City of Houston’s Intelligent Transportation System and TIGER 2014 Project

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History

- What are Intelligent Transportation Systems (ITS)?
- Federal transition to a focus on operations
- Tradition of design, build, maintain and operate
- New focus on transportation safety, management and operations
The Problem

- Significant number of devices deployed throughout the country
- Primarily on freeways and the occasional arterial
- Prime examples are freeway dynamic message signs with messages such as this:

At the same time, this is what drivers see in front of them.

What are their options?
TIGER Project

Concept

• Give commuter options
• Provide integrated traffic management system
• Operators and Engineers will:
  • Monitor traffic
  • Detect incidents
  • Make system changes based on real-time observations
  • Disseminate traffic information to Media and Public
How It Will Work (see alternate graphic on next slide)
What Has PWE Done So Far?

Communications Network
- Added 150+ miles of fiber optic cable across 450 traffic signals
- Added WiMax radios to 1,450 traffic signals
- Added Ethernet Over Copper to 300+ traffic signals
  - Primarily within the Central Business District
  - Upgrades are still underway

Extended Communications Network
- Fiber optic communications
- Licensed microwave network
WiMax Communications
Accomplishments to date

- Upgrade to 2070 advanced traffic signal controllers at nearly 2,000 intersections
- Completing upgrade of signal detection systems at 175 intersections
- Installed 15 midblock count/speed data stations as a pilot project
- Installed 25 pan/tilt/zoom closed-circuit TV (CCTV) cameras as a pilot project
Arterial Travel Times

- Data collected using Bluetooth readers
  - How system works
  - Pilot project started 2009 with 50 readers in West Houston

- Full deployment currently underway for city-wide coverage
  - 602 additional locations
  - 80% of funding provided through CMAQ Grant
Arterial Travel Times
What’s Next?

- Replace arterial traffic signal management software

- System and controller software almost 20 years old
  - 8 MS Windows upgrades in same period

- City is currently in process of procuring new software
  - 80% of funding is through CMAQ Grants
  - Contract expected to go to Council in August or September
TIGER Project

- 72 projects awarded in 2014 TIGER call for projects
  - 1 of 2 projects awarded in Texas
    - Other was planning project, not implementation

- Project provides for implementation of field devices throughout City
  - 113 additional pan/tilt/zoom CCTV cameras
  - 144 additional mid-block count/speed data stations
  - 91 arterial dynamic message signs
  - 489 additional intersection detection upgrades
ITS Project Investment

- Completed Investment
  (Intersection Upgrades, Communications, Pilots)
  $20 Million

- Projects Underway
  (Software and Arterial Travel Time Deployment)
  $6 Million

- TIGER Project
  - Federal Investment - $10 Million
  - Local Investment - $14 Million
  $24 Million

- Total Investment (since 2009)
  $50 Million
TIGER Project Schedule

- Federal dollars must be obligated by September 2016
  - RCA for agreement with FHWA in August/September 2015

- TIGER funds must be expended by September 2021
  - Expect RFP to be released in early Fall 2015
  - Design/build RFP process
  - Construction slated for FY16, 17 & 18
TIGER Deployment Plan
Questions?