

**St. Louis Avenue Reconstruction  
Ocean City, Maryland**

**City Council Work Session  
September 9, 2008**



**GMB**  
ARCHITECTS / ENGINEERS

# St. Louis Avenue Reconstruction

## Council Work Session Agenda



- Goals
- Scope
- Location
- Preliminary Design Process
- Traffic Analysis
- Conceptual Ideas
- Schedule
- Recommendations
- Questions and Comments

# St. Louis Avenue Reconstruction

## Project Goals

- Improve the pavement, aesthetics, intersections, and pedestrian safety.

## Project Scope

- Repairs and replacement of water mains, sanitary sewer mains, and storm drains. New pavement restoration.
- Consideration for new sidewalks, street lighting, landscaping, utility undergrounding, bicycle lane modifications, and traffic calming

## Project Location

- St. Louis Avenue from North Division Street to 17th Street with the exception of the block between 3rd and 4th Streets
- Side streets generally go to the west to the Bay, with the exception of 14th and 15th Streets which go to the west side of Jacqueline Avenue
- Side streets generally extend to the east approximately to the length necessary to make a smooth transition, with the exception of 17th Street which extends to Philadelphia Avenue

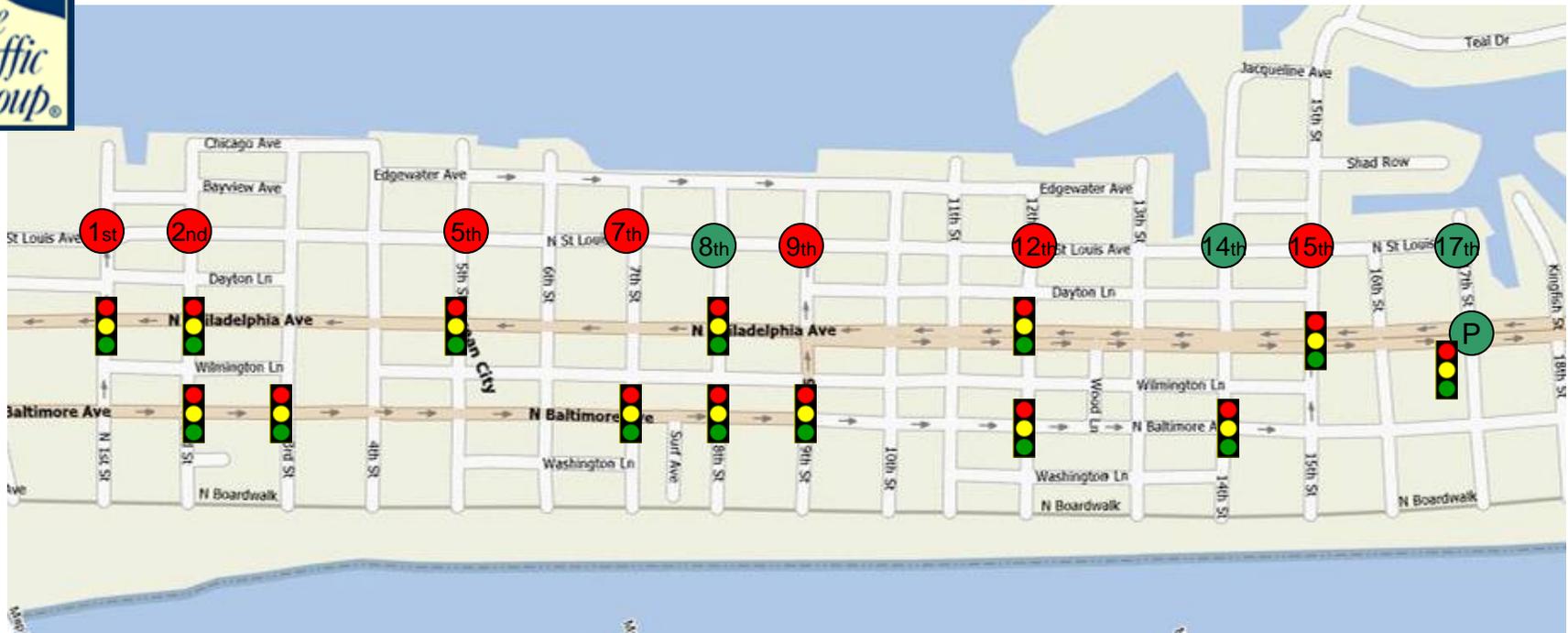
# St. Louis Avenue Reconstruction

## Preliminary Design Process

- Field investigations of property transitions and sidewalks
- Topographic survey of street
- Geotechnical analysis
- Traffic analysis – counts of vehicles, pedestrians and bicycles
- Develop Conceptual Design ideas and present at Public Workshop on July 17, 2008
- Public feedback from meeting and Opinion Surveys
- Revise Conceptual Design

# St. Louis Avenue Reconstruction

## Traffic Analysis



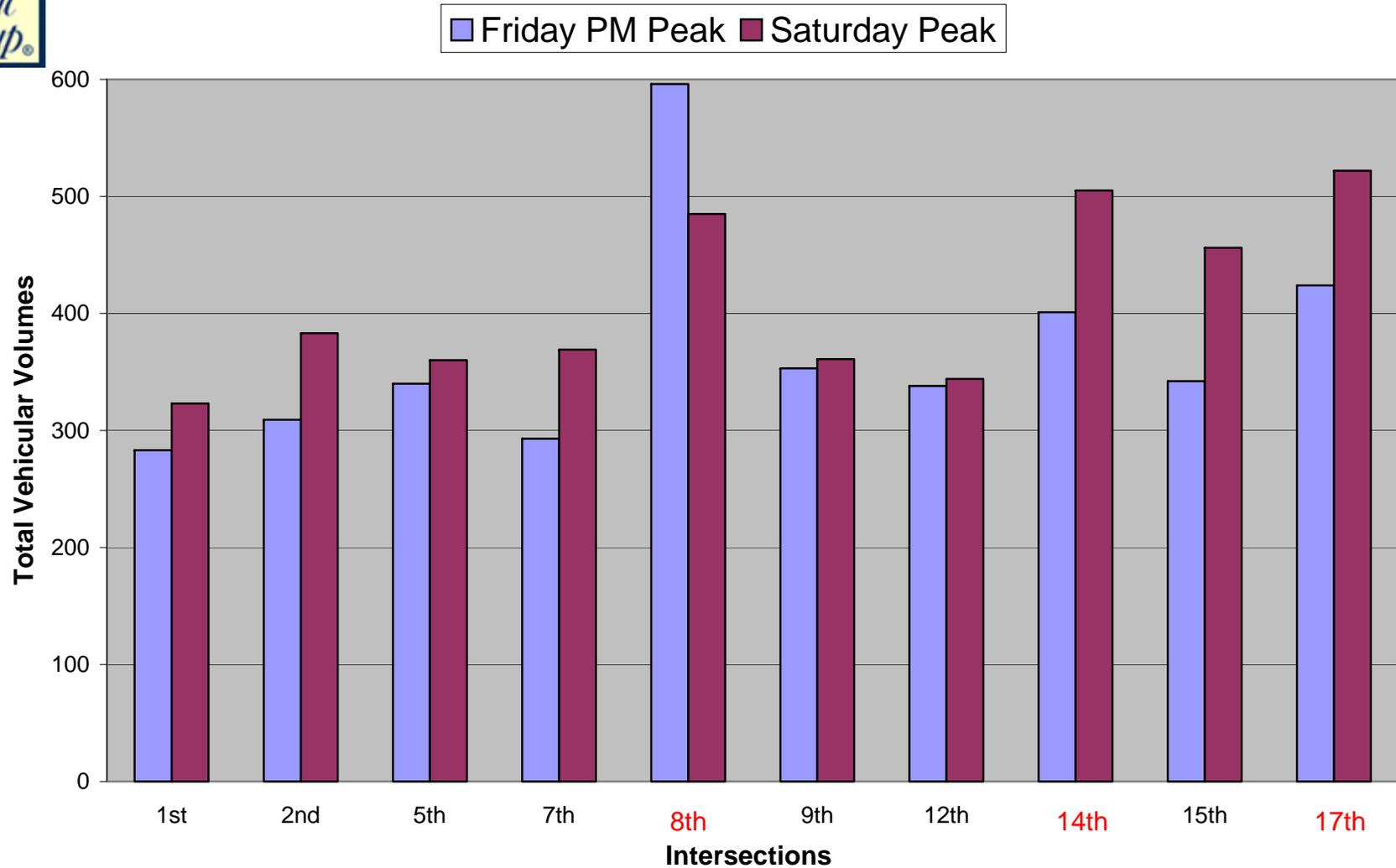
Intersection		1st	2nd	5th	7th	8th	9th	12th	14th	15th	17th	P
Count Date		6/27 & 28, 2008	6/27 & 28, 2008	6/27 & 28, 2008	6/27 & 28, 2008	7/11 & 12, 2008	6/27 & 28, 2008	6/27 & 28, 2008	7/11 & 12, 2008	6/27 & 28, 2008	7/11 & 12, 2008	7/11 & 12, 2008
Vehicle Volumes	Friday PM Peak	283	309	340	293	596	353	338	401	342	424	2736
	Saturday Peak	323	383	360	369	485	361	344	505	456	522	2952
Bicycle Volumes	Friday PM Peak	29	26	26	32	41	21	25	31	32	-	13
	Saturday Peak	36	29	22	80	58	21	38	57	44	-	38
Pedestrian Volumes	Friday PM Peak	57	73	62	38	103	32	42	47	79	-	302
	Saturday Peak	104	69	79	83	68	40	121	97	88	-	215

# St. Louis Avenue Reconstruction



## Traffic Analysis

### Total Vehicular Volumes By Intersections



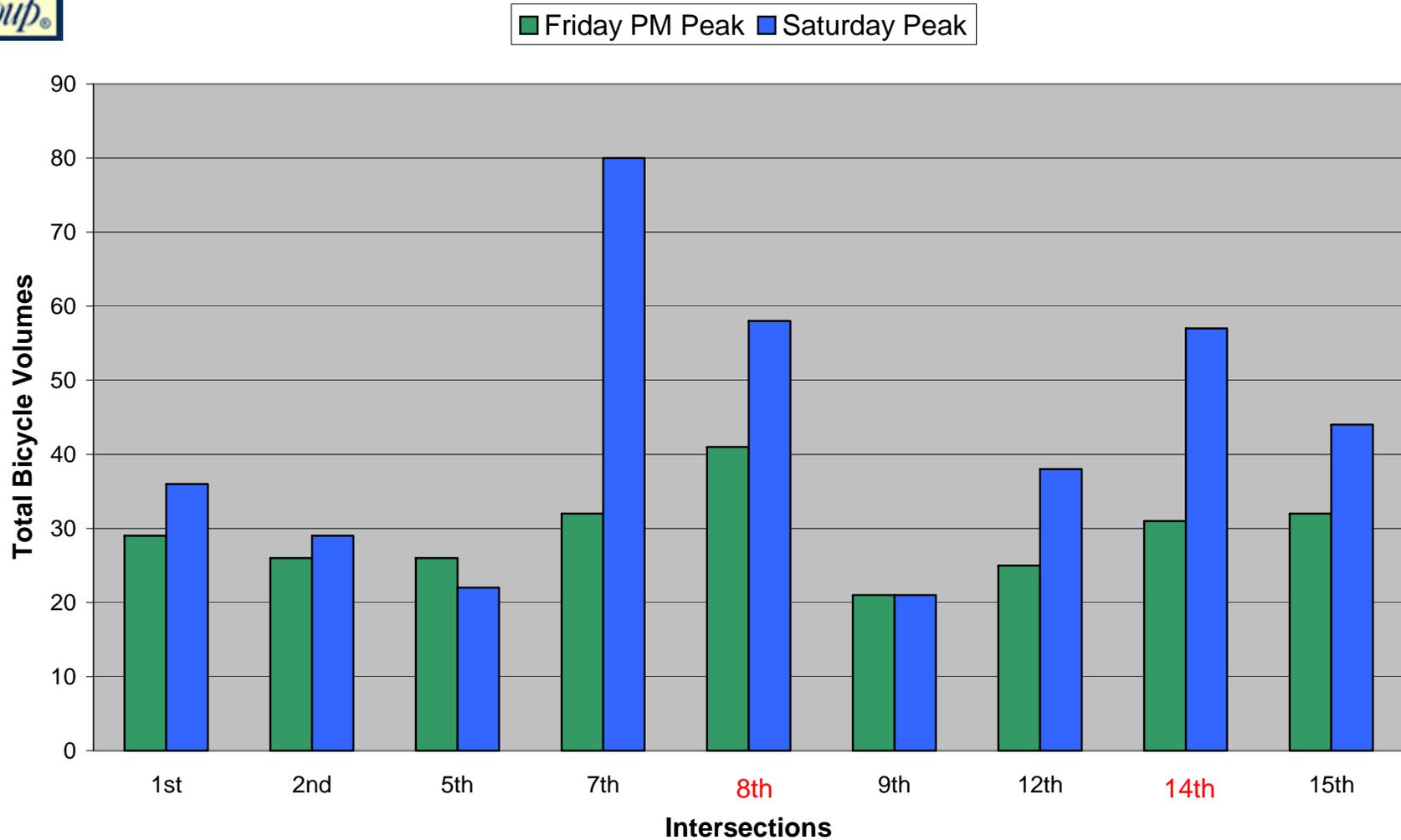
George, Miles & Buhr

# St. Louis Avenue Reconstruction



## Traffic Analysis

### Total Bicycle Volumes By Intersections



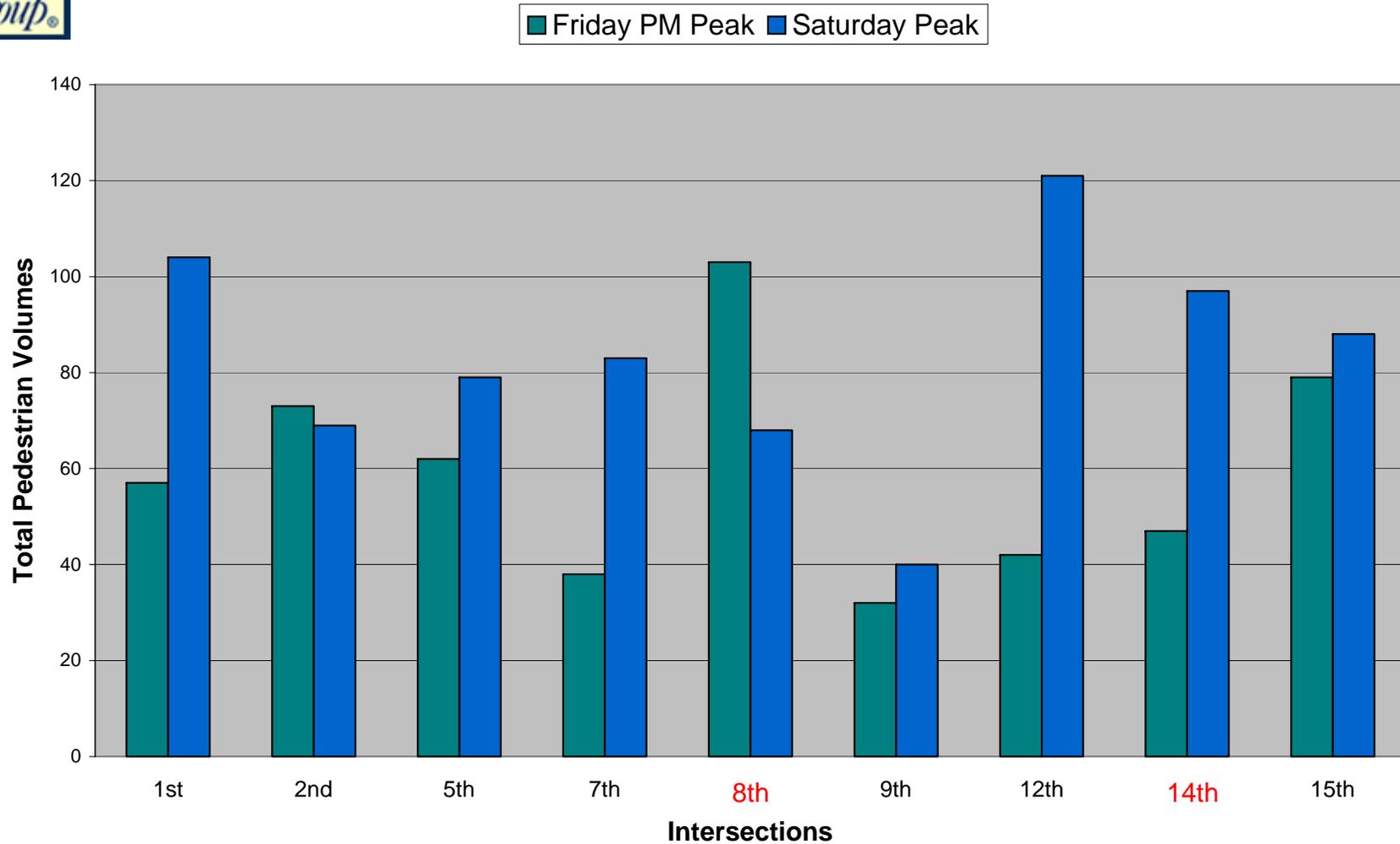
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# St. Louis Avenue Reconstruction



## Traffic Analysis

### Total Pedestrian Volumes By Intersections



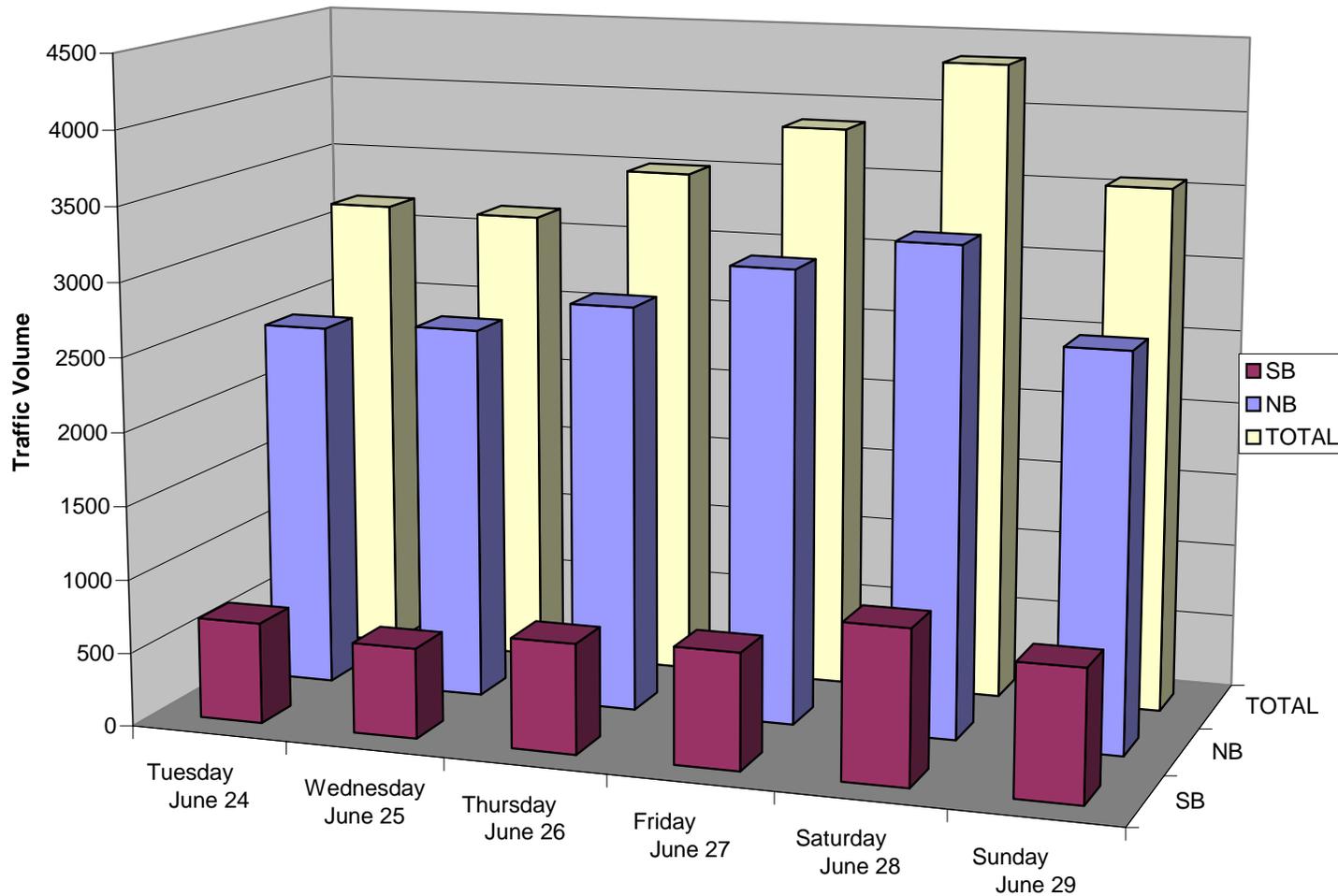
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# St. Louis Avenue Reconstruction



## Traffic Analysis

Directional Counts Between Division St and 1st Street



# St. Louis Avenue Reconstruction

## Opinion Survey Results

**1 is strongly oppose, 5 is strongly in favor:**

	Individual Survey Respondents										Average
Traffic Calming/ Vehicle Speed Reduction General	4	-	3	1	5	3	3	5	4	3	3.4
Intersection "Bump Outs"	4	4	1	5	5	3	3	5	2	3	3.5
Narrower Travel Lanes	1	4	3	1	5	3	3	2	3	3	2.8
Traffic Circles at some intersections	1	3	1	1	5	3	1	2	2	1	2.0
Medians	3	1	1	1	-	5	5	2	3	1	2.4
Other: Crossing traffic sight line to St. Louis traffic	-	-	-	5	-	-	-	-	-	-	5.0
Other: Relocating power/phone lines	-	-	-	-	-	-	-	-	5	-	5.0
Brighter Street Lighting	5	3	4	4	5	5	5	5	2	5	4.3
Pedestrian /Bicycle Safety General	4	-	5	4	5	5	5	5	5	4	4.7
Wider/unobstructed Sidewalks	4	2	4	1	3	4	5	2	3	1	2.9
Marked Crosswalks at every intersection	4	2	5	5	3	5	5	5	5	4	4.3
Separate Marked Bike Lane	5	5	5	5	5	5	5	5	5	5	5.0
Shared Marked Bike Lane	1	1	3	1	1	2	3	1	5	1	1.9
On Street Parking	5	5	5	5	5	2	1	5	5	5	4.3
Landscaping/Street Beautification General	3	-	4	5	3	5	5	5	5	3	4.2
Tree Lined Street	3	2	3	1	3	5	5	3	5	2	3.2
Grass Utility Strips	-	1	1	1	1	4	3	1	5	2	2.1
Paver Utility Strips	2	1	3	5	4	5	5	4	5	4	3.8
"Antique" style light fixtures	4	4	3	4	1	3	4	3	5	3	3.4
Other: Parking / No Parking signage	-	-	-	4	-	-	-	-	-	-	4.0
Other: Bury power lines	-	-	-	-	-	5	5	-	-	-	5.0
Street Drainage Improvements	5	5	5	5	-	5	5	5	5	5	5.0
Environmental Improvements	5	-	3	3	-	5	5	5	5	3	4.3

- In favor of improved lighting, pedestrian/bicycle safety, marked crosswalks, separate bicycle lanes, on street parking, and drainage/environmental improvements.
- Opposed to traffic circles, medians, shared bicycle lanes, and grass utility strips.

# St. Louis Avenue Reconstruction

## Conceptual Design

- Traffic Calming using visual features
  - Bump outs (landscaping, benches, lights)
  - Crosswalks (thermoplastic, pavers)
  - Roundabouts

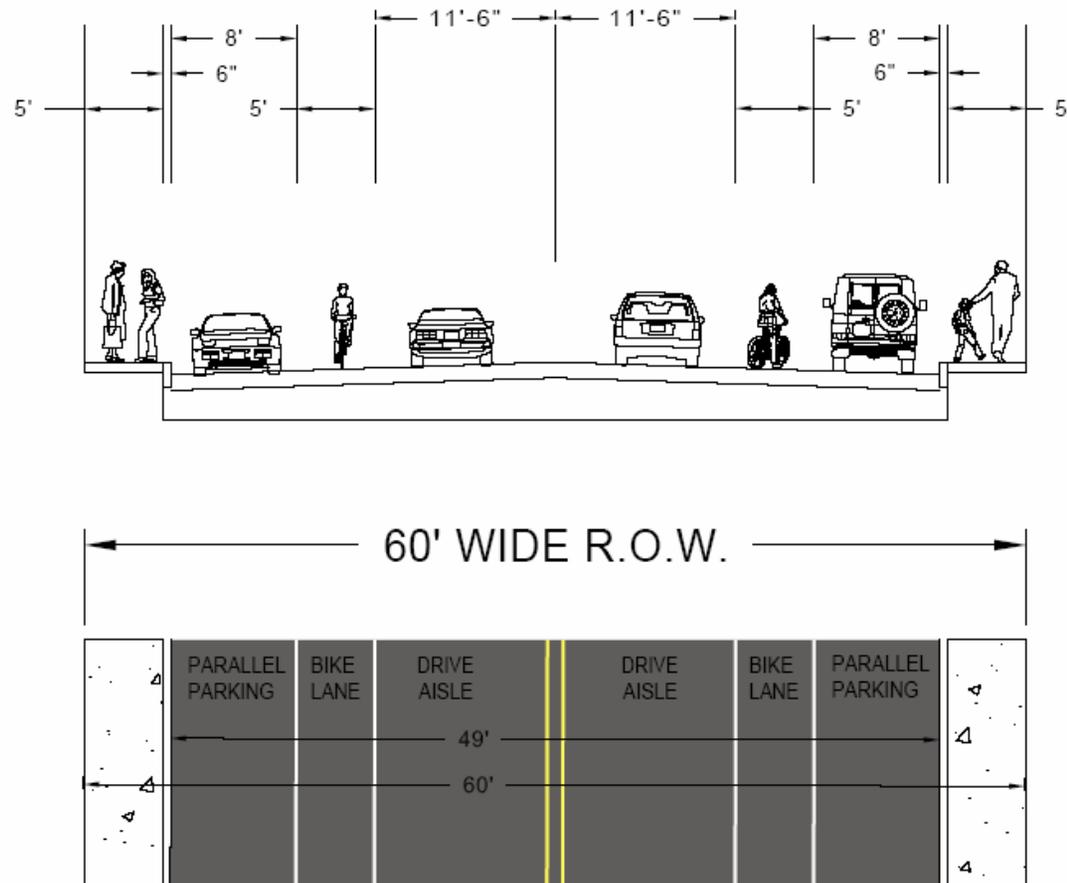


- Bicycle Lanes
  - Separate marked lane with directional arrows
    - 5' wide bike lane with 11'-6" wide travel lane
  - Shared or hybrid lanes
    - 15' wide shared bicycle and vehicle lane



# St. Louis Avenue Reconstruction

## Conceptual Design – Cross Section



# St. Louis Avenue Reconstruction

## Conceptual Design



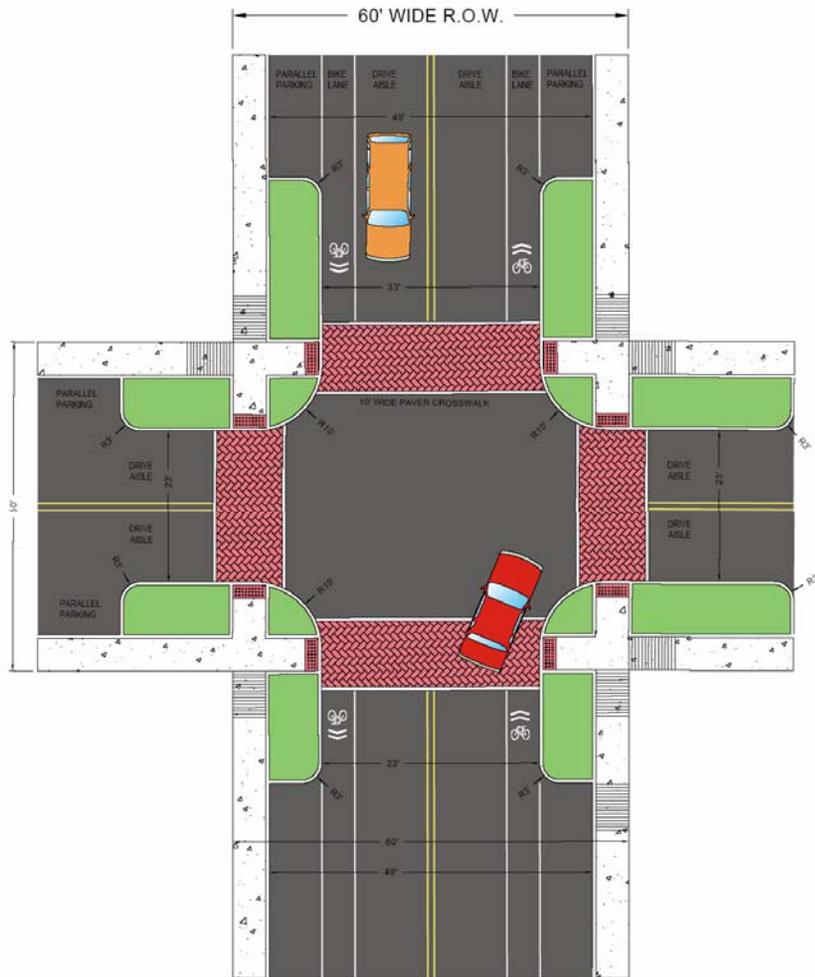
- Direct Pedestrian flow by having different intersection configurations for intersections that connect to traffic signals on Philadelphia Ave versus ones that do not
  - Signals on Philadelphia Ave: 1<sup>st</sup>, 2<sup>nd</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 12<sup>th</sup>, 15<sup>th</sup>, and 17<sup>th</sup>

- 12<sup>th</sup> and 15<sup>th</sup> Street – possible right turn lanes or additional signage
- 1<sup>st</sup> Street Intersection – roundabout
- Street lights and lighted bollards
- Drainage Improvements

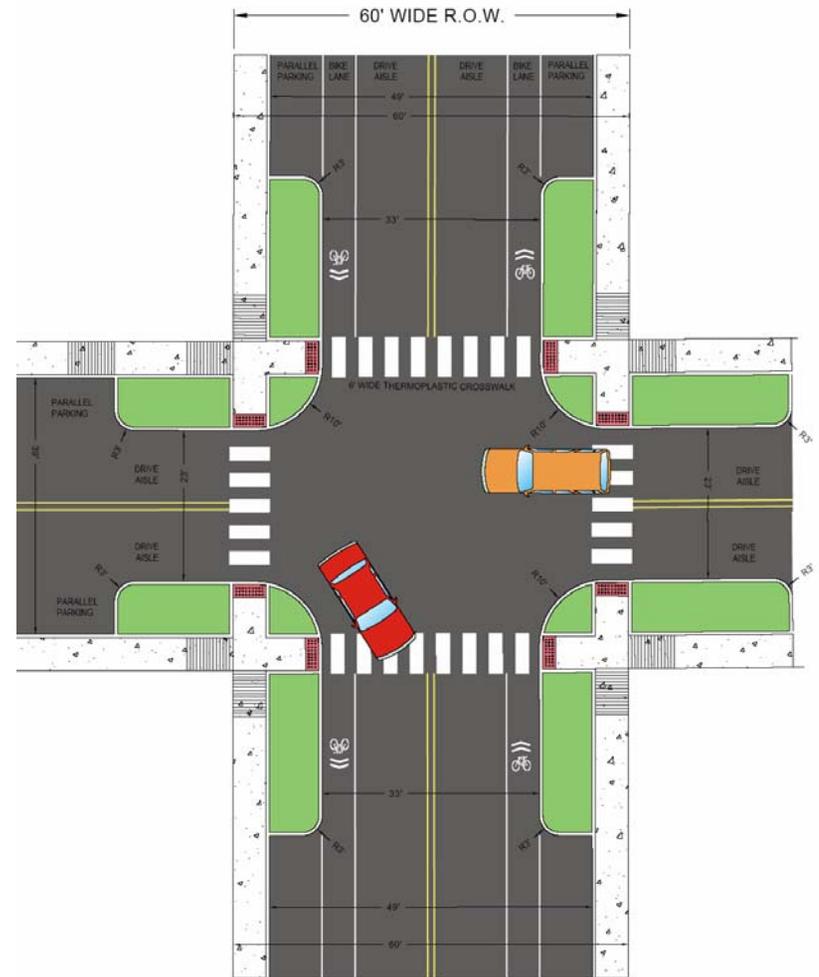


# St. Louis Avenue Reconstruction

## Conceptual Design - Intersections



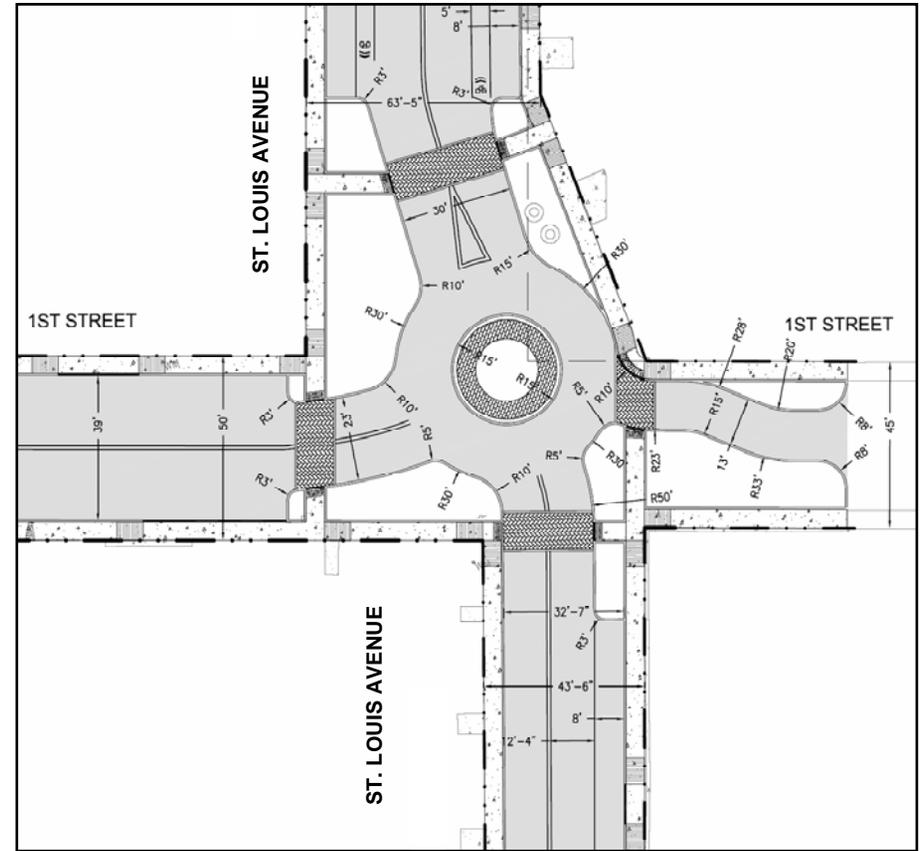
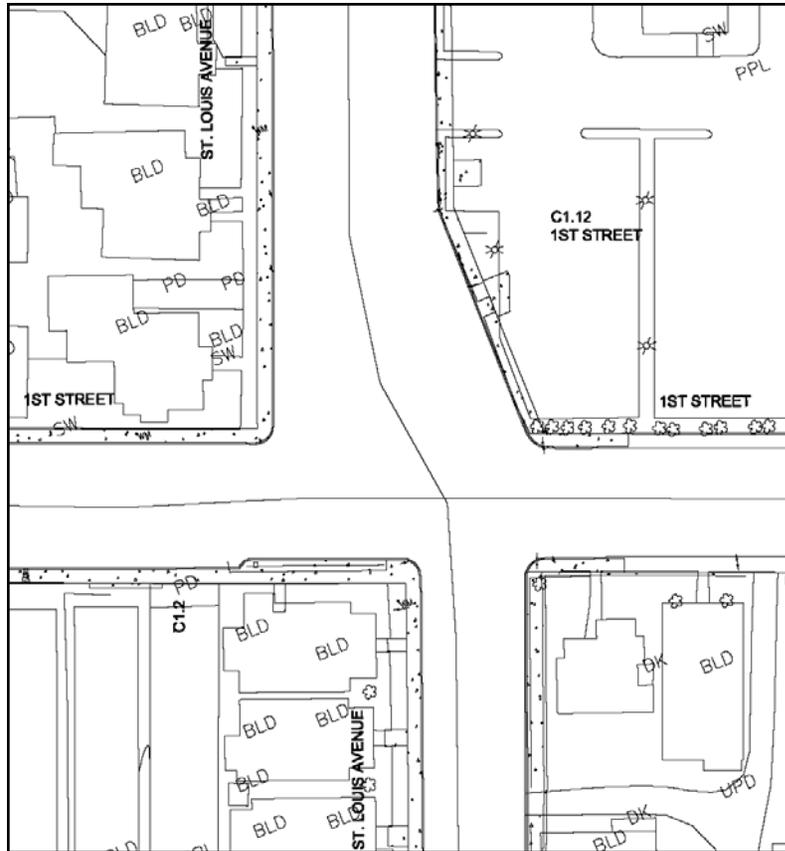
PLAN VIEW ON ST. LOUIS AT SIGNALIZED INTERSECTIONS AT PHILADELPHIA AVE



PLAN VIEW ON ST. LOUIS AT NON-SIGNALIZED INTERSECTIONS AT PHILADELPHIA AVE

# St. Louis Avenue Reconstruction

## Conceptual Design – 1<sup>st</sup> Street



# St. Louis Avenue Reconstruction

## Conceptual Design – 1<sup>st</sup> Street



Looking north on St. Louis Ave towards 2<sup>nd</sup> Street

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# St. Louis Avenue Reconstruction

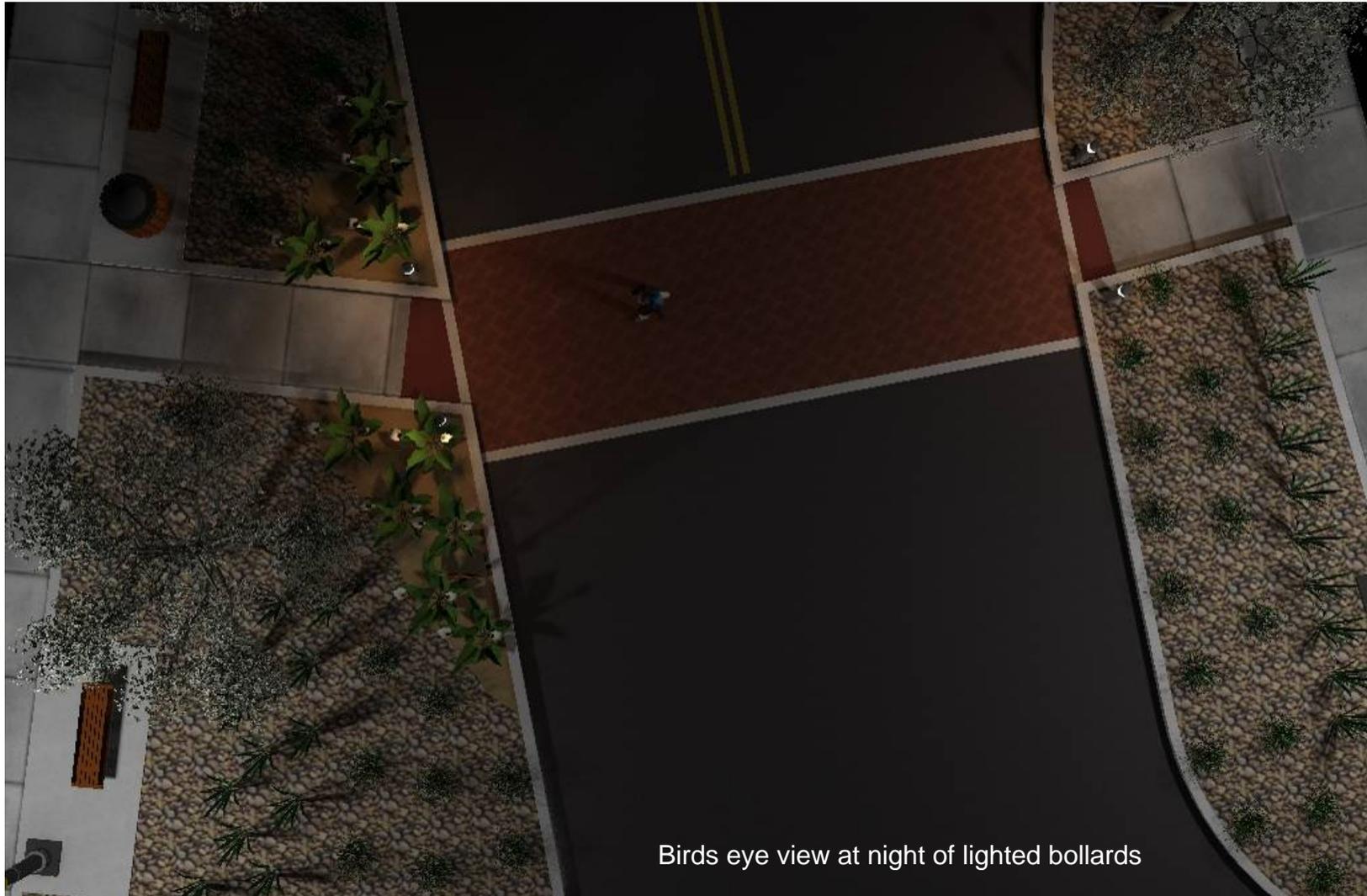
## Conceptual Design – 1<sup>st</sup> Street



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# St. Louis Avenue Reconstruction

## Conceptual Design – 1<sup>st</sup> Street

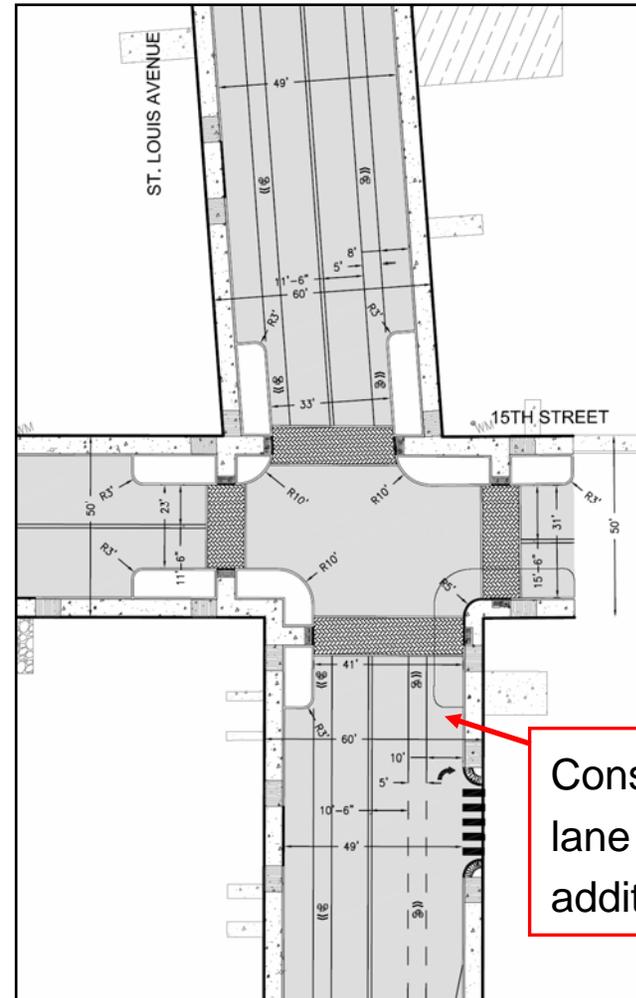
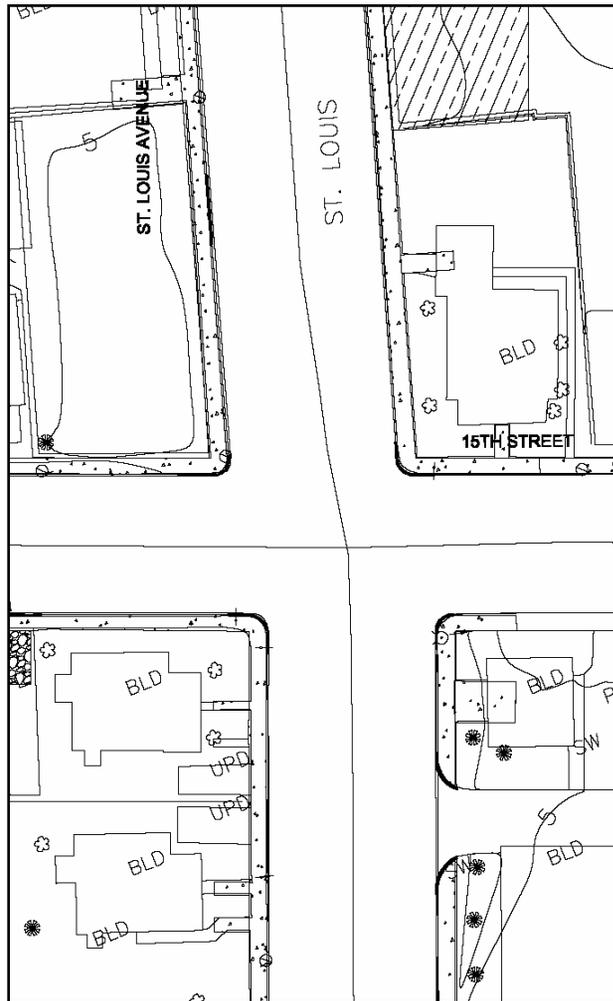


Birds eye view at night of lighted bollards

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# St. Louis Avenue Reconstruction

## Conceptual Design – 15<sup>th</sup> Street



Consider right turn lane northbound or additional signage

# St. Louis Avenue Reconstruction

## Schedule

- Present Conceptual Design at Council Work Session – September 9, 2008
- Pending Approval, Submit full Conceptual Design Drawings to City Engineer for Review – September 2008
- Final Design & Prepare Construction Drawings – October 2008 to May 2009
- Present Final Design at Public Workshop – May 2009
- Construction Bidding – Summer 2009
- Begin Construction – September 2009

# St. Louis Avenue Reconstruction

## Recommendations

- 1<sup>st</sup> Street Intersection improved with roundabout
- Traffic Calming via bump-outs and clearly defined crosswalks (thermoplastic and pavers)
- Provide 5' wide sidewalks for pedestrians with improvements to street lighting
- Provide separate lane with thermoplastic markings for Bicycle Use
- Drainage improvements such as elevating the crown and a few intersections

## Questions & Comments