WHEN DATA DRIVEN SAFETY AND COMMUNITY INVOLVEMENT MERGE, WE CAN REALLY SAVE LIVES

US 20 HIGHWAY SAFETY STUDY

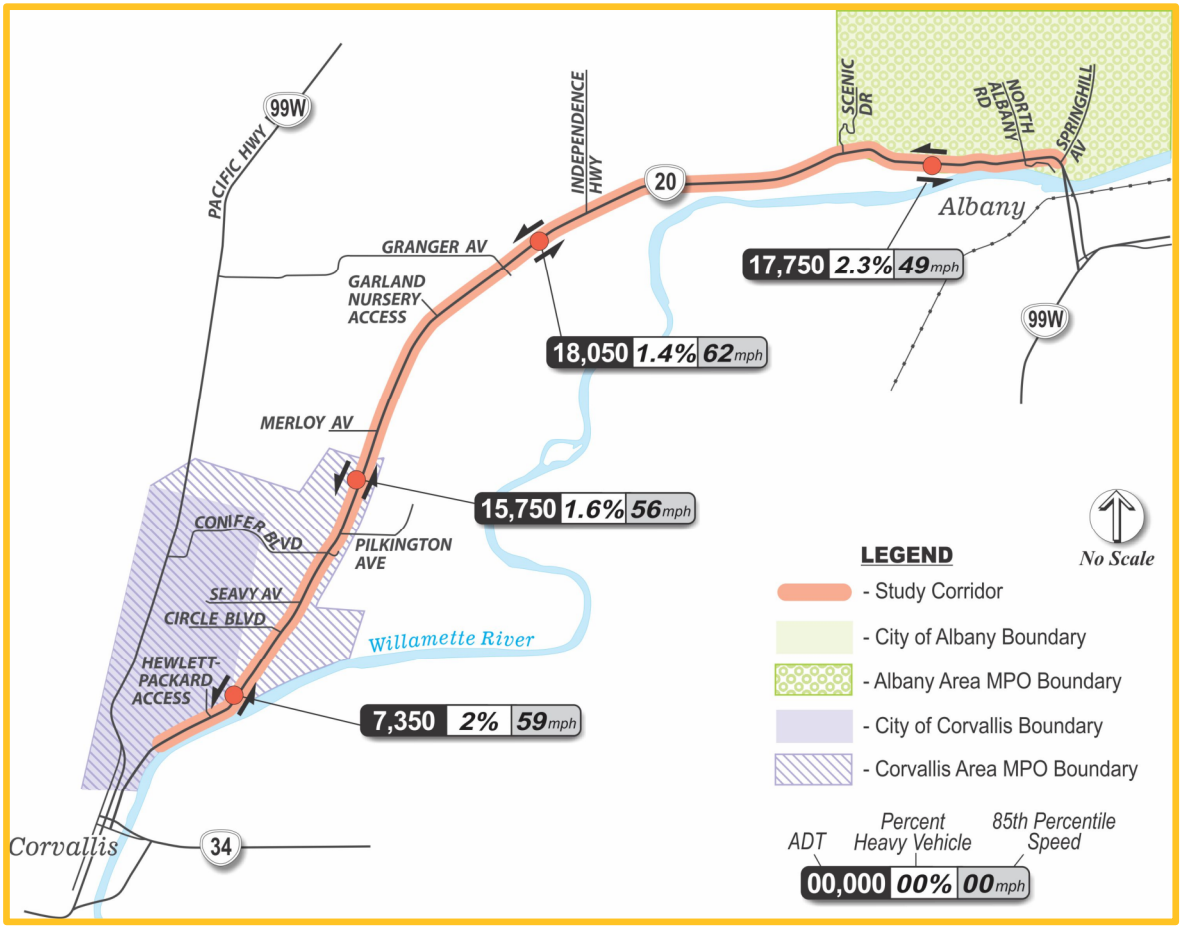
SCOTT MANSUR, PE, PTOE
PRINCIPAL
SMM@dksassociates.com
503-391-8773

SHAPING A SMARTER TRANSPORTATION EXPERIENCE™
DKSASSOCIATES.COM
AN EMPLOYEE-OWNED COMPANY
DKS

Project Area

US 20 Project Limits

- Rural High-Speed Highway (45 to 55 mph) connecting urban facilities within the Cities of Albany and Corvallis
- Connects Housing in Albany with Corvallis Jobs and Oregon State University



US 20 project limits between Albany and Corvallis

Study Overview

US 20 Corridor

- 2-lane highway
- High volume commuter corridor
- High access density
- High frequency and severity of crashes

Study Overview

US 20 Safety Study

- Top priority corridor for many years (several top high crash hot spot locations)
- Previous studies looked at isolated hot spots; safety improvements resulted in increased crashes
- ODOT needed a comprehensive, data-driven evaluation

Heatmap: Fatal and Severe Crashes, 2013-2017

Study Goals and Objectives

- Evaluate the **past, current, and future** corridor safety performance.
- Identify **cost-effective** systemic and hot-spot **safety improvements**.
- Use a **data-driven** process to **prioritize safety improvements**.
- Gain **stakeholder consensus** on recommended safety improvements.

Study Approach

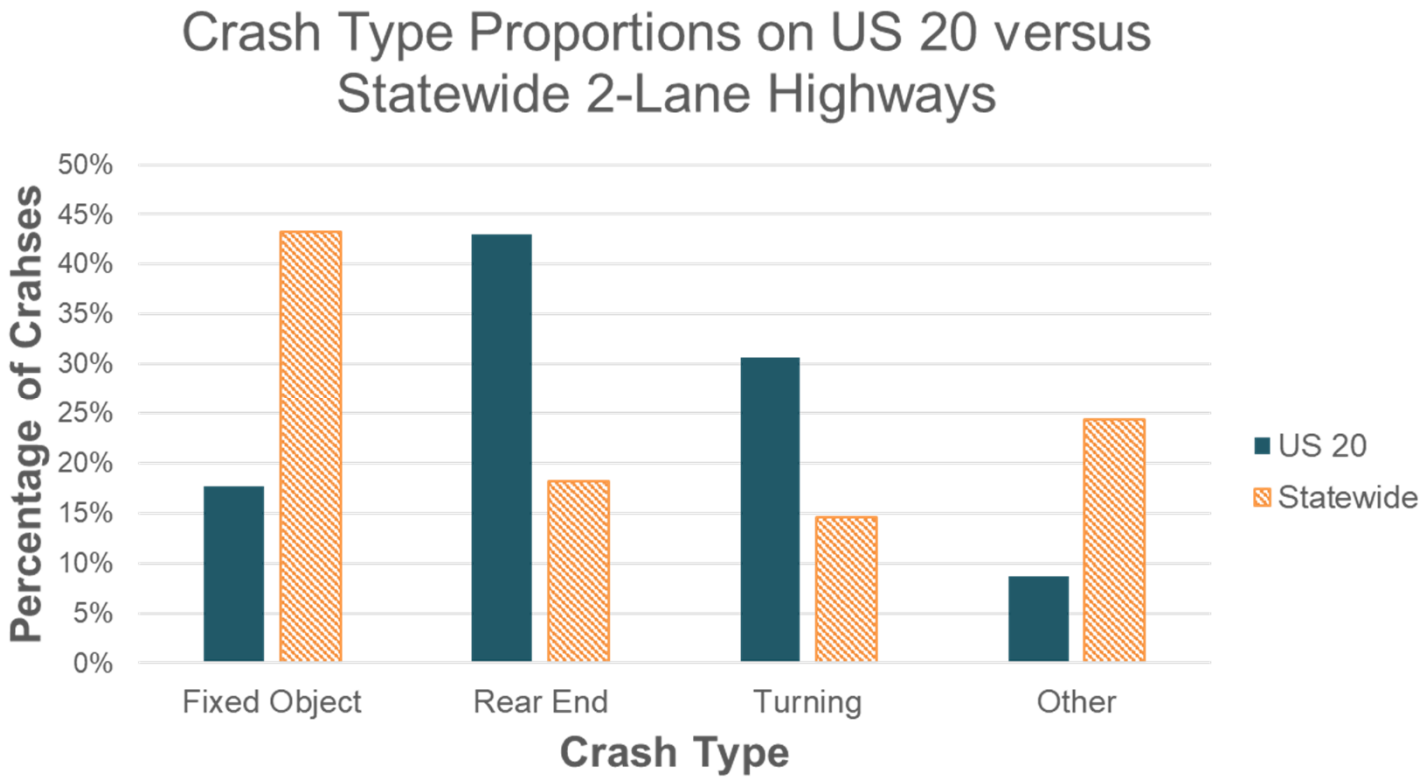
1. Conduct a three-phased safety evaluation
2. Identify feasible, proven countermeasures to improve safety
3. Engage the public early and often
   - Online tools, open house events, stakeholder groups
4. Incorporate both community interests and benefit-cost analysis into prioritization

Safety Evaluation

Traditional	Qualitative	Data-Driven
❖ Trend analysis of historical crash data	❖ Field safety assessment and observations	❖ HSM Predictive Method

Safety Evaluation

- Trend Analysis



Safety Evaluation

- Trend Analysis

Segment Start Point	*Segment End Point*	*Segment Length (miles)*	*Average Crashes per Year*	*Crash Rate vs Critical Rate*
Corvallis City Limits	Circle Blvd.	1.15	0.6	
Circle Blvd.	Conifer Blvd.	0.61	3.0	
Conifer Blvd.	Pilkington Ave.	0.07*	0.8	
Pilkington Ave.	Merloy Ave.	0.76	4.0	
Merloy Ave.	Granger Ave.	1.59	6.8	
Granger Ave.	Independence Hwy.	0.67	0.2	
Independence Hwy.	Scenic Dr.	2.03	6.2	
Scenic Dr.	North Albany Rd.	1.34	6.8	
North Albany Rd.	Springhill Dr.	0.17	0.2	

* Short segment length

below critical rate

above critical rate

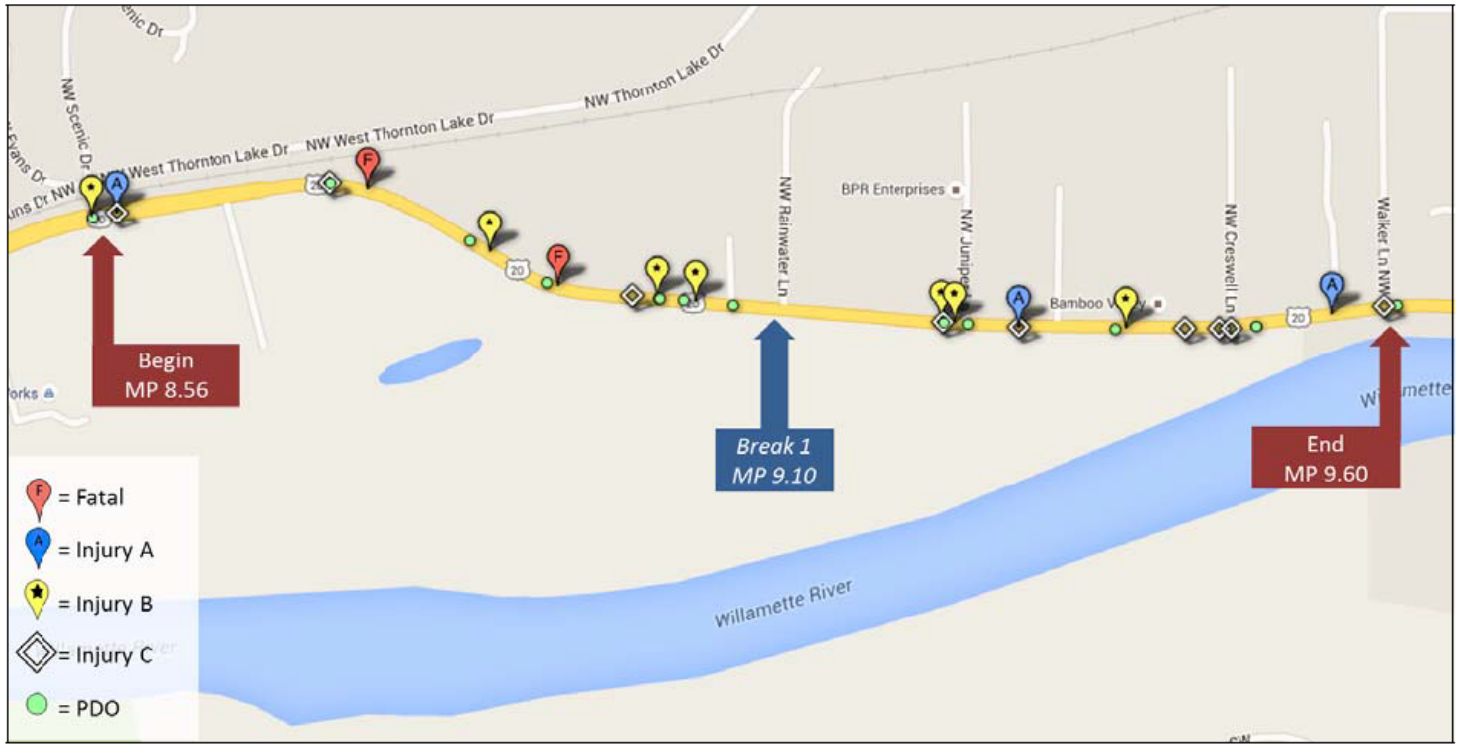
Safety Evaluation

- Field Assessment and Observations
  - Driveways and streets with limited sight distance
  - Fixed objects in roadside clear zone
  - Parallel rail line impacts highway operations

Safety Evaluation

HSM Predictive Method

- Focused on three sections of the corridor with the highest and similar crash risks
- Used HSM Smart Spreadsheets to evaluate potential countermeasures



DKS

Public Involvement

- Who was invited? **Everyone!**
- Who attended?
  - **Local residents,**
  - **Business owners,**
  - **Agricultural users,**
  - **Commuters**
- What data did we get?
  - **Quantitative community priorities!**

Unique Public Involvement Results

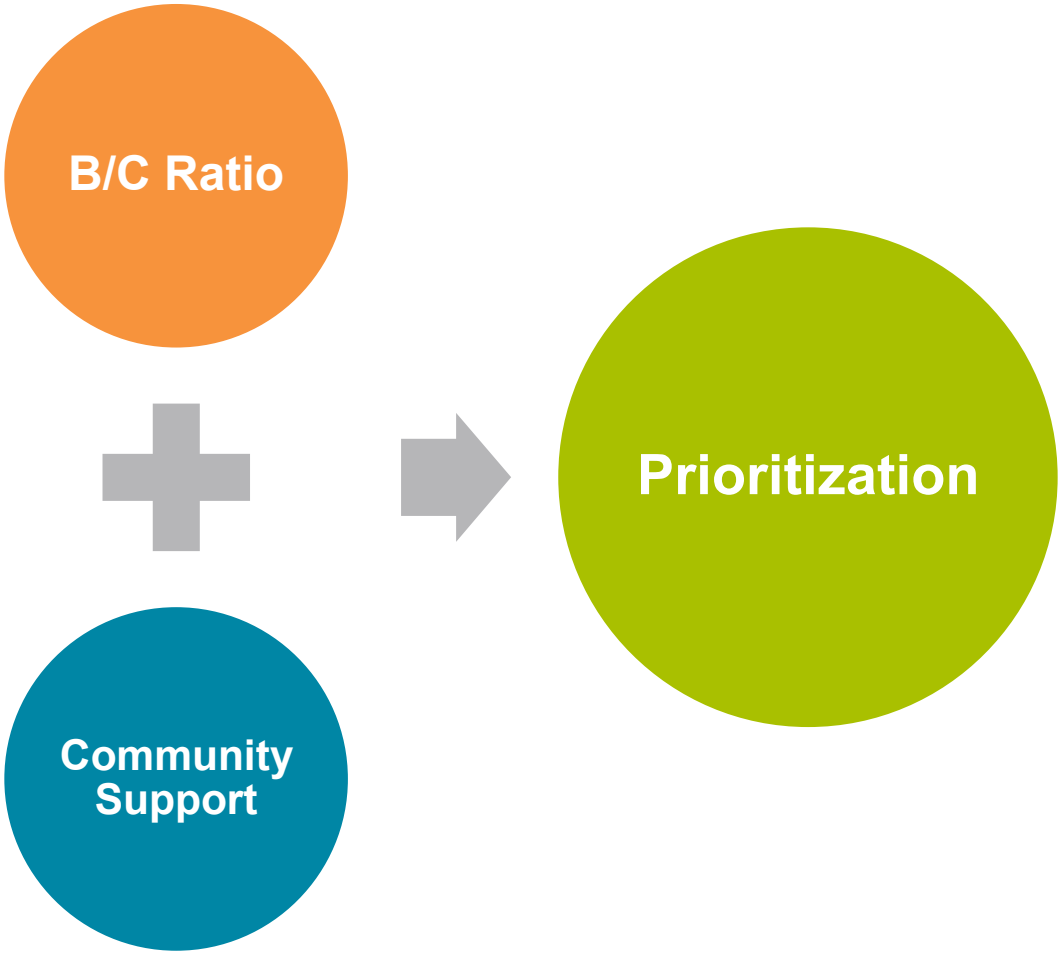
Families of fatal crash victims encouraged participation:

- **Created a Facebook Page with project updates**
- **Energized and informed the community**
- **Supported technical findings and became project champion**

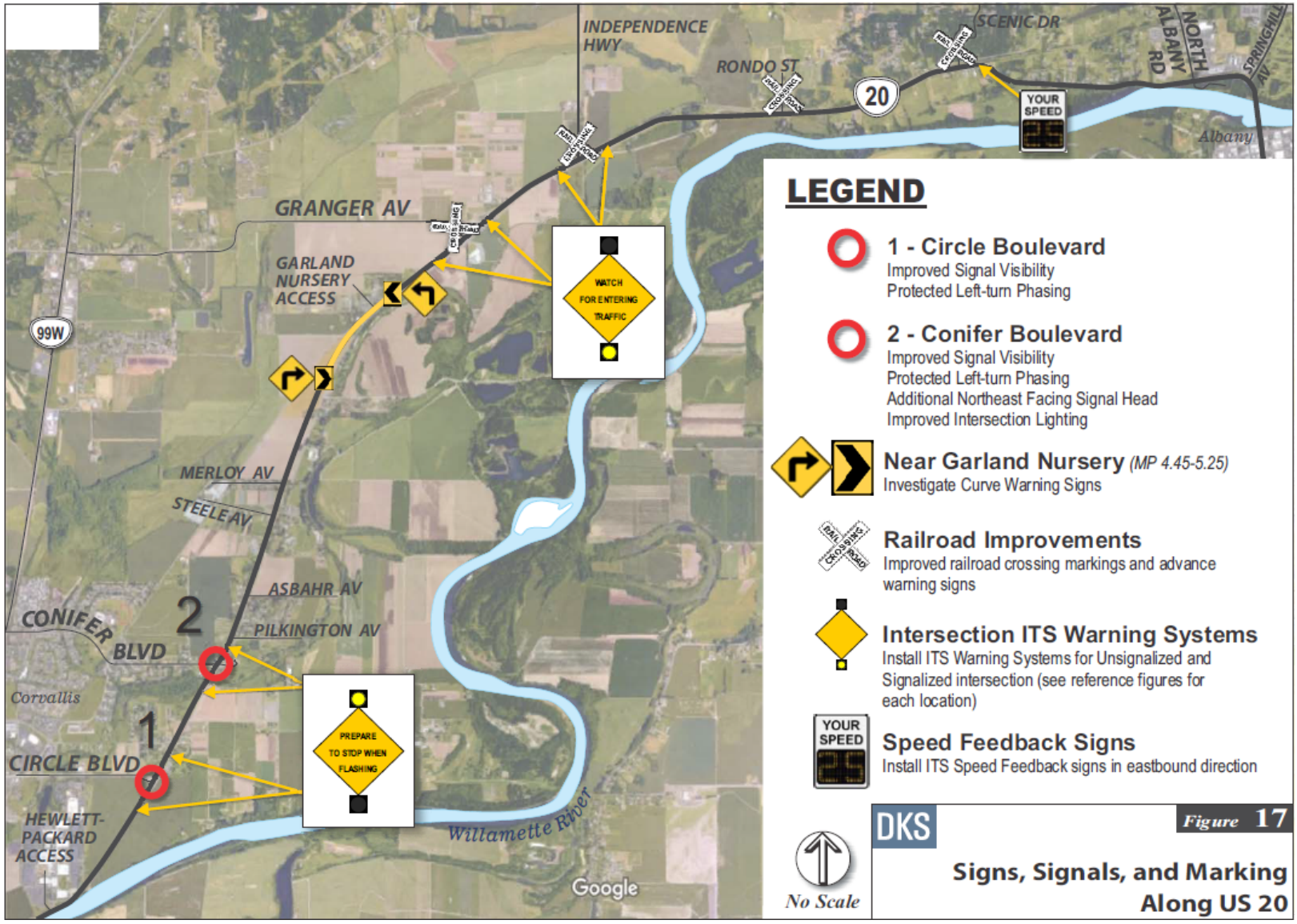
Two state legislators caught wind of project on social media and became engaged (one was involved in a crash on the corridor)

Project Prioritization

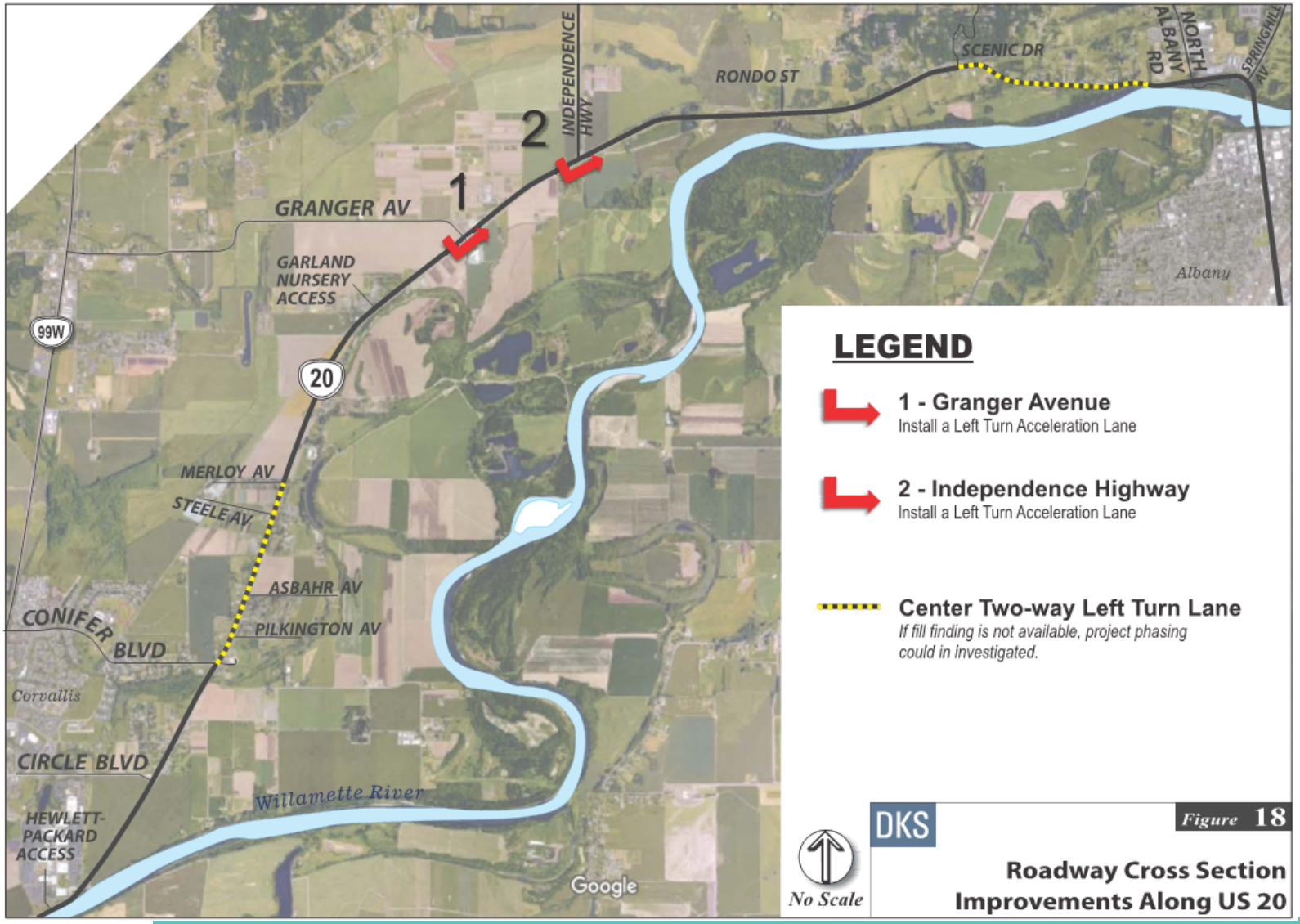
- Planning level cost estimates
- HSM expected crash reduction



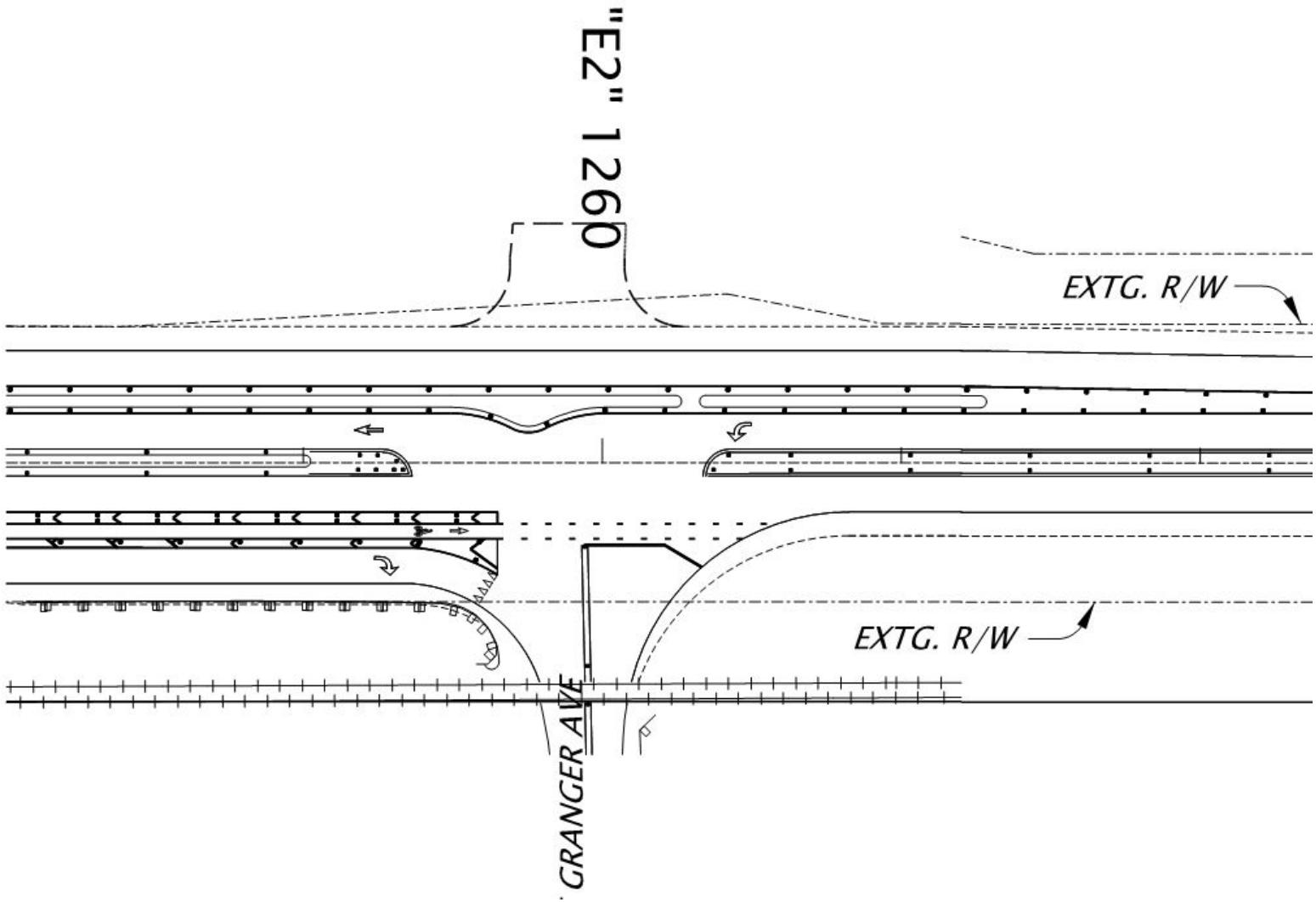
Short-Term Project Identification



Long-Term Project Identification

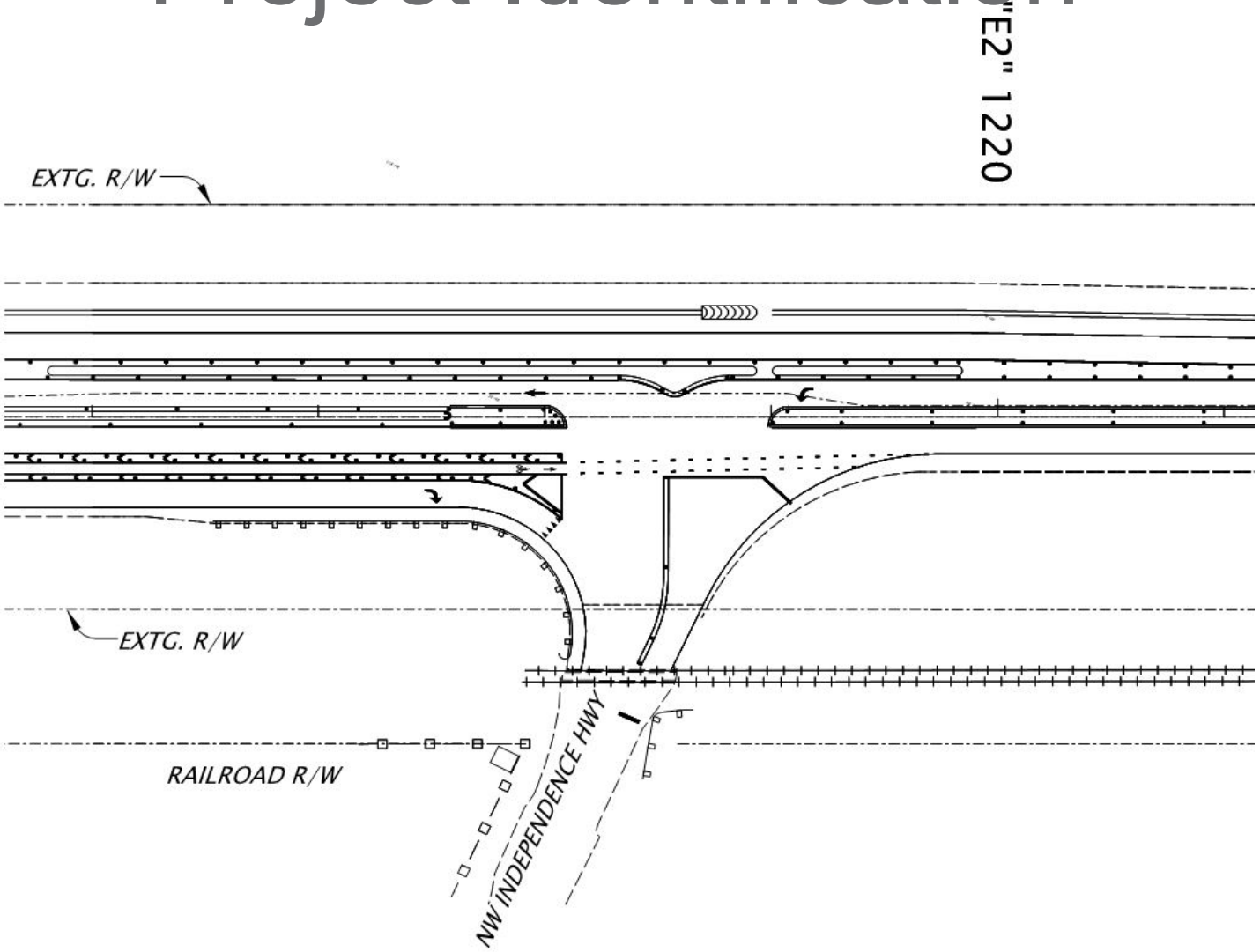


Project Identification



US20/Granger Avenue Median Add Lane

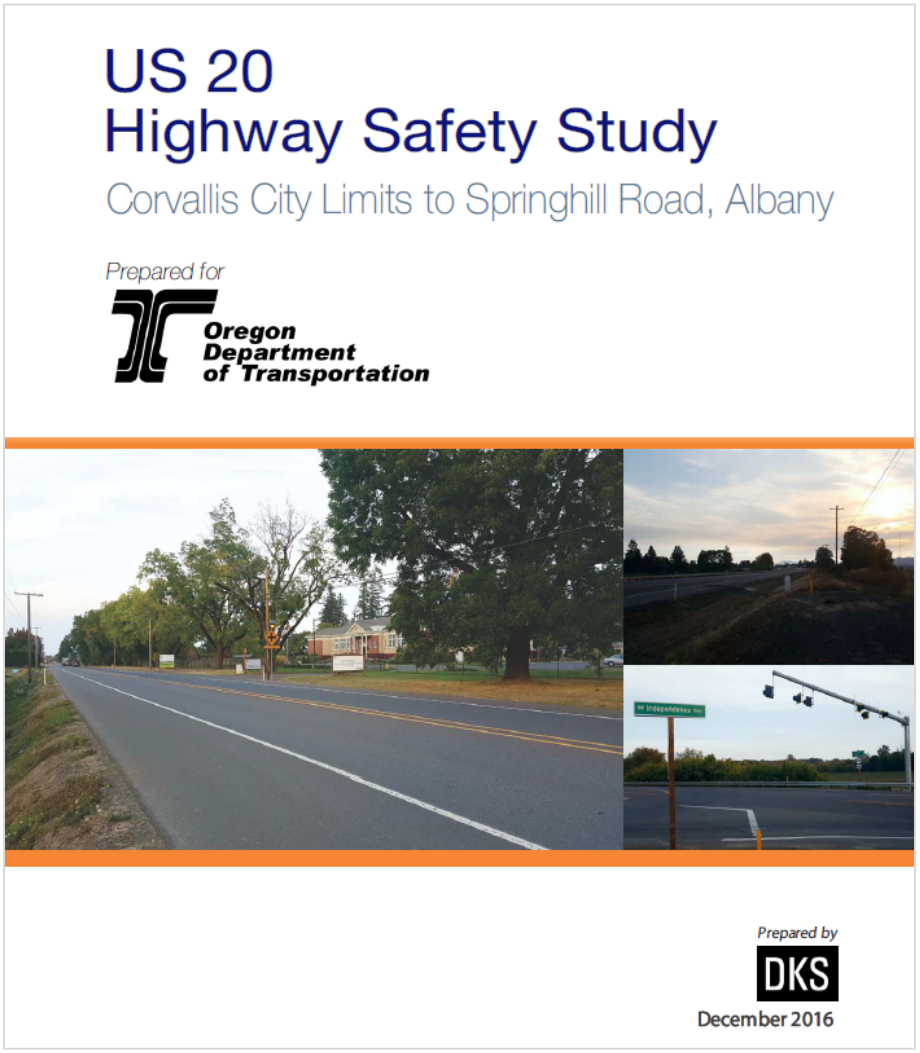
Project Identification



US20/Independence Highway Median Acceleration Lane

Safety Study Adoption

- Safety study was **unanimously approved** by ODOT
- HSM predicts a **reduction of 20 crashes per year including 1.5 fatal and serious injury crashes**



What Happened Next?

- State Legislator that attended public events asks ODOT:
  - What is the cost for the “best and safest” fix for US 20, regardless of price?
- A year later, Oregon House Bill 2017 passed
  - Included **$28.2M in funding** identified for US 20 safety improvements including Design and Construction
- Project is currently being designed and will be constructed in 2022.

Key Study Takeaways

- Safety studies with robust public involvement results in:
  - ❖Passionate public stakeholders
  - ❖Higher public turnout
  - ❖Improved messaging through social media
  - ❖Outreach to elected officials and legislators
  - ❖Expedited funding of needed improvements
  - ❖Lives saved
- When safety analysis and public support work hand in hand, eliminating fatal crashes can become a reality.

THANK YOU

DKS CORE VALUES

MEANINGFUL DIFFERENCE

OPPORTUNITY

EXPERTISE

TRUSTWORTHY

CLIENT SATISFACTION

TEAMWORK

SCOTT MANSUR, PE, PTOE
PRINCIPAL
SMM@dksassociates.com
503.391.8773

SHAPING A SMARTER
TRANSPORTATION EXPERIENCE™
DKSASSOCIATES.COM

AN EMPLOYEE-OWNED COMPANY

DKS