
City of Camas

NW 6th and Norwood Open House Presentation

Opening Remarks and Introductions

- **Scott Higgins, Mayor**
 - **Project Team**
 - Peter Capell, City Administrator
 - Steve Wall, Public Works Director
 - Robert Nova, WSDOT
 - Jim (Curleigh) Carothers, Engineering Manager
 - HDJ Design Group - Project Consultant
 - Greg Jellison, Principal and Project Manager
 - John Manix, Senior Traffic Engineer

Existing Intersection

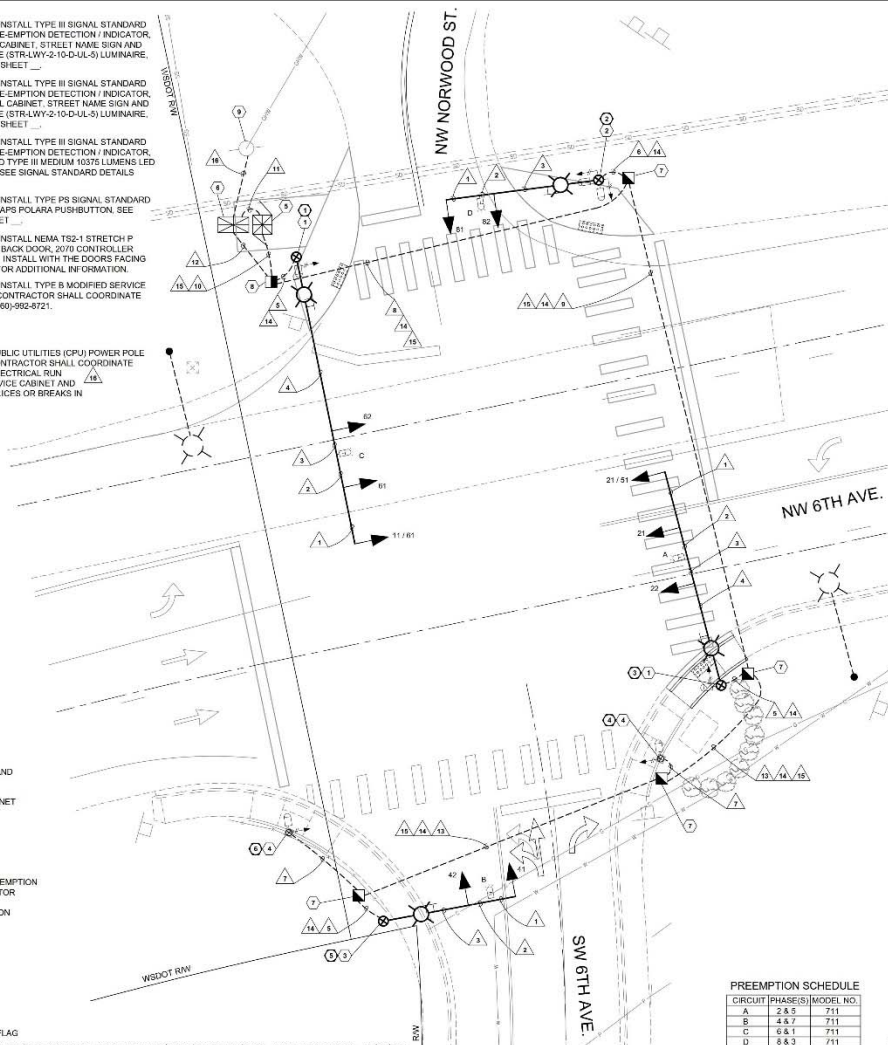


Signalized Intersection

CONSTRUCTION NOTES:

- CONSTRUCT CONCRETE FOUNDATION AND INSTALL TYPE III SIGNAL STANDARD COMPLETE WITH SIGNAL DISPLAYS, ONE PRE-EMPTION DETECTION / INDICATOR, ONE APS POLARA PUSHBUTTON, TERMINAL CABINET, STREET NAME SIGN AND TYPE III MEDIUM 10375 LUMENS LED FIXTURE (STR-LWY-2-10-D-UL-S) LUMINAIRE, SEE SIGNAL STANDARD DETAILS CHART ON SHEET.
- CONSTRUCT CONCRETE FOUNDATION AND INSTALL TYPE III SIGNAL STANDARD COMPLETE WITH SIGNAL DISPLAYS, ONE PRE-EMPTION DETECTION / INDICATOR, TWO APS POLARA PUSHBUTTONS, TERMINAL CABINET, STREET NAME SIGN AND TYPE III MEDIUM 10375 LUMENS LED FIXTURE (STR-LWY-2-10-D-UL-S) LUMINAIRE, SEE SIGNAL STANDARD DETAILS CHART ON SHEET.
- CONSTRUCT CONCRETE FOUNDATION AND INSTALL TYPE III SIGNAL STANDARD COMPLETE WITH SIGNAL DISPLAYS, ONE PRE-EMPTION DETECTION / INDICATOR, TERMINAL CABINET, STREET NAME SIGN AND TYPE III MEDIUM 10375 LUMENS LED FIXTURE (STR-LWY-2-10-D-UL-S) LUMINAIRE, SEE SIGNAL STANDARD DETAILS CHART ON SHEET.
- CONSTRUCT CONCRETE FOUNDATION AND INSTALL TYPE PS SIGNAL STANDARD COMPLETE WITH SIGNAL DISPLAY AND ONE APS POLARA PUSHBUTTON, SEE SIGNAL STANDARD DETAILS CHART ON SHEET.
- CONSTRUCT CONCRETE FOUNDATION AND INSTALL NEMA TS-1 STRETCH P TRAFFIC SIGNAL CABINET WITH FRONT AND BACK DOOR, 2070 CONTROLLER CONFIGURED FOR NEMA TS-1 OPERATION. INSTALL WITH THE DOORS FACING NORTH AND SOUTH. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONSTRUCT CONCRETE FOUNDATION AND INSTALL TYPE B MODIFIED SERVICE CABINET AND METER PER STD. PLAN J3-B. CONTRACTOR SHALL COORDINATE WITH (CONTACT NAME) OF CLARK PUD AT (800)992-8721.
- INSTALL TYPE 2L JUNCTION BOX.
- INSTALL TYPE B JUNCTION BOX.
- CONTRACTOR TO CONNECT WITH CLARK PUBLIC UTILITIES (CPU) POWER POLE PC1310123 TRANSFORMER FOR POWER. CONTRACTOR SHALL COORDINATE WITH (CONTACT NAME) AT CPU FOR THE ELECTRICAL RUN. SHALL BE CONTINUOUS BETWEEN THE SERVICE CABINET AND THE CPU TRANSFORMER WITH NO WIRE SPLICES OR BREAKS IN THE CONDUIT SYSTEM.

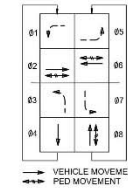
- ### LEGEND
- TYPE 2L JUNCTION BOX
 - TYPE B JUNCTION BOX
 - TRAFFIC SIGNAL CONTROLLER AND CABINET
 - TYPE B MODIFIED SERVICE CABINET
 - TYPE PS SIGNAL STANDARD
 - SIGNAL STANDARD, TYPE II
 - VEHICLE SIGNAL DISPLAY
 - COMBINATION EMERGENCY PREEMPTION DETECTOR/EMERGENCY INDICATOR
 - POLARA NAVIGATOR PUSHBUTTON
 - CONDUIT AND CONDUCTOR
 - STREET NAME SIGN
 - PEDESTRIAN SIGNAL DISPLAY
 - WIRE NOTE FLAG
 - CONSTRUCTION NOTE FLAG
 - SIGNAL POLE STANDARD NOTE FLAG



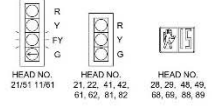
WIRING SCHEDULE SERVICE NO.

CONDUIT NO.	SIZE	PPR	CONDUCTOR	E.V. NO.	VERT. HEAD	HEAD NO.	POWER	POWER	POWER	GPR
		SCS	SCS	SCS	SCS	MC	#1	#2	#3	COMM. CABLE
1	MAST ARM					1				
2	MAST ARM					1				
3	MAST ARM					2				
4	MAST ARM					3				
5	2"					1				
6	2"					1				
7	1 1/4"					1				
8	3"					2				
9	2"					1				
10	2"					1				
11	2"					3				
12	2"					2				
13	2"					SPARE WITH FULL LINE				
14	1 1/4"					1				
15	2"					2				
16	2"					SPARE WITH FULL LINE				
17	2"									
18	3"									

PHASE DIAGRAM



SIGNAL DISPLAYS



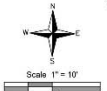
SERVICE BREAKER SCHEDULE

CIRCUIT	BREAKER RATING (Amps)	CONTRACTOR RATING (Amps)	VOLTAGE (Volts)	LOAD (KVA)
MAIN	100A	100A	N/A	
ILLUMINATION A	30A	30A	240	4.000
SIGNAL	50A	50A	120	2.999

BLUESWORK SHALL BE RATED AT 250 AMP MINIMUM

PREEMPTION SCHEDULE

CIRCUIT	PHASE(S)	MODEL NO.
A	2 & 5	711
B	4 & 7	711
C	6 & 1	711
D	8 & 3	711



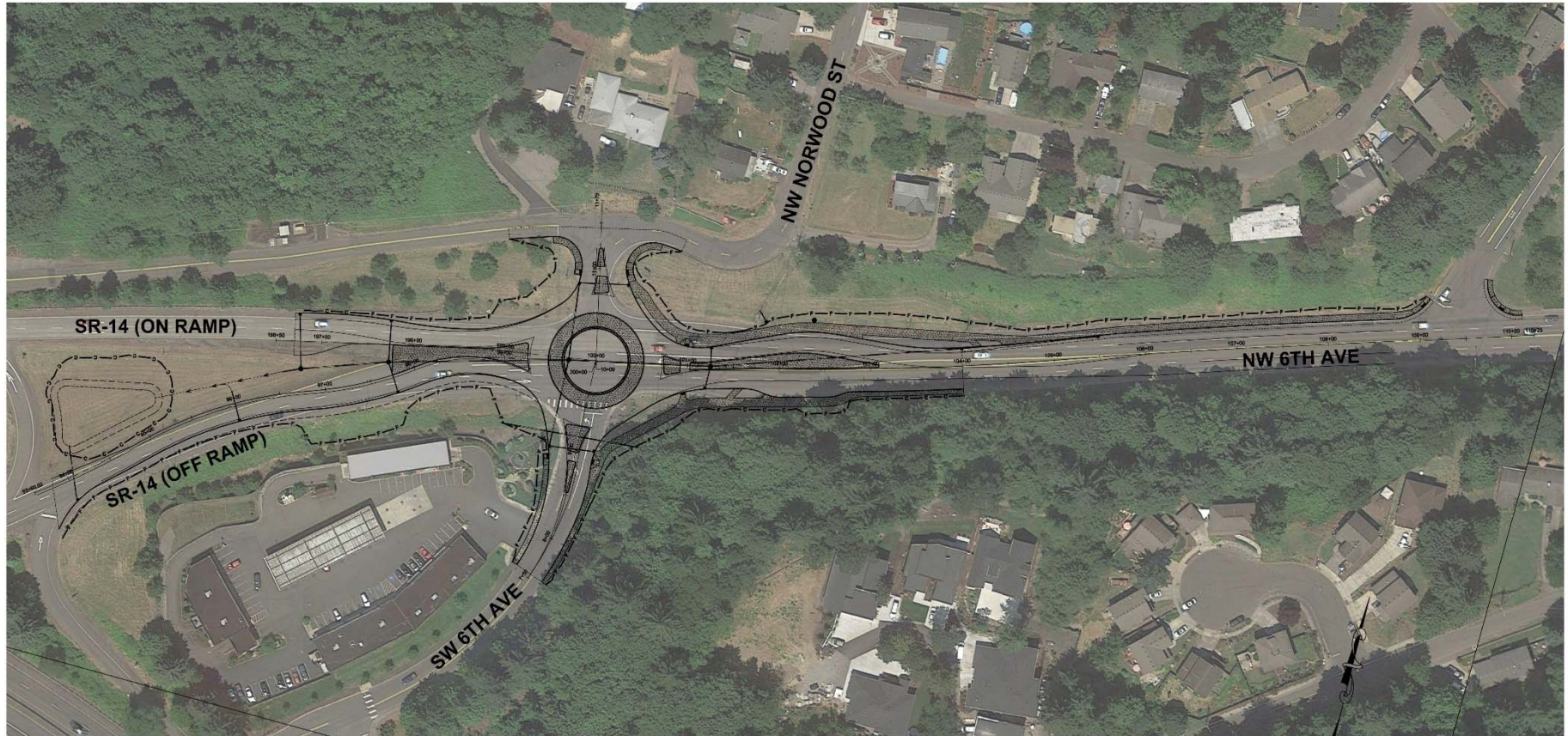
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 Vancouver, WA 98665 2927
 360.662.3489
 509.621.4825
 309.664.8774
 www.hdjgroup.com

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 "It's the Day"
 COMMUNITY DEVELOPMENT
 ENGINEERING DEPARTMENT
 NW 6TH AND NORWOOD
 SIGNAL PROJECT
 TRAFFIC SIGNAL INSTALLATION

30% REVIEW
 PRELIMINARY
 NOT FOR
 CONSTRUCTION

CAMAS PROJECT NUMBER
 WS-
 STATUS: CONSTRUCTION AS-BUILT
 PAGE: OF
 CAMAS DRAWING NUMBER
 CAMAS CATALOG NUMBER
 TS1

Roundabout intersection



**NW 6TH AVE AND NW NORWOOD ST -
30% ROUNDABOUT LAYOUT**

Plan View of Roundabout Rendering



Roundabout Rendering



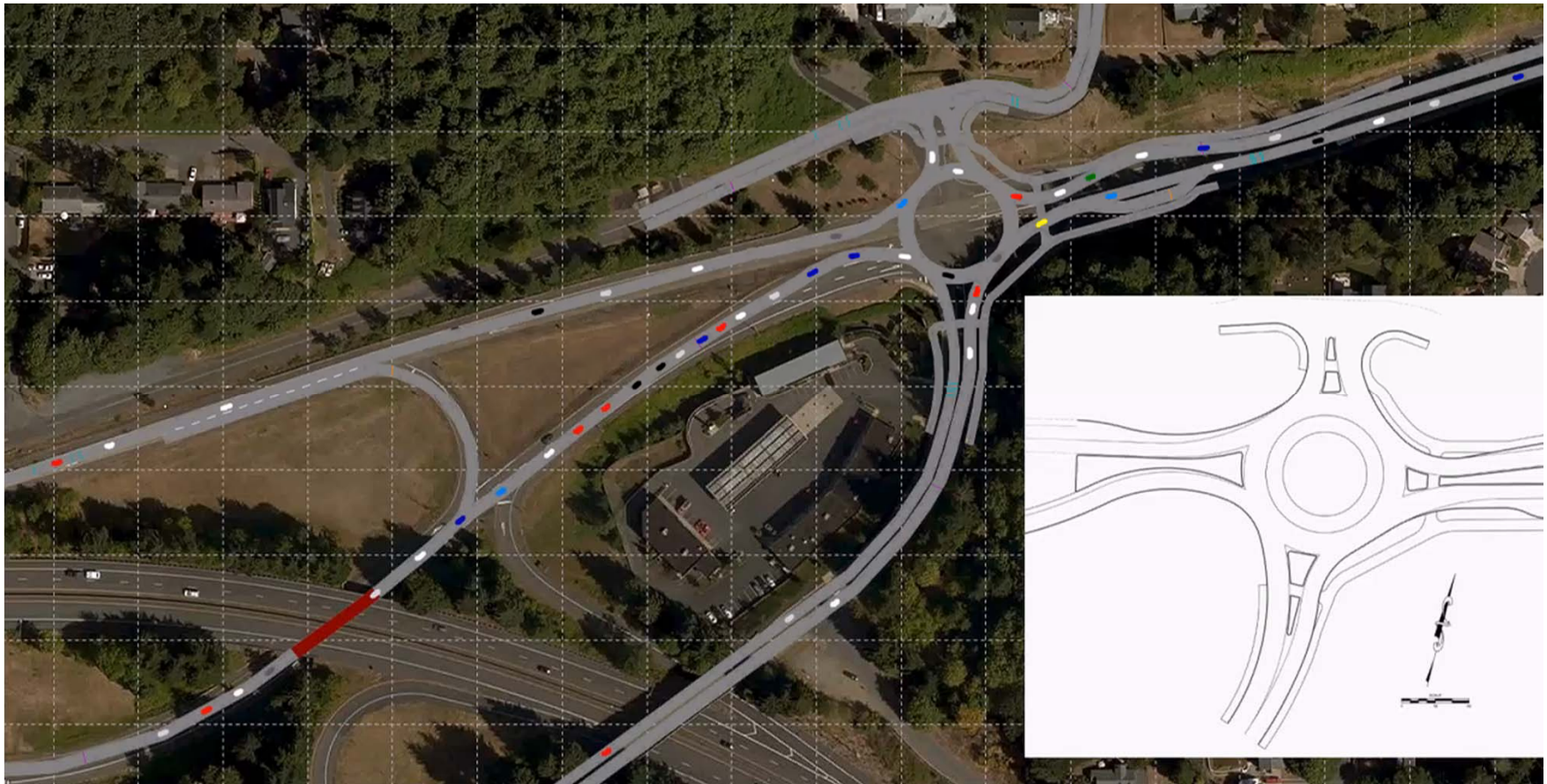
Traffic Analysis

- Both a signal and roundabout will work
 - Traffic Signal
 - EB Queue in PM Peak is 14 cars in both lanes
 - Delay for WB Left Turns – 46 Seconds
 - The Queue is stopped
 - Roundabout
 - EB Queue in PM Peak is 11 cars in one lane
 - Delay for all WB Vehicles – 9 Seconds
 - The Queue is rolling
 - 20 Year Plus... Design Life

Traffic Analysis

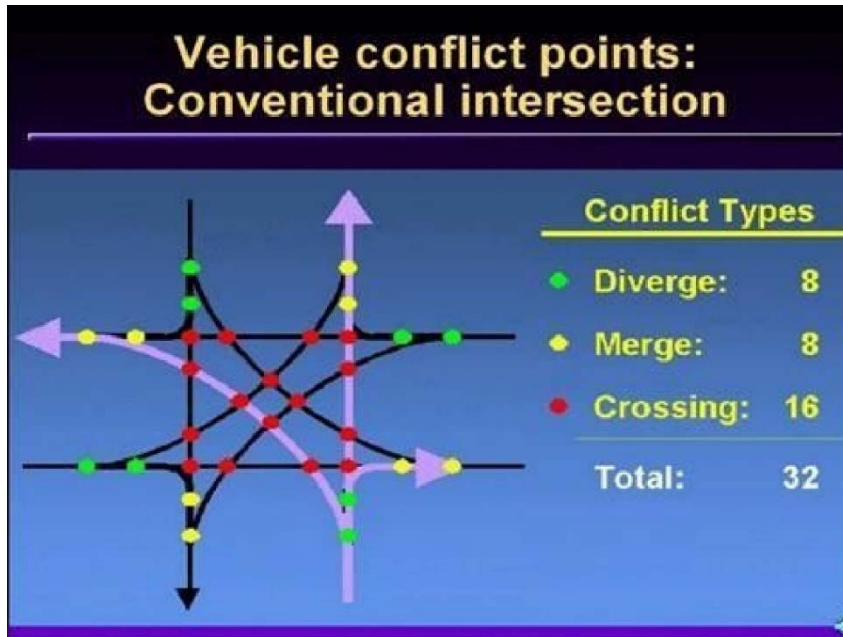
- Single Lane vs. Multilane Roundabout
 - Why not extra lane now?
 - Single lane will operate efficiently beyond the 20 year design life.
 - Single lane is safer than a multi-lane.
 - Especially if there is excess capacity with multi-lane.
 - Increased cost of multi-lane.
 - Increased property impacts of multi-lane.
 - Single lane will be designed to accommodate additional east bound lane in the future

Visual Traffic Simulation Prepared by WSDOT

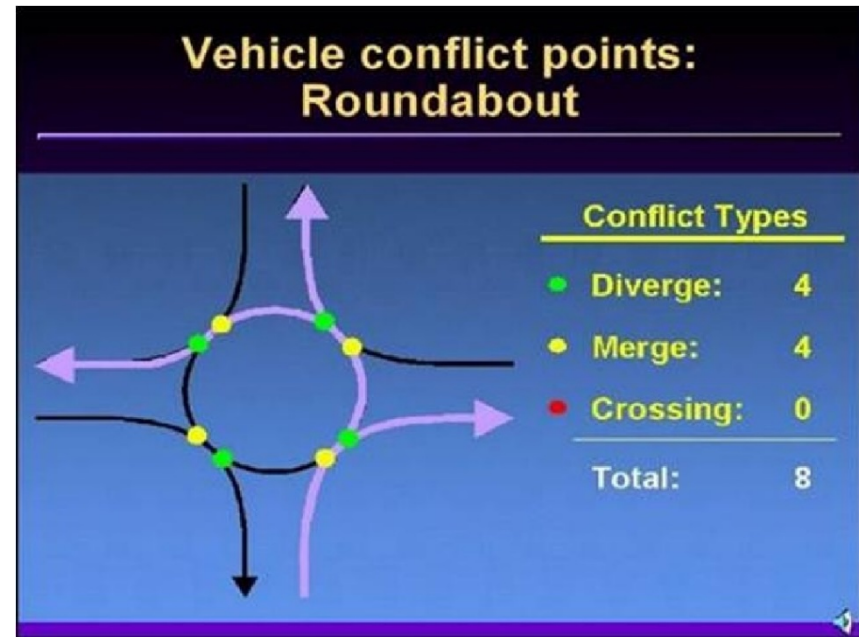


Safety

Signal

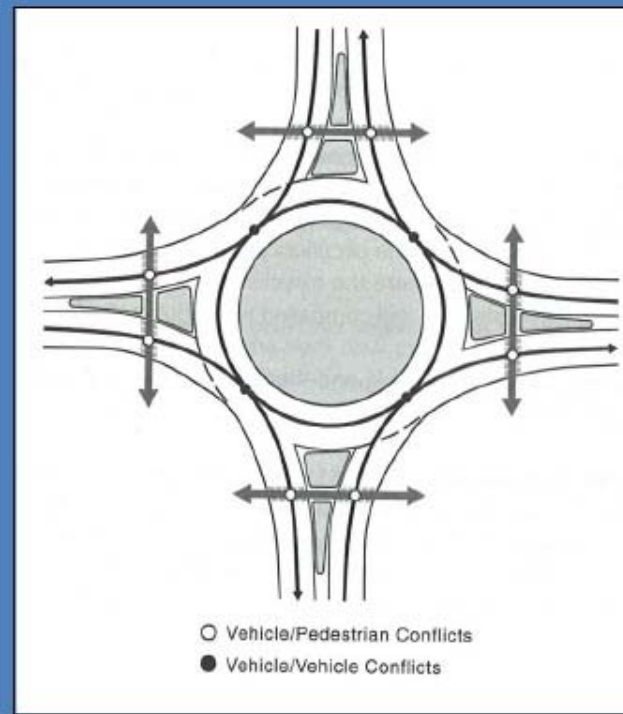
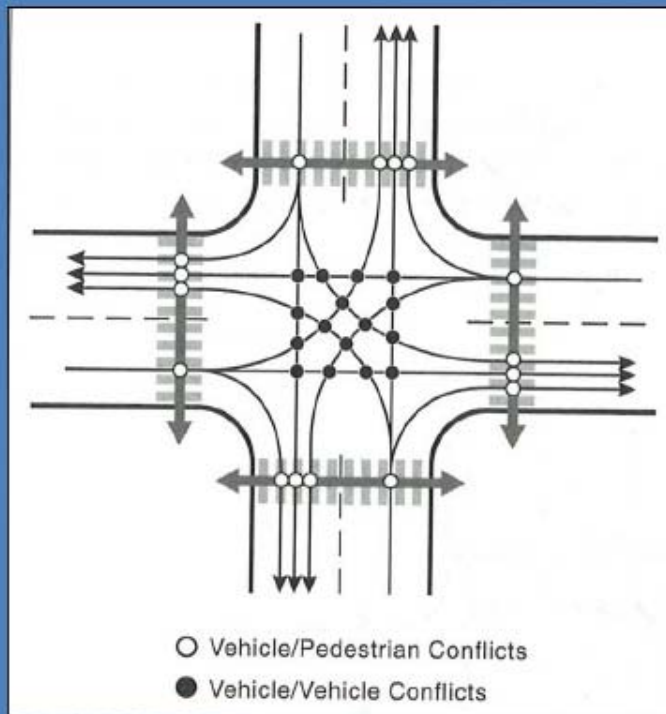


Roundabout



SAFETY

- Roundabouts reduce the number of vehicle to pedestrian conflicts
- 8 conflict points in Roundabout vs. 16 conflict points in a signalized intersection



Roundabouts vs. Signals

Safety

- A 37 percent reduction in overall collisions
- A 75 percent reduction in injury collisions
- A 90 percent reduction in fatality collisions
- A 40 percent reduction in pedestrian collisions

Safety

- Traffic Calming Effect
- Pedestrian safety:
 - Reduced Speeds
 - Focus on one traffic stream
 - Refuge Island
- No Light to Beat

Roundabouts vs. Signals

Operations

- Lower Overall Delay
- Improves Access
- Lower Operating Costs
- Lower Maintenance Costs
- Always Works (*Power Outage*)

Environmental Factors

- Less Noise
- Less Fuel Consumption
- Better Air Quality
- Less Pavement

Roundabouts vs. Signals

- **Land Use and Aesthetics**
- Provides Transition
- Gateway Opportunities
- Improved Access to Businesses and Neighborhoods

