

Paving the Way: Comprehensive Traffic Solutions for Manhattan, KS

ITS Heartland | April 2025



Introductions



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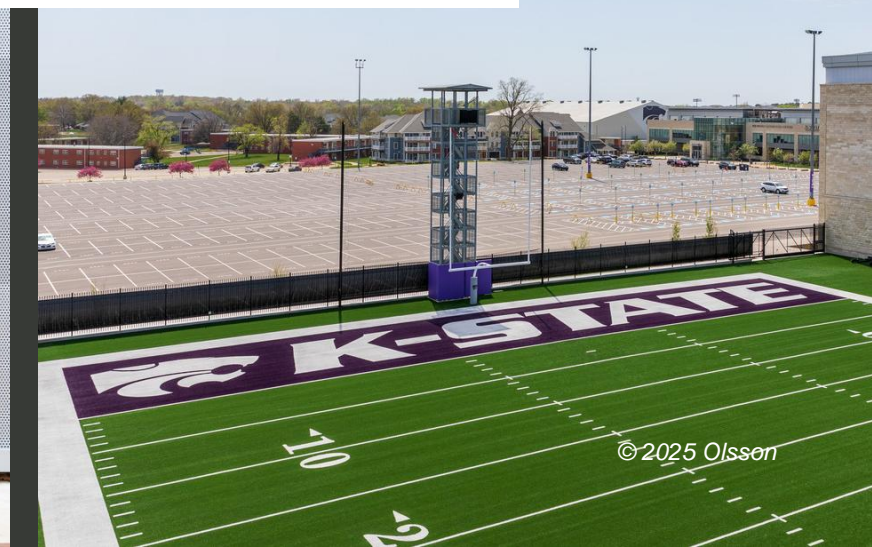
Agenda

- Overview of the City of Manhattan
- Project Objectives
- Signal System Assessment
- ITS and Communications Plan
- Findings and Recommendations

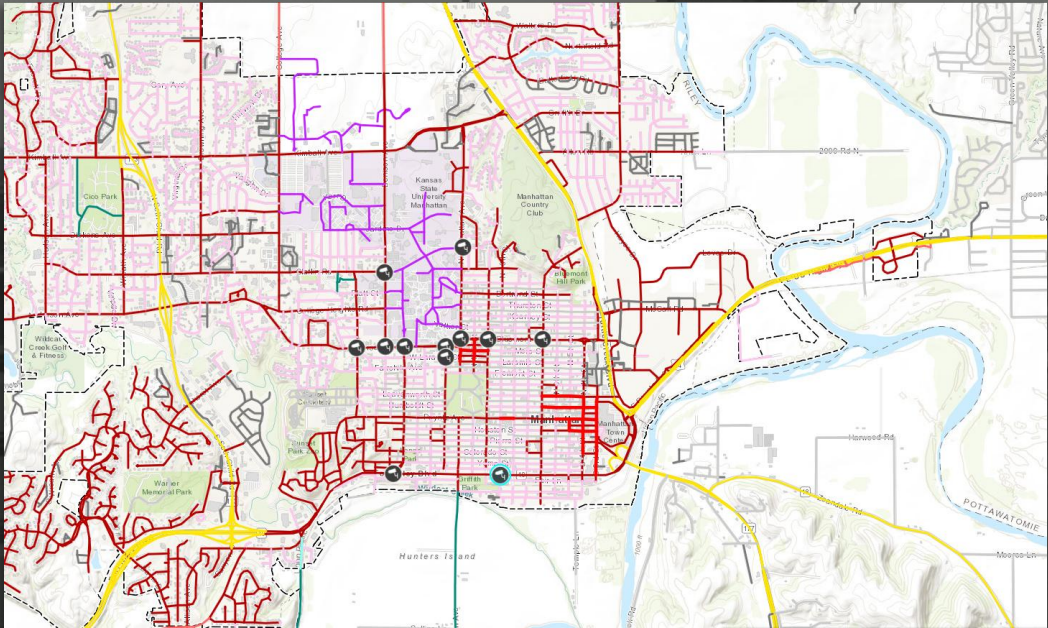




Manhattan, KS



Traffic Department



Project Objectives

- Understand Existing Conditions
- Address Issues
- Provide Recommendations
- Path into the Future



MANHATTAN TRAFFIC SYSTEMS MASTER PLAN

PREPARED FOR:
CITY OF MANHATTAN, KANSAS

MARCH 2024

OLSSON PROJECT NO: 022-01734

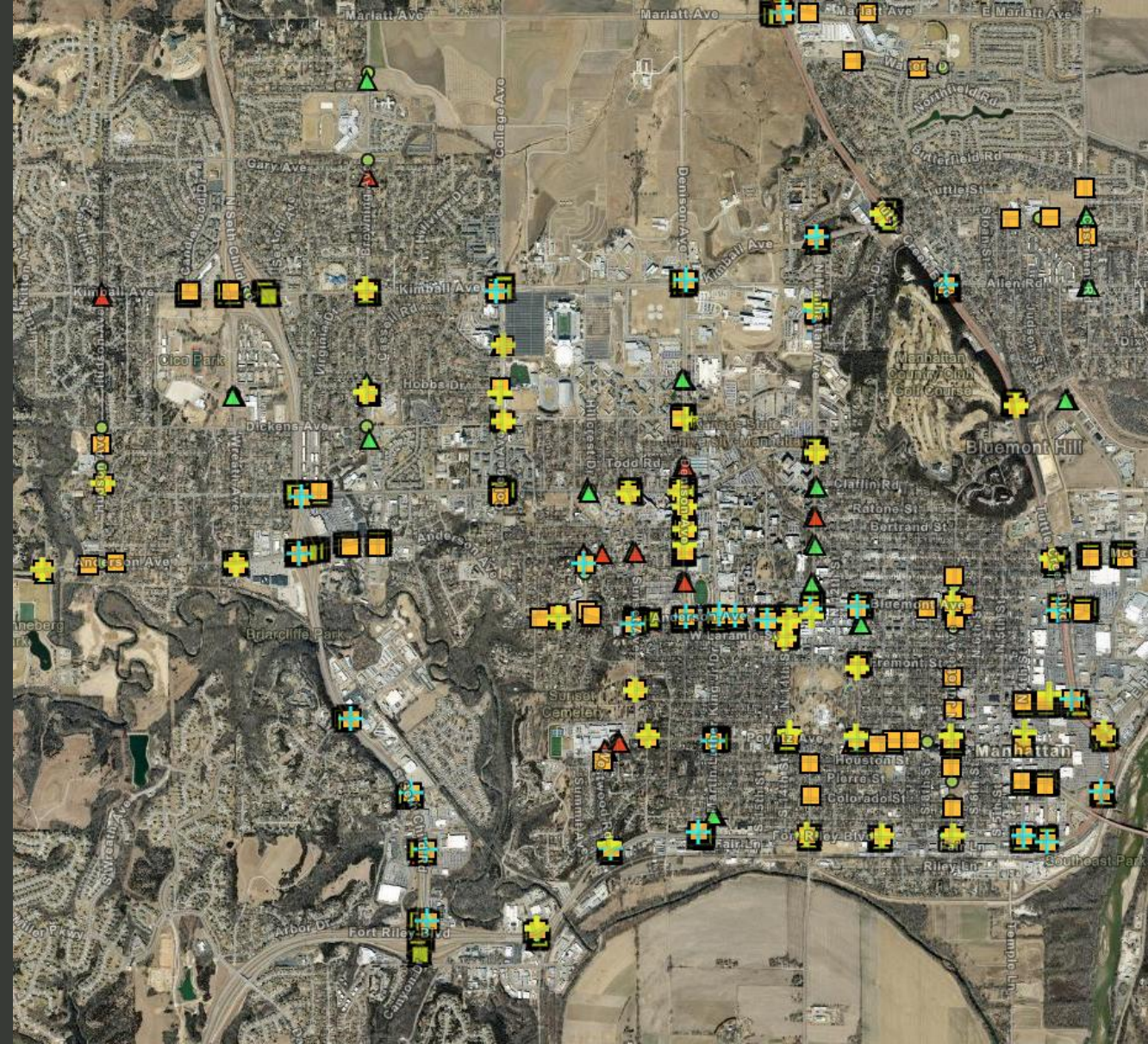


Signal System



Evaluation of Existing System

- 72 Traffic Signals
- 28 Pedestrian Crossings
 - 6 Rectangular Rapid Flashing Beacons
 - 5 Pedestrian Hybrid Beacons
 - 3 Pedestrian Signals
- 42 School Zone Flashing Beacons



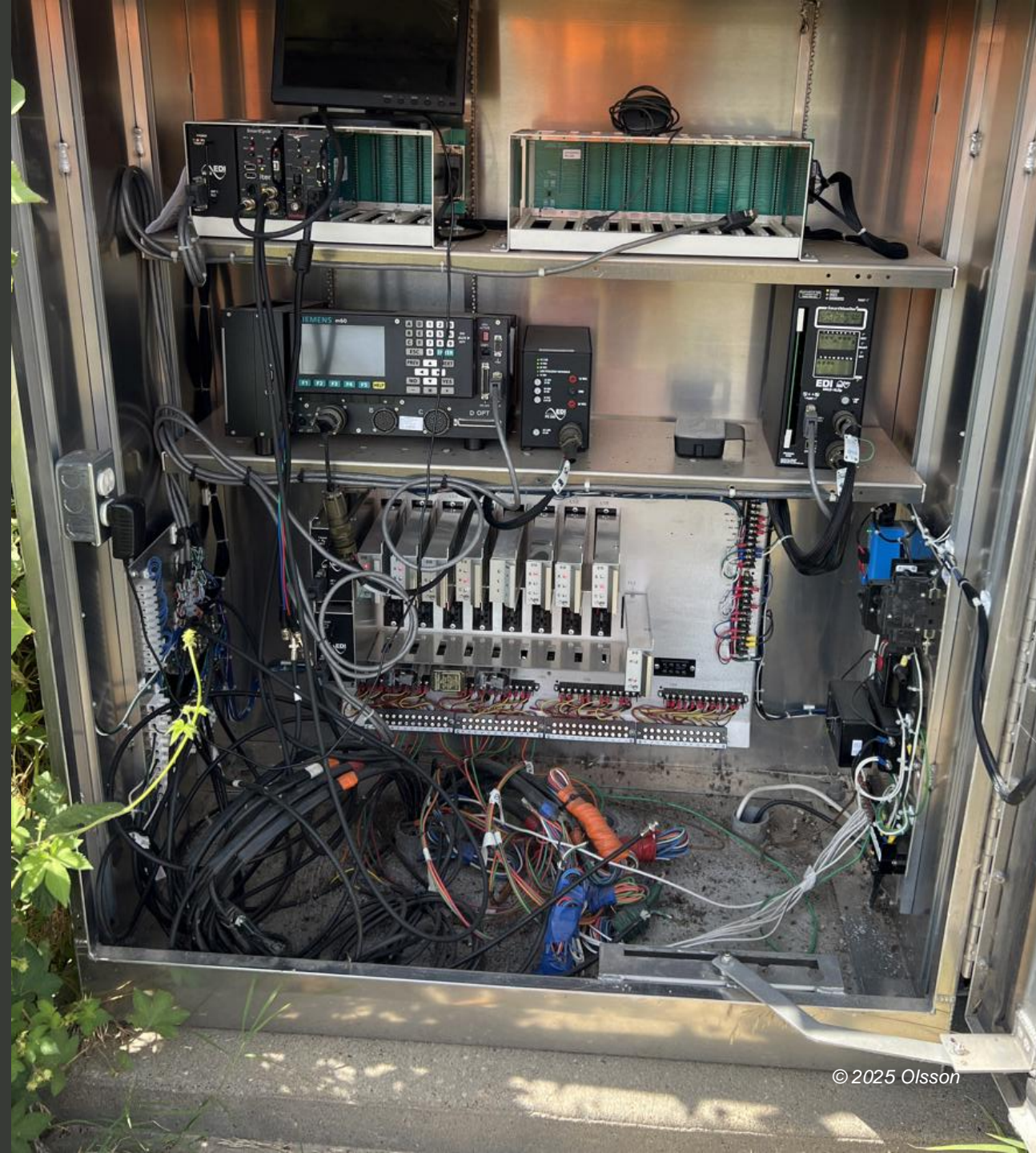
Structural Review

- Foundations
- Base Plates
- Poles
- Corrosion



Non-Structural Review

- Cabinets
- Signal Components
- Software
- Conduit
- Pull Boxes



Signal System Recommendations

- School Zone Flashing Beacons
- RRFB and Pedestrian Flashers
- Traffic, Pedestrian, and PHB Signals
- Controllers Firmware and Central Software
- Signal Timing

Prioritization Schedule

Improvement	Year / Improvement (1,000s)				
	2024	2025	2026	2027	2028
14th Street & Poyntz Avenue	\$325				
Beechwood Terrace & Claflin Road - Ped Pole Only	\$10				
MLK Jr Dr & Poyntz Ave – New Cab and NW Pole	\$100				
12th Street & Bluemont Ave - Install PHB	\$150				
Tuttle Creek Blvd & Casement Rd		\$325			
Tuttle Creek Blvd & Allen Rd		\$325			
Mid Campus & Anderson Ave - Replace with PHB		\$160			
1500 Block & Anderson Ave - Replace with PHB		\$160			
Denison Ave & Hunting Ave - Install PHB			\$150		
Denison Ave & Kerr Dr - Install PHB			\$150		
Browning Ave & Hobbs Dr			\$325		
Westwood Rd & Fort Riley Blvd			\$325		
Pierre St & Fort Riley Blvd				\$325	
Juliette Ave & Fort Riley Blvd				\$325	
10th Street & Fort Riley Blvd				\$325	
MLK Jr Dr & Fort Riley Blvd					\$325
Manhattan Ave & Fort Riley Blvd					\$325
Wreath Ave & Anderson Ave					\$325
Total Cost (per year)	\$585	\$970	\$950	\$975	\$975

Intelligent Transportation System



Intelligent Transportation System

- ITS optimizes traffic flow and city operations utilizing **INFORMATION**
- Why is it important?
 - Adds capacity without widening roads
 - Increases efficiencies
 - Weather response
 - Emergency response
 - Traffic management

Intelligent Transportation System

- ITS Field Devices
- Network Infrastructure
- Software
- Manhattan Traffic Operations Facility

ITS Field Devices

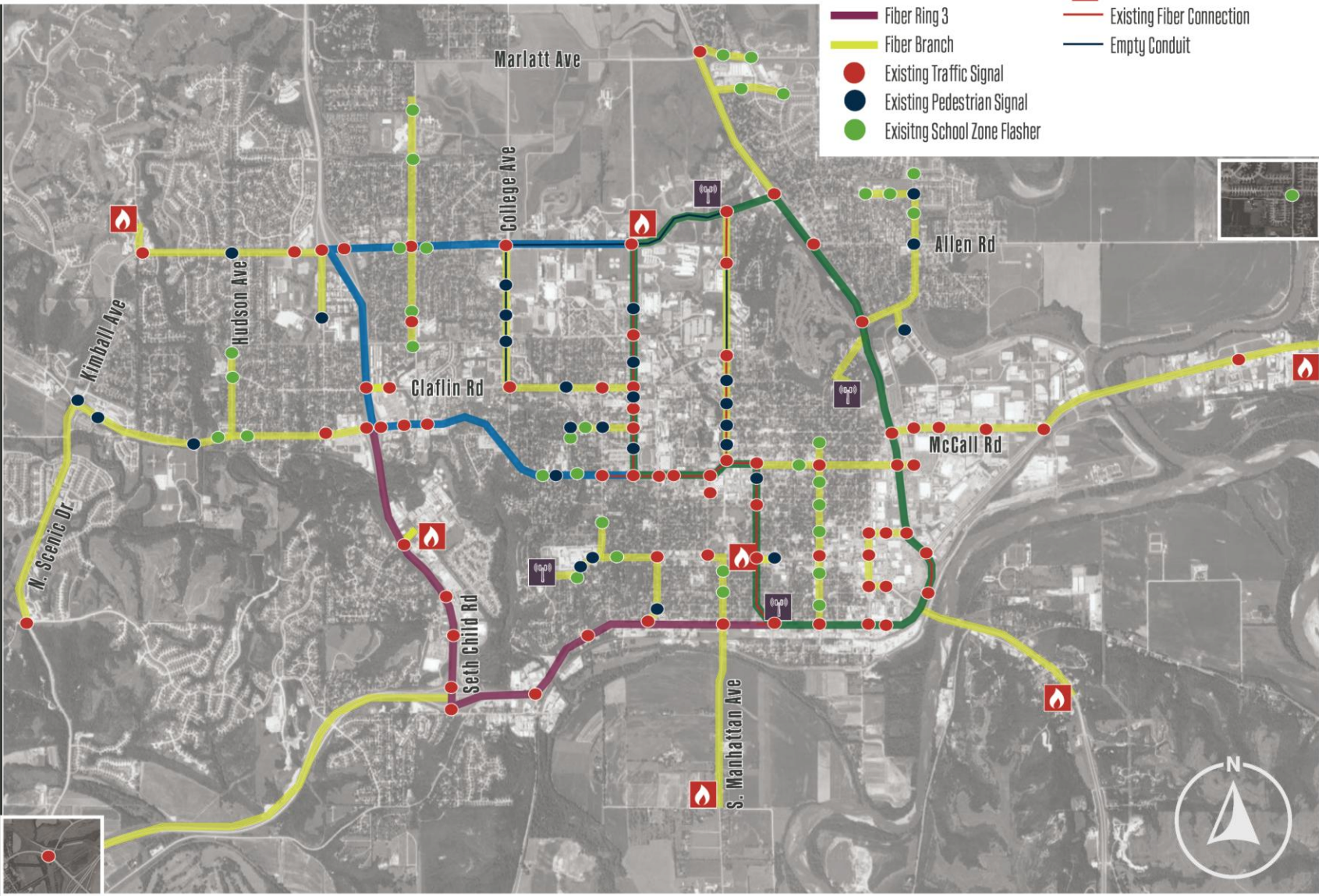
- **RWIS**
- **Traffic Data**
- **Cameras**
- **Dynamis Message Signs**
- **School Zone Flashers**

Network Infrastructure

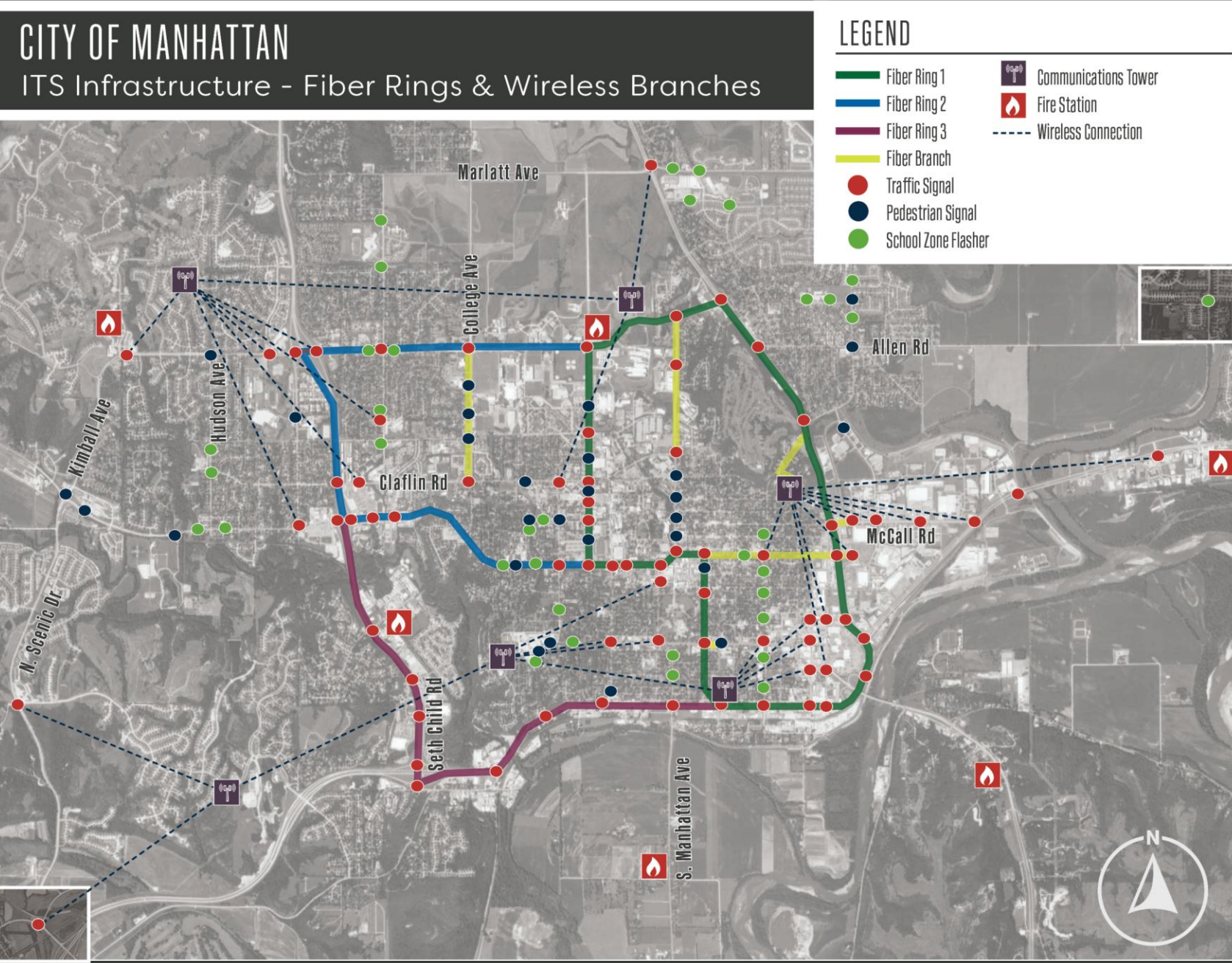
- Fiber Optic Communications
- Wireless Communication
- Cellular Communication
- Network Architecture
- Network Management

Communications Option 1 - Fiber Only

CITY OF MANHATTAN ITS Infrastructure - Fiber Only



Communications Option 2 - Fiber + Wireless



Software

- General
- Network Monitoring
- ITS and Fiber Asset Management
- Central ATMS Software
- Advanced Traveler Information Systems (ATIS)
- Video Management, Distribution, and Recording

Manhattan Traffic Operations Facility

Function	Recommendation			Description
	Priority	Short Term	Mid to Long Term	
1	Basic Observation	•	•	Monitor roadway conditions and accept field condition reports
2	Environmental Monitoring		•	Monitor weather and other environmental conditions that affect road and travel conditions
3	Emergency Management			• Prepare for and participate with partner agencies for emergency response and management
4	Incident Detection	•		• Monitor roadways to identify incidents and events that impact travel
5	Incident Dispatch Coordination			• Assist with incident response coordination, make operational changes, disseminate information
6	Regional Traffic Management	•		• Lead coordination with partner agencies for traffic operations throughout the region
7	Field Device Monitoring		•	Support system maintenance, collect and analyze data from field devices
8	Signal Control	•	•	Monitor, operate, optimize, and maintain all elements of the traffic control signal system
9	Traffic Information Dissemination	•	•	Collect and distribute travel information using various methods
10	Work Zone and Event Management			• Help plan, monitor, and implement traffic operations for work zone and special events
11	Training	•	•	Provide training for MTOF operators and other staff

ITS Recommendations

- Continue Deploying Devices
- Utilize Probe Data
- Build Out Communications
- Fully Utilize Current ATMS
- Expand Role of Traffic Operations Facility

Summary

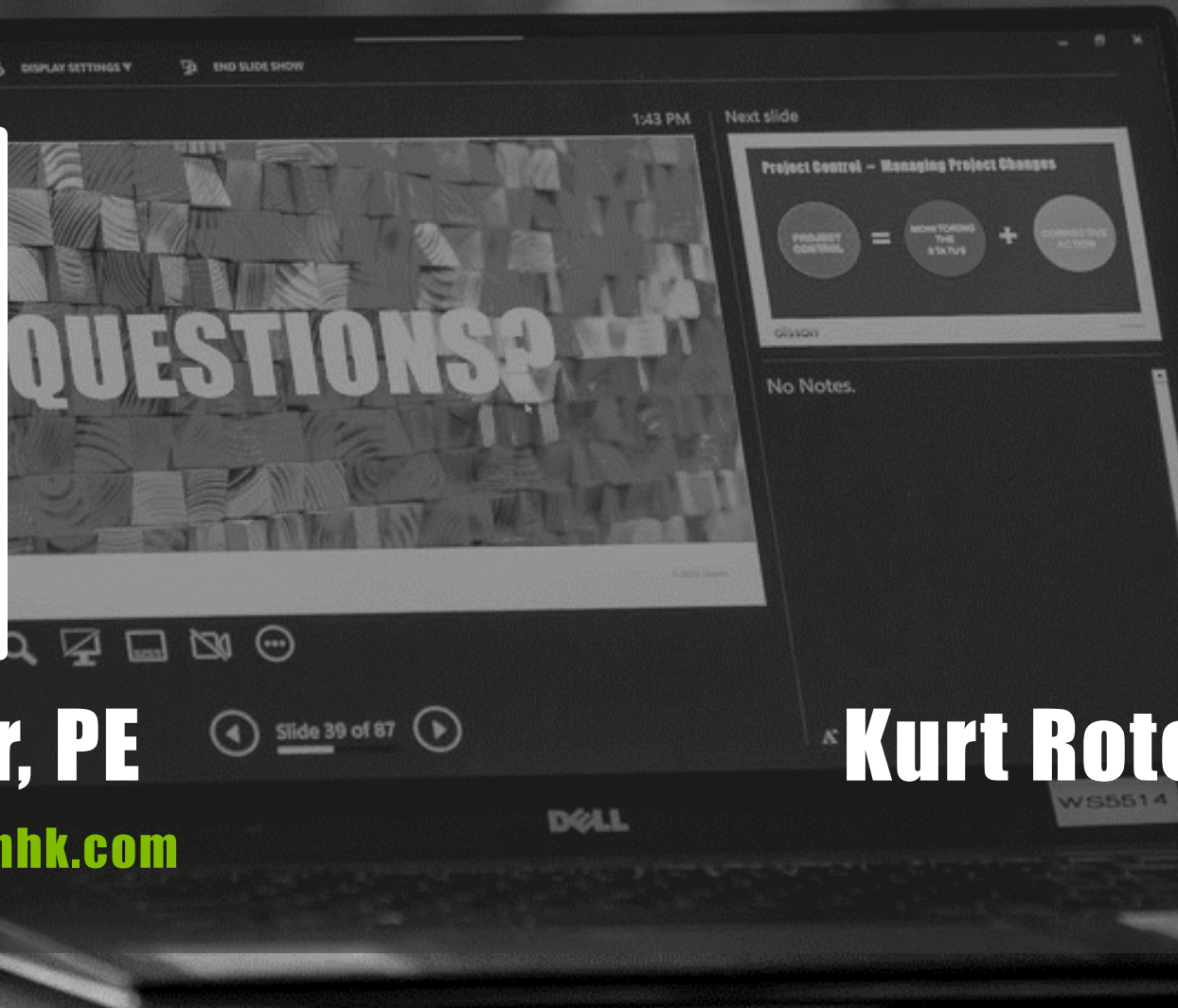
- ✔ Budget to Replace Signals Regularly
- ✔ Improve Signal Timings
- ✔ Build out Communications
- ✔ Expand MTOF Uses
- ✔ Prepare for the Future
- ✔ Utilize technology to increase capacity and safety



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