An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)

Brian Burkhard, PE
Associate Vice President
Great Lakes Division
ITS Service Line Leader
Topics covered

- Review of the challenges of “traditional” rural ITS
- VII
  - Rural vs. Urban
  - Benefits and challenges
- Rural VII – how might it work

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
Rural “traditional ITS” scenario

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
Rural “traditional ITS” scenario

- May see it
- May see it with information
- May see it with useful information

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Rural “traditional ITS” means of detection

- RWIS - ESS
- Vehicle detection
- Emergency response

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Rural “traditional ITS” dependencies

- Communication
- Algorithm/automation
- Manual verification

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An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
Urban canyons

Reliance on short haul communication
Other Urban VII Characteristics

- Blind spots

- Need for intersection collision avoidance

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Other Urban VII Characteristics

- Slower speeds
- Short lead time to incident

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An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
“More likely” Rural VII Characteristics

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Other Rural VII Characteristics

- Trees
- No blind spots
- Long lead time to incident
- Faster speeds
Other Rural VII Characteristics

- Edge of pavement warning
- Curve speed warning
- Adaptive cruise control

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Rural VII scenario

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Rural VII scenario

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)

➢ WILL see it
➢ WILL see it with information
➢ WILL see it with useful information
But how to get detection rurally?

Third party provider or subscription

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
But how to get detection rurally?

Third party provider or subscription

Unique OBD2

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
But how to get notification rurally?

- Virtual traffic cone or beacon
  - Mobile RSE
    - Low-power
    - Solar
    - Basic Linux box
    - Broadcast message
    - DSRC radio

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But how to we get notification rurally?

» Create geo-fenced area of influence

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
But how to we get notification rurally?

- Create geofenced area of influence

An Evaluation of Rural Area Vehicle Infrastructure Integration (VII)
Rural VII can surpass capabilities traditional ITS
Focused on long-haul communication
Mobility-centric
Thank you

Brian Burkhard, PE
bburkhard@hntb.com
312-371-7166