

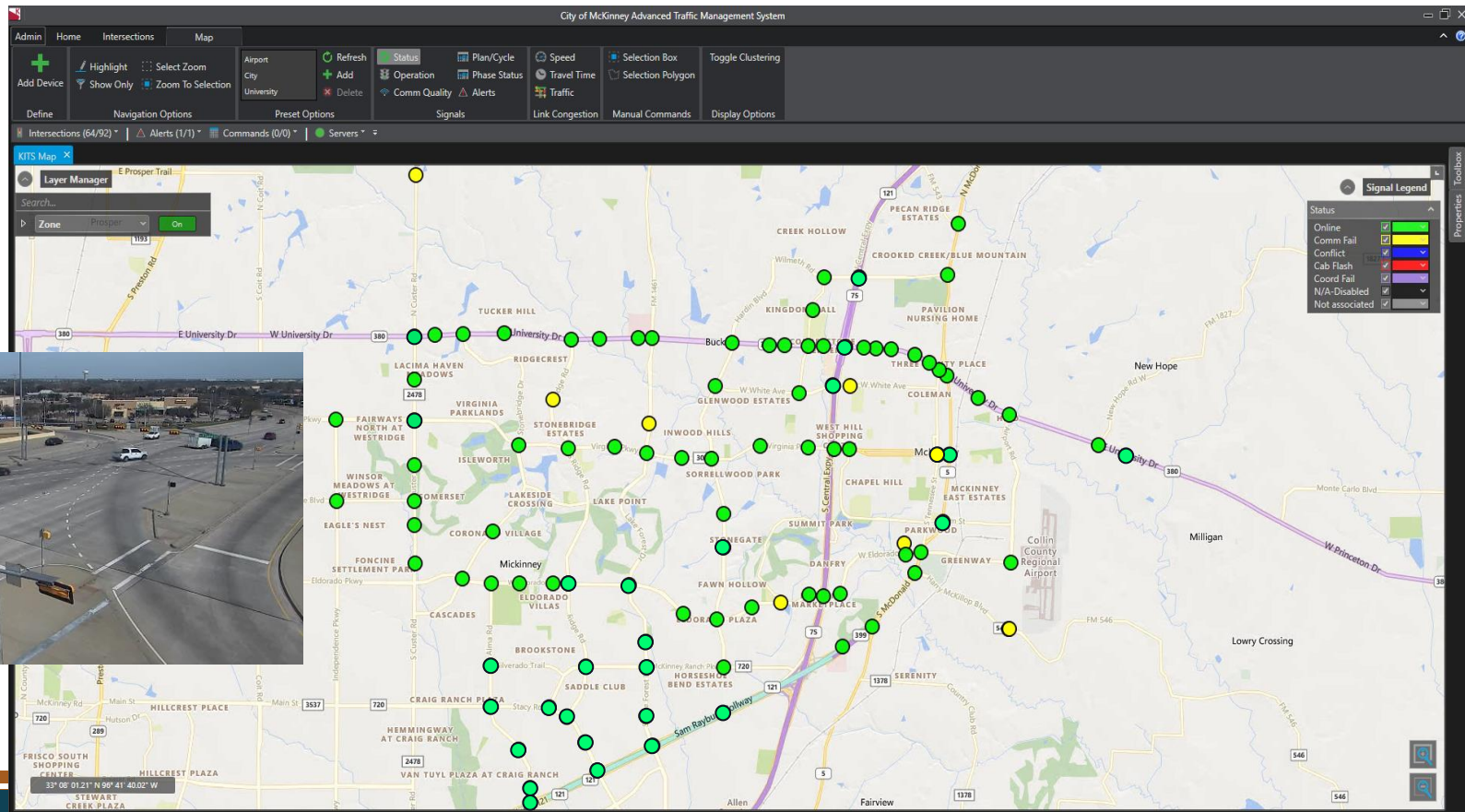
Smart City Applications for the City's Signal System

March 21, 2023

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Signal System Upgrades

- Implemented centralized signal system
- Upgraded the signal controller at all signalized intersections to latest technology
- Upgraded detection equipment at US 380/University Dr traffic signals
- Expanding fiber network for improved signal system communication
- Pan Tilt Zoom (PTZ) Cameras

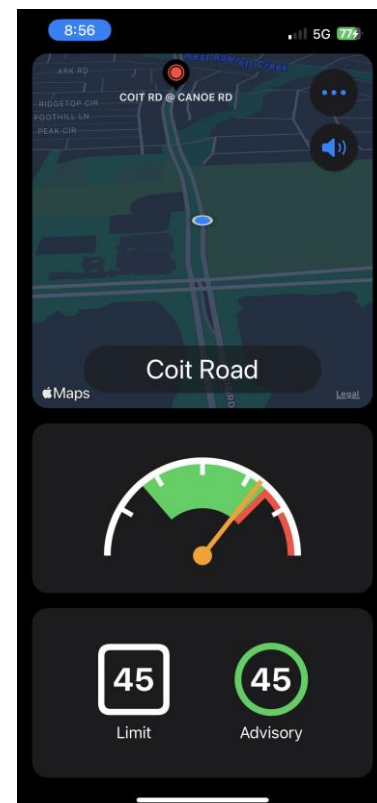


Benefits of Investment

- Provide real time signal system performance monitoring
- System can alert staff of communication or equipment issues before they are reported that can lead to operational issues
- Can work with industry partners to share traffic signal operation data for improved regional traffic flow

Traffic Technology Services, Inc. (TTS) - *Personal Signal Assistant*®

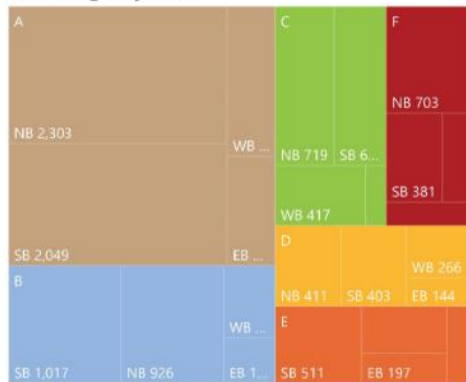
- Traffic Technology Services, Inc. (TTS) is an information service provider for connected and automated vehicle applications
- Uses data received from the City to inform drivers of signal operations
 - How long the driver can expect to wait for a green light when they arrive at a traffic signal
 - Recommends driver travel speeds to arrive at the next traffic signal on green to help reduce their number of stops along the roadway
- TTS uses cellular communications to vehicles or mobile devices using a subscription-based app
- Automotive OEMs such as Volkswagen Group and Daimler Mercedes-Benz fleet have implemented this feature into new models



Benefits to the City

- Adding a service for our citizens
- City will receive periodic signal performance metric reports summarizing intersection performance and connected vehicle crossings
- Performance metrics will help traffic engineers identify and quantify problem locations to improve traffic signal timing operations for all users
- Reports and services are provided at no cost to the City

Crossings by LOS



Total Crossings

13,411

Total Delay

108.7

(hours)

tts

TRAFFIC
TECHNOLOGY
SERVICES

Average Delay

29.2

(sec/veh)

Morning Peak

16.3

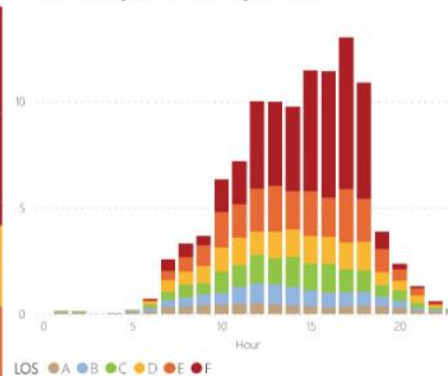
Midday Peak

30.9

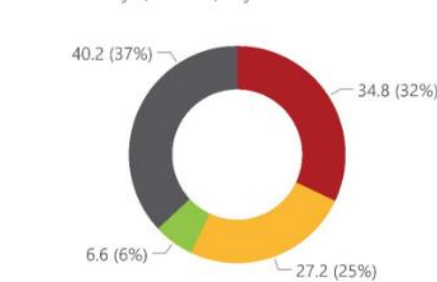
Evening Peak

42.4

Total Delay (Hours) by Hour

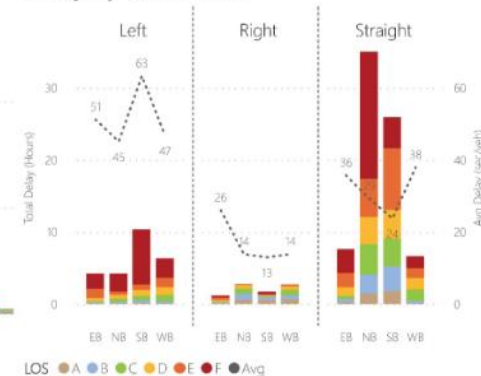


Total Delay (Hours) by Peak

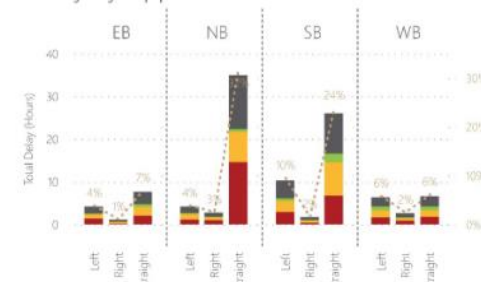


Peak: Evening (4-7pm) Midday (11am-1pm) Morning (6-9am) Other

Delay by Movement



Delay by Approach

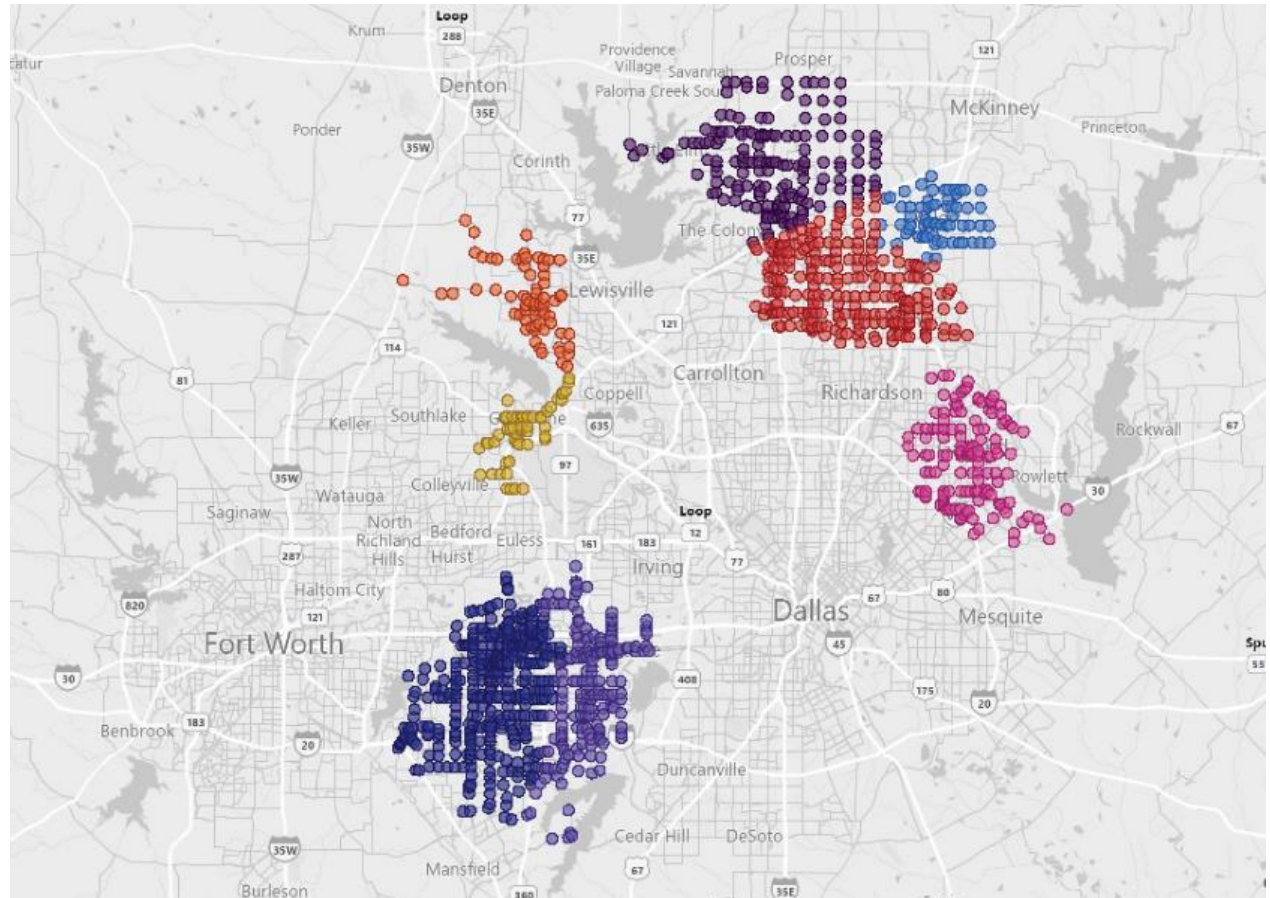


Peak: Evening (4-7pm) Midday (11am-1pm) Morning (6-9am) Other % of Total

Benefits to the Region

- The City's deployment would compliment the existing data sharing agreements with TTS in the Dallas/Ft. Worth Region

- Allen
- Arlington
- Flower Mound
- Frisco
- Garland
- Grand Prairie
- Grapevine
- Plano



Questions?