder design sprint included plans for an on-going Stakeholder Consortium to address implementation issues and developing collaborative agreements among stakeholders, including agreements with regard to training. Participants in this consortium have been identified, but the work of developing training requirements has not yet begun. Some preliminary considerations include the following:

Stakeholders have noted the common experience of only being able to afford to send one person to trainings on proprietary automated systems; when they lose that person, they lose the expertise in which they had invested. With an open source platform, agencies are able, either independently or collaboratively, to provide training internally or to hire a vendor to develop training content and materials. When multiple stakeholders implement the proposed system, there is an efficiency incentive to collaborate across counties on the costs of training - classrooms, manuals, online demonstrations, etc. This collaboration gives each county more training resources than they could manage on their own. As stakeholders noted in the first design sprint, prioritizing such joint projects is a low-resistance gateway to greater collaboration in the future.

Further, trainings can be specifically tailored to the manner in which stakeholders intend to use the program.

Broadly, training for the Mobility Management Office Suite will include:

- Systems Administrator Interface
- Reservationist/Scheduler Interface
- Accounting/Reporting Interface
- Rider Interface

2.2 Transportation Provider Suite

2.2.1 Overview

The transportation provider module provides a finely grained, computer-assisted workflow for assigning transportation orders to individual drivers, both ahead of time and in real time. It manages driver information and schedules. When an agency creates a reference in their system to a provider who has adopted the provider suite, the integration will be seamless, as if the agency were running its own fleet. Still, both the provider and the agency have the ability to throttle the sharing of information to the minimum necessary to conduct shared operations. Thus, a provider using the suite may be integrated into multiple agencies' mobility management systems.

2.2.2 Functional Elements

The identified functional elements of this module are detailed in screen shots in the Common Fleet Information Platform deliverable. These include:

- Login Authentication
- Create, View, Edit vehicles
- Create, View, Edit drivers
- Create, View, Edit schedules
- Create, View, Edit driver trip logs
- Add/Remove data sharing permissions
- Dispatch and monitor performance
- Generate invoices for trips

2.2.3 Anticipated Impact on Business Processes and Roles/Responsibilities

In order to maximize the ease of adoption and usefulness, particularly by users new to automated transportation tools, the system will primarily automate current basic business processes and current roles/responsibilities.

Responsibilities are encoded as access permissions to data and system methods. Permissions are assigned to roles. Default system roles are listed in 1.4.3 Roles and Permissions.

Implementation of the system will create efficiencies and increase accuracy by eliminating redundant data entry, implementing data validation checks on data entered, creating facilities for drivers to enter their own data, and outputting data in formatted reports/invoices.

Implementation of the system will advantage cooperation across jurisdictions and among agencies and providers, by creating and storing records electronically, and creating opportunities for integration and/or interoperable operations.

2.2.4 Agency/Stakeholder Resource Requirements

As the resources of stakeholders are limited, the proposed system requires a low cost-of-entry. Most stakeholders have the necessary infrastructure to support access to a web-based application. At a minimum they may need to update a web browser or upgrade an existing broadband connection; at most an upgrade of desktop computers to run a standards-compliant web browser may be necessary. The system must be hosted on some sort of server. Multiple low cost hosting options are detailed in section 1.4.6 Hosting.

GIS Map functions integrated into this module may require agencies to contract with a GIS service provider. This module will incorporate a wrapper API that allows an agency to switch between various GIS service providers. Prices in this market are volatile, but at current pricing levels and stakeholders' current business volume, no fees are likely to be incurred (for instance Google's MAP API is currently free for the first 25,000 lookups per day, and 50¢ pre each additional 1000 lookups).

2.2.5 Training Requirements

See Section 2.1.4.2 for general discussion of trainings. Specific training for the Transportation Provider Suite will include:

- Systems Administrator
- Dispatcher
- Driver Desktop Interface
- Trip Data Upload

2.3 Transportation Provider Driver Module

2.3.1 Overview

The driver module provides a mobile-ready interface to a single driver's view of the system, with tools to track ride events, such as pickup or drop-off, and gives the driver a way to record the transportation costs, such as miles and hours, at point of drop off.

For transportation providers that don't provide mobile devices for their drivers, this module can also be used on a desktop computer for receiving assignments and submitting the trip logs for compensation.

2.3.2 Functional elements

The identified functional elements of this module are detailed in the Common Fleet Information Platform deliverable. These include:

- Login Authentication
- View, Edit run sheet
- View, Edit Call Detail (with GIS)
- Change Status: Acknowledge, 3-Minute Alert, On Site, Loaded, Dropped, Empty, Cancel, No Load
- Messaging Interface
- Question Request
- Emergency Notification

2.3.3 Anticipated Impact on Business Processes and Roles/Responsibilities

In order to maximize the ease of adoption and usefulness, particularly by users new to automated transportation tools, the system will primarily automate current basic business processes and current roles/responsibilities.

Implementation of the driver module will create further efficiencies and increase accuracy by eliminating redundant data entry, implementing data validation checks on data entered, creating GIS-encoded timestamps to verify that on-time performance requirements have been met, reducing passenger load time by sending a 3-Minute Alert to riders, creating facility for drivers to enter their own data.

If 4G coverage is available and drivers have devices in the vehicle, their work may be further aided by trip GIS, route suggestions and traffic information.

2.3.4 Agency/Stakeholder Resource Requirements

For transportation providers that don't provide mobile devices for their drivers, this application will be accessible from desktop computers. Currently, the majority of agency drivers are volunteer drivers and may wish to complete their run sheets on their home computers. Other drivers prefer some company at the end of their shifts and may want to complete their run sheets at the agency's office. Agencies may

need an additional computer or kiosk-device to accommodate these drivers.

For transportation providers that do provide mobile devices for their drivers, 4G service will be required for real-time trip information transfer (tablets should store data until a connection can the server can be completed).

GIS Map functions integrated into this module may require agencies to contract with a GIS service provider. This module will incorporate a wrapper API that allows an agency to switch between various GIS service providers. Prices in this market are volatile, but at current pricing levels and stakeholders' current business volume, no fees are likely to be incurred (for instance Google's MAP API is currently free for the first 25,000 lookups per day, and 50¢ pre each additional 1000 lookups).

2.3.5 Training Requirements

See Section 2.1.5 for general discussion of trainings. Specific training for the Transportation Provider Driver Suite will include:

- Driver Desktop Interface
- Driver Device Interface
- Device Gesture Training

2.4 API Facade Service

2.4.1 Overview

To facilitate integration of third party systems, and provide some tools for participants to customize their own use of the system, most of the service endpoints that power the user interfaces will be available for use through an open and published API. Since this same API service will be used by the front-end interfaces, all operations available via the user interface will be accessible by machine service accounts for integration purposes.

2.4.2 Anticipated Impact on Business Processes and Roles/Responsibilities

Providing an open and published API with clear documentation, creates additional opportunities for interoperability and integration, creating hooks for owners of proprietary software or other open source projects to make posts to and requests of stakeholders' systems (with proper authorization and authentication, of course).

2.4.3 Training Requirement

The API Facade Service Suite should have published API documentation.

3.0 IMPLEMENTATION

Multi-Approach Implementation

A combination of implementation approaches will be utilized: a phased approach, parallel execution, and one-time cut-over. The parallel execution, and one-time cut-over approaches may be repeated in the course of each phase of development or at each stakeholder site.

Phased Implementation Plan: The phased approach allows the initial Pilot Development Team to include a limited number of stakeholders at a high level of involvement, developing consistency in the team and their development process. It allows features to be prioritized for development consistent with the business needs and processes of the preliminary pilot agency, and to deploy and test feature sets in the confined environment of a single agency (rather than potentially sending disruptive bugs to multiple agencies).

Consequently, the implementation of the proposed system will consist of a 4-phase pilot project, beginning in a 5-county portion of the proposed total service area, leveraging the fledgling collaborations of the Southwest Wisconsin Transit Team (SWITT). SWITT is sponsored by the Southwest Regional Planning Commission, and participants include the counties of Grant, Green, Iowa, Lafayette, and Richland, The LIFT project, the Hodan Center, and the Southwest Opportunity Center. SWTT meets every other month “to share ideas and insights into transit provision in the region”.

A Stakeholder Consortium consisting of stakeholders from the 11 counties (see Section 1.3, Further Stakeholder Activities) will oversee the progress of the implementation.

The site of the initial pilot will be LIFT. LIFT is a volunteer and paid driver program serving 5 of the 11 counties in the MSAA project. LIFT is operated by the Southwestern WI Community Action Program (SWCAP). LIFT is a member of SWTT, and because of perceived jurisdictional issues, is currently the only agency coordinating rides with the other members. LIFT has received State of WI Section 5310 funds in 2018 to explore ways to collaborate with the 5 SWTT counties on volunteer recruitment and retention.

In successive phases the developed and tested software will be made available to other consortium stakeholders, in a deployment queue.

4-Phase Implementation Summary

Implementation will be managed in 4 phases:

- Initial Application and Training Materials Development via Pilot with LIFT
- Extend Application and Training Materials Development including interoperability functions via Pilot to participating SWITT County agencies; implement and improve the training developed in Phase 1
- Complete API and API documentation; Develop public-facing pages; Design training for riders and caseworkers
- Queue remaining participating counties, and sequentially deploy based on availability of resources.

Parallel Execution: Running the system being developed in parallel with an agency’s current system during development allows the agency participating in the Pilot Development Team to continue

operations without interruption throughout the development cycles, while identify outcome inconsistency between the two systems and troubleshoot the source of these inconsistencies (they could be bugs in the old system).

At each stakeholder agency where the application is implemented it will be run in parallel to ensure the application developed accurately reflects the needs of the agency's unique operation.

One-time cut-over: At all implementation sites, when the application has been tested and accepted a one-time cut-over to the new system will be scheduled.

3.1 Phase One Details

Initial Application and Training Materials Development - Pilot
The goals of Phase 1 of the implementation pilot is to get the bulk of the application and training materials completed, to assess true performance in controlled-but-live experiments, identify improvements to the system or implementation launch process, and have a working prototype to demonstrate to stakeholders and their IT departments.

In Phase 1 of the implementation, a Pilot Development Team will be established including LIFT staff, application developer staff, representatives of the other SWTT counties, and additional MSAA Stakeholder Consortium members (see Section 1.3, Further Stakeholder Activities) as deemed appropriate by the consortium.

Of the Requirements established by the project as a whole, the Pilot Development Team will prioritize those requirements which are the highest service requirements of the LIFT deployment. Three lists, collectively Feature Sets - Phase One, will include requirements from each of the first three application modules (the Mobility Management Office Suite, the Transportation Provider Suite, and the Transportation Provider Driver Module).

3.1.1 Major Tasks

- Convene the Pilot Development Team
- Prioritize Feature Sets
- Setup Hosting
- Setup Development and Production Environments for Identified Agencies
- Code-Test-Deploy Iterations of Prioritized Feature Sets of Pilot Program
- Develop Training Materials for Agencies for Deployed Feature Sets
- One-Time Cut-Over

3.1.2 Descriptions of Tasks

Utilizing an iterative Agile approach, the Pilot Development Team will develop, deploy and test-in-parallel Feature Sets -Phase One of the Mobility Manager Office Suite (MMOS) the Transportation Provider Suite (TPS), and the Transportation Provider Driver Module (TP-DM). LIFT operations require all three. Feature Sets - Phase One will include most of the functions required for basic operations, including:

- Login Authentication (MMOS Users, TPS Users, and Drivers)
- Create, View, Edit riders
- Create, View, Edit reservations (with GIS)

- Create, View, Edit funding sources
- Create, View, Edit accounts
- Create, View, Edit vendors
- Log contacts with riders and caseworkers
- Create, View, Edit Invoices
- Create, View, Edit vehicles
- Create, View, Edit drivers
- Create, View, Edit schedules
- Create, View, Edit driver trip logs
- Dispatch and monitor performance
- Generate invoices for trips
- Report and bill on transportation performed
- Login Authentication
- View, Edit run sheet
- View, Edit Call Detail (with GIS)
- Change Status: Acknowledge, On Site, Loaded, Dropped, Empty, Cancel, No Load
- Question Request

The system will be deployed to LIFT in parallel with the work requirements and within the restrictions of their current system. LIFT may require additional staffing to ensure ability to properly run both systems.

As the Feature Sets - Phase One are implemented and tested in parallel, training materials for the features will also be developed. The type and extent of materials will be agreed upon by the Stakeholder Consortium.

When the software has been tested and accepted, a one-time cut-over to the new system will be scheduled.

3.1.3 Phase 1 Implementation Estimate

Phase 1	Application Development		Annual Application Hosting	Annual Technical Support	Time Frames	
	Low	High			Low	High
Software Development	$200,000	$600,000	TBD	TBD	16 months	30 months
Mobility Manager Office Suite (feature set 1)						
Transportation Provider Suite (feature set 1)						
Transportation Provider Driver Module						
Training Development	$150,000	$300,000			16 months	30 months
Mobility Manager Office Suite (Feature Set 1)						

Transportation Provider Suite (Feature Set 1)						
Transportation Provider Driver Module (Feature Set 1)						
Total	$350,000	$900,000			16 months	30 months

3.2 Phase 2

Extend Application and Training Materials Development Including Interoperability Functions
The goals of Phase 2 of the implementation pilot is to verify the application features which are internal-facing to agencies; training materials; the performance of interoperability functions meets the needs of the user.

Phase 2 will be implemented in two of the five counties in the Southwest Wisconsin Transit Team (SWTT) area. These two counties will be selected by the Stakeholder Consortium to participate in this phase of implementation. This selection will take place at the beginning of Phase 1 of implementation, as these counties may choose to send staff representation to Pilot Development Team which begins in Phase 1.

3.2.1 Major Tasks

- Build a Deployment Container
- Set up Hosting
- Code-Test-Deploy Iterations of Prioritized Feature Sets
- Develop Training Materials for Deployed Feature Sets
- Complete One-Time Cut-Over

3.2.2 Descriptions of Tasks

With additional counties running the application, the Pilot Development Team will be able to test, provide feedback and improve the interoperability functions.

Training on Feature Sets - Phase One will begin in earnest as additional counties' stakeholder agencies are added to the pilot. Those agencies will receive training and provide feedback on the training materials from Feature Sets - Phase One. Further, training material on Feature Sets - Phase Two will be developed, refined and deployed.

Utilizing an iterative Agile approach, the Pilot Development Team will develop, deploy and test-in-parallel Feature Sets - Phase Two of the MMOS, the TPS, and the TP-DM. Feature Sets - Phase Two will include the remaining functions required for basic operations, including:

- Record/Lookup MCO authorizations
- Add/Remove data sharing permissions
- Generate standard, exception, funding, and custom reports

- Offer/Assign trips to providers
- Accept form data from “no tech” providers
- Accept batch upload data from providers with proprietary software
- Accept ride request form data from riders
- Accept eligibility application form data from riders
- Display regional transportation resources
- Report and bill on transportation performed with strong exception reporting capabilities
- Messaging Interface
- Emergency Notification
- Interoperability Functions

3.2.3 Phase 2 Implementation Estimate

	Application Development				Time Frames	
Phase 2	**Low**	**High**	**Annual Application Hosting**	**Annual Technical Support**	**Low**	**High**
Software Development & Installation	$100,000	$300,000	TBD	TBD	12 months	24 months
Mobility Manager Office Suite (Feature Set 2)						
Transportation Provider Suite (Feature Set 2)						
Transportation Provider Driver Module (Feature Set 2)						
Training & Training Development	$100,000	$200,000			12 months	24 months
Mobility Manager Office Suite (Feature Set 2)						
Transportation Provider Suite (Feature Set 2)						
Transportation Provider Driver Module (Feature Set 2)						
Total	$200,000	$500,000			12 months	24 months

3.3 Phase 3

Extend Application and Training Materials Development including API and public-facing pages
The goals of Phase 3 of the implementation pilot are to complete the API and public-facing portions of the application; API documentation; and training materials for riders, case workers and other users.

3.3.1 Major Tasks

- Accept ride request form data collected from riders
- Accept eligibility application form data collected from riders
- Display regional transportation resources
- Create documentation for the API
- Develop training materials for users
- Collaboratively develop public outreach campaign
- Schedule public training sessions for users

3.3.2 Descriptions of Tasks

Development, testing and rollout of features that operationally support agencies is in its final stages based on ongoing feedback. The next step is to develop and test the public-facing pages of the application. The Stakeholder Consortium will arrange training sessions for these users. A public outreach campaign regarding the new web features will be undertaken by the Stakeholder Consortium.

3.3.3 Phase 3 Implementation Estimate

	Application Development				Time Frames	
Phase 3	Low	High	Annual Application Hosting	Annual Technical Support	Low	High
Software Development & Installation	$100,000	$300,000			9 months	24 months
Mobility Manager Office Suite (Feature Set 3)						
API						
Training and Documentation Development	$75,000	$225,000			9 months	24 months
Mobility Manager Office Suite (Feature Set 3)						
API						
Training Implementation	$75,000	$225,000				
Total	$250,000	$750,000			9 months	24 months

it is difficult to determine the length of time it will take to roll out the system to an 'average' agency or provider. Each will have a unique set of business processes and procedures, so that a different constellation of issues will need to be addressed at each agency. Further, there are a number of hosting

options available. The system itself will be the common denominator, with a different set of functions needed at each site. Consequently, the training needs of each will vary somewhat, and while common training materials will be developed, the actual training delivered will be customized for each participating agency.

The actual process of setting up cloud hosting with deployment of the application and database will pretty straight forward. Initial system setup -- creating users, customizing data permissions, transferring data from previously used database system -- without complications should be able to be completed in less than 100 hours of skilled IT work. Development staff will remain involved, and systems will be run in parallel until all inconsistencies are resolved.

3.4 Phase 4

Develop a Queued Deployment Plan for Remaining Counties
The goals of Phase 4 will be to continue to rollout the application to the remaining counties, in a queued deployment overseen by the Stakeholder Forum.

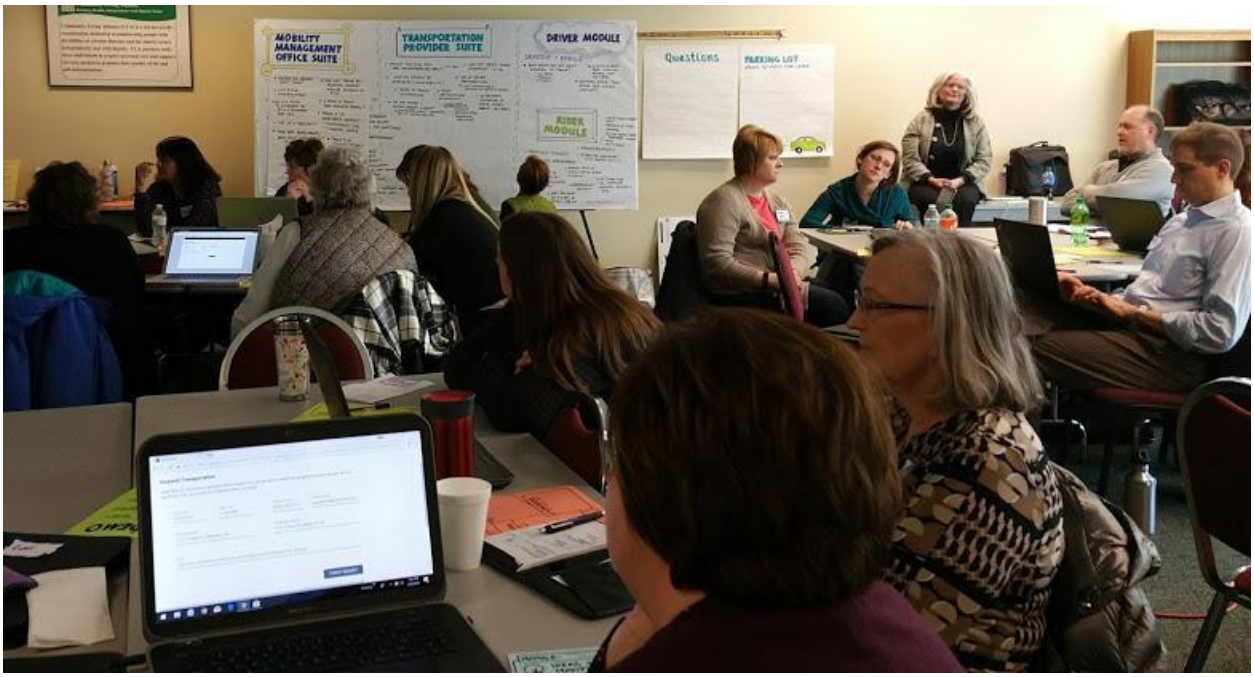
3.4.1 Major Tasks

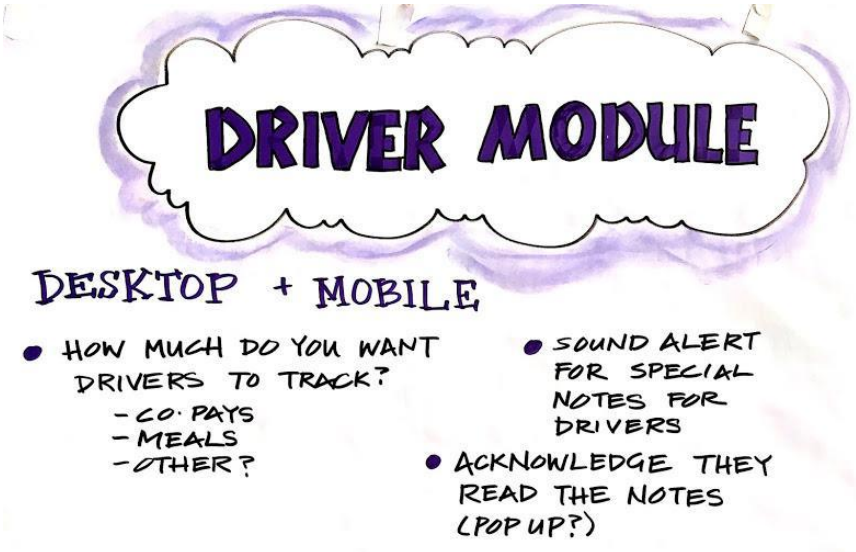
- Establish desired hosting scenario
- Set up new system in parallel with previous system, if any
  - Transfer data from previous system, if applicable
  - Setup system users
  - Customize data permissions
  - Setup funding sources
  - Setup additional system features as necessary
- Check for inconsistent outcomes between the previous system (if any) and the software application
- Perform one-time cut-over

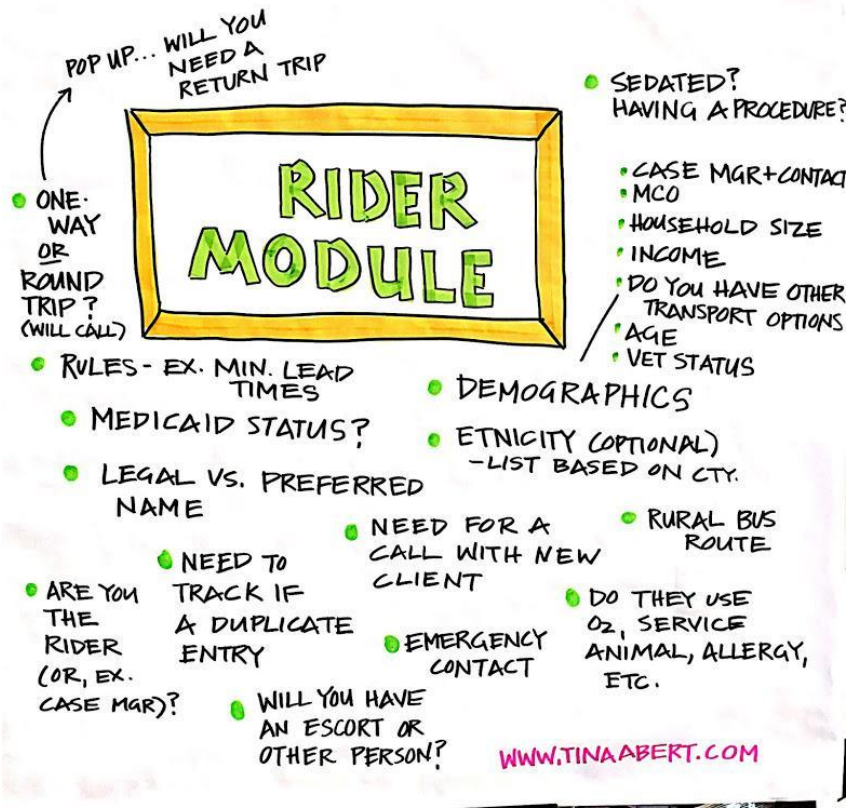
3.4.2 One-time cut-over

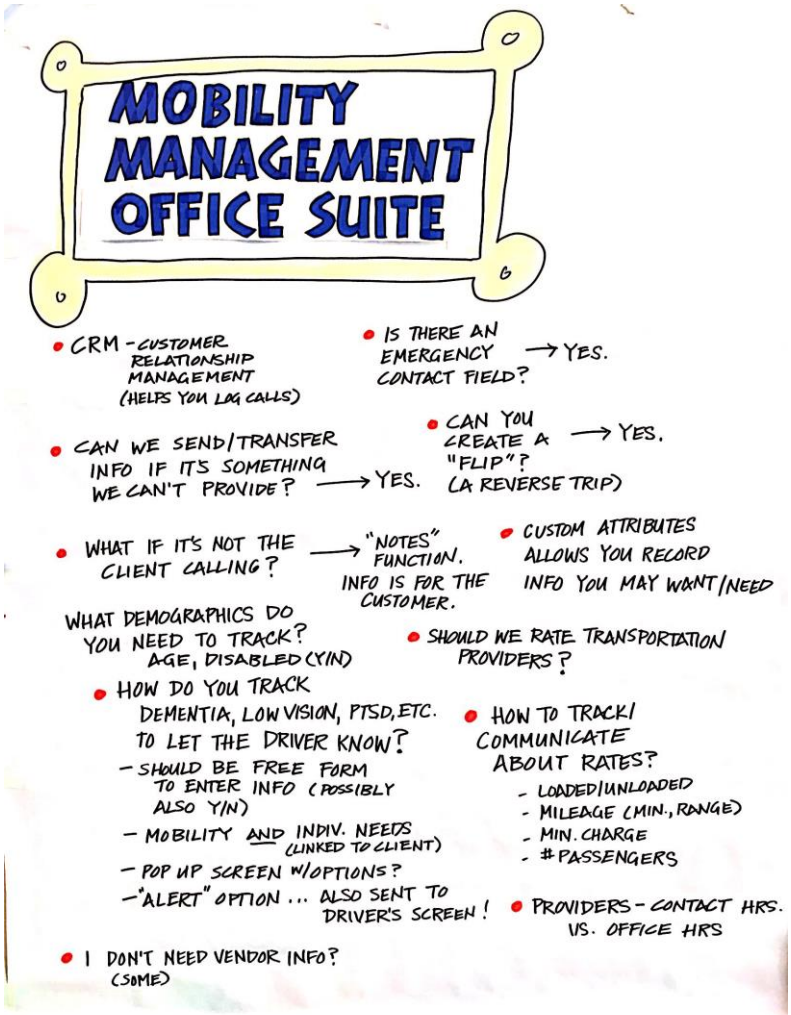
At all implementation sites, when the application has been tested and accepted a one-time cut-over to the new system will be scheduled.

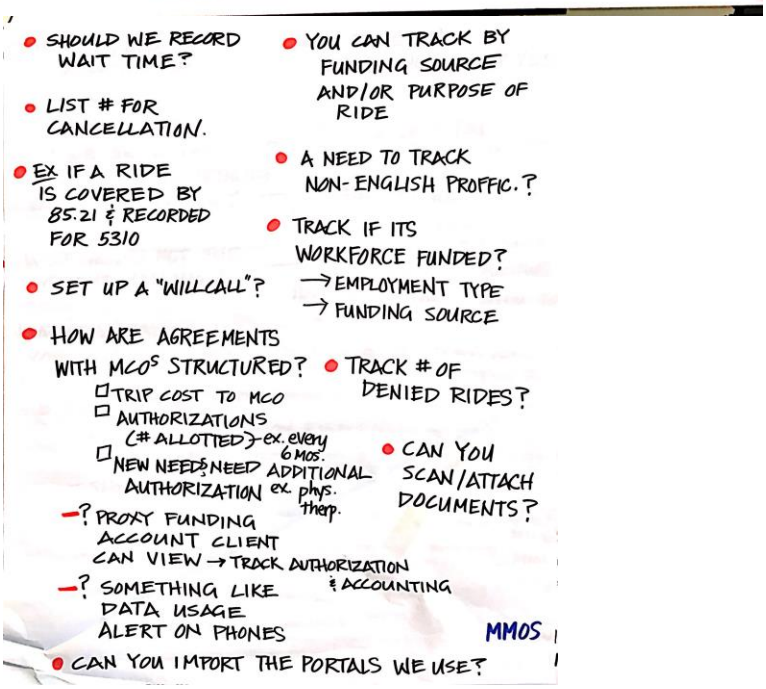
APPENDIX A Stakeholder Consortium


MOBILITY MANAGEMENT OFFICE SUITE
TRANSPORTATION PROVIDER SUITE
DRIVER MODULE
RIDER MODULE
Questions
PARKING LOT


DRIVER MODULE
DESKTOP + MOBILE
• HOW MUCH DO YOU WANT DRIVERS TO TRACK?
- CO-PAYS
- MEALS
- OTHER?
• SOUND ALERT FOR SPECIAL NOTES FOR DRIVERS
• ACKNOWLEDGE THEY READ THE NOTES (POP UP?)


RIDER MODULE
POP UP... WILL YOU NEED A RETURN TRIP
ONE-WAY OR ROUND TRIP? (WILL CALL)
SEDATED? HAVING A PROCEDURE?
CASE MGR+CONTACT
MCO
HOUSEHOLD SIZE
INCOME
DO YOU HAVE OTHER TRANSPORT OPTIONS
AGE
VET STATUS
RULES - EX. MIN. LEAD TIMES
MEDICAID STATUS?
LEGAL VS. PREFERRED NAME
DEMOGRAPHICS
ETNICITY (OPTIONAL) -LIST BASED ON CTY.
RURAL BUS ROUTE
NEED FOR A CALL WITH NEW CLIENT
NEED TO TRACK IF A DUPLICATE ENTRY
ARE YOU THE RIDER (OR, EX. CASE MGR)?
EMERGENCY CONTACT
DO THEY USE O2, SERVICE ANIMAL, ALLERGY, ETC.
WILL YOU HAVE AN ESCORT OR OTHER PERSON?
WWW.TINAABERT.COM


MOBILITY MANAGEMENT OFFICE SUITE
CRM - CUSTOMER RELATIONSHIP MANAGEMENT (HELPS YOU LOG CALLS)
IS THERE AN EMERGENCY CONTACT FIELD? → YES.
CAN WE SEND/TRANSFER INFO IF ITS SOMETHING WE CAN'T PROVIDE? → YES.
CAN YOU CREATE A "FLIP"? (A REVERSE TRIP) → YES.
WHAT IF IT'S NOT THE CLIENT CALLING? → "NOTES" FUNCTION. INFO IS FOR THE CUSTOMER.
CUSTOM ATTRIBUTES ALLOWS YOU RECORD INFO YOU MAY WANT/NEED
WHAT DEMOGRAPHICS DO YOU NEED TO TRACK? AGE, DISABLED (Y/N)
SHOULD WE RATE TRANSPORTATION PROVIDERS?
HOW DO YOU TRACK DEMENTIA, LOW VISION, PTSD, ETC. TO LET THE DRIVER KNOW?
- SHOULD BE FREE FORM TO ENTER INFO (POSSIBLY ALSO Y/N)
- MOBILITY AND INDIV. NEEDS (LINKED TO CLIENT)
- POP UP SCREEN W/OPTIONS?
- "ALERT" OPTION ... ALSO SENT TO DRIVER'S SCREEN!
HOW TO TRACK/ COMMUNICATE ABOUT RATES?
- LOADED/UNLOADED
- MILEAGE (MIN., RANGE)
- MIN. CHARGE
- # PASSENGERS
PROVIDERS - CONTACT HRS. VS. OFFICE HRS
I DON'T NEED VENDOR INFO? (SOME)


SHOULD WE RECORD WAIT TIME?
LIST # FOR CANCELLATION.
EX IF A RIDE IS COVERED BY 85.21 & RECORDED FOR 5310
SET UP A "WILLCALL"?
HOW ARE AGREEMENTS WITH MCOS STRUCTURED?
TRIP COST TO MCO
AUTHORIZATIONS (# ALLOTTED) - ex. every 6 mos.
NEW NEED & NEED ADDITIONAL AUTHORIZATION ex. phys. therp.
? PROXY FUNDING ACCOUNT CLIENT CAN VIEW → TRACK AUTHORIZATION & ACCOUNTING
? SOMETHING LIKE DATA USAGE ALERT ON PHONES
CAN YOU IMPORT THE PORTALS WE USE?
YOU CAN TRACK BY FUNDING SOURCE AND/OR PURPOSE OF RIDE
A NEED TO TRACK NON-ENGLISH PROFFIC.?
TRACK IF ITS WORKFORCE FUNDED?
→ EMPLOYMENT TYPE
→ FUNDING SOURCE
TRACK # OF DENIED RIDES?
CAN YOU SCAN/ATTACH DOCUMENTS?
MMOS

DELEGATED ACCESS

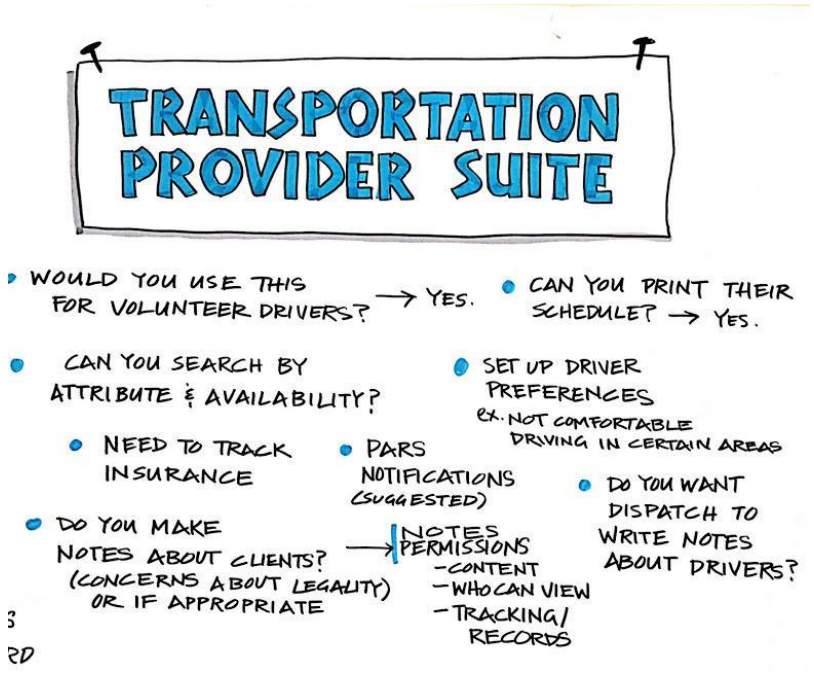
- HOW DO YOU GET EVERYBODY ON BOARD?
  → THEY MAY BE USING DIFF. MODULES BASED ON WHO THEY ARE
- RIDE REQUEST VS. ORDER? → ALWAYS A REQUEST
- WHAT STATE DOES A RIDE REQUEST BEGIN IN, BASED ON WHO PLACES IT?
- SHOULD AGREEMENTS W/MCO's, PROVIDERS, ETC. BE SHARED AMONG COUNTIES/ORGS?
  → CREATING PERMISSION SETTINGS
  → COLLUSION?
- MIN. LEAD TIMES VARY
  → YOU CAN SET CUSTOMIZED FIELDS (EX. LIKE A BASIC ACCOUNTING SYST.)
  ? VETS HELPING VETS IS A REPEATED, APPROVED REQUEST
- EXPORTING?
  → YOU CAN SELECT FIELDS

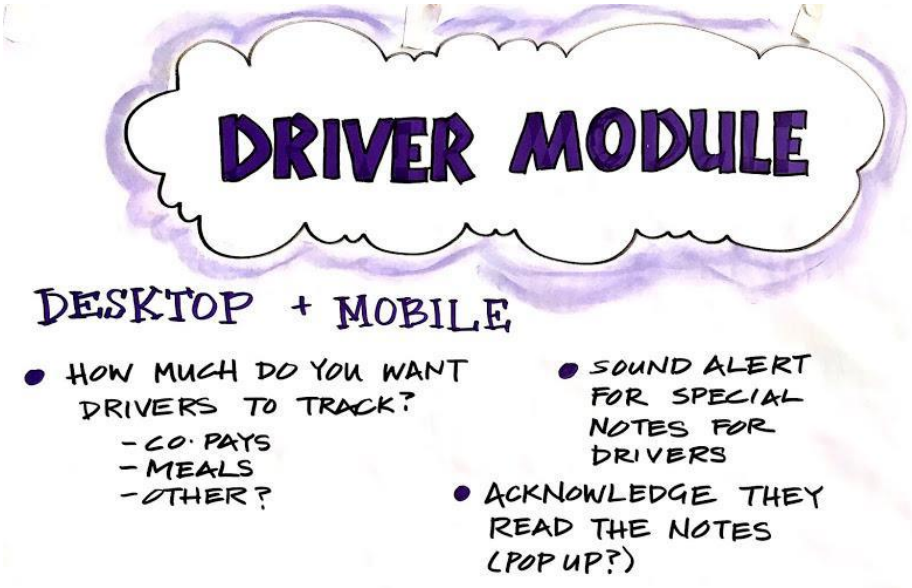
MMOS

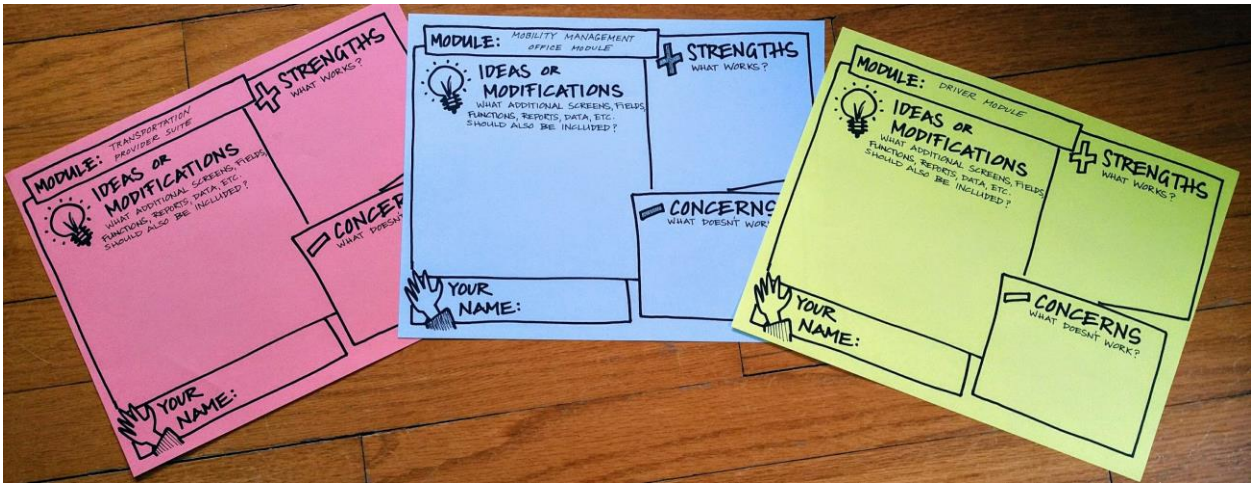
- GROUP TRIP CAN HAVE MULT. PURPOSES
  - IDENTIFY BUS # (SET UP IN VENDOR MODULE)
  - TRACK EACH LEG FOR EACH RIDER ON A GROUP RIDER
  - NEED TO RECORD NAMES?
- FUNDING
  - ADD BUS PASSES
- IS THERE A WAY TO TRACK 'NO SHOW'?
  → YES.
  NEW, ASSIGNED, LOADED, CANCELLED, COMPLETED
  ↑ *TRACK WHY *CANCEL ALL LEGS
- FUNDING — SOME YOU CAN CHARGE FOR NO SHOWS, BUT NOT ALL
  - A DROP DOWN W/EXCEPTION REPORTS
- GROUP TRIP VS. A BUNDLE OF INDIV. TRIPS

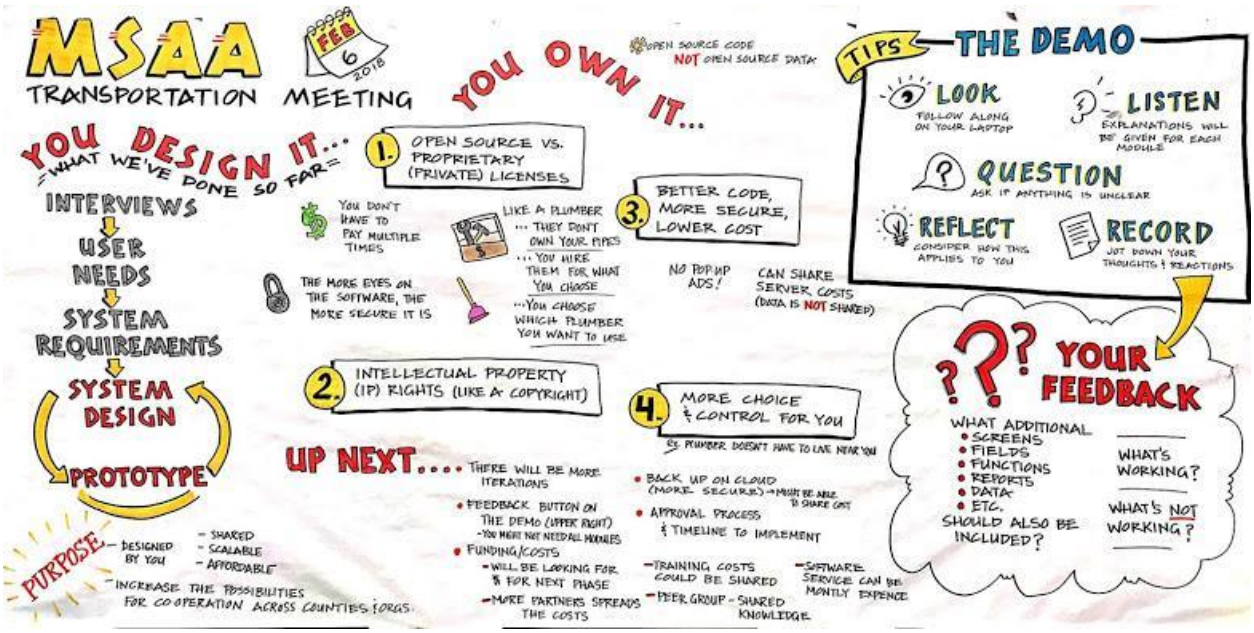
  EX. GROUP GOES TO MONROE, BUT THERE MAY BE MULTIPLE STOPS, NOT KNOWN IN ADVANCE
  → GROUP MAY NOT BE ENTERED AT THE SAME TIME (BUILD A BUS TRIP) ex. ZIMBRICK
- DOES MILEAGE REFLECT THE ROUTE?
  - EDITABLE ROUTE TRACKING
  - TRACK DRIVER GPS?
    *NEED BROAD BAND
  - HEAT MAPS, LIFE 360, ETC (BE AWARE OF BATTERY)
- CAN YOU EDIT/HIDE LOCATIONS WHEN NAMES CHANGE? EX. ST. MARYS → SSM

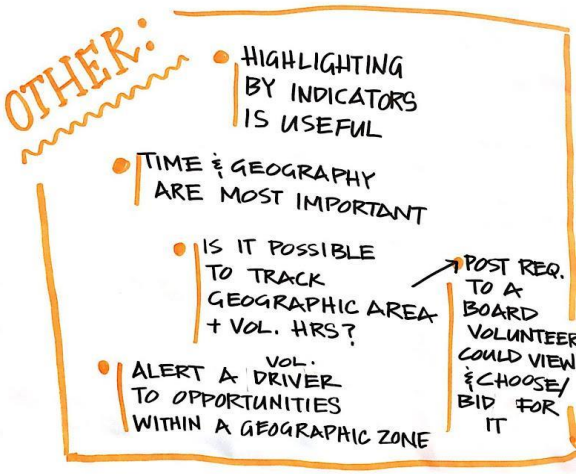
MMOS


TRANSPORTATION PROVIDER SUITE
WOULD YOU USE THIS FOR VOLUNTEER DRIVERS? → YES.
CAN YOU PRINT THEIR SCHEDULE? → YES.
CAN YOU SEARCH BY ATTRIBUTE & AVAILABILITY?
SET UP DRIVER PREFERENCES
ex. NOT COMFORTABLE DRIVING IN CERTAIN AREAS
NEED TO TRACK INSURANCE
PARS NOTIFICATIONS (SUGGESTED)
DO YOU WANT DISPATCH TO WRITE NOTES ABOUT DRIVERS?
DO YOU MAKE NOTES ABOUT CLIENTS? (CONCERNS ABOUT LEGALITY) OR IF APPROPRIATE
→ NOTES PERMISSIONS
-CONTENT
-WHO CAN VIEW
-TRACKING/ RECORDS


DRIVER MODULE
DESKTOP + MOBILE
HOW MUCH DO YOU WANT DRIVERS TO TRACK?
- CO-PAYS
- MEALS
- OTHER?
SOUND ALERT FOR SPECIAL NOTES FOR DRIVERS
ACKNOWLEDGE THEY READ THE NOTES (POP UP?)


MODULE: TRANSPORTATION PROVIDER SUITE
IDEAS OR MODIFICATIONS
WHAT ADDITIONAL SCREENS, FIELDS, FUNCTIONS, REPORTS, DATA, ETC. SHOULD ALSO BE INCLUDED?
STRENGTHS
WHAT WORKS?
YOUR NAME:
MODULE: MOBILITY MANAGEMENT OFFICE MODULE
IDEAS OR MODIFICATIONS
WHAT ADDITIONAL SCREENS, FIELDS, FUNCTIONS, REPORTS, DATA, ETC. SHOULD ALSO BE INCLUDED?
STRENGTHS
WHAT WORKS?
YOUR NAME:
MODULE: DRIVER MODULE
IDEAS OR MODIFICATIONS
WHAT ADDITIONAL SCREENS, FIELDS, FUNCTIONS, REPORTS, DATA, ETC. SHOULD ALSO BE INCLUDED?
STRENGTHS
WHAT WORKS?
CONCERNS
WHAT DOESN'T WORK?
YOUR NAME:


MSAA
TRANSPORTATION MEETING
FEB 6 2018
YOU OWN IT...
OPEN SOURCE CODE NOT OPEN SOURCE DATA
YOU DESIGN IT...
=WHAT WE'VE DONE SO FAR=
INTERVIEWS
USER NEEDS
SYSTEM REQUIREMENTS
SYSTEM DESIGN
PROTOTYPE
PURPOSE
- DESIGNED BY YOU
- SHARED
- SCALABLE
- AFFORDABLE
-INCREASE THE POSSIBILITIES FOR CO-OPERATION ACROSS COUNTIES/ORGS
1. OPEN SOURCE VS. PROPRIETARY (PRIVATE) LICENSES
You don't have to pay multiple times
Like a plumber ... they don't own your pipes ... you hire them for what you choose ... you choose which plumber you want to use
The more eyes on the software, the more secure it is
2. INTELLECTUAL PROPERTY (IP) RIGHTS (LIKE A COPYRIGHT)
3. BETTER CODE, MORE SECURE, LOWER COST
No pop-up ads!
Can share server costs (data is NOT shared)
4. MORE CHOICE & CONTROL FOR YOU
Ex. Plumber doesn't have to live near you
UP NEXT....
- There will be more iterations
- Feedback button on the demo (upper right) -You might not need all modules
- Funding/costs
-Will be looking for $ for next phase
-More partners spreads the costs
- Back up on cloud (more secure) → might be able to share cost
- Approval process & timeline to implement
-Training costs could be shared
-Software service can be montly expence
-Peer group - shared knowledge
TIPS
THE DEMO
LOOK
Follow along on your laptop
LISTEN
Explanations will be given for each module
QUESTION
Ask if anything is unclear
REFLECT
Consider how this applies to you
RECORD
Jot down your thoughts & reactions
??? YOUR FEEDBACK
What additional
- screens
- fields
- functions
- reports
- data
- etc.
should also be included?
What's working?
What's NOT working?


OTHER:
- Highlighting by indicators is useful
- Time & geography are most important
- Is it possible to track geographic area + vol. hrs? → Post req. to a board volunteer could view & choose/bid for it
- Alert a vol. driver to opportunities within a geographic zone