

Lenexa  
K A N S A S



OPERATION  
**GREENLIGHT**  
TURNING STOP LIGHTS INTO GO LIGHTS



## Operation Green Light

is a project to improve the coordination of traffic signals on major routes throughout the Kansas City area.



Kansas City, MO

Fairway

North Kansas City

Shawnee

Leawood

Lenexa

Liberty

Merriam

Fairway



Mission

Olathe

Westwood

Gladstone

Raytown

Prairie Village

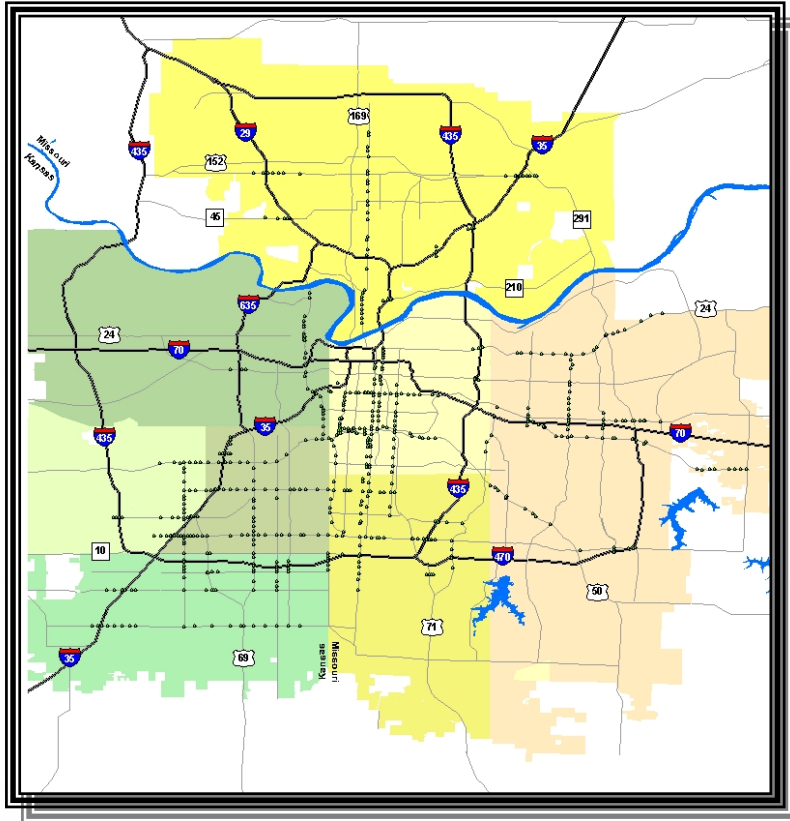
Independence

Overland Park

Fairway

Unified Govt/Kansas City, KS

# Kansas City



- 1.7 million people
- 3800 Sq. Miles
- 8 Counties
- 115 cities
- 2 states

# Operation Green Light: Mission

## Reduce:

- Air Pollution
- Vehicle Stops
- Delays
- Driver Frustration &
- Fuel Consumption



# Daily/Annual Savings

<b>Performance Measures</b>	<b>Daily Benefits</b>	<b>Annual Benefits</b>	
<b>Vehicle hours of travel</b>	<b>330</b>	<b>87,385</b>	<b>hours reduction</b>
<b>Fuel consumption</b>	<b>354</b>	<b>93,805</b>	<b>gallons decrease</b>
<b>Time and fuel costs</b>	<b>\$ 7,640</b>	<b>\$ 2,024,657</b>	<b>savings</b>
<b>Total pollutant emissions</b>	<b>378</b>	<b>100,276</b>	<b>Kilograms reduction</b>

\*Assuming that 22,000 vehicles are impacted daily.

# Project Challenges: Inter-Agency Cooperation

**19 Cities, 2 States**

**Technology**

**Training,  
Equipment Upgrades**

**Philosophy**

**Training,  
Pilot Projects,  
Flexibility**

**Mistrust**

**Fear**

**Turfism**

**Systems Engineering,  
Management Principles**

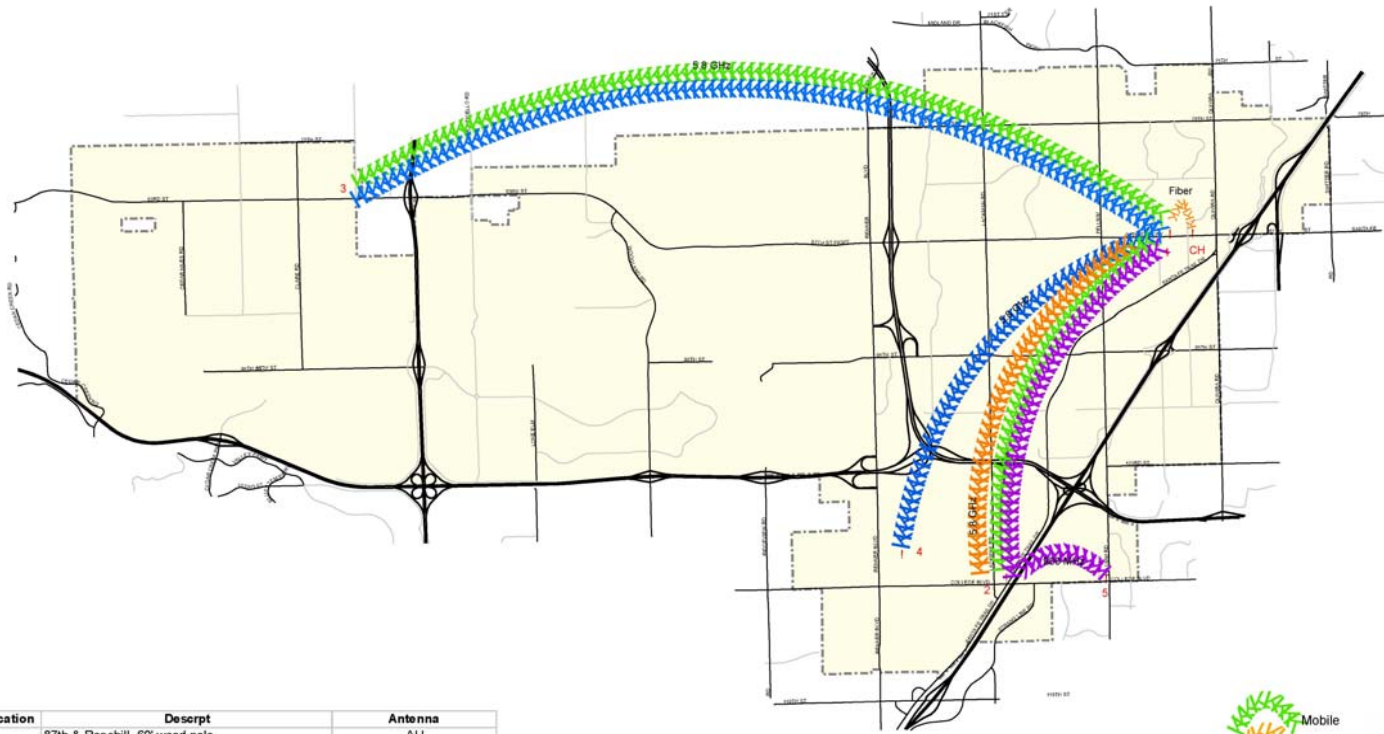


- Lenexa has approximately 45,000 Citizens, increasing to nearly 120,000 during the work day.
- The city covers some 30 square miles of undulating terrain.
- Lenexa has had proprietary fiber in use since 1994.
- Funding for full fiber coverage is not available.
- WiMAX is the viable alternative.

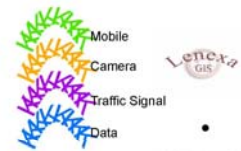


- IT has been looking for funding to expand fiber connectivity for many years – (laughter is OK)
- We (IT) were approached by the ITS director of Public Works who, through a number of road and bridge building projects, was going to expand the fiber inventory and invited IT and PD to participate in a study to determine needs.
- We were also told of the nature of Operation Greenlight and how it was going to make extensive use of RF technology.
- The most interesting conclusion was that it was to be an IP based ethernet data network – and could be used for more than just ITS traffic. Most importantly – the funding was in place for both new fiber and RF equipment!

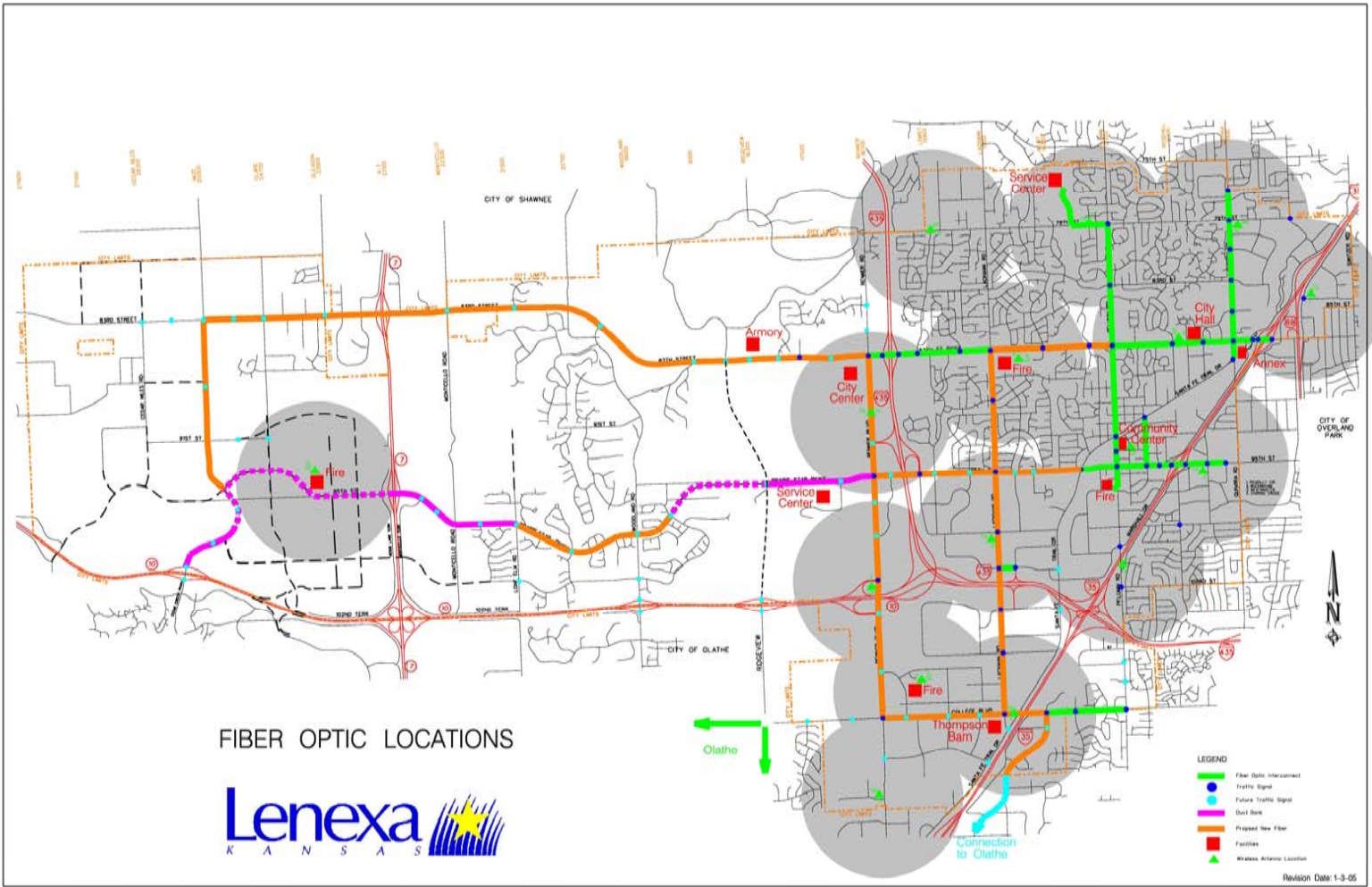
# Wireless Test



Location	Descript	Antenna
1	87th & Rosehill, 60' wood pole	AU
2	College & I-35, 50' Street Light pole with extension	CX
3	Fire Station 3, Existing Antenna	CX
4	Fire Station 4, Existing Antenna	SU
5	College & Pflumm, Traffic Signal / Street Light pole	900 SV
CH	City Hall	Fiber Connection



© 2009 lenexa.gis



- **Our Primary Antenna for Phase One & Testing.**

- **New Mpeg 4 video encoders allow for good resolution at lower bandwidths.**





■ **Ugly but effective!**

■ Backhaul for 900 Mhz  
ITS, Video and Mobile  
worker connectivity.





- Same location, I-35 overpass at 110<sup>th</sup> Street.
- The PTZ camera is visible, as are the 5.8 Ghz and 900 Mhz unlicensed radios/antennas.

■ This location has a 5.8GHz radio for data to the Fire Station it is located at and provides backhaul for 900 Mhz ITS, video and mobile worker traffic.







■ This Fire Station setup is being transferred to a newly finished Fire Station and Training facility that has no phone, or LEC data services available. It will provide the primary connectivity for voice and data.



## Contact Information:

### Michael Lawrence, Information Technology

Tel: (913) 477.7526

email: [mlawrence@ci.lenexa.ks.us](mailto:mlawrence@ci.lenexa.ks.us)

### Jasper Bruinzeel, Alvarion

Tel: (760) 517.3149

Cell: (760) 685.2015

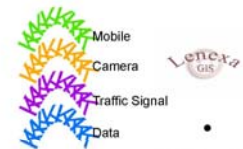
E-mail: [jasper.bruinzeel@alvarion.com](mailto:jasper.bruinzeel@alvarion.com)



## Wireless Test



Location	Descript	Antenna
1	87th & Rosehill, 60' wood pole	AU
2	College & I-35, 50' Street Light pole with extension	CX
3	Fire Station 3, Existing Antenna	CX
4	Fire Station 4, Existing Antenna	SU
5	College & Pflumm, Traffic Signal / Street Light pole	900 SV
CH	City Hall	Fiber Connection



Lenexa  
GIS

© 2009 lenexa, pdf