Variable Speed Limits

AS A COMPONENT OF THE I-35 & HOMESTEAD INTERCHANGE CONSTRUCTION PROJECT

2013

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I-35 Variable Speeds: Project Info

HIGHWAYS FOR LIFE Demonstration Project

- Smart Work Zone with
  - Portable changeable message signs (PCMS)
  - Portable Wavetronix speed sensors
  - Portable cameras
  - Portable variable speed limit signs
- System Capabilities included
  - Travel times
  - Delay warning/encourage diversion
  - Back of queue warning
  - Variable speeds

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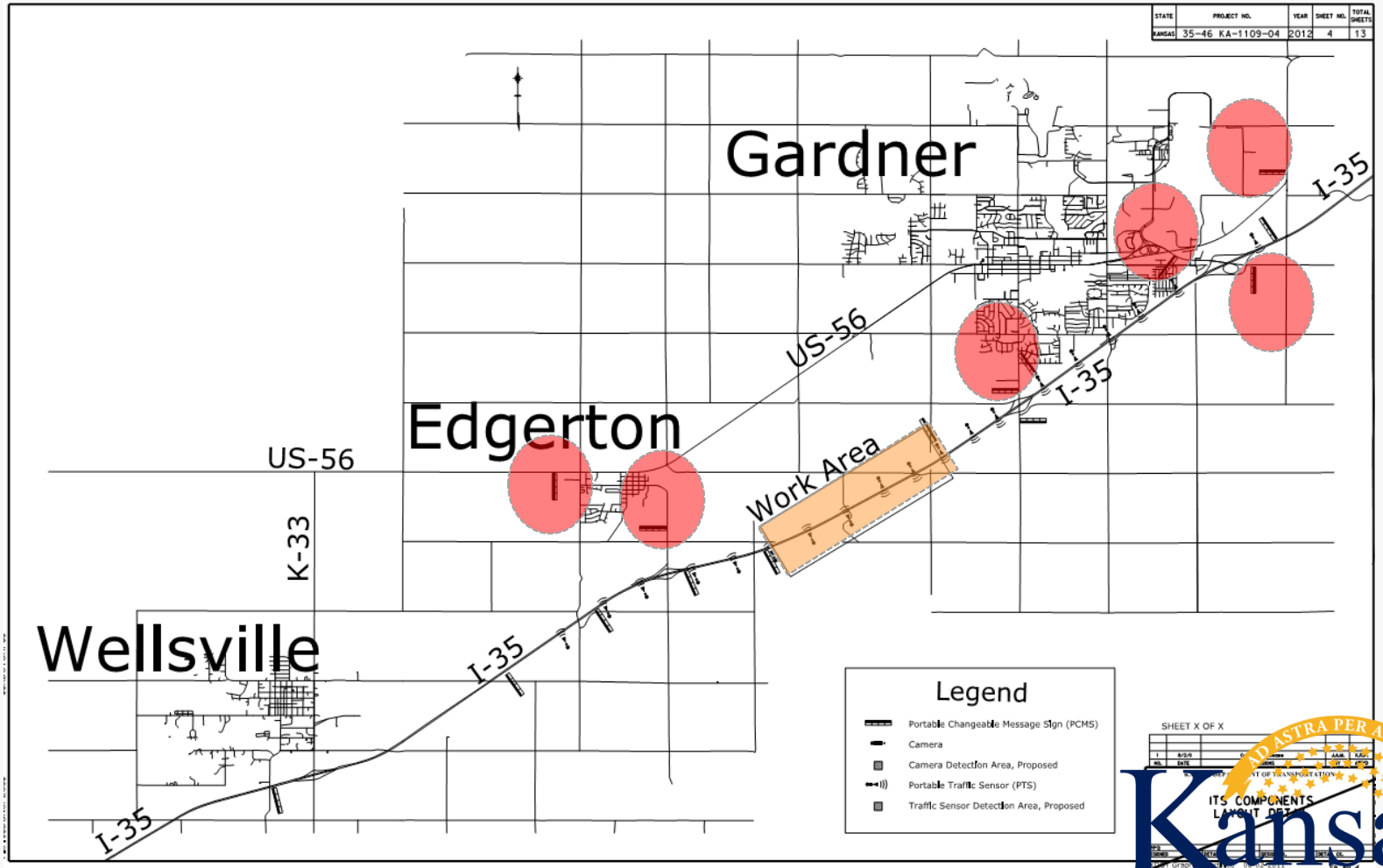
I-35 Variable Speeds: Project Info



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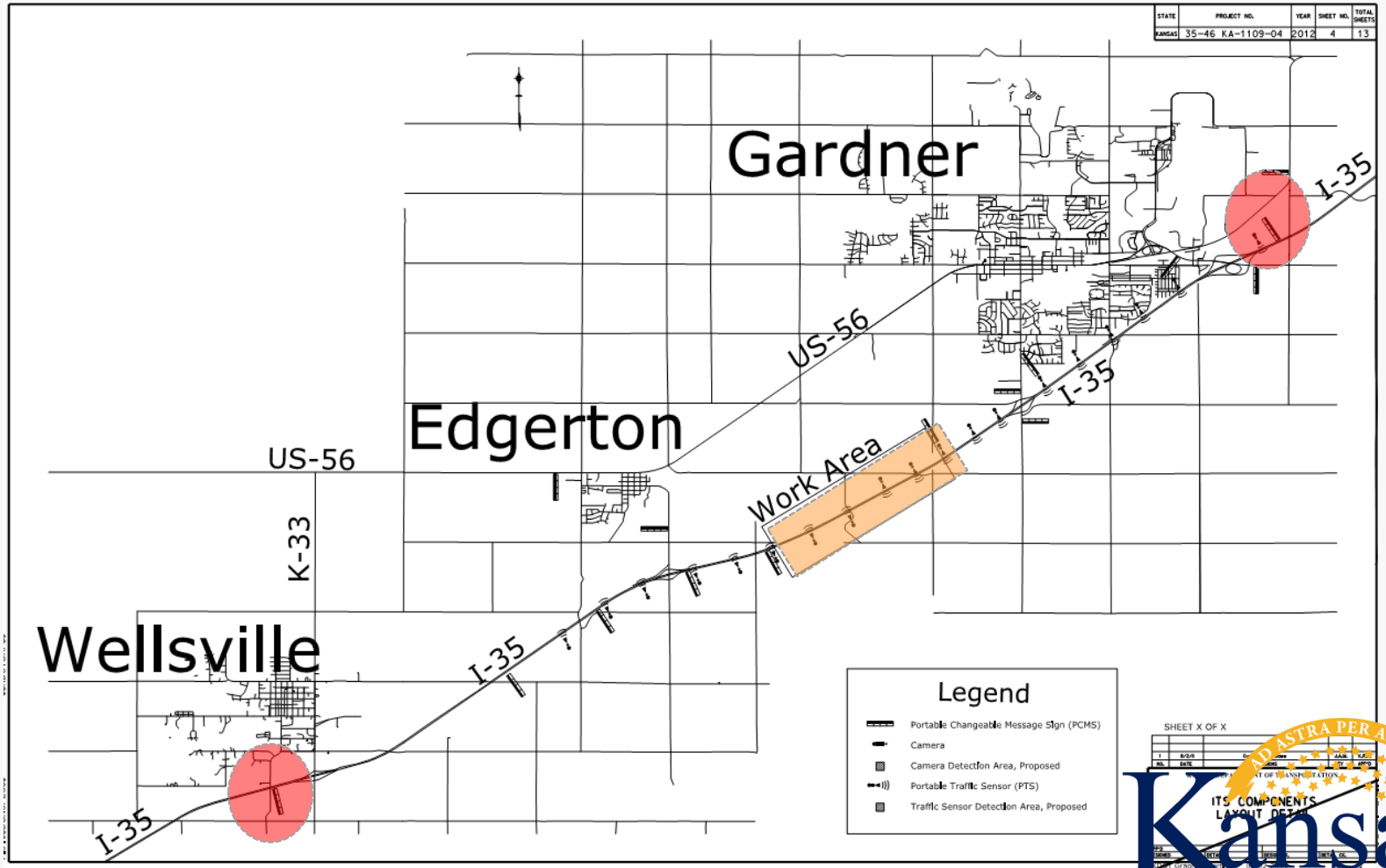

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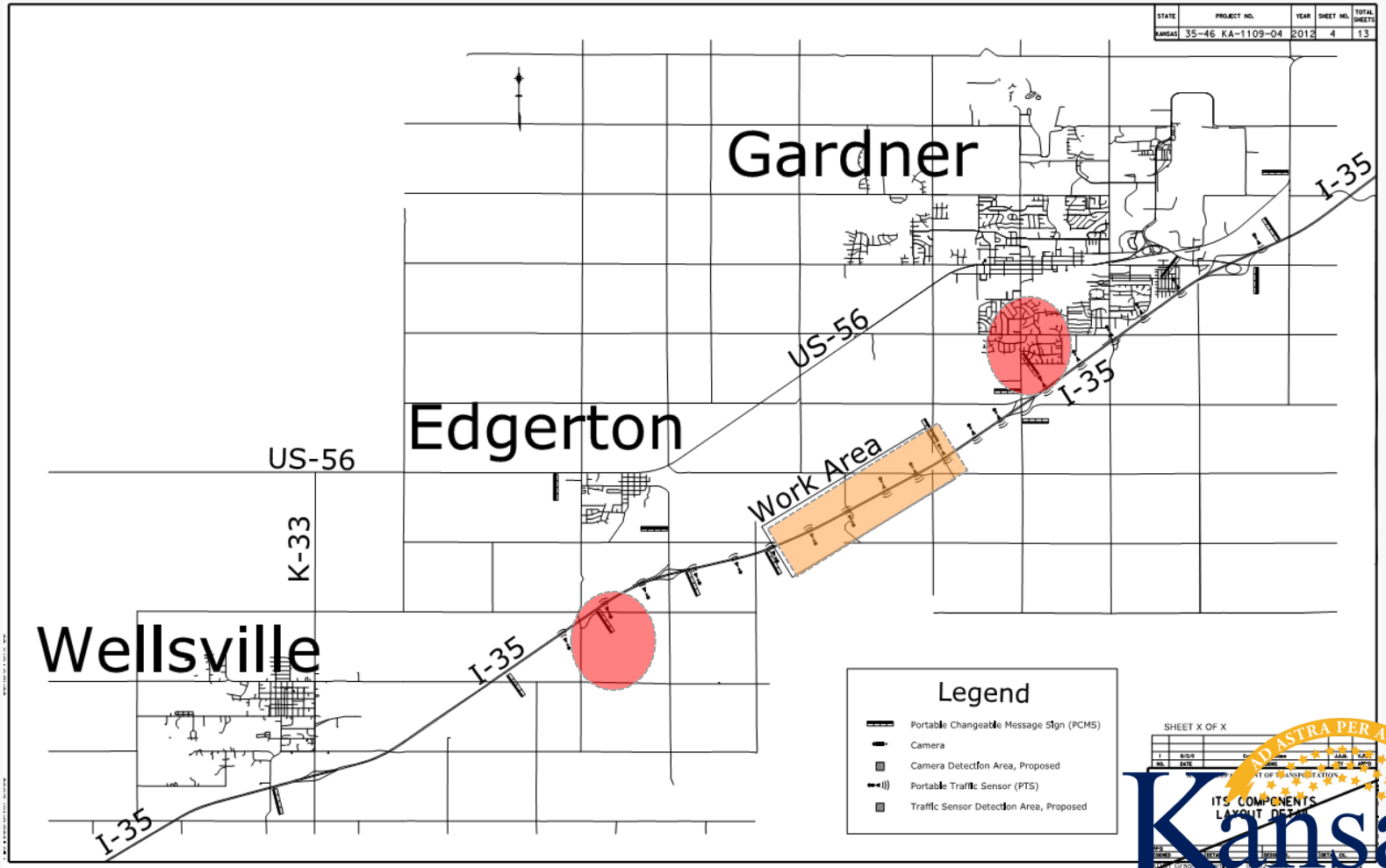

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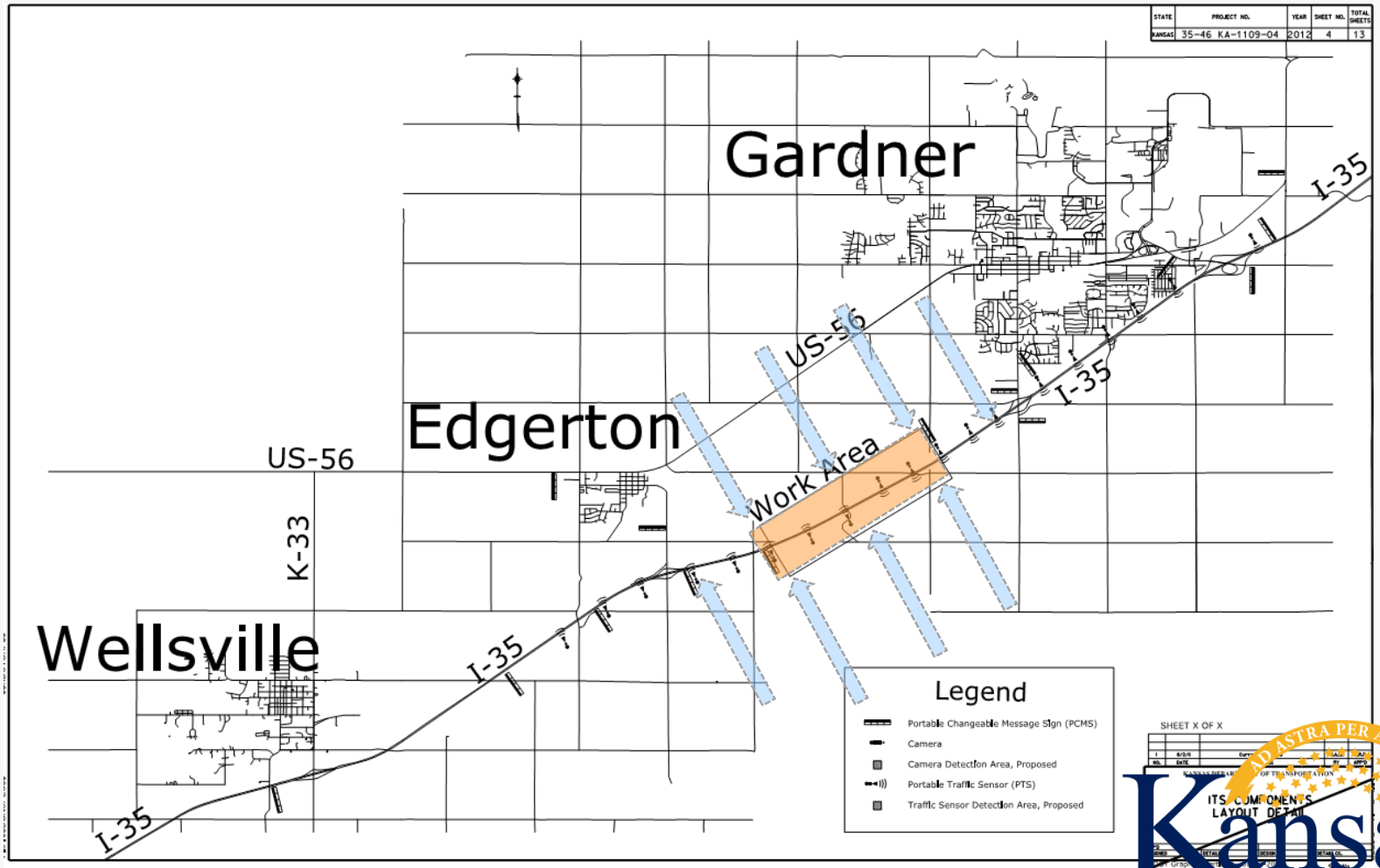

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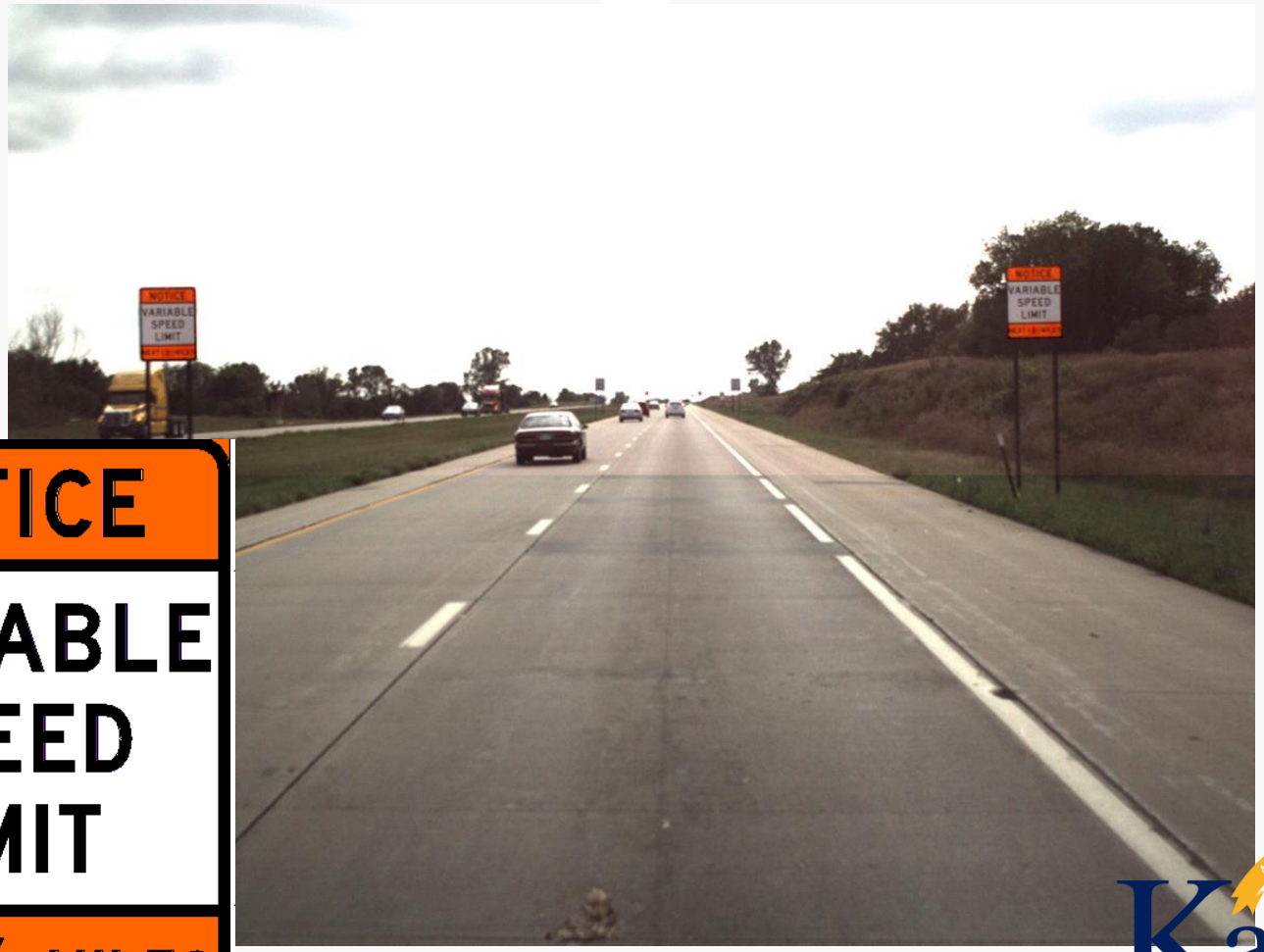

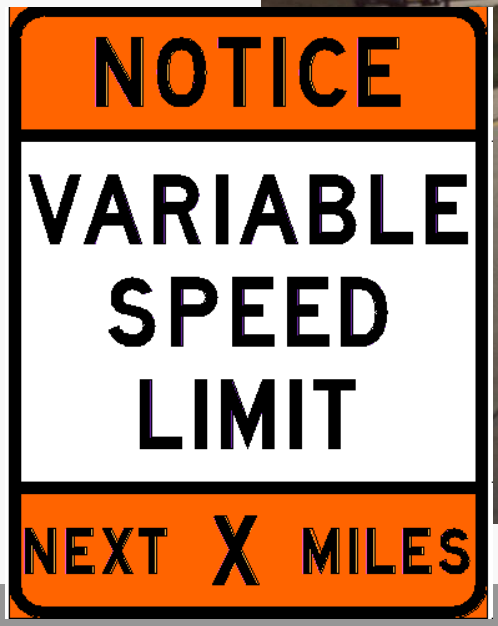

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I-35 Variable Speeds: Project Info

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I-35 Variable Speeds: Project Info

Variable speed limits

- Computer program calculated the 85th percentile speed for each minute of data for each traffic sensor
- Each Variable Speed Limit display was associated with 2 to 3 upstream traffic sensors
- The lowest 85th percentile speed of the associated sensors is posted on the VSL sign

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I-35 Variable Speeds: Challenges

Defining VSL criteria

- How to calculate the 85th percentile?
  - Minimum number of readings needed?
- What number to display?
  - Round up to the nearest 5mph integer (25, 30, 35, etc)
- How often should the display change?
  - If the calculated 85th percentile was < 10mph from current display, then it could only change every 5 minutes.
  - If the calculated 85th percentile was > or = to 10mph from the current display, then changes occurred every 1 minute.

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I-35 Variable Speeds: Challenges

Law Enforcement

- Would law enforcement be able to get speed limit data to support tickets?
  - Display data was logged in an easy to access web application.
- Can variable speed limits in Kansas be enforced?
  - Unknown.

Drivers

- Would drivers understand the message?

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I-35 Variable Speeds: Challenges

Operational Challenges

- VSL Visibility
- Data collection
  - Speed
  - Volumes

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I-35 Variable Speeds: Results

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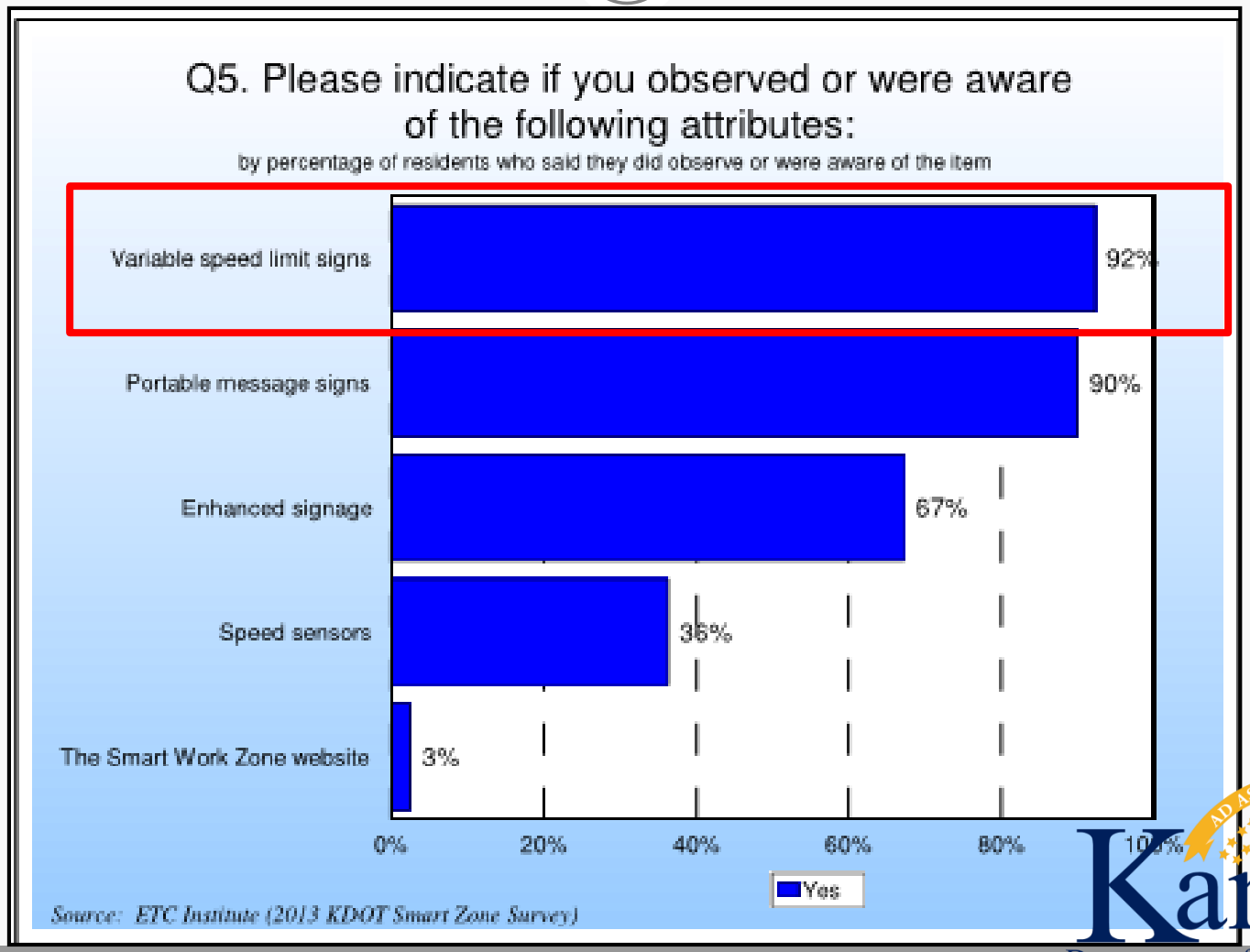
I-35 Variable Speeds: Results



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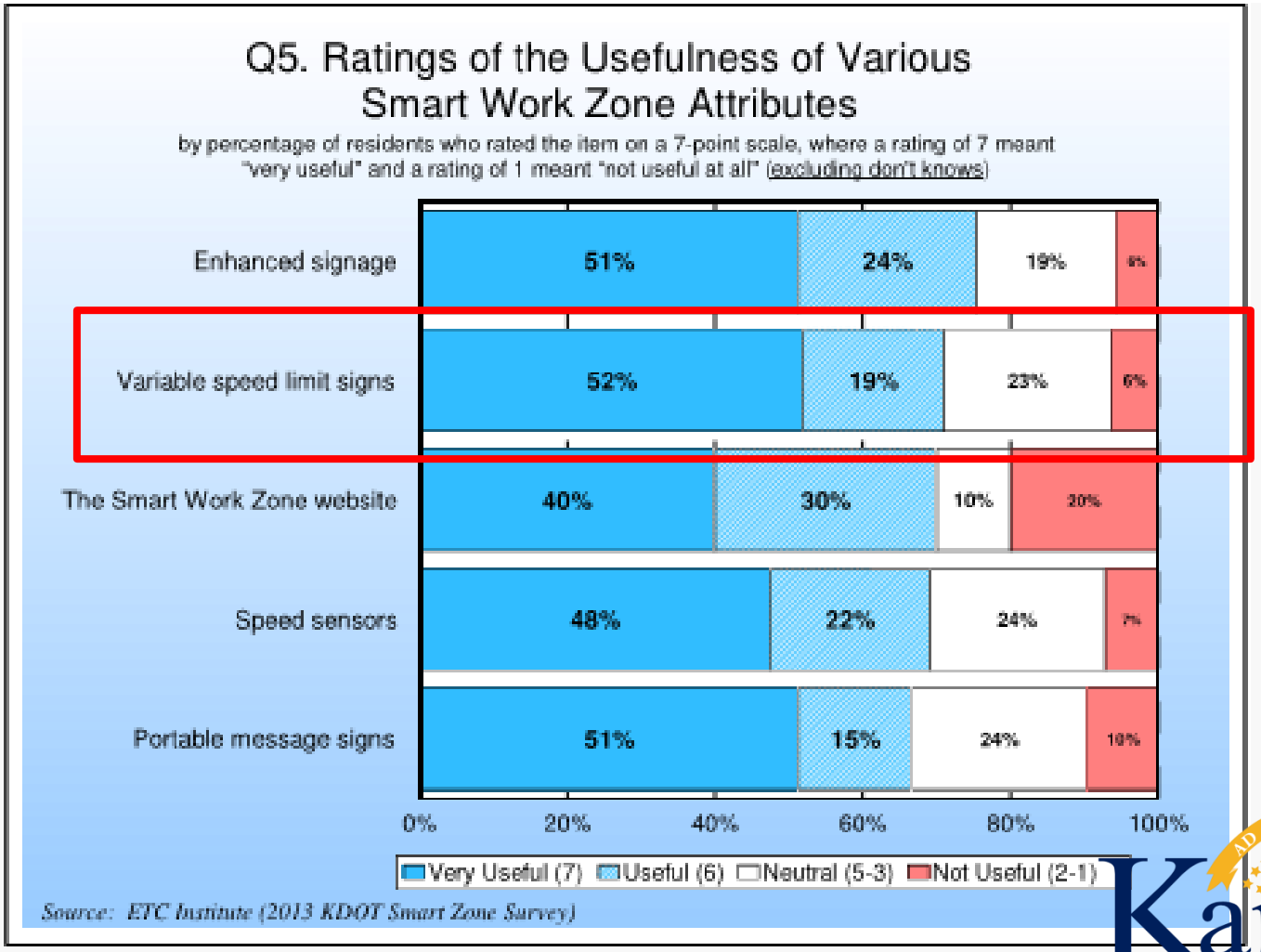

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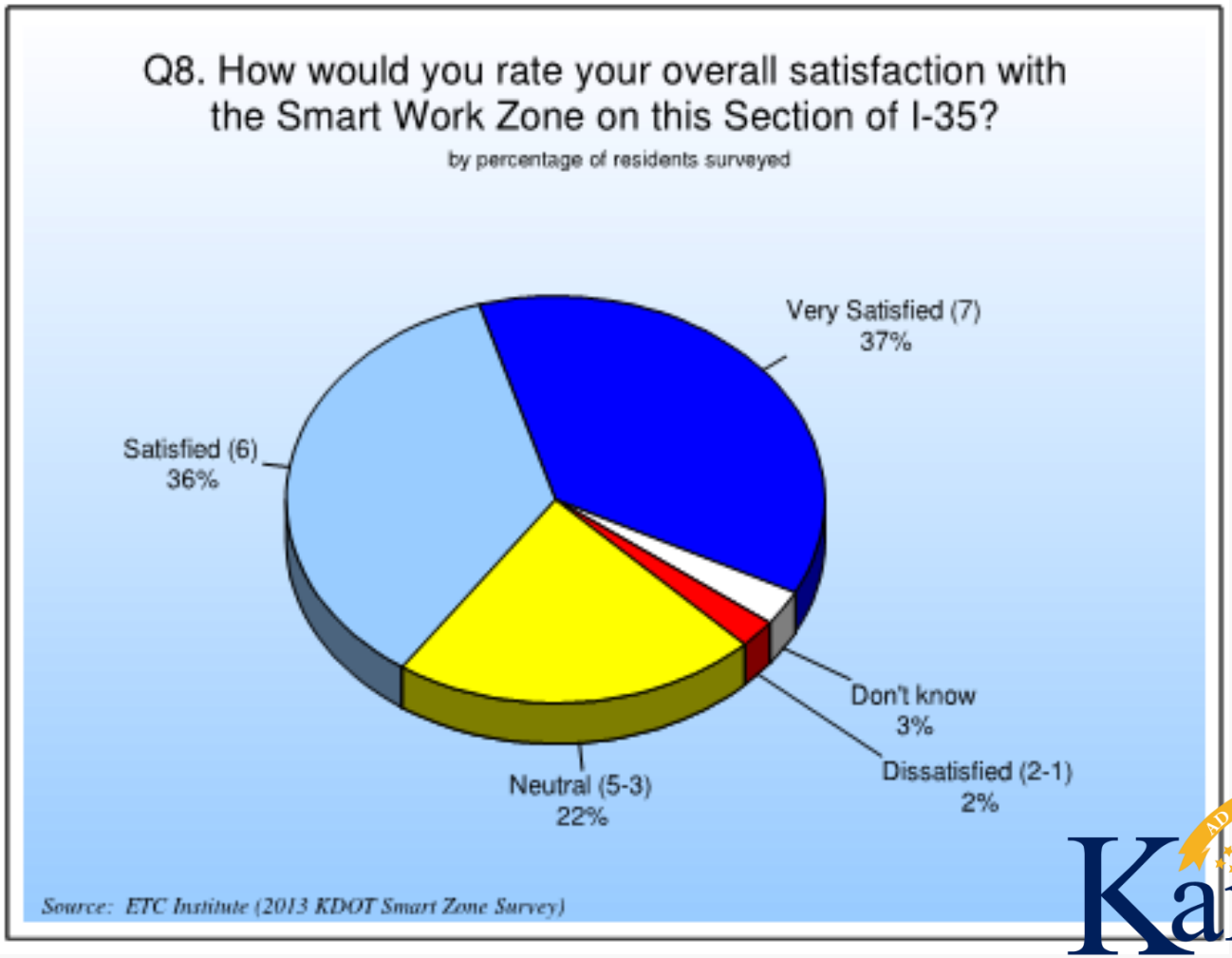

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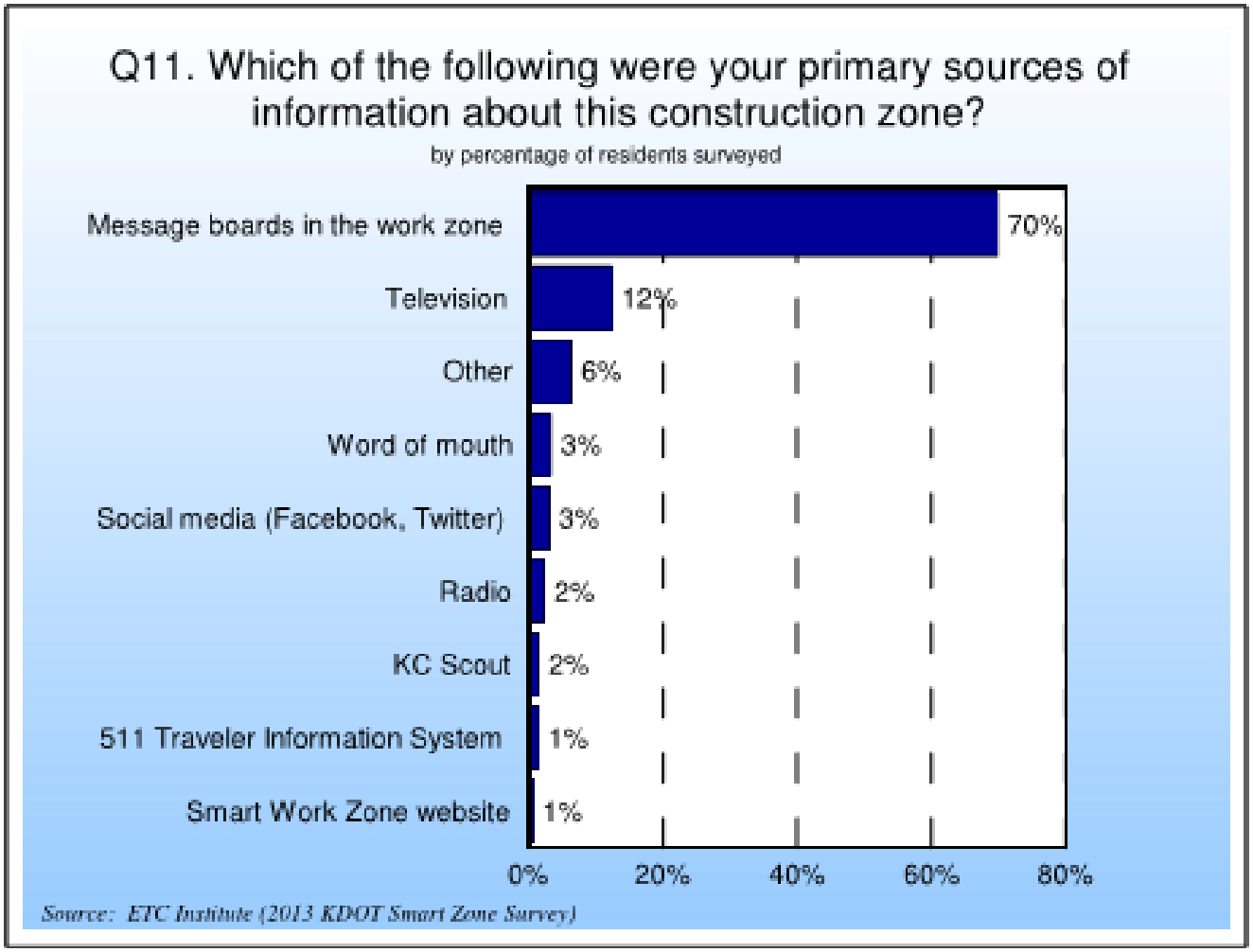

I-35 Variable Speeds: Future Plans

- Retained Equipment
- 100% use
  - Planning
  - Maintenance
  - Small Scale Smart Work Zones
- Contractor Supplied Smart Work Zones

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I-35 Variable Speeds

Questions?

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