Executive Summary

The Iowa legislature directed the Iowa Department of Transportation (Iowa DOT) "to conduct a study to identify administrative needs, projected demand, necessary capital and operating costs, and public transit service structures including park and ride lots, employer or public vanpool programs, and traditional fixed-route transit. The Iowa DOT shall submit a report with findings and recommendations to the general assembly on or before December 15, 2014." To meet this requirement, the Iowa DOT commissioned the Iowa Commuter Transportation Study (ICTS) to identify the existing and future commuter needs in the Interstate 380 (I-380) corridor and determine the viability of various commuter transportation improvements to address those needs.

The Office of Public Transit (OPT) was responsible for managing the study through a Project Management Team which included staff representatives of Iowa DOT's System Planning unit and the East Central Iowa Council of Governments (ECICOG). Iowa DOT retained HNTB, a transportation planning and engineering firm that has been assisting Iowa DOT with the assessment of I-380 improvements. A 15-person Advisory Group, comprised of transportation, planning and economic development stakeholders, was instrumental in providing valuable input throughout the study. The study relied heavily on input from major employers in the study area and the results of two public surveys that produced a combined total of nearly 1,000 responses from study area commuters.

Commuting between the Cedar Rapids and Iowa City metropolitan areas is significant. As shown in the table below, there are over 7,500 commuters travelling between the Cedar Rapids and Iowa City metropolitan areas and most of these commuters are traveling during the peak periods using I-380.

Table E-1: Cedar Rapids Metropolitan Area – Iowa City Metropolitan Area Commuter Patterns

Origin Area	Destination	Total Commuters
Cedar Rapids/Hiawatha/Marion	North Liberty/Coralville/Iowa City	4,159
North Liberty/Coralville/ Iowa City	Cedar Rapids/Hiawatha/Marion	3,371

Source: U.S. Census Bureau, American Community Survey 2006-2010 5-year samples

The public interest for improvements in the I-380 corridor is evident from the public surveys. Over 90 percent of respondents think transportation improvements are needed. Nearly 70 percent of respondents stated that they would use a public bus for their commute, indicating significant support for transit and other forms of ridesharing. For a detailed breakdown of survey results, see **Appendices A** and **B**.

I-380 Commuter Transportation Improvements

The study recommended a package of commuter improvements that could be implemented as a comprehensive program, or individually, reflecting the realities of funding and local priorities. This package of improvements includes:

- ***Public Interregional Express Bus Service***: A new interregional fixed route bus service connecting Cedar Rapids, North Liberty, Coralville and Iowa City.
- ***Subscription Bus Service***: This service can be tailored to the commuter needs of a specific locale or even a single employer and would be ideal to serve large employers.
- ***Public Vanpool Program***: Open to the public, uses passenger vans supplied by a public agency or agencies driven by one of the vanpool participants. Vanpools typically have ten to sixteen participants with similar origins and destinations
- ***Public Carpool Program***: A formal sharing of rides using one of the participant's private automobile. Carpooling typically has two to six participants with similar origins and destinations.

Commuter rail service in the corridor was previously studied in the Cedar-Iowa River Rail Transit Project Feasibility Study in 2006; this mode was considered in the evaluation. However, the capital and operating costs, and the cost effectiveness measured by cost per passenger was found to be significantly greater than comparable bus options. Therefore, at this time, the commuter rail service is not recommended to be pursued as part of the preferred package of service improvements in the short or mid-term. However, as pointed out in the previous study, the communities may reevaluate in the future.

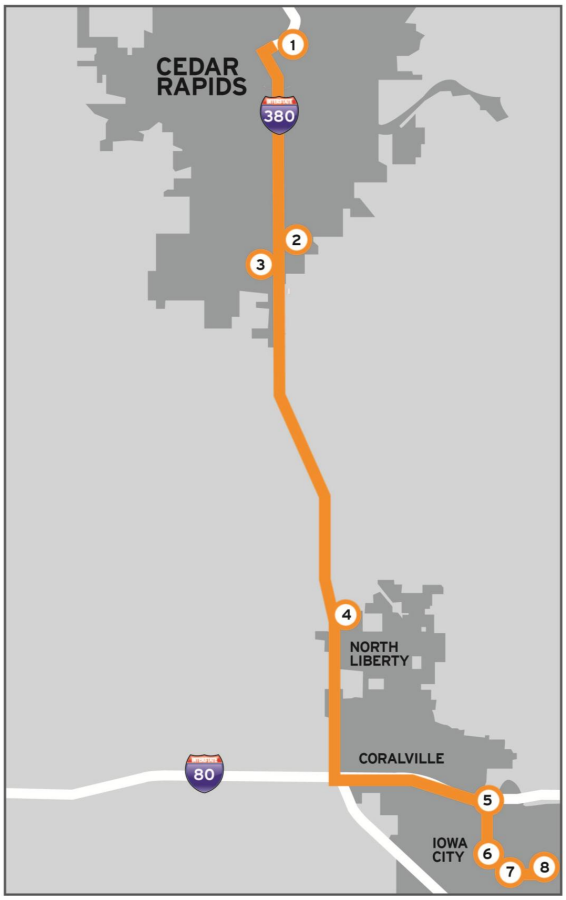
This package of improvements also includes recommended infrastructure and technology improvements that will augment the service alternatives and make them more effective:

- ***Park and ride facilities***: These are convenient locations along or near the primary commuting corridor to park private autos and connect to some form of public or private transportation which may include vanpools, carpools, and public bus service.
- ***Regional Commuter Travel Information***: This is a readily accessible and comprehensive source of information on all commuter transportation options in a defined area. Information includes routing, pick-up points, schedules, fares and fees, and other information necessary for commuters to make decisions regarding mode of travel.
- ***Transit Priority Measures***: These are transportation engineering tactics intended to make public transit and ridesharing more attractive to potential users by reducing travel time and improving reliability. Priority measures include strategies such as dedicated transit or high occupancy vehicle (HOV) lanes, bus-on-shoulder operation, traffic signal priority and queue jump lanes.
- ***Guaranteed Ride Home***: This service is used in conjunction with public transportation and rideshare options to provide a ride home in case of an emergency (illness, personal crisis), usually a cab ride that is reimbursed up to a certain amount.

Public Interregional Express Bus Service

This 2-way premium express service would operate with a minimum number of stops to minimize travel time in order to make the service as competitive as possible with auto commuting. In concept, the service would operate between downtown Cedar Rapids and downtown Iowa City using I-380 and I-80, with potential stops at the Cedar Rapids Ground Transportation Center, Kirkwood Community College, park and ride near the Eastern Iowa Airport, park and ride near North Liberty, the Coralville Intermodal Facility, University of Iowa, University of Iowa Hospitals and Clinics, and the Iowa City Court Street Transportation Center.

Figure E-1: Conceptual Public Interregional Express Bus Alignment and Stops



The service would rely on park and ride lots as collection points for the dispersed commuter origins and the current transit networks for distribution to destinations not within walking distance of stops. The graphic to the right shows this concept.

Four operating plans with varying service frequency were evaluated for the express service. The option with 30 minute service during the peak periods, assumed to be 5 a.m. to 9 a.m. and 3 p.m. to 7 p.m., was judged to be the most effective in balancing costs and benefits such as ridership. Ridership was estimated at 563 daily trips for the 30 minute frequency option. For any of the alternatives, midday off peak service can be considered, however, this service may be eliminated if a guaranteed ride home program is in place.

The proposed service would use standard 40 passenger transit buses. Operating and capital costs were estimated for all of the bus options evaluated and are presented in the final report. For simplicity, only figures for the 30 minute frequency option are show in **Table E.2** below. The capital costs do not include the cost of vehicle storage and park and ride lots. Initial park and ride lots could include no cost lease options on shared use private lots. The table below shows the public transportation-related costs that require new funding.

Table E-2: Public Transportation Option Costs and Revenues – 2014 dollars

Service Option	High Estimate	Low Estimate
*Transit Only Capital Cost	$2,831,000	$990,000
Annual Operating Cost	$1,037,000	$676,000
Passenger Revenue	$502,000	$502,000
Annual Operating Funding Needed	$535,000	$174,000

**Note: Capital costs only include vehicles costs.*

The figures in **Table E.2** are shown as a range reflecting the uncertainty of estimating costs for a service that is defined only conceptually, and the fact that there are many different ways to deliver the service, all of which have different cost implications.

Subscription Public Bus Service

A subscription bus is tailored to the commuter needs of a specific locale or even a single employer. Large employers sometimes have a need to move a relatively large number of employees, 20 to 30 or more, from an origin area to the workplace. In concept the service works similar to a vanpool except the vehicle is larger, usually a small to medium size bus, and the driver is a professional rather that one of the commuters.

The design and operation of a subscription bus is very flexible; often the service consists of one trip to the workplace and a return trip after the workday. The route can be designed to access the largest number of employees; a park and ride lot is typically used as a collection point. The service can be limited to employees of a single company, or can be open to the public, serving multiple employers.

The Whirlpool manufacturing plant near the Amana Colonies is an example of a location that may be effectively served by a subscription bus. With a current workforce of 2,200 and growing, and a location remote from large numbers of employees, the plant would benefit from a more structured approach to commuter options. However, the low density area of the plant cannot support regular fixed route transit service.

Public Vanpool Program

To meet the needs of dispersed origins, particularly in the rural areas not directly served by the I-380 corridor, a public regional vanpool program was recommended. This program would complement the proposed interregional express bus service and address service gaps of existing private vanpools by providing a service that is open to the public and is an efficient and cost-effective employment transportation option for commuters with dispersed origins.

Two vanpool programs are currently provided in the study area. The University of Iowa provides a program that is limited to university employees with 80 vanpools including 15 in the I-380 corridor from the Cedar Rapids area. A private firm, vRide provides private vanpool service, however, it is up to individuals who live and work in the same areas to collectively organize.

An expanded public vanpool program can take different forms. The vanpool program could be operated by an existing transit service operator or other agency eligible to receive federal and state funding. The benefit of this is that the operator could use federal and state transit funding for vehicle acquisition thereby lowering the cost to the commuter. The program requires administrative and management support to handle responsibilities such as vehicle acquisition, defining program policies and procedures, training drivers, assisting in ridematching and program accounting. Alternatively, an agency could contract with a private firm such as vRide to handle all operational aspects of the program.

It is possible for user fees to cover all program costs. In practice user fees would be set to achieve program policies regarding cost recovery. Typically, agency operated programs cover some costs through grants or local transit funding. Operating costs typically are in the range of $10,000 to $12,000 per vanpool, although program costs vary widely. The capital cost of the vans is either realized as an outright purchase cost, or a lease cost. Vans typically cost in the range of $35,000 to $40,000 per vehicle.

There is no reliable means to estimate the demand for vanpooling, however the public surveys revealed a high level of interest among survey respondents in vanpooling (and carpooling). Moreover, much of the study area outside of the I-380 corridor does not currently have commuter transit service and likely will not be able to support transit in the foreseeable future.

Public Carpool Program

A carpool program can be implemented less expensively than other programs and is recommended because of its ease of implementation and cost effectiveness. A formal carpool program is a natural element of a commuter transportation program. Employers and stakeholders have noted their desire for a centralized ridematching system. This would need to be integrated into existing programs and would need to be actively promoted by sponsoring agencies.

Statewide Applicability

Iowa's socioeconomic and passenger travel trends suggest there will be a need to identify travel demand management strategies for increasing the safety and efficiency of Iowa's transportation system. Increased population in and around metropolitan areas will create congestion and capacity issues as long as single-occupant vehicle travel remains the primary mode of travel. As Iowans drive longer distances to work, it will be increasingly important to identify and maintain commuter routes with facilities and services that provide alternatives to the single-occupant vehicle.

When examining the applicability of this effort to other areas of the state, the advisory group and project management team looked to identify other commuter corridors that were comparable to the Cedar Rapids-Iowa City corridor. The general consensus was that there was only one truly comparable corridor in the state of Iowa, that being the Ames-Des Moines corridor. Here you also have two metropolitan areas (population greater than 50,000), separated by roughly the same distance, and connected by a similar interstate highway facility that carries comparable levels of passenger traffic.

Having identified Ames-Des Moines as a comparable corridor where this effort may have some direct applicability, it was noted that a feasibility study was already underway for this corridor, led by the Des Moines Area Metropolitan Planning Organization. The final Ames-Des Moines I-35 Commuter Corridor Feasibility Study was published on August 19, 2014 and contained conclusions similar to those identified in the ICTS. The Ames-Des Moines study found that sufficient demand exists to warrant investment in a commuter express bus service operating along the I-35 corridor during the weekday peak periods.

While these two corridors are somewhat unique in a statewide context, the methodology applied in the development of the ICTS could certainly be applied to other commuter corridors, although the recommendations would likely differ. In addition to the ICTS, the Iowa DOT has also recently engaged in other commuter transportation planning efforts, including the recent completion of the Iowa Park and Ride System Plan and ongoing efforts related to the development of a statewide ride-matching system.

The *Iowa Park and Ride System Plan* will be used by the Iowa DOT to plan, evaluate, and develop a formal statewide system of park and ride facilities. For the purposes of this plan, park and ride facilities are places to park a vehicle when carpooling, vanpooling, or taking public transit. The plan provides the framework for determining the current need for commuter park and ride services, evaluating the existing system, identifying gaps in service, and guiding potential system expansion. The primary objective of the plan was to develop a location-specific, priority-based park and ride system that allows for coordinated planning and implementation of park and ride facilities that maintain highway safety, encourage ridesharing, support commuter transportation, and promote energy conservation.

Related to this effort is the development of a statewide rideshare program that can be used to match potential carpool and vanpool participants using a single ride-matching system. Historically, rideshare services across Iowa have been administered in a decentralized model where the Iowa DOT has not been involved in the procurement, administration, or marketing of local rideshare programs. This model requires rideshare organizations to provide separate startup funding and yearly support fees, reduces the overall number of matches available for potential rideshare participants, and is not consistently administered across the state.

The result of this has been an inefficient and costly system that does not serve all of Iowa's communities and results in fewer ride matches created. The statewide rideshare project will provide a more efficient, affordable, and user-friendly service by eliminating the need for multiple global administrators, reducing capital and operating expenses, and consolidating services into a single software system. The goal of this program is to increase the number of people who wish to take part in car pools, van pools, and public transit services.

Next Steps

The following ICTS next steps are necessary for the implementation of the ICTS recommended package of service improvements.

1. ***Identify Lead Agency for Implementation:*** The implementation of the ICTS recommendations will involve an active partnership between multiple jurisdictions and agencies within the region. However, one agency should be identified to lead the effort. ECICOG was suggested as the agency that could lead the initial effort of coordinating initial discussion between the study partners. Although not identified as a lead agency, Iowa DOT would continue to have an important role in the initiative.
2. ***Form Study Implementation Committee*:** The lead agency will organize a study implementation committee comprised of study area jurisdictions, public agencies and service providers. The function of the committee would coordinate implementation efforts.

3. ***Identify and Pursue Preferred Funding and Financing Options for Implementation:*** The implementation of the ICTS recommendations will likely require multiple funding sources, some existing such as state and federal funding programs, some new such as a regional transit district, a special assessment district or other sales or property tax.

4. ***Create an Implementation Plan:*** Given the recommendations and established priorities, and with more information on funding needs and availability, a detailed implementation plan should specifically list the steps to implement each of the projects and programs. There are multiple ways to operate and manage each of the service improvements. However, this will require more deliberation from the Study Implementation Committee, public agencies, transit service providers, local governments, and more detailed discussions with corridor stakeholders including major employers on how best to implement the improvements.

5. ***Define Project Phasing Based on Available Funding and Priorities:*** Initial funding through one-time state or federal grants or other mechanism may be able to fund initial improvements. Implementation can be phased based on available funding and financing, as well as the community's priorities. There are several initiatives already underway such as the Iowa DOT's park and ride program, the statewide ridematching system deployment and the statewide transportation website. Pilot programs can be an effective way to test the effectiveness of concepts and garner support for funding and broader implementation. For example, a pilot of the interregional bus transportation concept may be effective in helping to create the support for a long term investment in the corridor.