



VISION FOR INFRASTRUCTURE INVESTMENT

EXECUTIVE SUMMARY

INTERSTATE 80 PLANNING AND ENVIRONMENTAL LINKAGES (PEL) STUDY

July 2018

Introduction

Decisions made today can have a big impact on the future. As for the Iowa Department of Transportation (Iowa DOT), we must use thoughtful and strategic foresight today to meet Iowa's economic and mobility needs of tomorrow. This is particularly a challenge given funding realities and the length of time required to turn an idea into construction. Highway projects completed today are the direct result of long-term plans developed years earlier.

Interstate 80 (I-80) across Iowa is one of our most daunting challenges. As Iowa's busiest interstate, it plays a vital role in connecting Iowa's major metro areas and distributing people and products. It is critical to Iowa's economic prosperity. But it is time to reinvest in this important route. Originally built in the 1950s and 1960s, a new vision for this Interstate is needed due to age and use – one that preserves past investments and positions Iowa for the 21st Century.

But simply rebuilding the existing roadway may not meet the needs of an uncertain future. This new vision, called the I-80 Vision, must plan for and adapt to future challenges. As mobility needs of future generations evolve, and as new vehicle technologies emerge, the I-80 Vision must accommodate future transportation operations, all while meeting the immediate and short-term needs of Iowans and others traveling through the state.

Throughout this Document:

Icons indicate that additional information is available at <https://iowadot.gov/interstatestudy>.



Technical Reports



Project Website

Iowa in Motion 2045: Setting the Statewide Vision

The statewide long range plan sets the framework for the Iowa DOT's planning and construction. This plan identifies the statewide vision for Iowa's transportation system:

“A safe and efficient multimodal transportation system that enables the social and economic wellbeing of all Iowans, provides enhanced access and mobility for people and freight, and accommodates the unique needs of urban and rural areas in an environmentally conscious manner.”

Iowa in Motion 2045,
State Transportation Plan,
May 9, 2017

The I-80 Planning Study: Key Findings



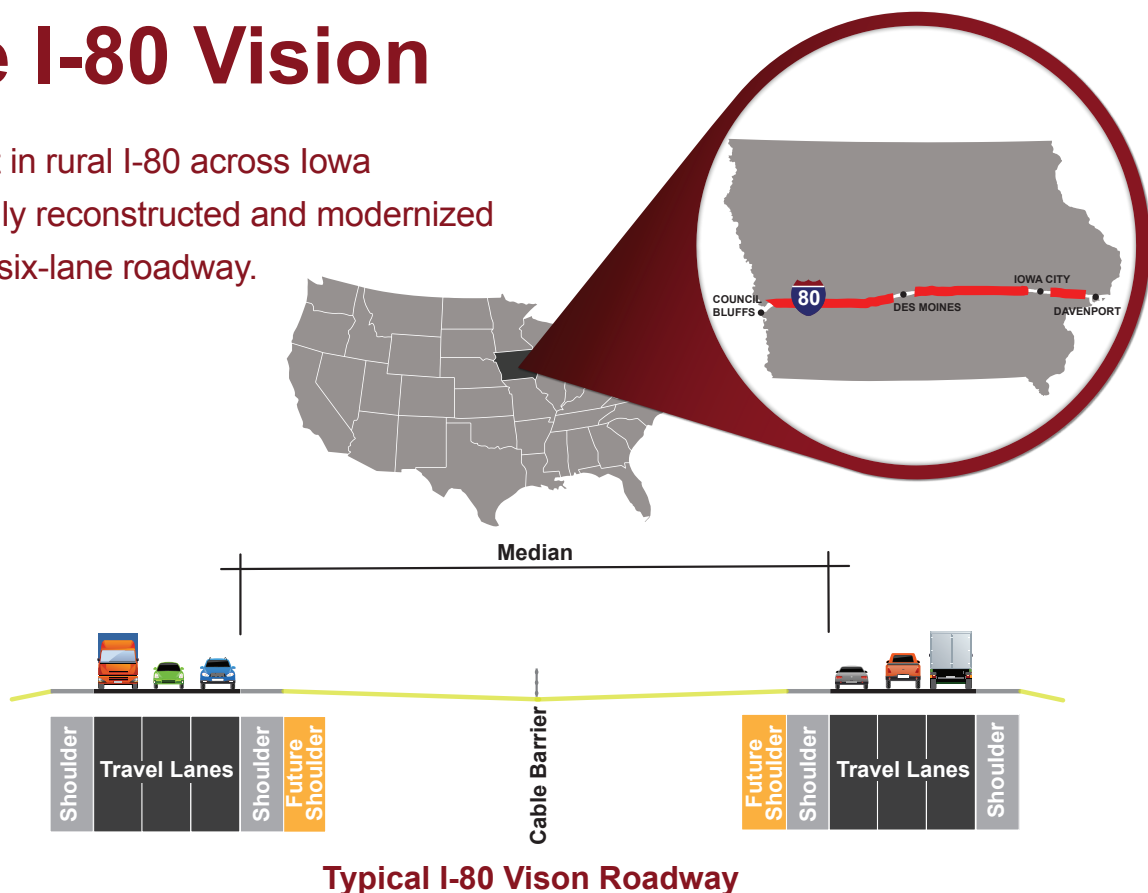
The Iowa DOT conducted a long-term planning study of rural I-80 across Iowa to identify a new vision for the interstate.

Findings of the study:

- I-80 is one of Iowa's most important transportation corridors.
- Rural I-80 needs to be widened and modernized to effectively serve Iowa in the future.
- New vehicle technologies will play an important role in the improved I-80 operations.
- The funding needs of I-80 and the state are greater than Iowa's projected revenue.
- The upgraded rural I-80 will be delivered over time in a balanced, statewide approach.
- Tolling rural I-80, as an alternative funding strategy, is not considered a viable option.

The I-80 Vision

Reinvest in rural I-80 across Iowa with a fully reconstructed and modernized ultimate six-lane roadway.



Features of the Vision

Today's interstate design standards are different than the original I-80 construction. The Vision provides a modern interstate designed for the 21st Century. Features include:

- A modern 75 mph design with a gentler state-of-the-art alignment.
- New pavement, bridges, and roadside.
- Interchange improvements to serve future traffic growth and development.
- Real time traveler information for inclement weather and incidents.
- Expandability for long-term traffic growth.
- Accommodations for future autonomous vehicles and operations.
- Provisions for truck operations to improve overall traffic flow.
- Reshaping of Iowa's rest area system.
- Improved reliability for increased flooding risks due to changing weather trends.
- An ultimate six-lane roadway across Iowa built in stages based on need.
- Phased implementation and build-out as funding is available.

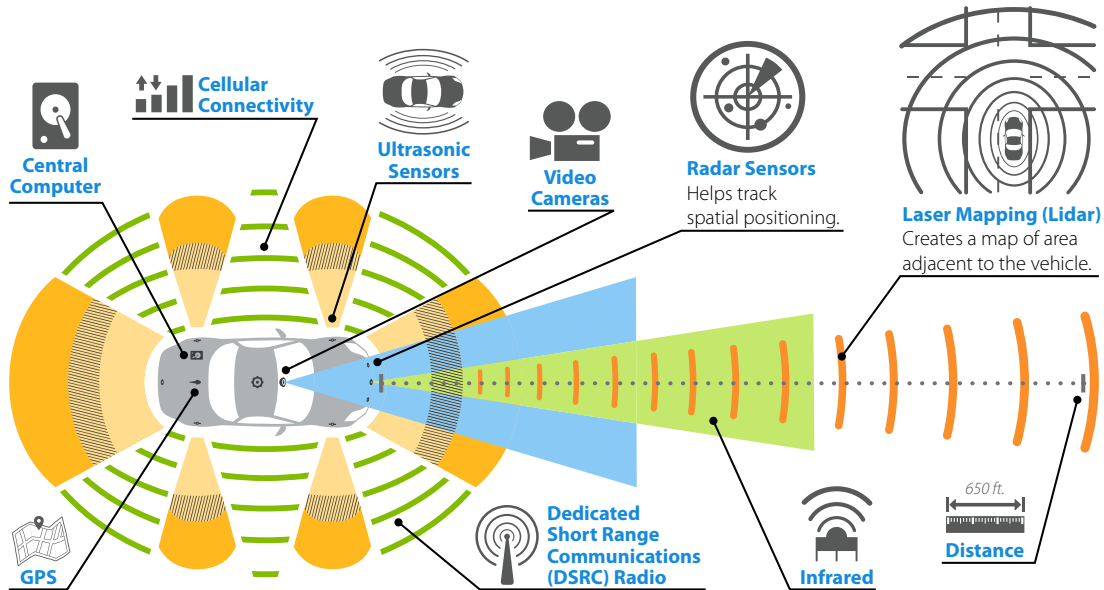
The I-80 Vision uses the current rural I-80 infrastructure across Iowa, a total length of 248 miles, as a base for an improved roadway. Full reconstruction of the existing roadway and bridges, built over time as funding and priorities allow, will ultimately result in a modern six-lane roadway. Through reinvestment, the Vision provides a long-lasting, future ready, less congested, more efficient, and safer interstate to serve Iowans for decades to come.

Maintaining Traffic During Maintenance and Rehabilitation

A significant issue is our ability to maintain I-80 traffic during major pavement and bridge rehabilitation or reconstruction. During these activities today, traffic lanes are temporarily closed and work is staged to maintain one lane of traffic in each direction – often resulting in long traffic delays. This impacts both travel safety and reliability, and increases the cost of the work. The Vision will enable two lanes of traffic in each direction to be maintained during future maintenance and rehabilitation activities.



Accommodating Future Vehicle Technologies



Sometime relatively soon, self-driving vehicles will be commonplace on our highways. Today, several automobile manufacturers offer Automated Vehicles (AVs) that use computers to replace the human driver in varying aspects of vehicle operation and control. It is predicted that within the next decade fully autonomous AVs, which allow operations without any human assistance for better traffic flow and safety, will be operating along I-80.

The Vision will accommodate this technology and the resulting improved traffic flow and safety improvements. When the time is right, additional space will be available for special AV lanes and roadside communications infrastructure will be in place.



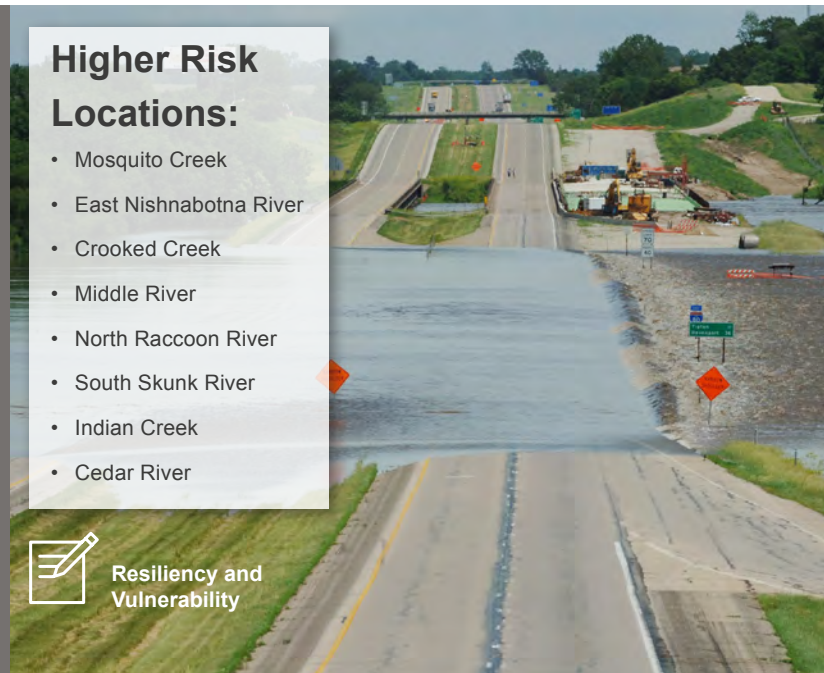
Improved Reliability for Changing Weather Trends

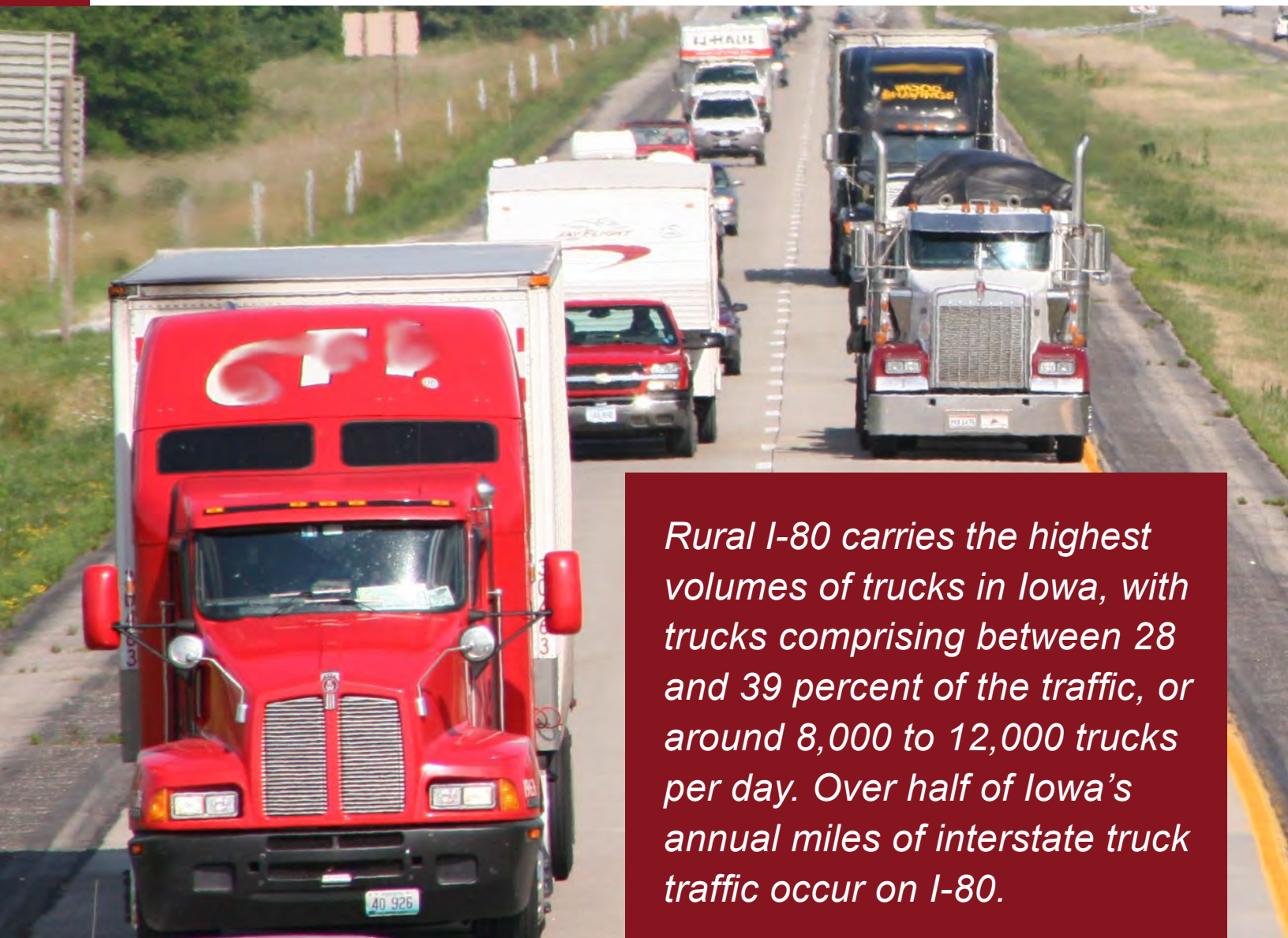
Iowa's weather trends are changing. Research of historic weather data shows an increased risk of flooding at several locations across rural I-80. These risks increase the vulnerabilities of I-80 to road closures due to flooding – potentially impacting travel safety and reliability across Iowa.

The Vision provides the opportunity to improve I-80's resiliency and reduce the risks of road closures due to flooding. At each high-risk location, detailed risk analysis will assess raising and lengthening of bridges.

Higher Risk Locations:

- Mosquito Creek
- East Nishnabotna River
- Crooked Creek
- Middle River
- North Raccoon River
- South Skunk River
- Indian Creek
- Cedar River





Rural I-80 carries the highest volumes of trucks in Iowa, with trucks comprising between 28 and 39 percent of the traffic, or around 8,000 to 12,000 trucks per day. Over half of Iowa's annual miles of interstate truck traffic occur on I-80.

Local Crossroad Bridges

In its efforts to right size the Vision, we are offering an incentive program with local agencies. Many local crossroad bridges along rural I-80 are not performing functions as originally intended. These crossings involve local roads with very low traffic volumes. The Vision provides an opportunity to remove these low-volume crossings, saving construction and maintenance costs. This incentivized asset management program benefits both the state and the local agencies and depends on local decisions to participate.

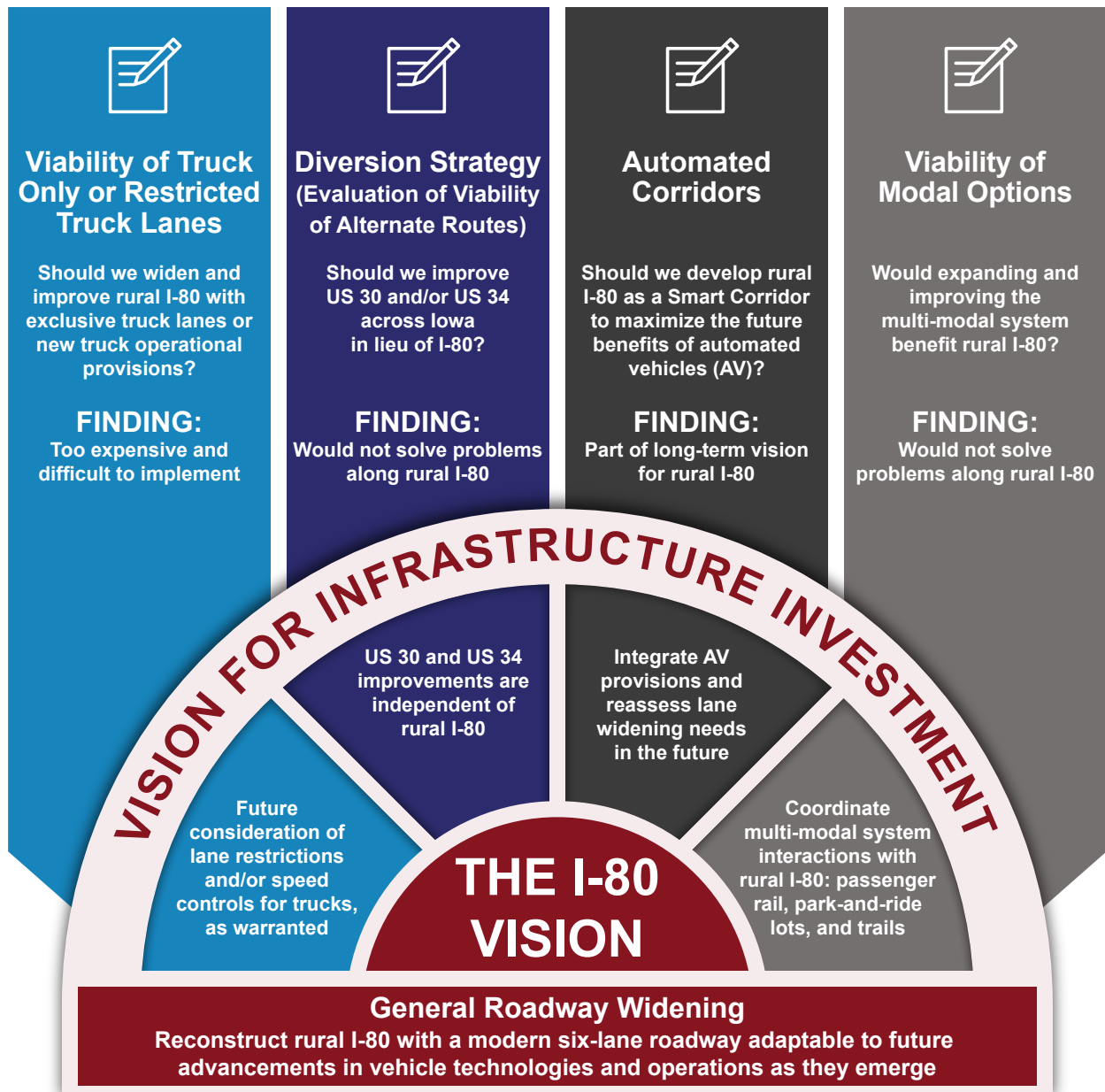
The Incentive Program Includes:

- 47 eligible bridges
- \$1.5 Million per crossing location
- Coordination with local agencies



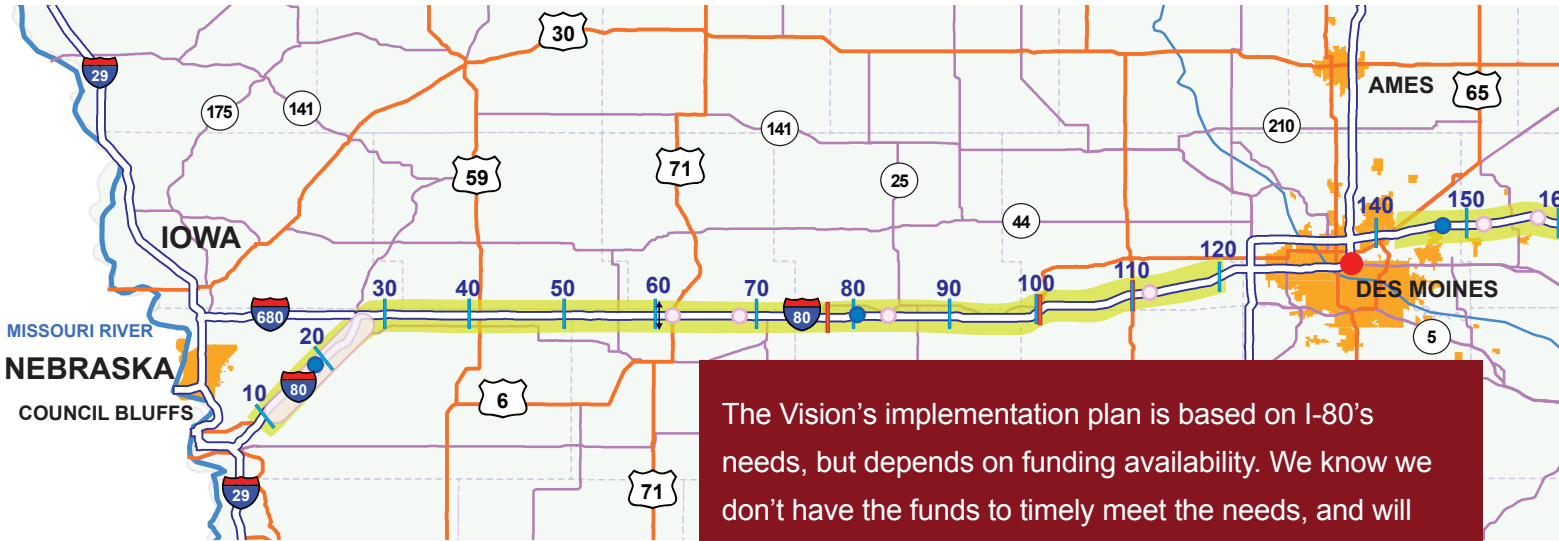
Integrated Mobility Solution for Iowa

The I-80 Vision is the result of a comprehensive long-term planning process, called the I-80 Planning Study. In addition to general roadway widening, other non-interstate improvement strategies were studied. Each, such as truck-only lanes and alternate routes strategies, was assessed to identify its interaction with rural I-80 and its ability to relieve congestion. The result is an integrated solution that improves mobility across rural Iowa. While each does not solve the problems along rural I-80 alone, elements of these other strategies are integral to the I-80 Vision.



LEGEND

- INTERSTATE
- STATE HIGHWAY
- COUNTY BOUNDARY
- MILE POST #
- US HIGHWAY
- RIVERS



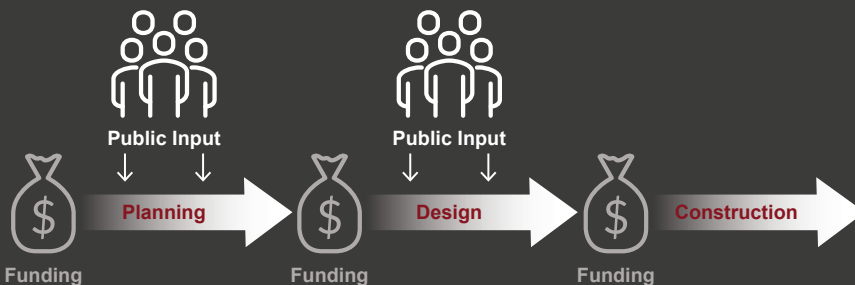
Note: The I-80 Vision applies to the rural portions of I-80. The urban portions are being evaluated separately.

The Vision's implementation plan is based on I-80's needs, but depends on funding availability. We know we don't have the funds to timely meet the needs, and will implement the Vision as funding is identified through a balanced statewide priority approach.

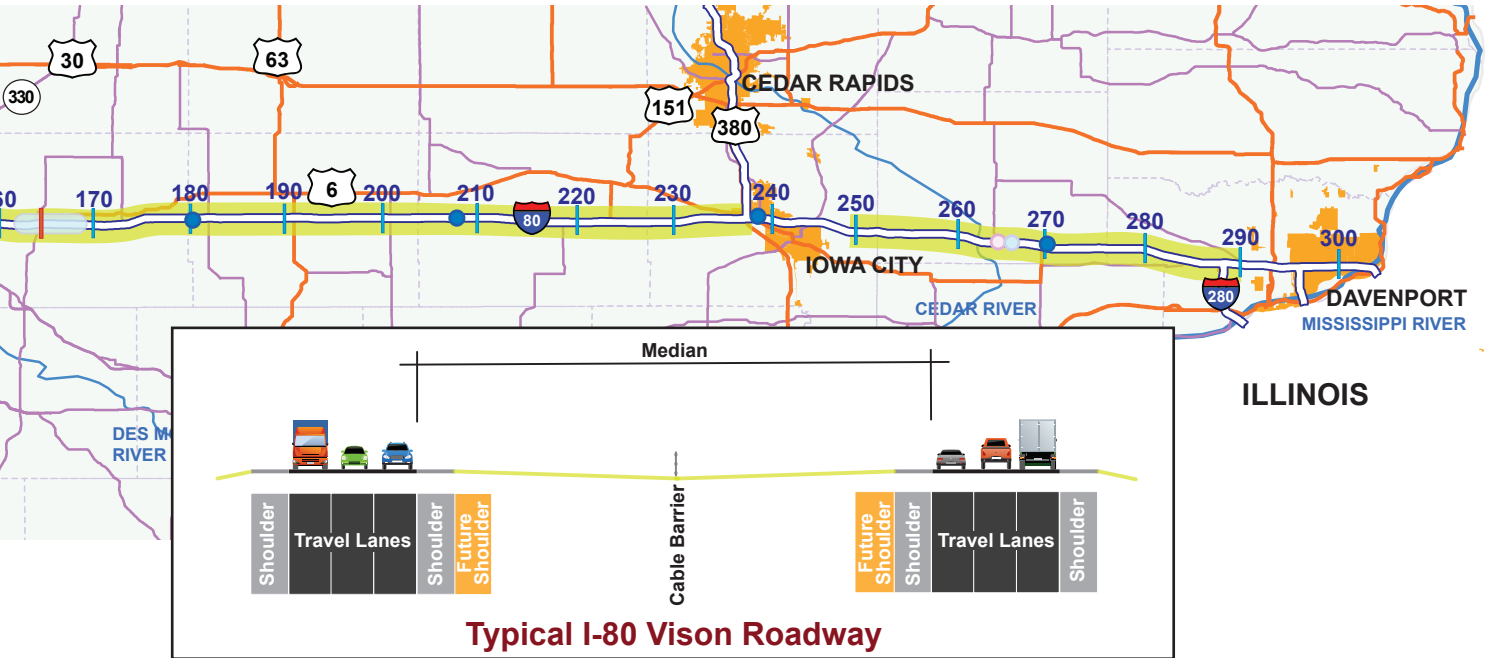
Implementing the Vision

Constructing the Vision will be accomplished over time, as funding is available and priorities allow. As a framework for our construction planning and programming, individual projects along I-80 will be identified based on the Vision's Implementation Plan. Once identified and funded, we will conduct additional engineering and environmental planning studies for each project, followed by final design, right-of-way acquisition, and construction. The planning studies will include field surveys and investigations of potentially impacted environmental resources. During the planning studies, as well as during final design activities, public meetings will be held to provide additional opportunity for public input and comment.

The I-80 Vision will include additional public information meetings as part of the planning studies and design activities.



I-80 VISION DESIGN FEATURES

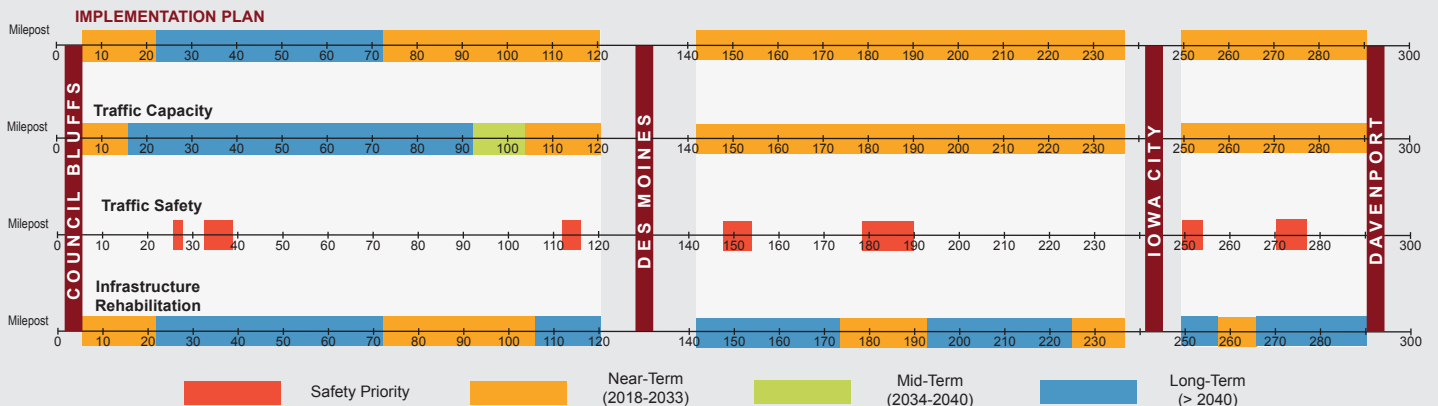


The Vision's Project Implementation Triggers

The Vision will be the primary guiding factor for determining where funding is focused. As funding is available, the needs of I-80 will determine when and how the Vision will be constructed. The improvements can be built in phases and stages as the needs arise. When a need is identified, we will determine how to best address the need while implementing the Vision. Through this process, the improvements will be completed over time as funding allows.

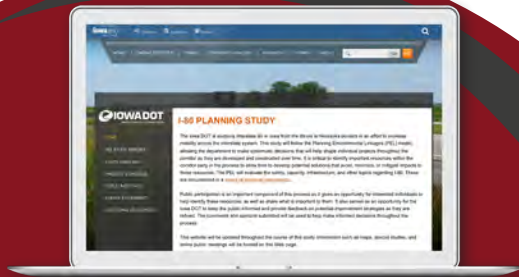
Priorities for phasing will be triggered by three primary factors:

- **Traffic capacity** – Congested traffic operations.
- **Traffic safety** – Areas with higher crash rates.
- **Infrastructure rehabilitation** – End of pavement service life requiring full replacement to maintain state of good repair.



The I-80 Vision: Formed by You

Through multiple public meetings, public comments received through our study website, and a study questionnaire, we learned about the issues most important to Iowans. The Vision is the product of listening and adjusting to what we heard.



During the Planning Study, a study website allowed residents and other interested parties to participate in the study process. Over 100 comments were received through the site and over 5,500 participants completed the on-line questionnaire. This site provided access to:

- General information about the study.
- Maps of the study area.
- Multiple technical reports on important study topics.
- A video about future Automated Vehicle technologies.
- Three on-line public meeting videos.
- The final study report - Vision for Infrastructure Investment.



<https://iowadot.gov/interstatestudy>

How the Vision Benefits Iowa

Reinvesting in, expanding, and modernizing I-80 across Iowa provides long-lasting and improved mobility for Iowans. Given its important role in the state's economy, the Vision benefits all Iowans - residents, producers, manufacturers, freight carriers, and travelers. Through improved travel service and reliability, I-80 will continue to be an important backbone of Iowa's economy. When completed, the Vision will address:



Travel

Improve travel times and reduce traffic congestion



Safety

Provide safer travel and reduce the number of crashes



Reliability

Reduce travel delays due to weather and incidents



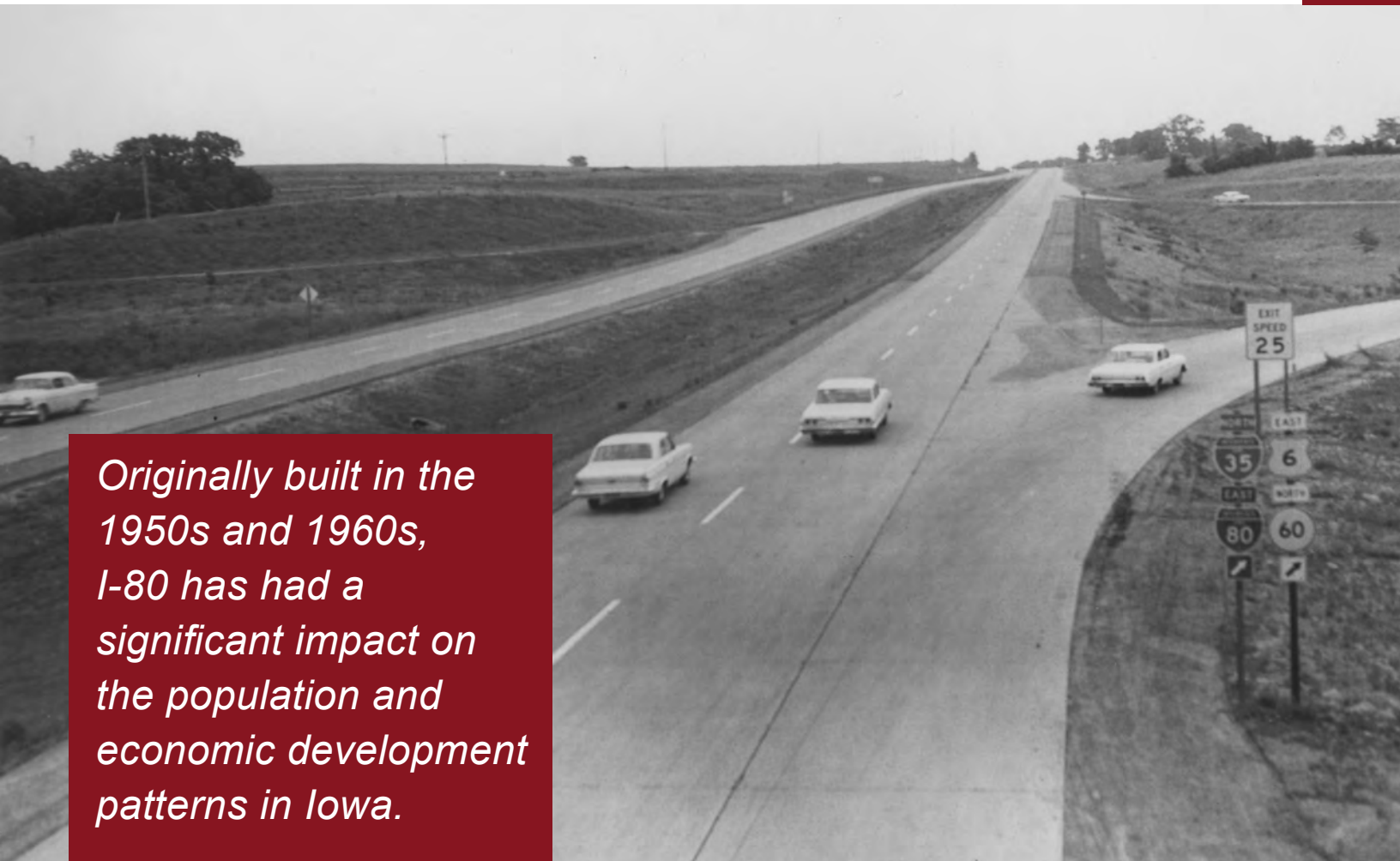
Economy

Save travelers money by reducing delays and crashes



Maintenance

Reduce the normal costs of maintaining pavement and bridges



Originally built in the 1950s and 1960s, I-80 has had a significant impact on the population and economic development patterns in Iowa.

Estimated Benefits of the I-80 Vision (2018 to 2050):

Improve **travel times** across Iowa



Prevent roughly **24,000 total** and **180 fatal crashes** statewide



Reduce approximately **475 million hours** of travel delay statewide



Save around **\$3.1 billion** in travel and safety-related costs statewide



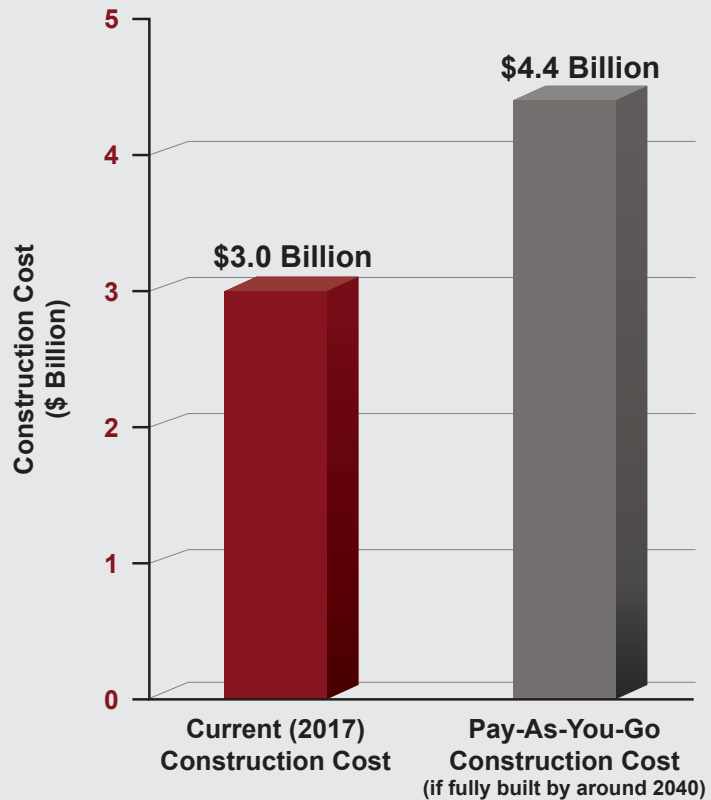
Save around **\$600 million** in existing pavement and bridge rehabilitation costs



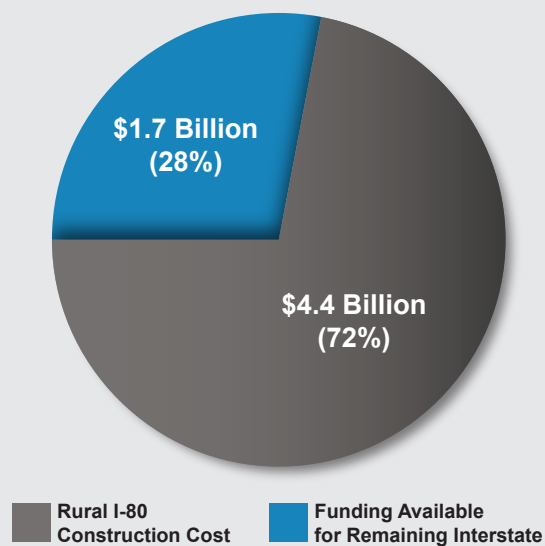
Paying for the Vision

Completing the Vision is an important commitment for Iowa. However, with a current construction cost of nearly three billion dollars, it will require allocation of a significant portion of our funding in the future. If fully built by around 2040 on a pay-as-you-go basis with present day forecasts, roughly three quarters of future interstate funding would need to be allocated. This would impact the ability to address other needs across Iowa. Moving forward, we will continue to assess the many important, yet competing needs across Iowa, including I-80, in determining how best to spend our limited resources.

THE VISION CONSTRUCTION COST



TOTAL INTERSTATE FUNDING (2018–2040) = \$6.1 BILLION



Note: The above charts illustrate the impacts on construction costs and available funding for an assumed Vision completion date of around 2040. This assumption is for illustration purposes only and is not a planned commitment of the Iowa DOT.

What's Next

The I-80 Vision provides strategic direction and a long-term framework for constructing future improvements. It's a roadmap for the future of rural I-80. This enables us to maintain the existing pavement and bridges, while simultaneously programming, planning, and constructing projects based on the Vision. This provides long-term compatibility and cost savings as the improvements are completed.



Alternative Funding Options

The Iowa DOT does not currently have the funding available to complete the Vision to address the predicted needs in a timely fashion. Without new funding, the Vision will be implemented as existing funding is available, over time, based on a balanced statewide priority approach. During the Planning Study, tolling was evaluated, but was rejected as a viable alternative funding option.

With the current limitations of federal and state highway funding, we must continually balance the competing needs of our highway system to prioritize the use of available funding. With a current estimated construction cost of nearly three billion dollars, implementing the Vision will be a significant investment. Moving forward, we will continue to assess alternative funding options, as they present themselves, to pay for the improvements. These options would provide new and additional funding so that current revenue sources can be preserved for other system needs. Providing new funding would enable the Vision to be completed more timely while reducing the costs of construction and providing its benefits to Iowans sooner.

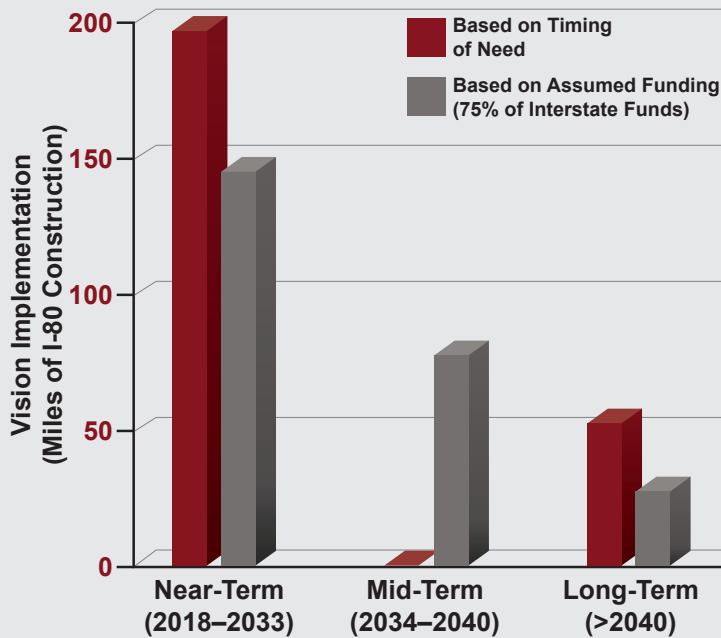


**Tolling
Considerations**



Ongoing maintenance of the existing I-80 pavement and bridges will continue as the Vision is constructed over time across Iowa.

**VISION IMPLEMENTATION
BASED ON NEED COMPARED
TO AVAILABLE FUNDING**



Note: Assumption of 75% of Interstate funds is for illustration purposes and is not a commitment by the Iowa DOT.

Next Steps for the Vision

The I-80 Vision is flexible and adaptable to future conditions. This includes building the improvements in phases as funding becomes available. We cannot build the Vision all at once. While funding is not currently available, we will advance the Vision while maintaining the existing I-80 infrastructure. Over time, funding for the Vision will be identified based on Iowa's overall needs and priorities.

Operations and Maintenance

As part of its normal annual interstate condition assessments and maintenance programming, major roadway and bridge rehabilitation activities will be coordinated with the Vision's implementation.



Coordination of Statewide Projects

Statewide improvement programs, such as rest areas and park and ride facilities, will be coordinated to accommodate the Vision's implementation.



Additional Studies

For corridor-wide applications, more detailed studies will be performed to define common design standards and infrastructure requirements.



Project Programming

As part of regular planning and construction programming activities, projects within the Vision will be identified and programmed.



Funding Options

Given its importance, funding realities, and the benefits of earlier completion, alternative funding options will continue to be assessed.





**Office of Location
and Environment**

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iowadot.gov/interstatestudy

