



# Iowa Statewide Passenger Transportation Funding Study – Executive Summary

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Prepared By:

**URS**





## iRIDE ADVISORY COMMITTEE

Name	Organization/Agency
Linda King	Iowa Office of Energy Independence
Marnie Stein	Iowa Department of Natural Resources
Eileen Creager	Iowa Department of Human Services
Carol Stratemeyer	Iowa Department of Human Services
Nicki Stajcar	Iowa Department on Aging
Nathanial Baer	Iowa Environmental Council
Brad Miller	Des Moines Area Regional Transit Authority (DART)
Sheri Kyras	Ames-CyRide
Gena McCullough	Bi-State Regional Planning Commission
Jeff Beckner	Southwest Iowa Planning Council (SWIPCO)
LaVon Griffieon	1000 Friends of Iowa
Rebecca Neades	Iowa City Area Chamber of Commerce
Tim Wiltsin	Iowa Medicaid Enterprise
Ted Kourousis	Northwest Iowa Planning and Development Commission
David Osterberg	University of Iowa Public Policy Center
Paul Hanley	University of Iowa Public Policy Center
Eugenia Vavra	United Way of East Central Iowa
Marian Riggs Gelb	Iowa Environmental Council
Michelle McEnany	Iowa Department of Transportation
Tammy Nicholson	Iowa Department of Transportation

This report and its data are the result of research conducted by URS. The data contained within this report is the result of research of URS, the consultant, and the compilation of that data by URS, the consultant. The data presented has not been verified by the Iowa Office of Energy Independence or the Iowa Department of Natural Resources.

**For More Information:**  
[www.iRIDE21.com](http://www.iRIDE21.com)

## iRIDE

Providing independence for Iowa’s senior and other population groups, improving the connectivity of passenger transportation services, improving the convenience required for passenger transportation to compete for customers and environmental stewardship responsibility (green) are the purpose of iRIDE.

These not only represent impetus of the Funding Study, but they emphasize the action that reflects successful implementation of the end product (I Ride).



### iRIDE PASSENGER TRANSPORTATION VISION

Iowans will have convenient access to a sustainable and intermodal passenger transportation system that recognizes the dynamic environmental and societal conditions across the state and changing conditions over time.

### iRIDE PASSENGER TRANSPORTATION GOALS

**Goal #1: Provide passenger transportation service throughout the state that is:**

- Convenient.
- Accessible.
- Affordable.
- Safe and secure.

**Goal #2: Provide a passenger transportation system that is focused on the future by:**

- Coordinating land use and transportation.
- Incorporating efficiency-building 21st century technology.
- Utilizing alternative sources of power.
- Being a part of the statewide energy independence and environmentally conscience solution.

**Goal #3: Address the diverse mobility needs and demand through a range of modes.**



## FUNDING STUDY SUMMARY

The 2008 legislature directed the Iowa Department of Transportation, in cooperation with, the Iowa Office of Energy Independence and the Iowa Department of Natural Resources to conduct a study to:

1. Quantify current revenue available to support public transit.
2. Determine whether current revenue is sufficient to meet future needs.
3. Assess how well the state’s public transit network supports the current and expanding mobility needs of the state’s senior population.
4. Document the transit improvements needed to meet the state’s energy independence goals.

### PUBLIC TRANSIT TODAY IN IOWA

Passenger transportation service is provided in each of the 99 counties in the state. The level of service varies widely across the state with some cities providing five minutes or less frequency between pick ups on routes. In other areas service is limited to one or two trips a week and passengers need to reserve trips days in advance.

Iowa’s public transit network is made up of 35 systems divided into regional and urban systems. Rural areas and small towns in the state have been grouped into one of 16 regions and within each region there is a designated agency responsible for transit service. Urban transit systems, providing fixed route service and paratransit service, are divided into small urban systems in communities of less than 50,000 population and large urban systems in communities with a population of 50,000 or more.

Currently, seven communities in the state operate transit systems designated as small urban systems and there are 12 large urban transit systems operating in nine metro areas, with multiple services organized in the Iowa City-Coralville and Bettendorf-Davenport metropolitan areas.

**Passenger transportation** is a broader network of services and programs that today, or in the future, could be in place to provide mobility to Iowans. Passenger transportation services include public transit, carpools and vanpools, intercity bus service, taxi service and commuter rail services.

### CURRENT PUBLIC TRANSIT REVENUE

In 2008, approximately \$100 million was spent by federal, state and local agencies to fund the 35 public transit systems that provided over 25.5 million trips to Iowans. Figure 1 displays where public transit revenue comes from. Approximately 60 percent of transit operating revenue is from local sources, including property taxes from the municipal transit levy and non-transit levy sources, contracts with human services agencies, fares and other sources such as advertising.

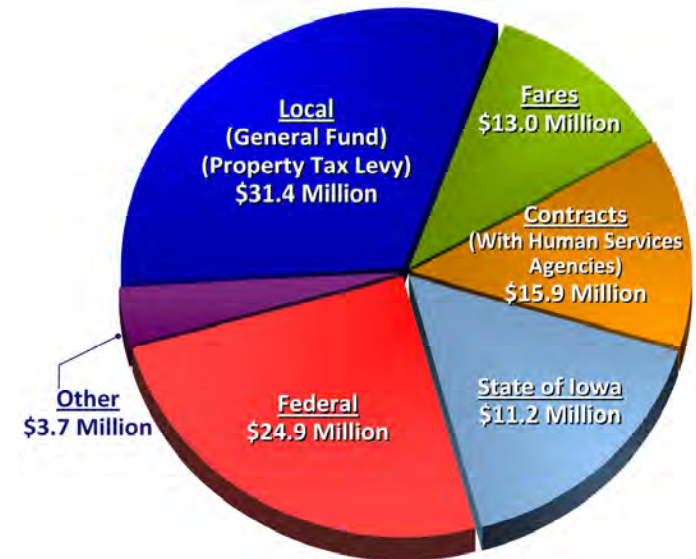
#### DEFINING IOWA’S FORMS OF PUBLIC TRANSIT

**Demand-response Transit – Service format where each rider, or group of riders, arrange their individual door-to-door trip. There is not a designed route and pick-up and drop off times are not fixed. Service is open to the general public.**

**Fixed Route Transit – Curb-to-curb transportation service that operates consistently on the same route and on a consistent time schedule. Service is open to the general public.**

**Paratransit - A specialized demand-response service for people meeting an age requirement and/or with disabilities who are not able to ride fixed-route public transportation.**

FIGURE 1: CURRENT PUBLIC TRANSIT OPERATING FUNDING





### DETERMINING CURRENT/FUTURE NEEDS

Information on travel needs that are not met by the existing public transit system was collected through six Iowa DOT hosted meetings across the state, over 800 responses to a web-based survey, and from input provided by public transit providers and human services agencies. The qualitative information gathered from the public and agencies was supplemented and quantified through travel demand modeling. Identified needs are:

- More trips per day are needed, more fixed route trip frequency, and more demand-response (dial-a-ride) trips.
- Service running later into the evening.
- More weekend service.
- Starting up or adding to inter-regional, inter-city and inter-suburban service.

From the information gathered and the travel demand modeling, it has been determined that:

- Across the state, people need more transportation service than the current systems provide (Baseline demand). In 2008, transit dependent Iowans needed to make 13.8 million more trips than the current system provided. This gap represents trips that are basic to the quality of life of Iowans who rely on public transit service for medical trips, shopping trips, work trips, etc. These basic quality of life trips are defined as Baseline demand.
- Passenger transportation can play a larger role in addressing the state’s energy independence goals (Choice demand). If travel on transit services were more convenient for Iowans, it is estimated that an additional 24.3 million trips per year would shift from low-occupant autos to passenger transportation. By improving the convenience of passenger transportation relative to the current system, Iowans are provided a more fuel efficient choice for their daily trip needs.

Figure 2 shows the intensity of the demand-to-current ridership gaps for the regional systems, small urban systems and large urban systems. Currently, demand for travel by transit dependent persons exceeds the number of trips currently provided in all 99 counties. Figure 3 displays the severity of the shortfall in service throughout the state.

In Iowa’s rural areas/small towns, travel demand by persons that are dependent on passenger transportation services exceeds current ridership by approximately 1.7 million (54%) trips per year. In the small urban areas, the transit dependent demand exceeds current ridership by 1.1 million (70%) trips per year and in the large urban areas transit dependent demand exceeds ridership by 11 million (54%) trips per year. If public transit service was more convenient and was able to provide trip times similar to auto trips (Choice demand service), it is forecasted that an additional 4.1 million and 18.5 million trips annually to small urban and large urban systems, respectively.

**KEY DEFINITIONS**

**Baseline Demand:** Level of travel reflective of the needs of Iowans that are transit dependent.

**Choice Demand:** Level of ridership possible if passenger transportation system trip travel times were more competitive with auto travel times.

**Transit Dependent:** Iowans that are not able to operate a vehicle or do not have access to a vehicle and, therefore, rely on public transit for their travel.

FIGURE 2: CURRENT RIDERSHIP RELATIVE TO DEMAND SCENARIOS

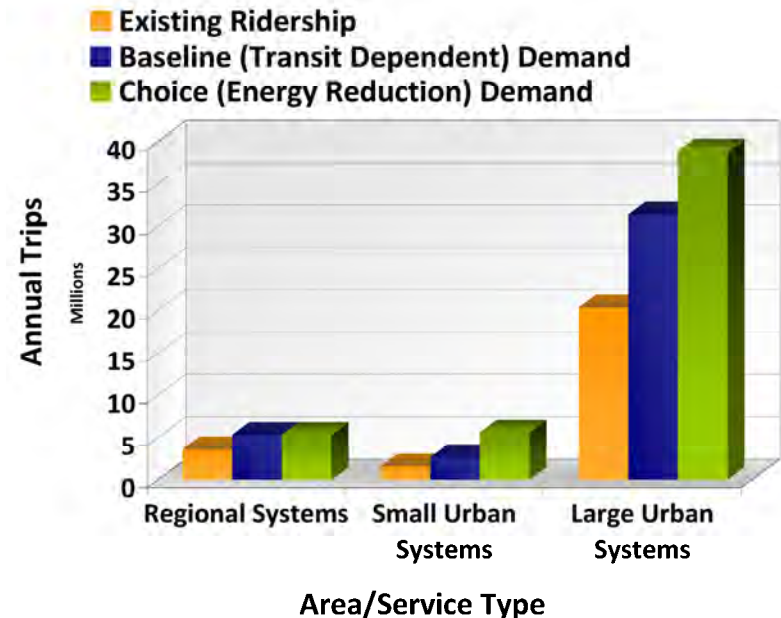
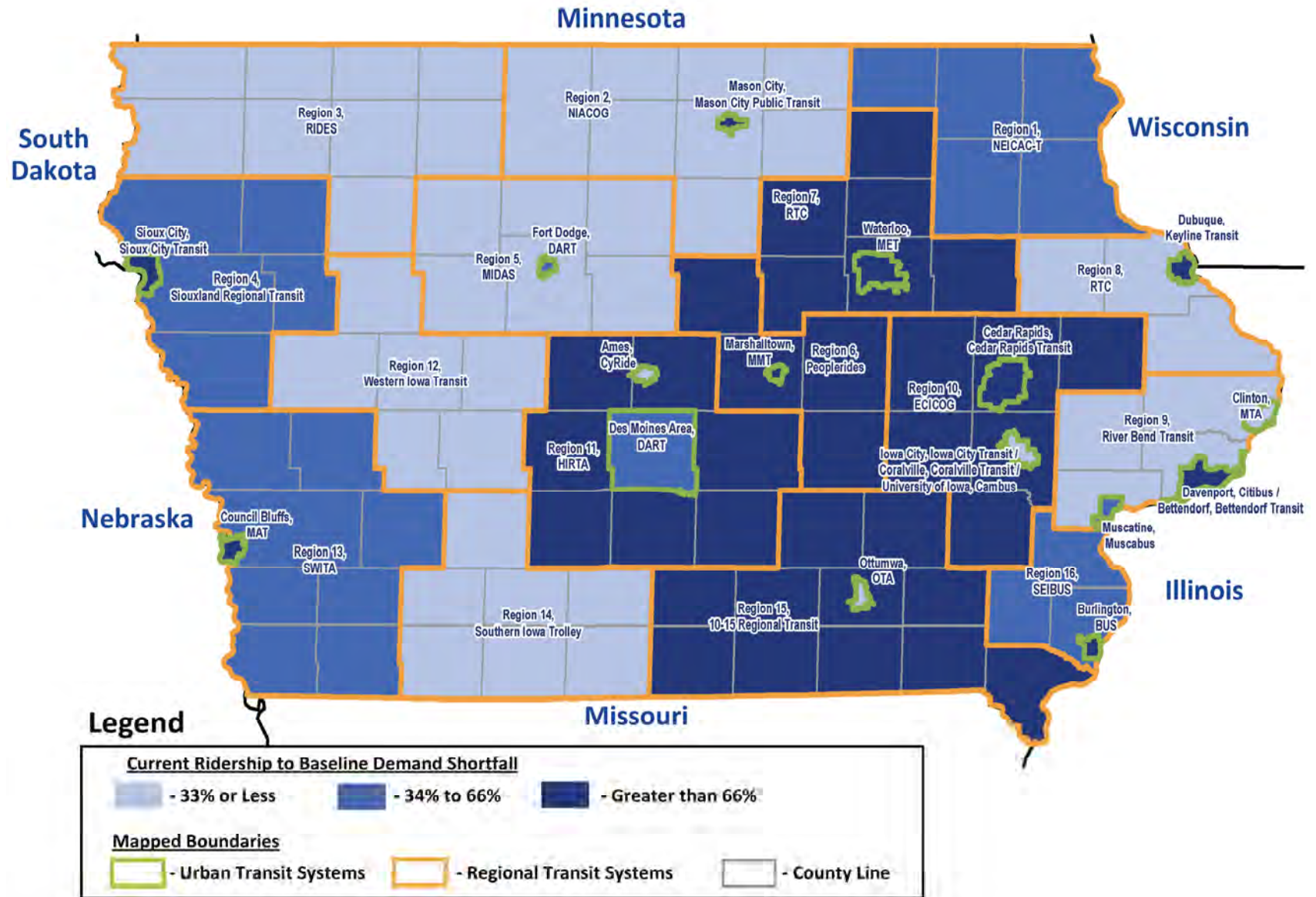




FIGURE 3: TRANSIT DEPENDENT (BASELINE) SERVICE SHORTFALLS BY REGION





### MOBILITY NEEDS OF IOWA’S SENIORS

Iowa’s seniors account for approximately seven percent of the annual statewide ridership. In the regional and small urban service areas, senior trips make up almost 20 percent of the annual ridership. From the surveys and public meeting input, it was found that the needs of Iowa’s seniors are very similar to those of other population age groups. The purpose for wanting to make a trip may be different (medical visit versus a work trip), but the unmet trip needs would be addressed through the same actions of adding bus frequency to urban fixed route systems, extending service hours later into the evening, increasing weekend service and adding to the number of regional system trips per day.

The most frequently identified unmet transit needs identified by seniors are:

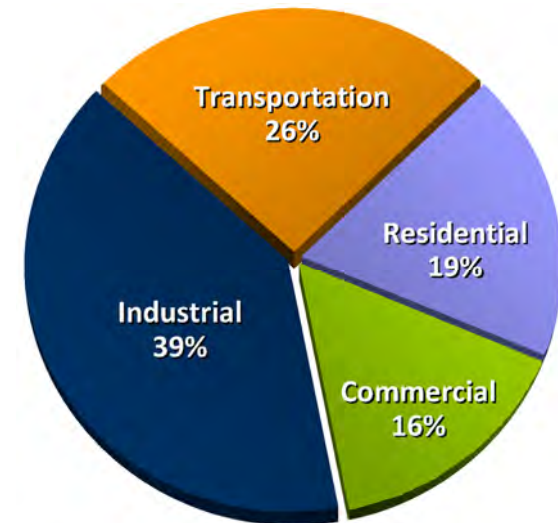
- Medical trips between their homes and regional medical centers.
- Door-to-door service.
- Evening service.

The conclusion of the information analysis is that while some of the needs of Iowa’s seniors are addressed through current service, there are many travel needs that are not. Approximately 900,000 trips per year by seniors are not being addressed through current services.

**FIGURE 4: IOWA’S ENERGY USE BY SECTOR (2007)**

### IOWA’S ENERGY EFFICIENCY AND ENVIRONMENTAL NEEDS

Currently, the primary sources for 95% of the energy used in Iowa are from outside the state, with many of the sources being outside the U.S. Figure 4 displays that the transportation sector accounts for approximately 26 percent of energy used in the state. Passenger transportation can play a role in reducing the statewide consumption of fuel, foreign and domestic, while maintaining the high level of mobility that is required to allow the state to retain its economic competitiveness. By establishing service that provides travel times that are competitive with auto travel, is convenient to use, and connects residential and employment activity centers, it is estimated more travelers would choose to shift from the low-occupant mode they presently use to passenger transportation.



Source: Energy Information Administration

Providing service that is competitive, convenient and connected would also need a public outreach program that is focused on informing Iowans of the services available and the benefits of using passenger transportation. The outreach program is needed because most travel in the state has traditionally, or at least over the last 50 years, been by private automobile. As a result, many Iowans are not aware of the services that presently exist or the quality of service that would be available following investment into expansion to support Baseline or Choice demand.

Initiating the shift in traveler behavior from autos to passenger transportation would likely also require a program of incentives and disincentives to driving alone. The program must be one that is supported by communities, businesses, developers, and employers. Incentive may include lower cost and closer-in parking for carpoolers, transit trip planning assistance, higher-end transit stop/station facilities, passenger transportation user clubs that build commadore, reduction in parking space requirements or higher than normal density allowances for developments that incorporate transit. Typically, disincentives to driving, or at least driving alone are required to jump start the mode shift. Disincentives my include increasing parking rates in targeted areas, reductions in parking supply in targeted areas, and focusing capacity improvements on transit modes rather than on auto modes in congested corridors. Wide support of a disincentive program would be needed because many of these ideas are contrary to what many have come to expect.



## TRANSIT SERVICE IMPROVEMENTS TO ADDRESS IOWA’S NEEDS AND GOALS

Table 1 documents the service improvements identified to address the unmet travel demand of the Baseline and Choice alternatives:

- Fixed route systems: Reduce time between trips from approximately 60 minutes (today) to 30 minutes to support Baseline demand and 15 minutes to address Choice demand.
- Regional system demand-response trips: Increase annual trips by 90 percent to address Baseline and Choice demand.
- Fixed route systems: Extend the weekday service day to 11:00 PM in the large urban areas to address Baseline demand and in both large and small urban areas to address Choice demand.
- Fixed route systems: Provide eight hours of service on Sundays in cities of 50,000 or more to address Choice demand.
- Vehicle replacement: Replace older vehicles statewide to lower the average fleet age from over six years to approximately four years.
- More transportation service coordination between human services agencies and public transit services.

**TABLE 1: SUMMARY OF THE PASSENGER TRANSPORTATION IMPROVEMENTS TO ADDRESS BASELINE/CHOICE DEMAND**

Proposed Action	Ridership and/or Ridership Increment from Current (Annual – Millions)	Annual Incremental Cost (2009 \$Millions)		
		Operating Costs	Capital Costs	Total
<b>Current Conditions (Total of 35 Providers)</b>	25.5	\$100.0	Variable	Variable
<b>Baseline Demand</b>				
Increase Fixed Route Service Frequency to 30 Minutes – Small and Large Urban Systems	11.2	\$75.7	\$5.7	\$81.4
Expand Daily Fixed Route Service to 11 PM Weekdays – Large Urban Systems	0.7	\$9.1	Minimal	\$9.1
Expand Daily Regional Demand-Response Trips by 90%	1.9	\$21.0	\$13.5	\$34.5
<b>TOTALS</b>	<b>13.8</b>	<b>\$105.8</b>	<b>\$19.2</b>	<b>\$125.0</b>
<b>Choice Demand</b>				
Increase Service Frequency to 15 Minutes – Small and Large Urban Fixed Route Systems	21.3	\$279.3	\$21.0	\$300.3
Expand Daily Service to 11 PM Weekdays – Large and Small Urban Systems	1.0	\$11.0	Minimal	\$11.0
Expand Daily Regional Demand-Response Trips by 90%	1.9	\$21.0	\$13.5	\$34.5
Expand Sunday Service (8 Hours in Day) – Large Urban Systems	0.1	\$4.2	Minimal	\$4.2
<b>TOTALS</b>	<b>24.3</b>	<b>\$315.5</b>	<b>\$34.5</b>	<b>\$350.0</b>
<b>Increase Level of Human Services Agency and Public Transit System Coordination – Large Urban, Small Urban, Regional Systems</b>				

Source: URS Corporation, Inc.

**COST OF CLOSING THE GAPS**

**Baseline Demand Gap: An additional \$125 million per year.**

**Choice Demand Gap: An additional \$350 million per year**

**Replacement Buses: \$100 million (to reduce current excessive statewide fleet age)**





### PASSENGER TRANSPORTATION SERVICE POLICY FINDINGS

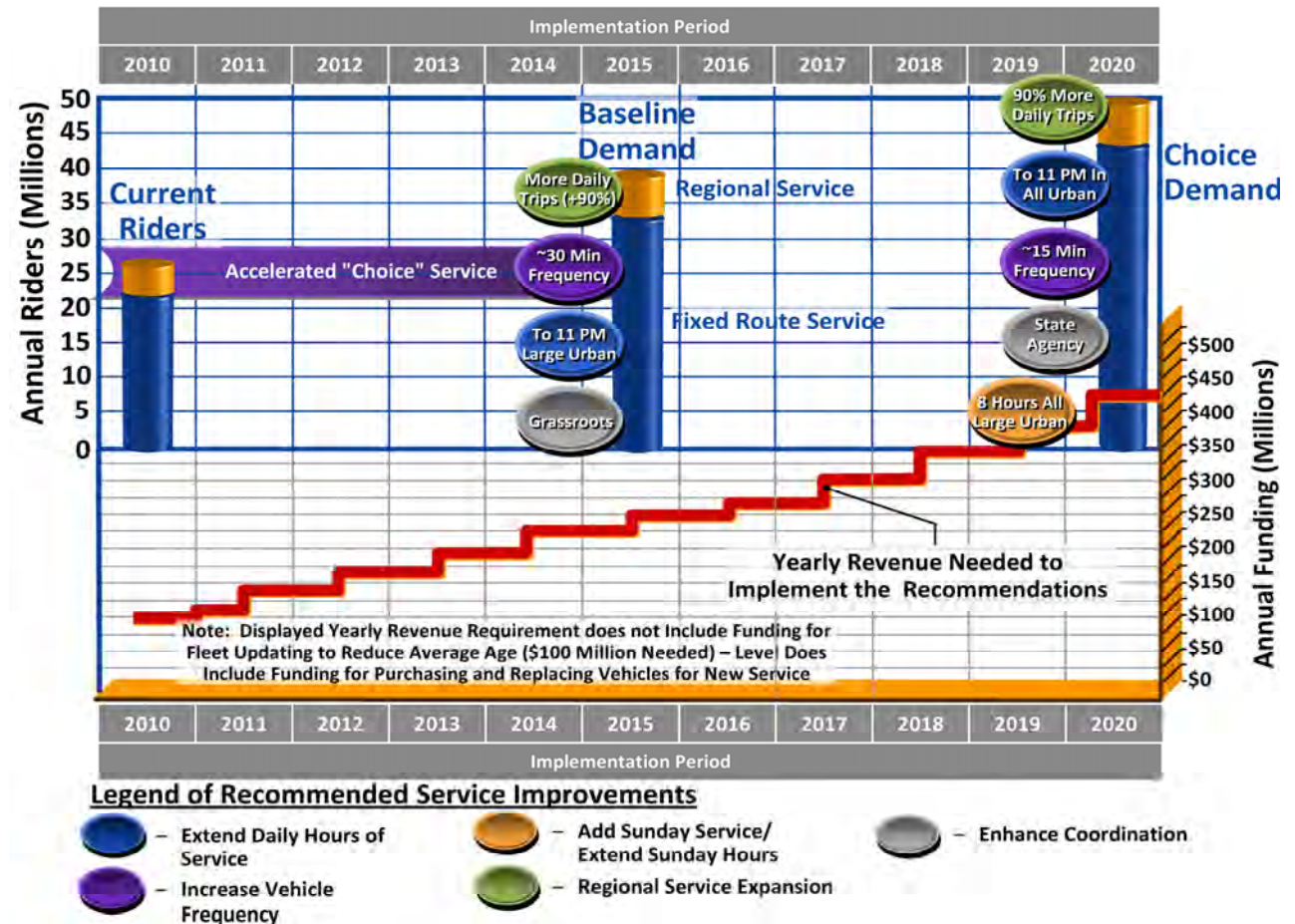
The incremental cost associated with addressing unmet needs by expanding/improving current passenger transportation service would require phasing the program implementation. Displayed in Figure 5 is a phasing concept prepared as part of the Funding Study for expanding service to address Baseline and Choice demand. If meeting these demand levels is determined to be a priority in the state, the stepped-up option for addressing Baseline demand requires an additional \$25 million per year of investment compared to the previous year for the next five years. Adding \$25 million in revenue annually would provide the \$225 million per year for service to meet the demand level (today's \$100 million per year plus \$125 million per year for expanded service). Similarly, if meeting the Choice demand needs is determined to be a priority, the annual increase in funding needed to support the added services is estimated to be between \$25 and \$40 million per year over a 10 year period. The incremental change would result in \$450 million per year for service \$100 million per year currently and an additional \$350 million per year for expanded service). The annual stepped-up revenue need is shown as the red line in Figure 5. Service expansion alternatives and ridership estimates for the Baseline and Choice demand are also displayed in Figure 5.

FIGURE 5: BASELINE AND CHOICE SERVICE IMPLEMENTATION

Institutional/policy actions that would support and complement service improvements for the Baseline and Choice demand are also needed and are described in the following sections.

#### Service and Facilities

- Establish service level goals (Baseline, Choice, or another) for the state from the information presented in this report.
- Review and revise the Iowa Statewide Transit Facility Needs Analysis: The 2008 Facility Needs Analysis concluded that \$53.3 million of public transit facilities are needed. These needs were based on current conditions and a moderate level of transit service growth. Service expansion for the Baseline and Choice demand concepts is substantially greater than the expansion provided for in the 2008 transit facility needs analysis. Therefore, implementation of the Baseline and/or Choice demand concepts would require revisiting facility needs.







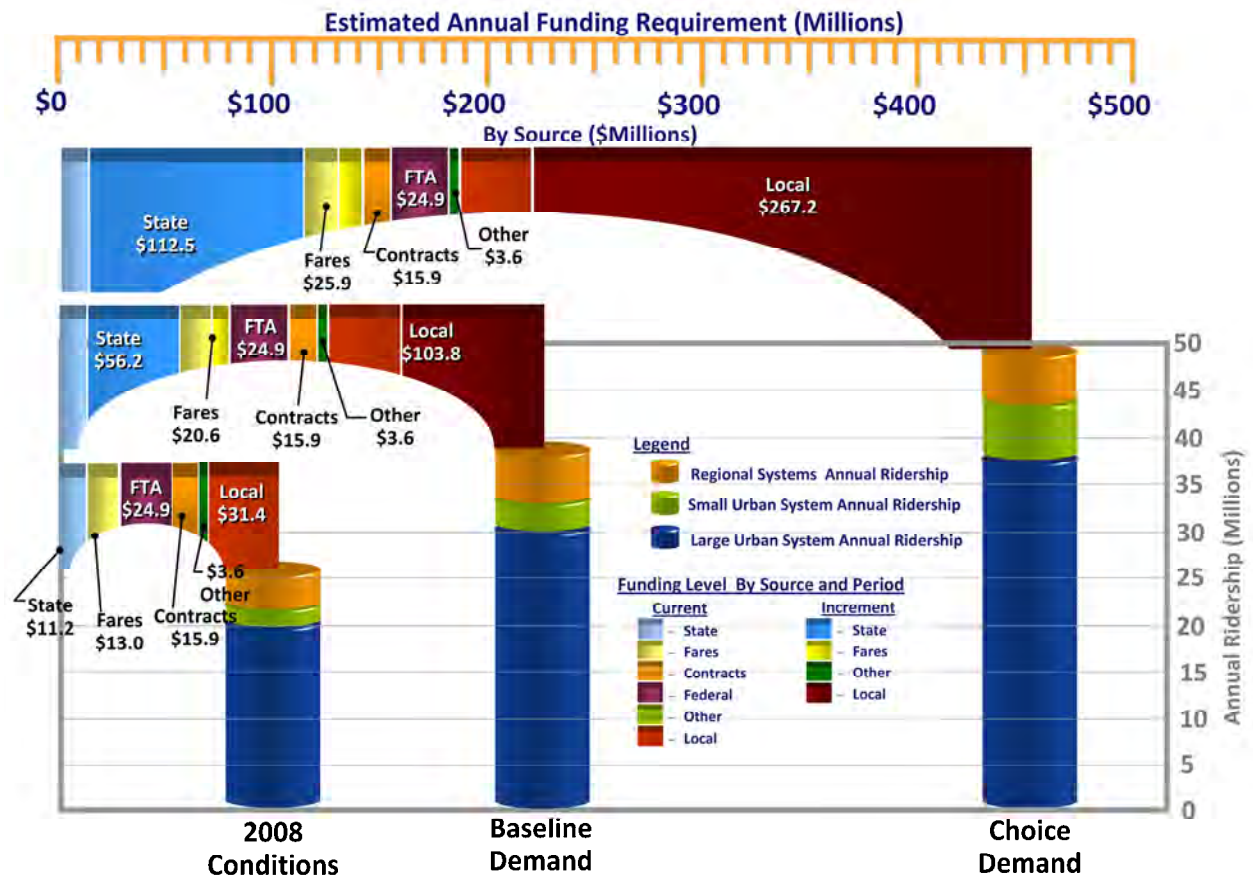
**Passenger Transportation Revenue/Funding**

- Identify capital funding sources to update the statewide transit fleet. Updating the fleet would reduce maintenance and fuel costs and reduce greenhouse gas emissions.
- Create local funding opportunities through technical changes to existing legislation:
  - Transit Property Tax Levy: Change “municipal” to “public” transit.
  - Eliminate the Regional Transit District minimum population threshold.
- Formalize jurisdiction level (state and local) funding responsibilities to bridge the revenue gaps. Figure 6 displays the current distribution of funding responsibility by source and the funding responsibility for service improvements to address the Baseline and Choice demand. As shown in the figure, today the state provides approximately 11% of annual public transit revenues. Following a proposal by the Iowa Climate Change Advisory Council to increase the state’s responsibility to 25% of total public transit funding for systems with increasing ridership and where reductions in emissions and fuel use result, funding responsibility proposals for bridging the financial gaps between current revenue and the revenue needed to support Baseline demand and Choice demand are displayed. As is shown, the state and local jurisdictions would be responsible for the vast majority the additional funding needed to provide added service.
- Continue financial support of the Public Transit Infrastructure Grant program (PTIG), which provides capital improvement funds to regional and urban transit systems.

**Interagency Coordination**

- Support the Iowa Medicaid Enterprise Transportation Brokerage.
- Encourage/require state agencies that provide or aid in arranging transportation to report basic trip information and costs.
- Emphasize passenger transportation as a state priority outside the Iowa DOT.

**FIGURE 6: FUNDING THE PASSENGER TRANSPORTATION IMPROVEMENTS – BRIDGING THE GAPS**





- Expand coordination between public transit systems and human services agency transportation programs.
- Strengthen local coordination between land use decisions and transportation plans, including passenger transportation.
- Coordinate community-to-community corridor travel findings with on-going rail studies.
- Improve the coordination between providers to better address inter-regional non-emergency medical trips and the unique time sensitivity considerations of the trips.

## FUEL USE AND GREENHOUSE GAS EMISSION ANALYSIS FINDINGS

For the Baseline demand alternative, statewide passenger transportation system incremental fuel use, fuel costs and vehicle greenhouse gas (carbon dioxide) emissions are greater than the automobile reductions associated with the shift from private auto travel to passenger transportation services. The primary reasons for the net increase area:

- The reduction in auto travel vehicle miles of travel and the associated emission reduction reflect impacting the state's transit dependent population. As many persons in this classification are either not making the trip or are sharing a vehicle trip, the auto vehicle miles of travel connected to the conversion to passenger transportation is not as great as it is for the Choice demand alternative.
- Service frequency improvements required to address the Baseline demand are disproportionately high relative to the number of persons that are forecasted to switch to passenger transportation services.

The passenger transportation emissions and fuel use conditions resulting from implementation of services to address the Choice demand compare much more favorably to the reduction forecasted in auto travel emissions and fuel use. The auto mode emissions reduction from the forecasted shift to passenger transportation services, including transit and rideshare programs, is estimated to be 83,900 tons per year in carbon dioxide. The estimated increase in passenger transportation emissions is approximately 77,500 tons per year, which results in a **net reduction of 6,400 tons per year.**

Introduction and/or expansion of alternate fuels such as biodiesel and compressed natural gas and incorporating hybrid vehicles into the passenger transportation fleet will increase the net emission benefits observed in the service concept to address Choice demand. Conversion to biofuels and/or wider use of hybrid vehicles can reduce passenger transportation emissions by 10% to 40% depending on the mix of vehicles and selected alternate fuel.



## USER AND SOCIETAL BENEFITS OF EXPANDING PASSENGER TRANSPORTATION SERVICE

Table 2 documents the user and societal benefits of the passenger transportation improvements that address the Baseline and Choice demand. Characterized below are many of the benefits included in the table numbers.

### Seniors and Transit Dependent Iowans

1. An improved physical and social quality of life with the added mobility for the state’s transit dependent population in all income levels.
2. Baseline demand service addresses the unmet mobility needs of Iowa’s seniors.
3. Improved financial quality of life for the 334,000 Iowans living below the poverty level by reducing their travel costs by giving them more lower cost travel options than a private vehicle.
4. Healthcare savings are created by allowing more seniors to live at home versus in care facilities. Stay-in-home versus medical costs versus assisted care medical costs are lower. Families can save \$46,000 per year per person in medical costs and have the same standard of care if they have reasonable travel to the doctor.

### Iowa’s Economy

5. Enhanced individual economic well-being by connecting Iowans to jobs.
6. Increased business economic activity by connecting consumers to businesses.
7. Vehicle cost savings for some families by allowing them to eliminate a vehicle.

### Iowa’s Quality of Life

8. Improved quality of life by connecting Iowans to services and activities.
9. Reduction in the increases in pollutants and greenhouse gas emissions. By Iowan’s shifting from a higher number of low-occupant vehicles to a lower number of higher-occupant the growth in annual automobile vehicle miles of travel can be slowed, which would have a positive impact on emissions.
10. Reductions in the observed trends of increasing annual fuel consumption. Shifting from private autos to passenger transportation modes would result in fuel cost savings for Iowa families and businesses that choice to make the change.

**TABLE 2: SUMMARY OF BASELINE AND CHOICE SERVICE IMPROVEMENTS AND RIDESHARE ENHANCEMENTS**

Measure of Effectiveness	Unit of Measure	Change Due to Implementing Passenger Transportation Improvements to Address Demand		Rideshare Enhancements
		Baseline	Choice/ Energy Reduction	
Increase in Passenger Transportation Trips from Current (Annual)	Trips	13,800,000	24,300,000	NA
Reduction in Annual Vehicle Miles of Travel	Annual VMT	34,400,000	121,000,000	54,000,000
Reduction in Fuel Consumption (Annual)	Gallons	1,700,000	6,100,000	2,700,000
Fuel Cost Savings (Annual)				
At Current \$2.64 Per Gallon	Dollars	\$4,500,000	\$16,100,000	\$7,100,000
At 2008 High of \$4.05 Per Gallon	Dollars	\$6,900,000	\$24,700,000	\$10,900,000
Reduction In Emissions:				
Carbon Monoxide	Tons	450	1,590	710
Nitrogen Oxide	Tons	10.4	36.5	16.5
Greenhouse Gases	Tons	16,400	57,900	26,000
Vehicle Cost Savings	Dollars	NA	\$890,000	NA





## SUMMARY/CONCLUSION

The purpose of the Funding Study was to assess whether Iowa's current system of passenger transportation services, comprising public transit providers, human services agency transportation programs, carpools/vanpools, inter-city bus carriers, and taxis are addressing the current and future demand and how passenger transportation can be a part of the state's energy conservation plans. In 2008, public transit systems across the state carried 25.5 million travelers 31.1 million vehicle miles. Relative to the 31.6 billion vehicle miles of travel per year on highways in the state, passenger transportation services play a relatively minor role in statewide fuel conservation goals.

Passenger transportation services can be a greater contributor to the state's energy independence goals, however, it will require a substantial investment into service and marketing passenger transportation as a choice for all travelers.

Closing the current ridership to Baseline, or transit dependent population, demand gap will require additional service on the regional and the urban systems. The estimated cost of the increment in service is \$125 million per year.

For passenger transportation to be a larger contributor to meeting the state's energy independence and greenhouse gas emissions goals, passenger transportation service that addresses the Choice demand estimate and attracts at least 24.3 million more passengers per year from lower-occupant vehicles would need to be implemented. Service improvements/expansion would be needed in both the regional service and urban service areas. The estimated cost of the expanded services is approximately \$350 million per year.

Introduction and/or expansion of alternate fuels such as biodiesel and compressed natural gas, and incorporating more hybrid vehicles into the passenger transportation fleet will increase the net emission benefits observed in the service concept to address Choice demand.

Expanding service levels in the 16 regional system and 19 urban system areas will not by itself result in the auto-to-passenger transportation mode shift that is required for passenger transportation in Iowa to be a much larger contributor to meeting the state's energy independence goals. The overall passenger transportation system program will need to include more active coordination between public transit systems and human services agencies throughout the state and a multi-level incentives and disincentives program. The incentives-disincentives program combines positive and negative reinforcement that the business as usual approach of driving alone must change if the environmental and economic quality of life Iowans expect, combined with the high level of mobility that is also expected, is to be sustained.

