5. IMPLEMENTATION & EVALUATION

In Chapter 1 of this Plan, a general concept of the planning process was depicted showing each of the steps from plan creation, to implementation, to performance measurement, then using feedback to inform future plan development. This final chapter will focus on some of the implementation actions that can be taken in order to successfully accomplish the strategies described in Chapter 3. This will be followed by a brief explanation of the role that performance measures play in monitoring whether a plan is being successfully implemented.

5.1. How will this Plan be implemented?

While this document outlines strategies to help achieve the vision for public transit in Iowa, the implementation of the Plan requires considering "how" the various strategies will be executed. In order to help guide the implementation of the Plan, three different tools will be utilized together to create a framework for successful implementation.

It is worth restating the vision statement that was described earlier in Chapter 3:

> "A public transit system that supports the physical, social, and economic wellbeing of Iowans, provides enhanced mobility and travel choices, and accommodates the unique needs of dependent and choice riders through rightsized solutions."

This broad statement serves as general guidance for the direction and intention of this Plan, with strategies and action items to help fulfill the vision.

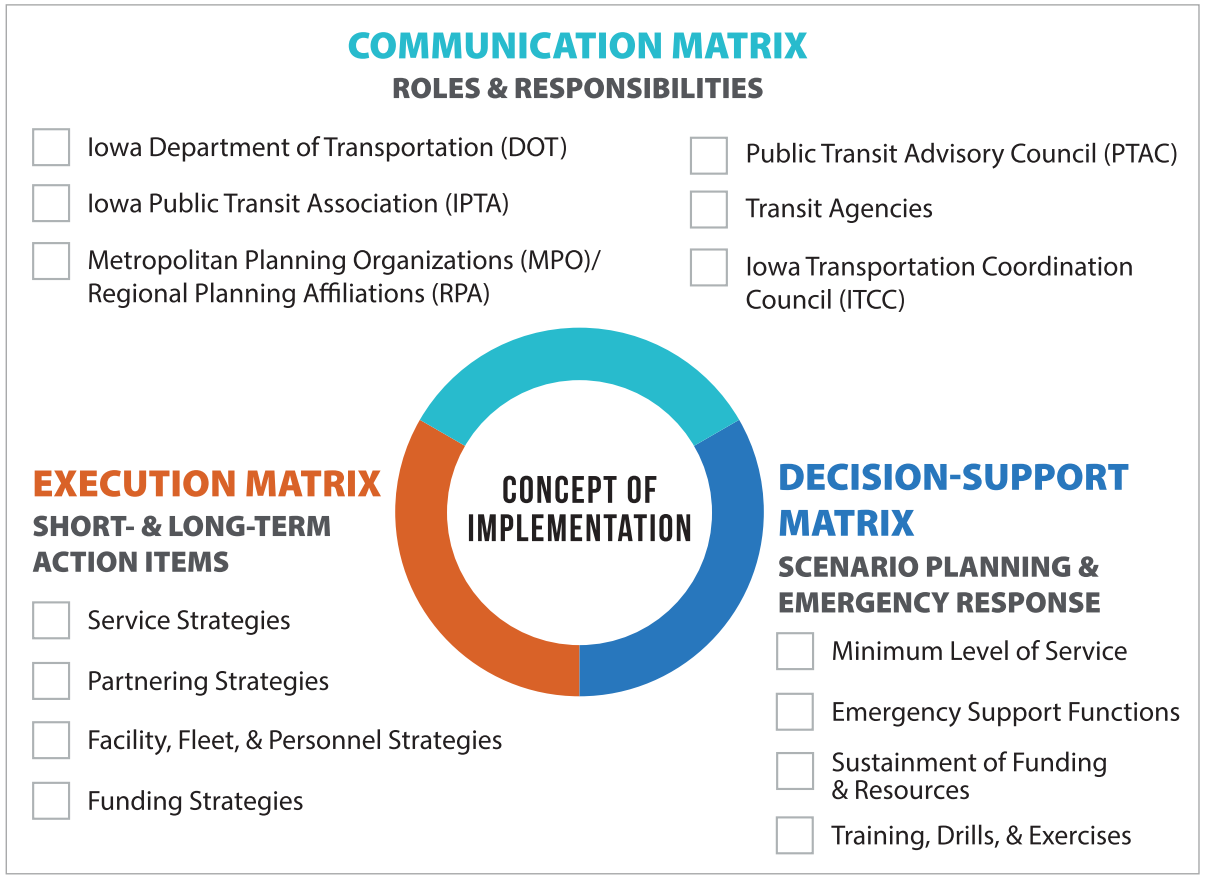
Concept of Implementation

This Plan will meet the stated intent of the vision statement by leveraging three distinct components in combination. A generalized diagram of this concept is depicted in Figure 5.1.

Concept Elements:

- **Communication Matrix:** the binding agent of this implementation, an array of internal and external stakeholder groups to assist with outreach, strategy implementation, and indirect support for contingency transit operations.
- **Execution Matrix:** listing of all strategies with key partners for implementing them, as well as approximate time periods that strategies are expected to be fully implemented by.
- **Decision-Support Matrix:** representation of "what ifs" for contingency operations, emergency support, and the maintenance of a minimum level of essential transit service for the public transit system.

Figure 5.1: Diagram depicting the concept of implementation



Source: Iowa DOT

Communication Matrix

The communication matrix represents a consolidated listing of key stakeholders who will help implement the strategies and action items of this Plan. Additionally, these organizations will have their own unique communication channels that can help with outreach and be utilized to gather valuable feedback regarding interests that are impacted by or overlap with public transit.

Figure 5.2 shows the different communication channels and stakeholders that will be utilized for strategy implementation. It lists typical groups, activities or events, the primary organizer of the event, and typical members or attendees. The frequency represents how often the group generally meets. The stated purpose attempts to capture the general reason why the communication channel exists, as well as to specify what aspects of the Plan's implementation will be discussed. In most cases, the execution matrix will be the primary agenda item from this Plan's point of view as it directly relates to the implementation of the identified strategies and action items. The decision-support matrix has a much narrower focus and has a correspondingly limited audience.

Figure 5.2: Communication matrix

Communication Type	**Participants** *Who are the primary organizer and members?*	**Frequency** *How often does it occur?*	**Purpose** *What is its purpose and how does it relate to implementation of the Plan?*
Public Transit Advisory Council (PTAC)	**Primary:** Public Transit Bureau **Members:** Transit Agency representatives	Quarterly	Members represent Iowa public transit agencies from large urban, small urban, and regional transit systems in order to provide guidance and recommendations to the Iowa DOT Public Transit Bureau regarding public transit funding and policy issues. **Relationship to the Plan:** Coordinate passenger strategy implementation (see *execution matrix*) across transit agencies and review expectations for maintaining minimum level of essential transit service (see *decision-support matrix*).
Iowa Transportation Coordination Council (ITCC)	**Primary:** Public Transit Bureau **Members:** IDPH Transit Agency MPO/RPA Veteran Affairs Refugee Services Epilepsy Foundation AARP American Cancer Society	Every other month	Discusses issues such as mobility management, accessibility of transportation, State Transit Assistance Special Project applications pertaining to coordination, and the encouragement of state and local agencies' involvement in the passenger transportation planning process. **Relationship to the Plan**: Coordinate passenger strategy implementation (see *execution matrix*) across external stakeholder groups.

Communication Type	**Participants** *Who are the primary organizer and members?*	**Frequency** *How often does it occur?*	**Purpose** *What is its purpose and how does it relate to implementation of the Plan?*
Iowa Public Transit Association (IPTA)	**Primary:** IPTA Executive Director **Members:** Transit Agencies Public Transit Bureau Passenger Planner Vendors and other interested parties	Three times per year	Trade organization of Iowa's 35 public transit agencies, advocating for public transit interests and hosting multiple conferences each year to highlight public transit trends, hold discussion on public transit challenges, and champion legislative priorities related to public transit topics. **Relationship to the Plan:** Coordinate passenger strategy implementation and legislative priorities (see *execution matrix*) across transit agencies.
Joint MPO/RPA Quarterly Meeting	**Primary:** MPO/RPA Coordinator **Members:** All MPOs/RPAs Planning, Programming, and Modal Division	Quarterly	Provide updates on multimodal transportation planning activities, including coordinated passenger transportation planning programs. **Relationship to the Plan:** Coordinate passenger strategy implementation (see *execution matrix*) across regions.
Transportation Advisory Group (TAG) meetings and Passenger Transportation Plan (PTP) development	**Primary:** MPOs/RPAs Transit Agencies Human Service Agencies **Members:** Passenger Planner Public Transit Bureau District Planners	TAG – Semi-annual (or more) PTP – Quinquennial	TAGs involve members from public transit agencies, human service agencies, MPOs/RPAs, and interested agencies and residents throughout Iowa. PTPs are updated by MPOs and RPAs at least every five years and are designed to promote joint, coordinated passenger transportation planning programs that further the development of the local and regional public transportation systems. TAGs serve as a forum to discuss these issues on a regular basis, and PTPs serve as documentation of the region's passenger transportation status, challenges, and needs. **Relationship to the Plan:** Opportunity for interregional coordination of transit services, implementation of intraregional passenger transportation services, implementation of other local-focused strategies and action items from the Plan (see *execution matrix*).
Planning, Programming, & Modal Division Geospatial Information Systems Meeting (PPM-GIS)	**Primary:** Cartography & Traffic Team **Members:** Public Transit Bureau Rail Transportation Bureau Aviation Bureau Systems Planning Bureau	Every other month	Coordination of GIS and data management activities in the PPM Division. **Relationship to the Plan:** Source of technology, data, and GIS support for the Division. Supporting effort for transit plan strategy implementation relating to data and technology needs (see *execution matrix*).

Communication Type	Participants *Who are the primary organizer and members?*	Frequency *How often does it occur?*	Purpose *What is its purpose and how does it relate to implementation of the Plan?*
Mobility Synchronization *(proposed)*	**Primary:** Passenger Planner **Members:** Public Transit Bureau Rail Transportation Bureau Aviation Bureau Systems Planning Bureau Bicycle & Pedestrian Coordinator Driver and Identification Services Bureau Research and Analytics Bureau	Quarterly	Iowa DOT coordination between modes of transportation that involve passenger mobility activities. **Relationship to the Plan:** Coordinate passenger strategy implementation (see *execution matrix*) across modal plans.
Iowa Mobility Managers Network (IMMN)	**Primary:** Statewide Mobility Manager **Members:** Mobility Managers	Quarterly	Manages and delivers coordinated transportation services to customers including low-income individuals, older adults, and persons with disabilities. Bridges the gap between transportation and human service agencies by locating the appropriate transit option within the community. Funded with federal funds through the Iowa DOT and local matching funds, coordinators must have a transit agency affiliation, but can be housed within a wide variety of locations, such as Area Agencies on Aging, Community Action Programs, and regional transit agencies. **Relationship to the Plan:** Coordinate passenger strategy implementation (see *execution matrix*) within and across multiple regions.
Iowa DOT Emergency Management *(proposed)*	**Primary:** Transportation Systems Management and Operations (TSMO) Team **Members:** Public Transit Bureau District Personnel	Annually	Tabletop exercises, response plans, and rehearsals used to clarify roles and to identify additional emergency management mitigation and preparedness needs. **Relationship to the Plan:** Rehearse response to maintain minimum level of essential transit service (see *decision-support matrix*) during natural disasters and other critical or disruptive events.

Communication Type	**Participants** *Who are the primary organizer and members?*	**Frequency** *How often does it occur?*	**Purpose** *What is its purpose and how does it relate to implementation of the Plan?*
Iowa Workforce Development (IWD)	**Members:** Future Ready Iowa Home Base Iowa American Job Center Workforce Services	As needed	State agency that provides employment services for individual job seekers through the IowaWORKS partnership. Connects workers to opportunities and employers to workforce solutions. Administering labor services, workers' compensation, labor market information, and unemployment insurance services. Maintains a statewide delivery system of 15 regional, 4 satellite, and 8 expansion offices to provide services to Iowans in communities demonstrating need. **Relationship to the Plan:** Coordinate passenger strategy implementation (see *execution matrix*) between employers and employees.
Intercity Transit Providers	**Members:** Greyhound Lines Jefferson Lines Dodger Area Rapid Transit (DART) Burlington Trailways	As needed	Intercity transit services are an extremely valuable transportation resource for Iowa's residents who do not drive or choose not to drive. This service allows them to reach destinations across the country. Intercity services include stops at non-urbanized locations and make meaningful connections to nationwide networks. **Relationship to the Plan:** Interregional coordination of transit services and passenger strategy implementation (see *execution matrix*) statewide for intercity, interregional, and interstate travel.
Local Jurisdictions	**Members:** Counties Cities	As needed	Governmental or administrative units smaller than states and regions; mainly consisting of but not limited to counties and cities. **Relationship to the Plan:** Localized coordination of transit services and passenger strategy implementation (see *execution matrix*).

Source: Iowa DOT

Execution Matrix

The execution matrix is a tool designed to track the execution of the Plan by showing key strategies and action items in a matrix format. In some ways, this product is similar to a very high-level version of a project management Gantt chart. The primary difference between this execution matrix and a Gantt chart is that individual subtasks have not yet been identified for each strategy. These smaller subtasks will represent the specific actions to be taken by appropriate entities to help implement the strategies.

During the development of the Plan, various strategies were identified by federal, state, and local stakeholders, as well as members of the public. These were then validated and refined by key stakeholders, and public feedback was provided on the strategies as part of the public

survey. These items collectively represent the actions that will be taken and implemented through this Plan in order to meet the intent of the vision statement for public transit in Iowa.

These action items can be further balanced by weighing the level of importance placed on them by stakeholders and the public against the finite resources available to accomplish them. For the purposes of this plan, examples of resources may include available funding, staff capacity and capability, or political capital needed to pass enabling legislation.

The execution matrix in Figure 5.3 lists the strategies described in Chapter 3. Estimated completion time periods are shown for each item indicating when it is expected to be implemented given resource constraints. Estimated timeframes include the short-term, which is the period between Plan publication and 2030, and the long-term, which is the period after 2030 until the long-term planning horizon of 2050. There are some items that overlap between short-term and long-term indicating that, while the strategy is being considered for implantation sooner rather than later, the timeline is flexible or ongoing.

Figure 5.3: Execution matrix

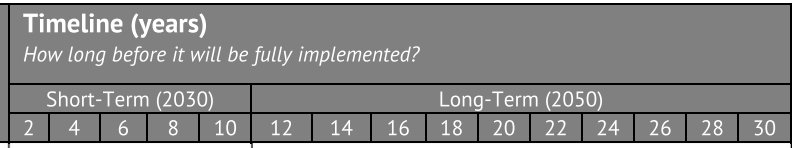
Goal Area	#	Strategy *What must be implemented?*	Key Partners *Who could help implement?*	Timeline (years) *How long before it will be fully implemented?*
				Short-Term (2030): 2 4 6 8 10 / Long-Term (2050): 12 14 16 18 20 22 24 26 28 30
Service	1-1	Examine the effects of offering fare-free statewide bus service.	Public Transit Bureau	
	1-2	Examine bus service hours for people who work nights and weekends.	Public Transit Bureau Transit Agencies	
	1-3	Prioritize funding applications for communities that improve transit service or access.	Public Transit Bureau ITCC	
	1-4	Examine the effects of creating more urban transit services in areas that are currently covered by regional transit services.	Public Transit Bureau Systems Planning Bureau MPOs/RPAs Transit Agencies	
	1-5	Continue existing services and establish new inter-regional services along commuter routes (such as Interstate 380 between Cedar Rapids and Iowa City, Interstate 35 between Ames and Des Moines, and Interstate 74 between Davenport and Illinois).	Transit Agencies MPOs/RPAs	

Goal Area	#	Strategy *What must be implemented?*	Key Partners *Who could help implement?*	Timeline (years) *How long before it will be fully implemented?*
Service	1-6	Start a subscription price service that works across all bus services in Iowa and includes bikes, scooter sharing, and parking facilities.	Transit Agencies IMMN Local Jurisdictions	Long-Term (2050)
	1-7	Enable all buses and transit agencies in the state to accept digital fares or electronic payment formats, while still allowing for cash payments.	Public Transit Bureau Transit Agencies PTAC	Short-Term (2030)
	1-8	Improve accessibility of all transit information, service notifications, and bus route information to ensure they are easy to understand for older adults, multilingual riders, and riders with audio, visual, or cognitive impairments.	TAGs ITCC IMMN	Short-Term (2030)
	1-9	Establish standardized data collection and reporting requirements to better understand ridership.	PPM-GIS Public Transit Bureau	Short-Term (2030) to Long-Term (2050)
	1-10	Study how to most effectively implement intercity transit bus systems in Iowa.	Public Transit Bureau Research and Analytics Bureau Intercity Bus Providers	Short-Term (2030)
	1-11	Study and define a statewide minimum level of essential transit service necessary to meet critical needs, particularly in the event of severe and sustained disruptions to demand or service.	Public Transit Bureau Research and Analytics Bureau Transit Agencies PTAC Intercity Bus Providers Emergency Management	Short-Term (2030)
Partnering	2-1	Improve bus transfers between regions and counties in order to support longer and more efficient trips across the state.	Transit Agencies MPOs/RPAs	Short-Term (2030) to Long-Term (2050)
	2-2	Partner with transportation network companies (such as taxis, Uber, Lyft) in order to support city bus routes and provide more transportation options.	Transit Agencies ITCC IPTA	Short-Term (2030) to Long-Term (2050)

Short-Term (2030): 2 4 6 8 10
Long-Term (2050): 12 14 16 18 20 22 24 26 28 30

Goal Area	#	Strategy *What must be implemented?*	Key Partners *Who could help implement?*	Timeline (years) *How long before it will be fully implemented?*
				Short-Term (2030): 2, 4, 6, 8, 10 — Long-Term (2050): 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
Partnering	2-3	Improve workforce development by partnering with businesses to help employees get to work.	IWD Transit Agencies Public Transit Bureau	
	2-4	Partner with non-profit organizations (such as American Cancer Society, Veteran's Affairs, and hospitals) to help people get to their medical appointments on time.	ITCC IMMN	
	2-5	Partner with other government organizations to increase the number of transportation options for traveling long distances.	Rail Transportation Bureau Aviation Bureau Public Transit Bureau Intercity Bus Providers Transit Agencies MPOs/RPAs	
	2-6	Work with businesses to create transportation options for their employees by offering subsides, bus passes, or incentives such as tax breaks.	IWD Transit Agencies Public Transit Bureau	
	2-7	Improve sidewalks and connecting infrastructure by working with state agencies, local government, and private organizations to improve access to bus stops and transit services.	Local Jurisdictions MPOs/RPAs	
Facility, Fleet, & Personnel	3-1	Develop a rightsizing strategy for transit agency bus fleets to decrease costs and better match vehicle sizes to the number of people taking the bus.	Public Transit Bureau PTAC	
	3-2	Decrease fuel costs for transit agencies by adopting electric, hybrid, or flex-fuel efficient vehicles.	Public Transit Bureau Transit Agencies PTAC MPOs/RPAs	
	3-3	Prioritize transit facilities that are evaluated as being in marginal or poor condition for reconstruction or repair.	Public Transit Bureau Transit Agencies MPOs/RPAs	

Goal Area	#	Strategy *What must be implemented?*	Key Partners *Who could help implement?*	Timeline (years) *How long before it will be fully implemented?*
Facility, Fleet, & Personnel	3-4	Save costs by encouraging transit agencies and local governments to share facilities and staff.	Transit Agencies Local Jurisdictions	
	3-5	Address the bus driver shortage by targeting non-traditional candidates to expand the pool of potential applicants.	IWD Transit Agencies	
	3-6	Increase training for bus drivers to better serve mobility, hearing or visually impaired riders, children, older adults, immigrant, and refugee populations.	ITCC IMMN Transit Agencies	
	3-7	Identify minimum technology needs for all transit agencies and develop a technology implementation plan.	Public Transit Bureau Research and Analytics Bureau PTAC PPM-GIS	
	3-8	Update the Park and Ride System Plan to determine ideal locations for carpooling and ridesharing to support commuting activities.	Systems Planning Bureau Public Transit Bureau Local Jurisdictions MPOs/RPAs	
	3-9	Improve the coordination of transportation services between transit agencies and other transportation providers by promoting and hiring mobility manager positions to provide statewide coverage.	IMMN Transit Agencies ITCC MPOs/RPAs	
Funding	4-1	Decrease maintenance costs by focusing resources on replacing transit vehicles that are beyond their useful life.	Public Transit Bureau Transit Agencies IPTA	
	4-2	Examine alternative ways of funding public transit that do not rely only on existing federal and state sources.	Public Transit Bureau Transit Agencies IPTA PTAC	



Goal Area	#	Strategy *What must be implemented?*	Key Partners *Who could help implement?*	Timeline (years) *How long before it will be fully implemented?*														
				Short-Term (2030)					Long-Term (2050)									
				2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
Funding	4-3	Conduct a benefit-cost analysis or economic impact study of transit services and projects in order to measure the impact and overall benefit to social welfare.	Public Transit Bureau Research and Analytics Bureau IPTA															

Source: Iowa DOT

Decision-Support Matrix

Long-range plans attempt to forecast needs into the future – the year 2050 in the case of this Plan. However, it is impossible to anticipate sporadic or random occurrences of disruptive events that may negatively impact public transit services. A clear example of this occurred in early 2020 during the development of this Plan, with an extreme disruption to transit service and everyday life due to the COVID-19 pandemic. Once such an event occurs, there is usually very little time to draft a plan on how to mitigate those disruptions. For this reason, it is beneficial to draft a set of anticipated decisions that will need to be made in order to react to such unforeseen disruptions. These decision-points can then be communicated to all involved parties and rehearsed, thus minimizing the reaction and response time when an actual disruption occurs.

The intent of this section is not to define a fully developed decision-support matrix in order to address these disruption mitigation measures. In fact, it is impossible to do so until stakeholders define what constitutes a "minimum level of essential transit service." Once this is defined, then a series of supporting decisions can be drafted that will help determine appropriate responses for ensuring a minimum level of essential transit service can be maintained.

Recognizing the need to address this for the future, a strategy to "Study and define a statewide minimum level of essential transit service necessary to meet critical needs, particularly in the event of severe and sustained disruptions to demand or service" was added to this Plan. This will be among one of the first action items that needs to be addressed before any support decision points can be formulated and a decision-support matrix drafted.

Once a minimum level of essential transit service has been defined, the remainder of the decision-support matrix can be created. Through past experiences and expected outcomes, an initial list of probable decisions can be generated with prepared action steps to respond to them. Each of these probable decisions will have specific criteria or conditions that will function as a trigger, resulting in the decision having to be made. The resulting decision-support matrix could then be validated through tabletop exercises, rehearsals, and drills organized by emergency management or other similar organizations. Lessons learned could be captured through an after-action report that could then be used to update or refine the decision-support matrix.

Once a decision-support matrix is finalized, it could be distributed to all appropriate stakeholders, including transit agencies, the State DOT, MPOs/RPAs, and county and city administrations. This would ensure that everyone is aware of and will expect certain actions to be taken given particular criteria.

5.2. How will Plan implementation be evaluated?

Performance measures support Plan implementation as a way to monitor progress toward achieving the Plan's vision. Existing system-level metrics are discussed, as these can help with understanding the overall health and status of the system. Additionally, ways the Plan itself will be monitored are discussed.

System Performance Measures

In order to assess the overall relative health of the public transit system in Iowa, the Public Transit Bureau tracks metrics related to performance, mileage, and condition. Iowa DOT has also recently implemented its Americans with Disabilities Act (ADA) Transition Plan[22] in order to bring public facilities within Iowa DOT right-of-way into compliance with federal ADA regulations. Performance measures for ADA compliance and the means of monitoring it are still being devised and thus are not shown with the other system performance measures at this time. It should be noted that, as of the publication of this Plan, the Iowa DOT is currently reexamining its performance management framework. As system performance objectives are finalized, key stakeholders will have an opportunity to examine the alignment of this Plan's performance measures to the Iowa DOT's new framework. Figure 5.4 shows the current transit system performance measures.

22 Iowa Department of Transportation ADA Transition Plan, December 2019: https://iowadot.gov/accessiblesidewalks/pdfs/CY20_IADOT_ADA_TP.pdf

Figure 5.4: Iowa DOT public transit system performance measures

Performance	Mileage	Condition
Annual statewide transit ridership	Total distance travelled by transit revenue vehicles while operating service routes and pick-ups	Percentage of transit fleet operating within Federal Transit Administration's normal useful life standards
2010: 26,209,999 **2016**: 27,838,603 **2019:** 23,828,108	**2010**: 25,045,158 miles **2016**: 21,360,197 miles **2019**: 22,581,257 miles	**2010:** 51% **2016:** 37% **2019**: 48%

Source: Iowa DOT

In addition to the performance measures identified by the Public Transit Bureau, there are federally-required measures for transit asset condition, which are discussed in the Transit Asset Management Group Plan[23]. These performance measures were identified as part of the group plan in 2018, and statewide targets for small urban and regional systems continue to be set annually. The performance targets set a goal for what percent of revenue and non-revenue vehicles will exceed their useful life benchmarks (ULB) by the end of 2020. ULBs represent the expected life cycle of a capital asset. In addition, a target is set for what percent of facilities will be rated as less than adequate on the Transit Economic Requirements Model (TERM) scale, which provides a numerical score ranging between 1 (Poor) and 5 (Excellent) for each facility. Figure 5.5 provides the current statewide group targets for small urban and regional transit systems. Each large urban system is responsible for creating its own asset management plan and updating its targets annually.

23 Iowa DOT Transit Asset Management Group Plan, September 2018: https://iowadot.gov/transit/publications/TransitAssetManagementGroupPlan.pdf

Figure 5.5: Performance measures established for transit asset management for States, public transit providers, and MPOs, and Iowa's 2020 targets for small urban and regional transit agencies

Performance Measure	Class	Current Status	2020 Target
Percentage of revenue vehicles met or exceeded Useful Life Benchmark	Automobiles	58% of fleet exceeds ULB of 8	70%
	Buses	20% of fleet exceeds ULB of 14	14%
	Cutaway buses	56% of fleet exceeds ULB of 8	51%
	Trolley	0% of fleet exceeds ULB of 13	0%
	Vans	60% of fleet exceeds ULB of 8	58%
	Minivans	36% of fleet exceeds ULB of 8	36%
Percentage of non-revenue vehicles met or exceeded Useful Life Benchmark	Automobile	20% of non-revenue service vehicles exceeds ULB of 8	0%
	Other rubber tire vehicle (tractor)	29% of fleet exceeds ULB of 14	43%
Percentage of assets with condition rating below 3.0 on FTA TERM Scale	Administrative/maintenance facility	0% of facilities rated under 3.0 on TERM scale	0%

Source: FTA final rule: Transit Asset Management; National Transit Database; Iowa Performance Targets for January 1, 2020[24]

Federal rules for transit safety were published in July 2018 with the intent that public transportation agency safety plans and targets are in place by July 2020 for each individual transit agency that receives Section 5307 funding (large urban agencies in Iowa). In April 2020, the deadline for completing safety plans was extended to December 31, 2020. All safety plans will incorporate measures on fatalities, injuries, safety events, and system reliability as shown in Figure 5.6. Public Transportation Agency Safety Plan (PTASP) regulations require that seven individual safety performance targets are reported.

24 https://iowadot.gov/systems_planning/fpmam/Iowa-2020-transit-asset-management-targets.pdf

Figure 5.6: Public Transportation Agency Safety Plan (PTASP) performance measures for States, public transit providers, and MPOs

Performance Measure	Description
Fatalities *(total)*	Total number of reportable fatalities and rate per total vehicle revenue miles
Fatalities *(per 100,000 vehicle revenue miles)*	
Injuries *(total)*	Total number of reportable injuries and rate per total vehicle revenue miles
Injuries *(per 100,000 vehicle revenue miles)*	
Safety Events *(total)*	Total number of reportable events and rate per total vehicle revenue miles
Safety Events *(per 100,000 vehicle revenue miles)*	
System Reliability *(failures per 100,000 vehicle revenue miles)*	Mean distance between major mechanical failures

Sources: FTA rulemaking: Public Transportation Agency Safety Plans; National Public Transportation Safety Plan

Plan Performance Measures

While the system performance measures help gauge the overall health of the public transit system, they may not be ideal for measuring the effectiveness of this Plan. Given that there are 30 strategies across four goal areas, any number of characteristics or factors related to these items could impact system performance. As such, it will be important to develop more specific performance measures tied to each strategy in order to determine how effective they are at implementing the overall vision of the Plan. Performance measures, or indicators, along with desired trend direction or specific targets, can be added to the execution matrix to help track progress.

Additionally, establishing performance measures for each strategy can also help assess the return-on-investment with regards to investing resources in particular strategies. For example, if contributing a certain amount of resources to a strategy results in a noticeable gain in transit ridership, then it may be worthwhile to sustain or increase the investment into that strategy. Likewise, should a particular strategy fail to achieve its intended results, then the implementation of it will likely need to be adjusted.

5.3. Next Steps

Monitoring Implementation

The performance measures and triggers described in the previous sections will be monitored and reviewed over time. The purpose of a periodic review of these measures is to bring the Plan into a more focused short-term perspective while providing more detailed information to decision-makers. This review or running assessment will be an additional planning tool representing a continual assessment of the current situation, incorporating lessons learned from the implementation of action items up to that point. This running assessment can alert decision-makers to potential adjustments that should be considered and whether planned future strategy implementation is able to be supported. This assessment can consider all elements affecting investment in the public transit system, not just the indicators, triggers, and performance measures that were defined.

Future Studies

In addition to implementing strategies and monitoring their impacts, a number of studies were specifically noted in the action items. These studies could potentially affect the monitoring of other action items by modifying their implementation or adding or removing efforts entirely, based on the results. Studies that are considered "specified" are those that specifically state 'study' in the strategy description and tend to focus on methodology and processes that arrive at a particular conclusion or result. Some strategies may not result in a dedicated study but may nonetheless require some analytical effort in order to influence a decision, strategy, or implementation. These "implied" studies focus mainly on effects rather than the methodology that produced the results.

Studies specified in the Plan strategies:

- **Service Goal Area:** "Study how to most effectively implement intercity transit bus systems in Iowa"
- **Service Goal Area:** "Study and define a statewide minimum level of essential transit service necessary to meet critical needs, particularly in the event of severe and sustained disruptions to demand or service"
- **Funding Goal Area** "Conduct a benefit-cost analysis or economic impact study of transit services and projects in order to measure the impact and overall benefit to social welfare"

Studies implied in the Plan strategies:

- **Service Goal Area:** "Examine effects of offering fare-free statewide bus service"
- **Service Goal Area:** "Examine bus service hours for people who work nights and weekends"
- **Service Goal Area:** "Examine the effects of creating more urban transit services in areas that are currently covered by regional transit services"
- **Funding Goal Area** "Examine alternative ways of funding public transit that do not rely only on existing federal and state sources"

Transit Dependency Analysis

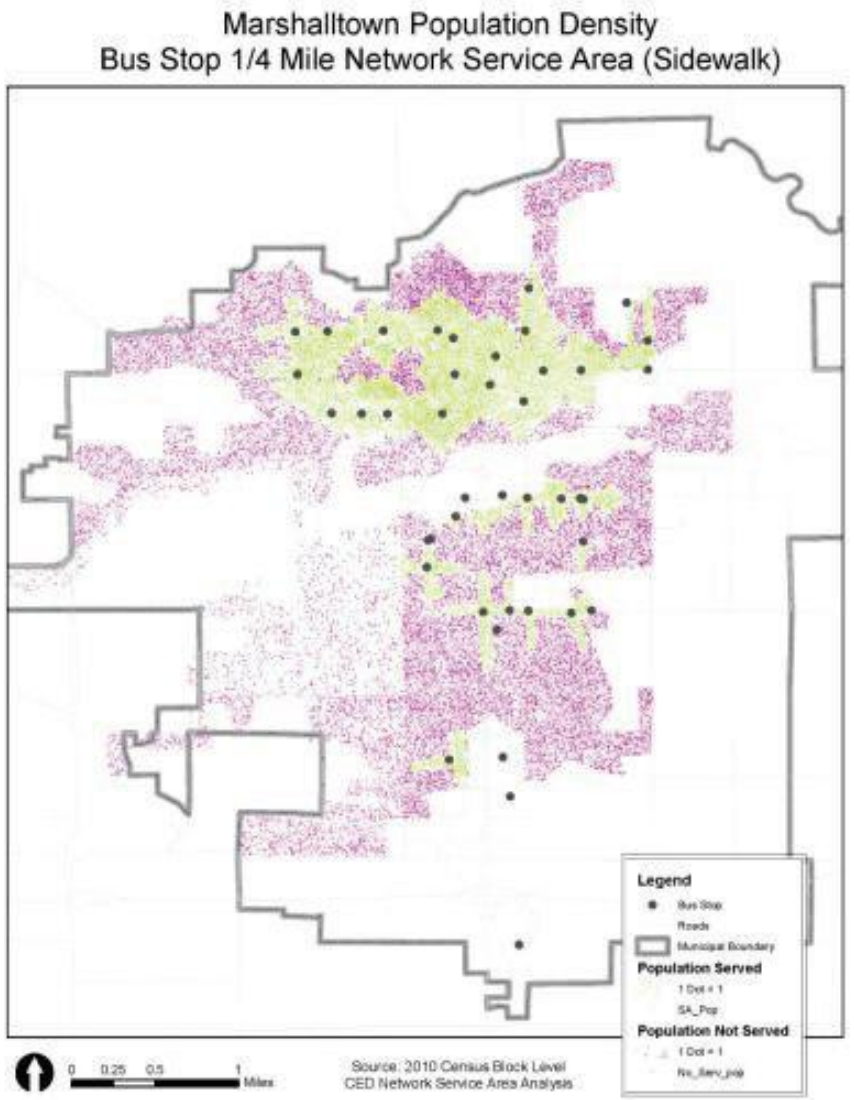
In addition to the specified and implied studies noted above, there are a few other existing and/or ongoing efforts that impact public transit decision-making. The transit dependency analysis discussed in Chapter 3 is one such effort. This analysis can be continued through conversations with transit agencies regarding service enhancements or outreach to particular demographic groups in efforts to increase transit ridership. This study could also serve as a sort of prediction or forecast that could lead to implementation of a follow-on study.

One such follow-on study to the transit dependency analysis could be similar to the transit optimization study conducted by Iowa State University (ISU) Extension and Outreach (see Figure 5.7).[25] Expanding on the demographic data such as that used in the transit dependency analysis and available through the U.S. Census Bureau, ISU's approach goes into greater detail and focuses on factors that are specific and unique to a transit system. Through the examination of land uses, existing routes, and anticipated growth patterns, ISU's effort takes the identified need areas or gaps and seeks to implement solutions to expand transit service and increase ridership.

Minimum level of essential transit service

As stated earlier in this chapter, defining a minimum level of essential transit service for public transportation will be among the first items examined, before the decision-support matrix can be developed or any agreed upon emergency measures can be drafted. Determining this level of service may involve some of the inputs or findings of the transit dependency analysis, population density and distribution, employment density and type, and transportation mode availability and infrastructure. Additionally, the criteria that trigger particular decisions with regard to prioritizing the maintenance of minimum service levels may also need to be incorporated into any existing response plans or emergency management processes that pertain to the preservation and sustainment of transportation systems.

Figure 5.7: Transit optimization product example



Source: Iowa State University Extension and Outreach

25 "Geospatial and Data Science Team Pilots 'Data Science for the Public Good' Project in Marshalltown", Iowa State University Extension and Outreach: https://www.extension.iastate.edu/communities/geospatial-and-data-science-team-pilots-%E2%80%98data-science-public-good%E2%80%99-project-marshalltown

Marketing and Outreach

Given the relationship between the Iowa DOT and the transit agencies, most marketing efforts will likely be geared toward encouraging public support for and utilization of Iowa's public transit services. Additionally, as discussed in the communication matrix, a variety of existing stakeholder groups and organizations will continue to be leveraged in order to better coordinate passenger transportation services across the state.

Outreach for this Plan will utilize several different lines of communication, both with key stakeholders and users of public transit services. While a website has already been established and will continue to be utilized for the dissemination of Plan-related information, other channels such as the Iowa DOT's blog and social media outlets will also be used to promote the awareness of this Plan.

This Plan will also be made available to the public in an accessible and interactive format through Esri's story mapping capabilities. Story maps are a combination of traditional text and graphic products, combined with maps and charts, to produce a content-rich user experience that highlights the key aspects of the Plan without having to search through a multi-page document.

Moving Forward

Iowa has a long history of providing public transit for its residents to access work, school, medical appointments, and social activities. This Plan's intent is to build on that history by providing a framework for the Iowa DOT and its partners to support the public transit system envisioned for the state. The investigation and analysis conducted throughout development of the Plan has led to the following general conclusions.

- Public transit is transitioning into a period where services will need to adjust to effectively operate alongside emerging transportation and micro-mobility options
- There is a critical funding shortfall that will worsen over time if action is not taken to identify new or additional sustainable financial resources
- As the state emerges from the COVID-19 pandemic, the resulting long-term changes to transportation user preferences will need to be monitored in light of their impact to optimal public transit service

Implementation of the Plan, monitoring its performance, as well as sharing and gathering information or feedback will be a continuous effort in the years following the publication of this Plan. These steps will be undertaken by the Iowa DOT Public Transit and Systems Planning Bureaus, Iowa's public transit systems, and many human service, business, and community partners throughout the state. Collectively, these activities of execution, monitoring, and receiving feedback will be instrumental as inputs for the next Plan update, which is expected to continue on a five-year cycle. It is through these efforts that the Plan seeks to carry out its mission and meet the intent of supporting the wellbeing of all Iowans, enhancing mobility, rightsizing the system, and accommodating the needs of passengers throughout the State.

The Iowa Department of Transportation would like to thank our stakeholder partners who have contributed their invaluable input and perspective in the development of this public long range plan.

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