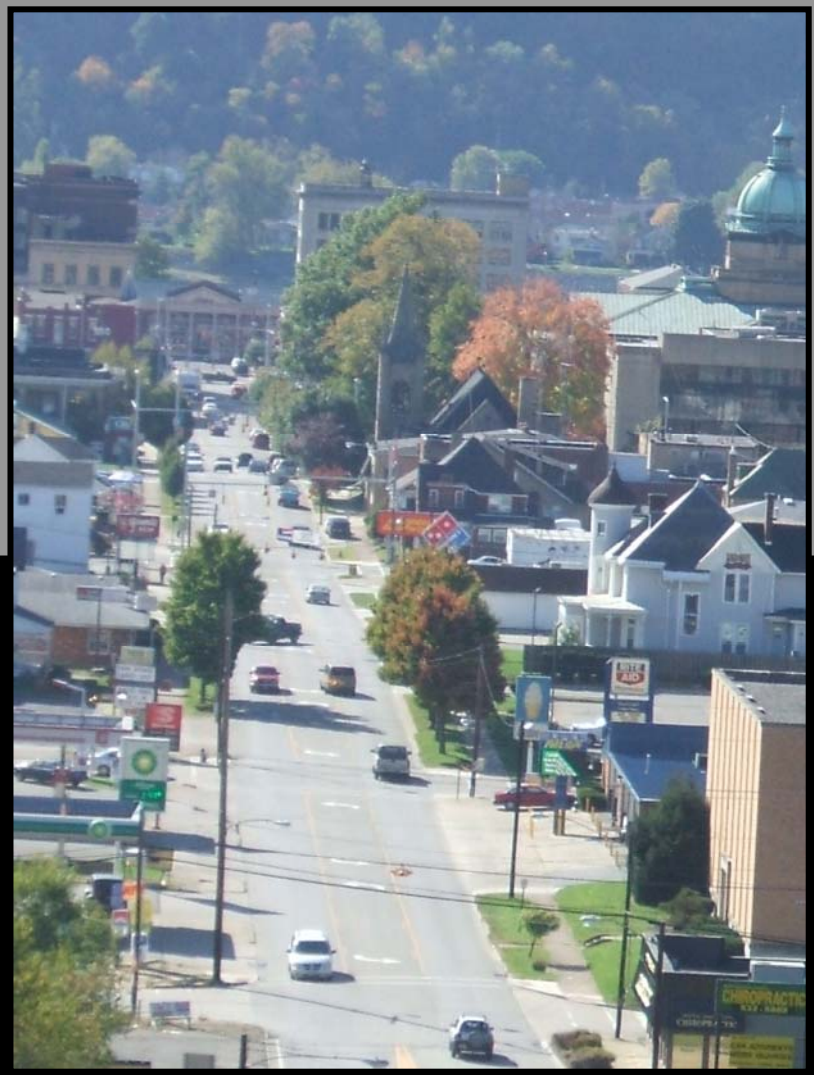
Ironton Traffic Flow Study

KYOVA
INTERSTATE
PLANNING



Tetra Tech

EL Robinson

Issues

- *Signal system based on outdated traffic*
- *Signal hardware outdated*
- *Need to plan for future connections*
- *Traffic flow non-signalized intersections*
- *Reduction in emissions*
- *Truck routes*

Goals and Objectives

- *Maximize traffic flow within the City of Ironton*
- *Meet traffic demands*
- *Blueprint for the future of Ironton's transportation system*
- *Increase the quality of life through transportation improvements*
- *Evaluate downtown parking*

- *Stakeholders*
  - *KYOVA*
  - *Ironton*
  - *ODOT*
  - *Lawrence County*
  - *Huntington Ironton Empowerment Zone*
  - *Ironton Business Association*
  - *Port Authorities*

- *KYOVA Website link*

www.wvs.state.wv.us/kyova/Ironton_Traffic_Flow_Study/index.html

Approach

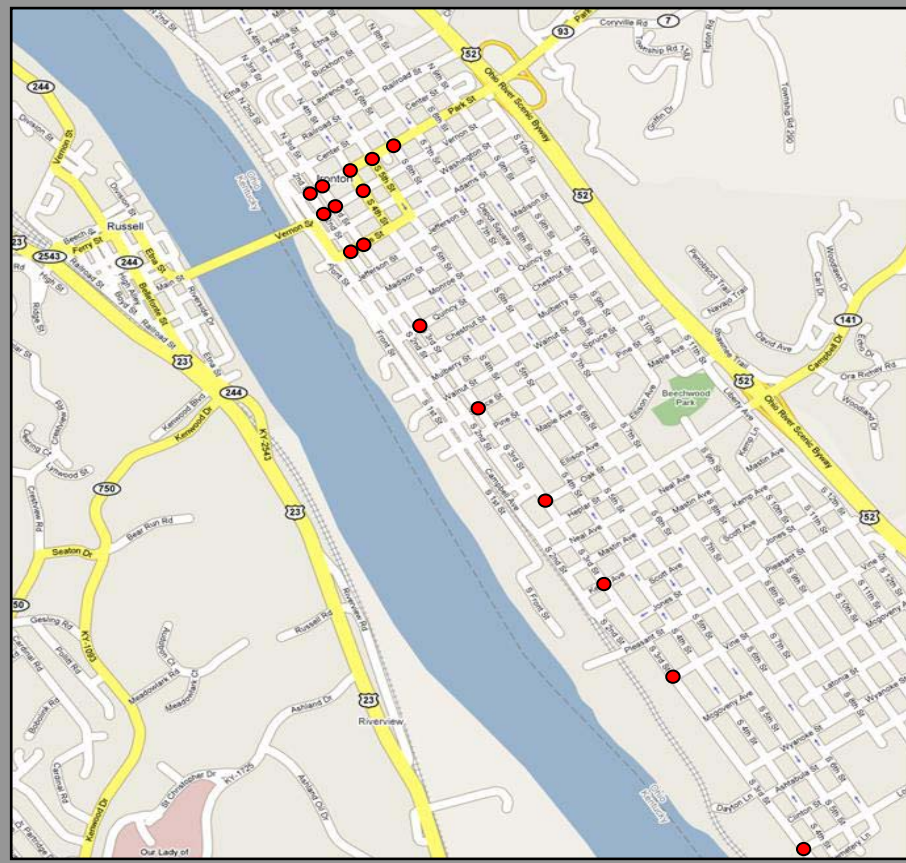
- *Signal Equipment Inventory*
- *Traffic Flow Assessment*
- *Existing and Future System*
- *Signal System Analysis*

Signal Equipment Inventory

- *Hardware*
- *Controllers*
- *Signal Heads*
- *Poles*
- *Interconnect Capabilities*

Traffic Flow Assessment

- *Traffic Counts at 15 signals*
- *Traffic Counts at other key locations*
- *Travel time runs*
- *Check pavement markings, stop signs, signage*



Existing and Future System

- *Collect accident reports from ODOT and local police*
- *Traffic count data input to Synchro*
- *Travel Demand Model analyses*
- *Recommendations – Short, intermediate, and long term*

HISTORIC TRAFFIC DATA—2030 PROJECTIONS (12/08 Ohio DOT)

Intersection	1975 ADT	1994 & 1998 ADT	2008 ADT	% Growth 1975 to 2008/Yr.	% Growth 2005 to 2030	% Growth 2005 to 2030 per Yr.
Park Ave. North of 9th St.	13590	19734	15230	.4		
Park Ave. North of 3rd St.	8020	7139	3620	-1.7	21%	0.8%
2nd St. West of Park St.	4510	6905	6030	1.0	25%	1.0%
2nd St. East of Vernon St.	not available	7187	7040	-.2	12%	0.4%
3rd St. West of Adams St.	4510	6162	4320	-.1	35%	1.4%
Ironton-Russell Bridge	5000	11900	11560	4.0		

Existing Conditions Summary

- ***Turning Radii*** *– Six intersections with quadrants that have existing turning radii that do not meet current ODOT standards*
  - *Liberty and Pine Streets – northwest quadrant*
  - *9th and Spruce Streets – southwest quadrant*
  - *3rd and Lorain Streets – northeast and southeast quadrants*
  - *3rd and Jefferson Streets – southwest quadrant*
  - *2nd and Jefferson Streets – northeast quadrant*
  - *2nd Street and Park Avenue – southeast quadrant*
  - *2nd and Adams Street – southwest quadrant*

Existing Conditions Summary

- ***Signals***
  - *None of the sixteen intersections meet Americans with Disabilities Act (ADA) compliance.*
  - *Existing electromechanical controllers at eight intersections.*
  - *Problems:*
    - *one timing plan*
    - *no multiple timing plans for AM, Midday, PM peak;*
    - *no pushbutton actuation for pedestrians,*
    - *no actuation for vehicles,*
    - *no pre-emption, and*
    - *there is timing loss over time.*
- ***Travel Time Study***
  - *Current average travel time for 3rd Street, Park Avenue, and 2nd Street calculated and compared to free flow time.*

Existing Conditions Summary

- ***Capacity Analyses***
  - *Intersections currently operate at LOS "B" or better*
- ***Crash Data***
  - *Most were 25 crashes in 3 years at the intersection at Park Avenue and 6th Street.*
  - *Highest crash rate identified is 1.79 at the intersection of 3rd and Adams Streets.*
- ***Arterial Analysis***
  - *Existing signal system does not provide optimal coordination and should be studied for improvement.*

Alternative Analyses

- ***Consider raising 2nd Street bridge***
- ***Increase parking by evaluating angle parking***
- ***Improve US 52/University area to 3rd Street flow***
- ***ITS Applications***

Signal Analyses

- ***Signal Equipment Evaluated***
  - *New Street Lights*
  - *New Decorative Poles*
  - *Pole Foundations*
  - *Controllers w/cabinet*
  - *Curb Ramps*
  - *UPS*
  - *Pull Boxes*
  - *New Signal Heads(LED)*
  - *Pedestrian Pedestals*
  - *Pedestrian Heads*
  - *Pushbuttons*
  - *Loops*
  - *Master Controller*
  - *Signal Cable*
  - *Loop Lead-in*
  - *Interconnect*
  - *Conduit in paved area*

Signal System Analysis

- *Synchronized system to reduce delay and emissions (HC, NOx, CO)*
- *Analyze coordination options including ITS*
- *CMAQ application*

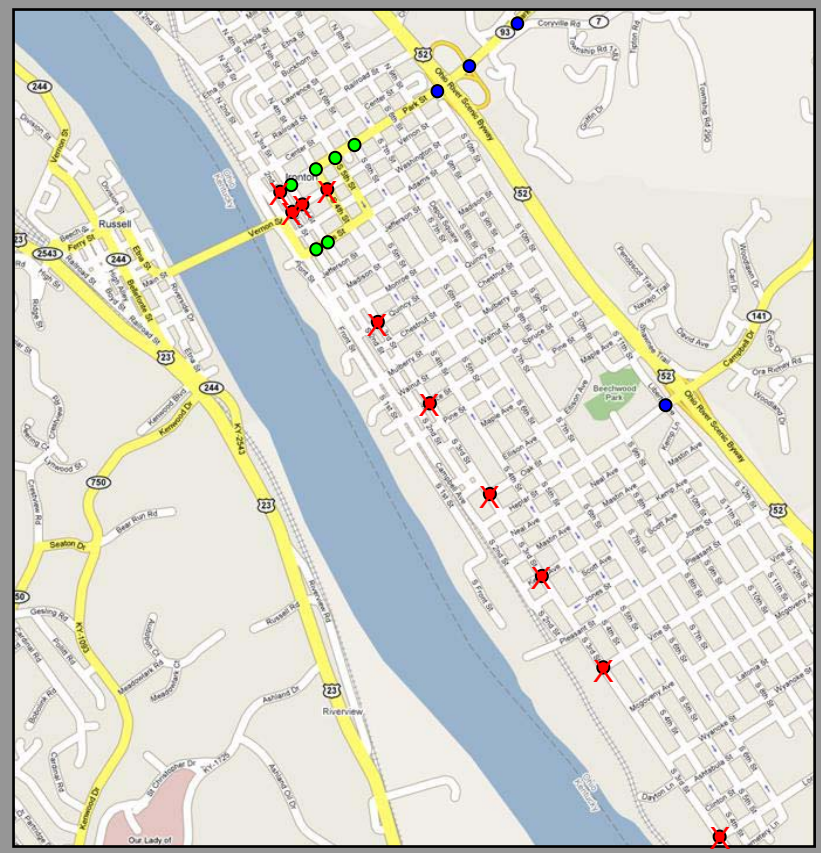
Signal Recommendations

Upgrade Signal, Poles, and Lights

- ***Phase 1***
- *Park Ave. (SR93) & 6th St.*
- *Park Ave. (SR93) & 5th St.*
- *Park Ave. (SR93) & 4th St.*
- *Park Ave. (SR93) & 3rd St.*
- *2nd St. & Adams St.*
- *3rd St. & Adams St.*
- *Central Signal System*

Phase 2

- *Park Ave. (SR93) & 2nd St.*
- *2nd St. & Vernon St.*
- *3rd St. & Vernon St.*
- *3rd St. & Quincy St.*
- *3rd St. & Spruce St.*
- *3rd St. & Oak St.*
- *3rd St. & Kemp St.*
- *3rd St. & Vine St.*
- *3rd St. & Lorain St.*
- *4th St. & Vernon*



Emissions Analyses

		HC		CO		NOx	
Optimization			Difference from 2030 No-Build		Difference from 2030 No-Build		Difference from 2030 No-Build
	AM peak	0.436 kg	.078 kg	12.947 kg	2.307 kg	1.688 kg	0.324 kg
	Midday peak	0.705 kg	0.156 kg	20.985 kg	3.677 kg	2.791 kg	0.578 kg
	PM peak	0.778 kg	0.183 kg	23.600 kg	4.018 kg	3.111 kg	0.644 kg

SHORT TERM (0-5 years) PROJECTS

- Improve ADA access at six intersections
- Replace signal poles and field equipment at six intersections
- Replace Signal heads (LED) and associated hardware (signal cable, conduit, controller boxes) for six intersections
- Purchase signal optimization software (and training)
- Implement optimized timings
- Implement intersection count program every 3 yrs.
- Install central system signal control
- Asses Phase 2 of Signal System
- Improve curb radius at 7 intersections

Short Term (1 to 5 Year) Implementation Schedule

Priority	Alternatives	Estimated Cost ($1,000s)	Funding Source	Maximize Traffic Flow	Meet Traffic Demands	Increase Quality of Life
1	Delaware St. Improvements	$500	KYOVA	H	H	H
2	New Coordinated Signals and Curb Ramps	$1,000	KYOVA	H	H	H
3	Improve Curb Radius	$200	City/KYOVA	H	H	H
4	Develop Downtown Parking Lots		City/KYOVA	M	M	H

Long Term (> 5 Years) Implementation Schedule

1	Raise 2nd Street Bridge	$5,000	City/KYOVA	M	M	M

Schedule

- *March*
  - *Public Meeting (March 5)*
  - *Complete CMAQ application*
- *April*
  - *Complete Final Report*
  - *Begin Signal Design*
- *August*
  - *Complete Signal Design*

Questions?

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