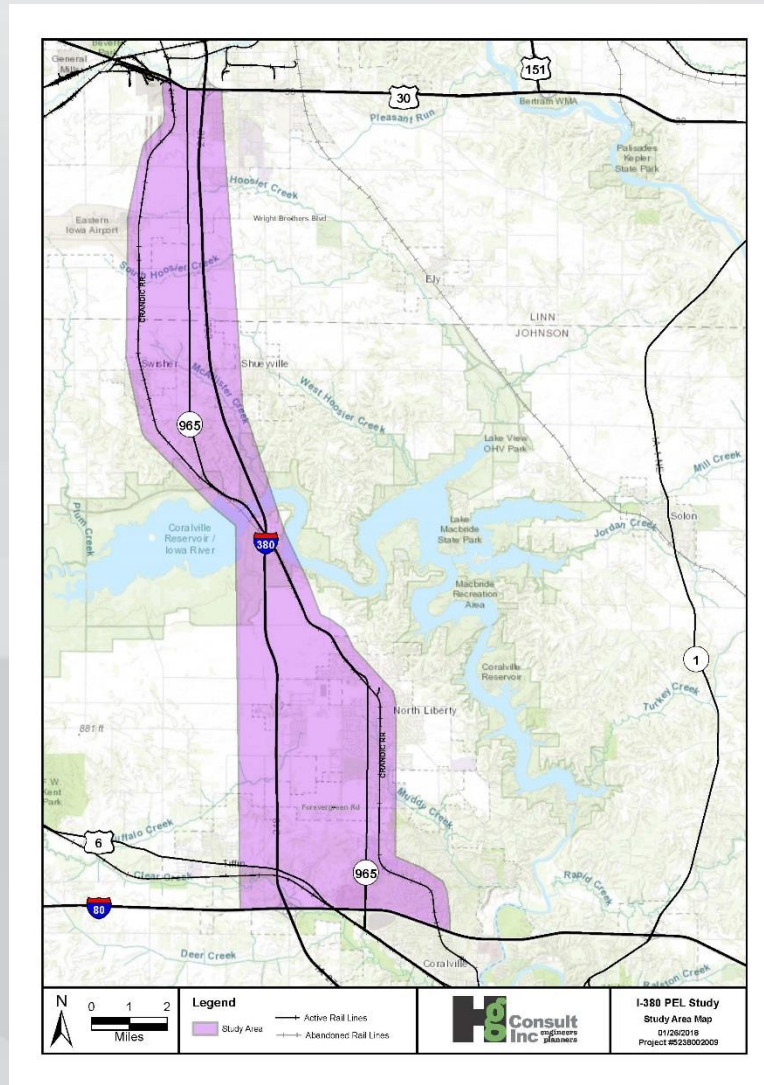


I-380 Planning and Environmental Linkages (PEL) Study

I-380 PEL Study Area



Outcomes of I-380 PEL Study

- Define a long-term **I-380 Vision**
- Increase mobility and travel time reliability during construction
- Develop an investment strategy and implementation plan for improvements

Process

- Follow the Planning Environmental Linkages (PEL) model
- Establish a vision and goals for the system
- Take a corridor wide and multi-modal approach
- Evaluate safety, capacity, and infrastructure deficiencies
- Public involvement and stakeholder input



Schedule & Status Technical Memos

• Public Involvement Plan	DONE	IN HOUSE
• Guiding Principles	DONE	IN HOUSE
• Alternative Modes	DONE	CONSULTANT
• Existing Conditions Analysis	DRAFT	CONSULTANT
• Resiliency and Vulnerability	DONE	CONSULTANT
• Automated Vehicles	DRAFT	CONSULTANT
• Vision for Infrastructure Invest.	Draft Summer 2018	CONSULTANT

Project Website

<https://www.iowadot.gov/I380Planningstudy>



Public Involvement

Project Website

<https://www.iowadot.gov/I380Planningstudy>

➤ **Over 800 Subscribers**



**Public Meeting #1 - Complete July 2017
(online)**



**Public Meeting #2 – Coming March 2018
(online)**



**Public Meeting #3 – Coming Summer August 2018
(in-person)**



Existing Conditions & Operations

- I-380 designed in 1970's
- Some features don't meet current design standards
- Current and forecast operations at interchange merge and diverge areas showing problems
- Capacity issues
- Safety and crash analysis
- Natural and human environment constraints:
 - Iowa River crossing
 - Wetlands and public areas
 - Industrial, residential and commercial growth

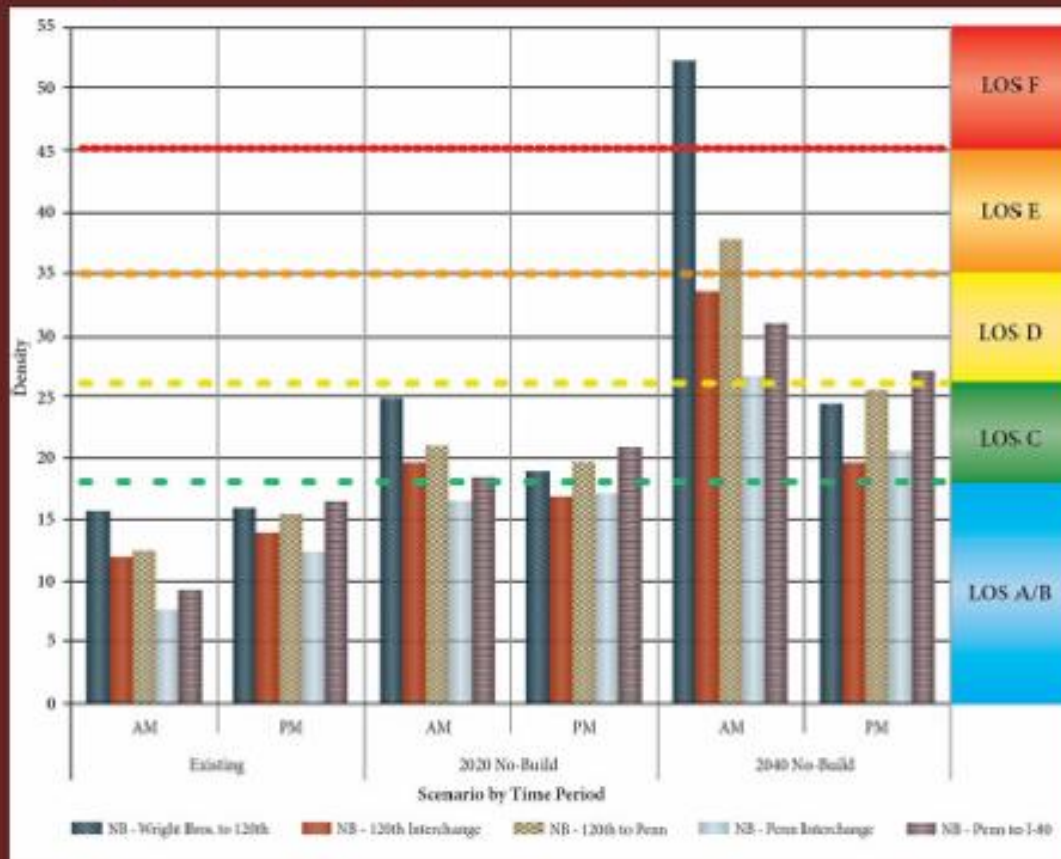


Traffic and Level of Service (LOS)

Growth in I-380 Traffic Outpaces Previous Forecasts

The 2012 I-380 Rural Feasibility Study forecasted that several segments of I-380 would operate at LOS C or worse by 2020.

The I-380 PEL operations analysis results show that LOS C is already exceeded on mainline segments in the morning and afternoon peak hour

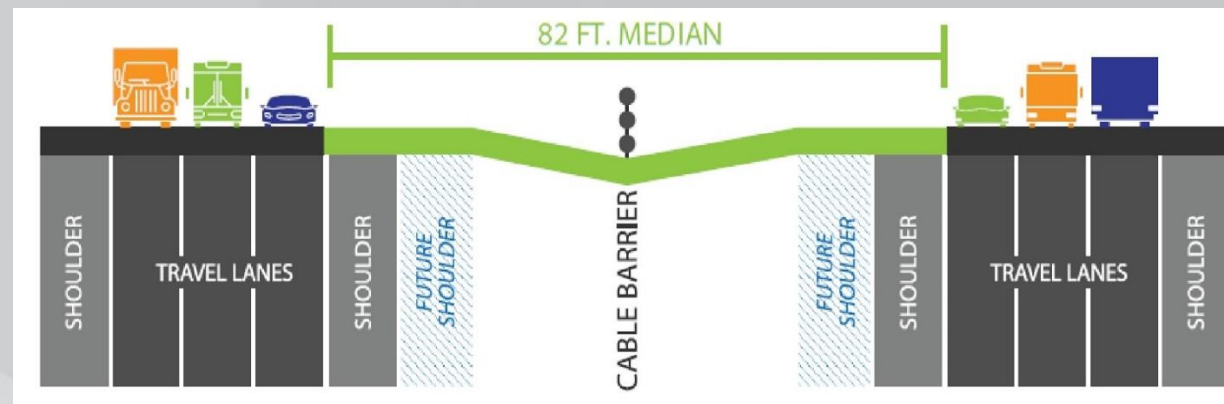


Existing Conditions & Operations – Preliminary Findings:

Findings:

- The I-380 Corridor is one of the fastest-growing corridors in Iowa
- Today, during AM peak hours, 3 of 12 segments operate at LOS C
- In the PM peak hours, increases to 8 of 12 segments at LOS C
- In less than ten years, some segments are at or exceed LOS D
- By 2040, all but one segment is expected to operate at LOS D or worse in the PM

Expansion to 6-lanes, with potential to expand to 8-lanes in the future



Alternative Modes - Technical Memo



- Evaluate the long-term potential for commuter rail and bus transit in the corridor
- Considerations
 - Use of CRANDIC rail line
 - Ride Sharing
 - Van Pooling
 - Express Bus Service

Alternative Modes – Preliminary Findings:

- I-380 improvements are necessary
- Long-term implementation of a parallel transit line will be supplemental to and not replacement for widening of I-380 in the short-term
- Preservation of CRANDIC line for future opportunities
- Consider Iowa City to North Liberty commuter rail in short-term
- AV implementation best suited for first mile/last mile connection to commuter rail service
- Commuter rail implementation within I-380 ROW is infeasible



Resiliency & Vulnerability - Technical Memo



- Assess threats based on historical climate & projected climate trends
- Identify and understand vulnerabilities
- Identify potential strategies
- Provide recommendations for future environmental and engineering studies

Resiliency & Vulnerability – Preliminary Findings:

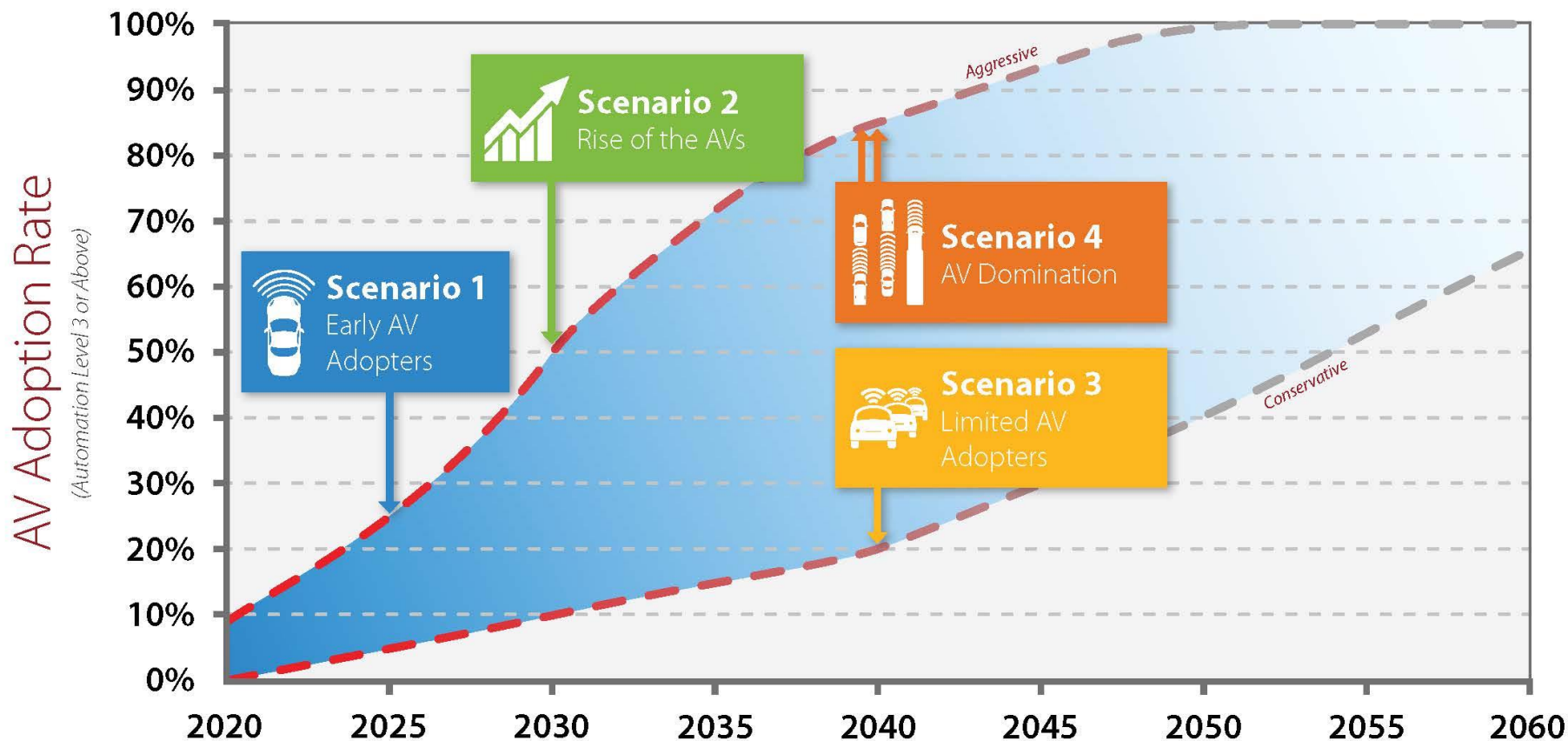
- Develop a road closure monitoring and documentation program
- Monitor maintenance performance considering recent weather events and projected climate variability
- Review and update stormwater design standards
 - Recent changes in hydrologic records
 - Assets - such as culverts, bridges, etc.
 - Future changes in precipitation intensity and hydrology
- Perform risk analysis for vulnerable locations
- Coordinate resiliency of interdependent I-80 and I-380 corridors

Automated Vehicles & Emerging Technology



- Evaluate the effect of automated vehicles and emerging technology on:
 - Safety
 - Capacity & Operations
 - Travel Time Reliability
 - Design Elements

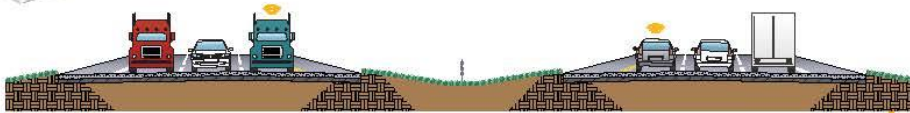
Automated Vehicle (AV) Market Adoption



The I-380 Planning Study and market adoption rates and impacts of vehicle automation are informed by industry leading research by University of Texas, University of California at Berkeley, Victoria Transportation Policy Institute and Goldman Sachs. The scenarios ranged from conservative to aggressive in market adoption.

AUTOMATED CORRIDORS

I-380 PEL Study



3 Westbound General Travel Lanes

3 Eastbound General Travel Lanes

Today

Tomorrow

Future



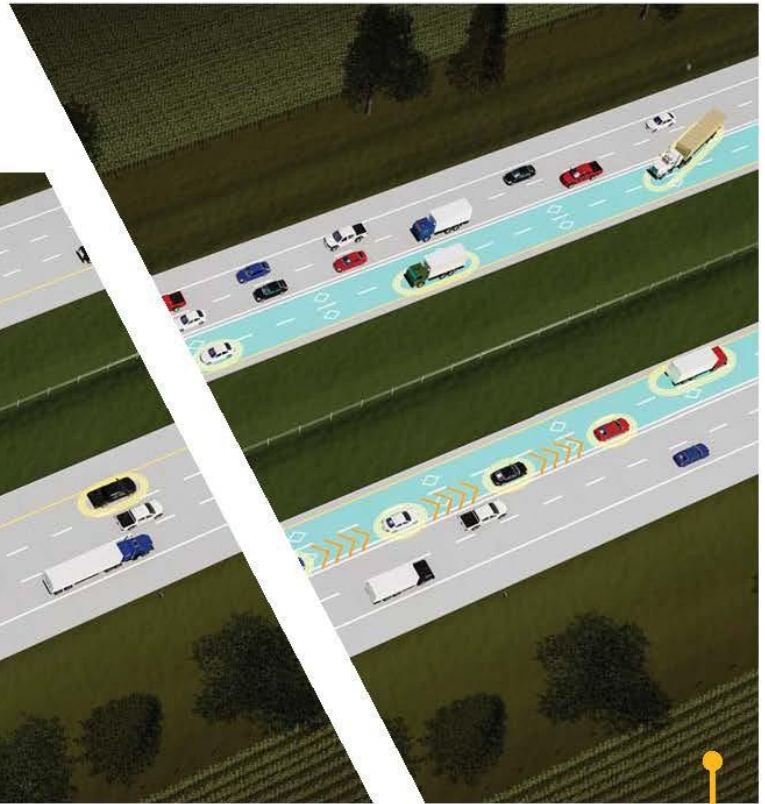
2 Westbound AV Lanes

2 Eastbound AV Lanes



2 Westbound General Travel Lanes

2 Eastbound General Travel Lanes



2 Westbound General Travel Lanes

2 Eastbound General Travel Lanes

AUTOMATED CORRIDORS

I-380 PEL Study

STUDY RESULTS

2040 Scenarios versus Existing Conditions

Data based on studies and analyses of a typical segment of rural I-380.

4-Lane I-380 UNIMPROVED IN THE YEAR 2040




Average **crashes** per mile will **increase 60%** with little change to the number of **fatal and major injury crashes***

*(with a 33% increase in volumes)



SAFETY

Vehicle **crowding** will increase by **25%** causing **average speeds** to decrease **10%**



TRAFFIC CAPACITY

Overall **travel times** will increase and **reliability** will worsen



RELIABILITY

6-Lane I-380 IMPROVEMENTS




Average **crashes** per mile will **increase 23%** with little change to the number of **fatal and major injury crashes***

*(with a 33% increase in volumes)



Vehicle crowding and average speeds **remain the same** as today



Reliability slightly worsens

6-Lane I-380 with AV IMPROVEMENTS




Average **crashes** per mile will **decrease 45%** and **fatal and major injury crashes** will **decrease 20%***

*(with a 58% increase in volumes)



11% less vehicle crowding and average speeds **increase 2%**



Significant **reliability** improvement

I-380 PEL Study – key takeaways

Study Outcomes:

- Recommended long-term **I-380 Vision**
- Recommended implementation plan

Next Steps:

- Public Involvement
 - Online public meetings – March 2018
 - In-person public meeting – August 2018
- Final Tech Memo – Vision for Infrastructure Investment
 - Identify improvement strategy
 - Prioritize sections for construction
 - Funding strategy





QUESTIONS ???