

Bigelow Boulevard Complete Streets Upgrade Project

**City of Pittsburgh
University of Pittsburgh**

June 7 , 2018



Meeting Agenda & Goals

- **Introductions**
- **Overview / Complete Streets context**
- **Project design**
- **Project Logistics**
 - **Funding**
 - **Construction process**
 - **Schedule**
- **What we heard last time - responses**
- **Final thoughts + Q&A**

Urban Design & Placemaking

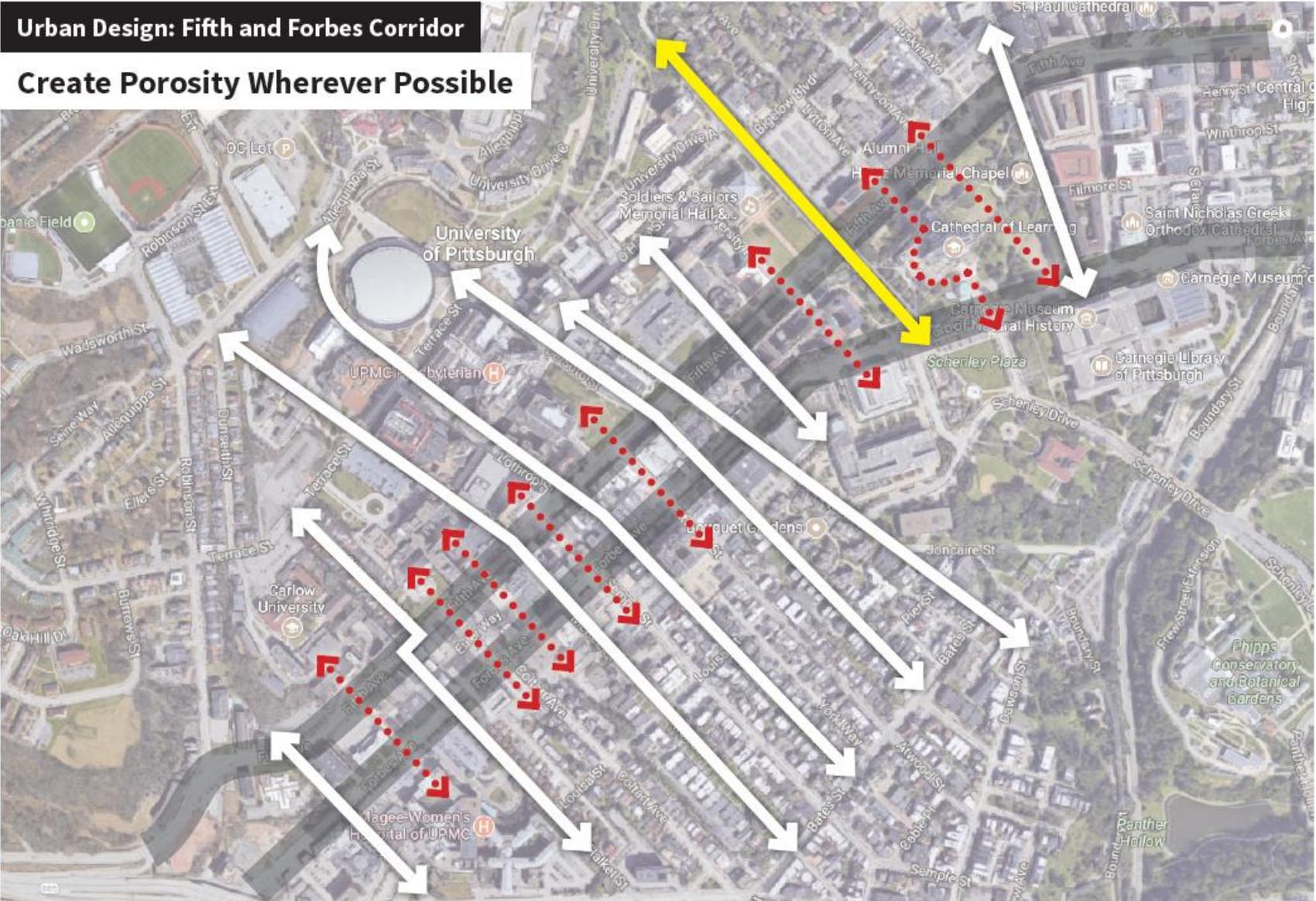
What is the Public Realm?

- **The public realm is what defines and sets the character for a place.**
- **Great public realms are examples of a successful public/private partnerships.**
- **A successful public realm is mix of many elements:**
 - **Streets**
 - **Sidewalks, accessways and alleys**
 - **Landscaped areas and parks**
 - **Plazas and other open space areas between buildings**

Planning & Urban Design

Urban Design: Fifth and Forbes Corridor

Create Porosity Wherever Possible



What is a Complete Street?

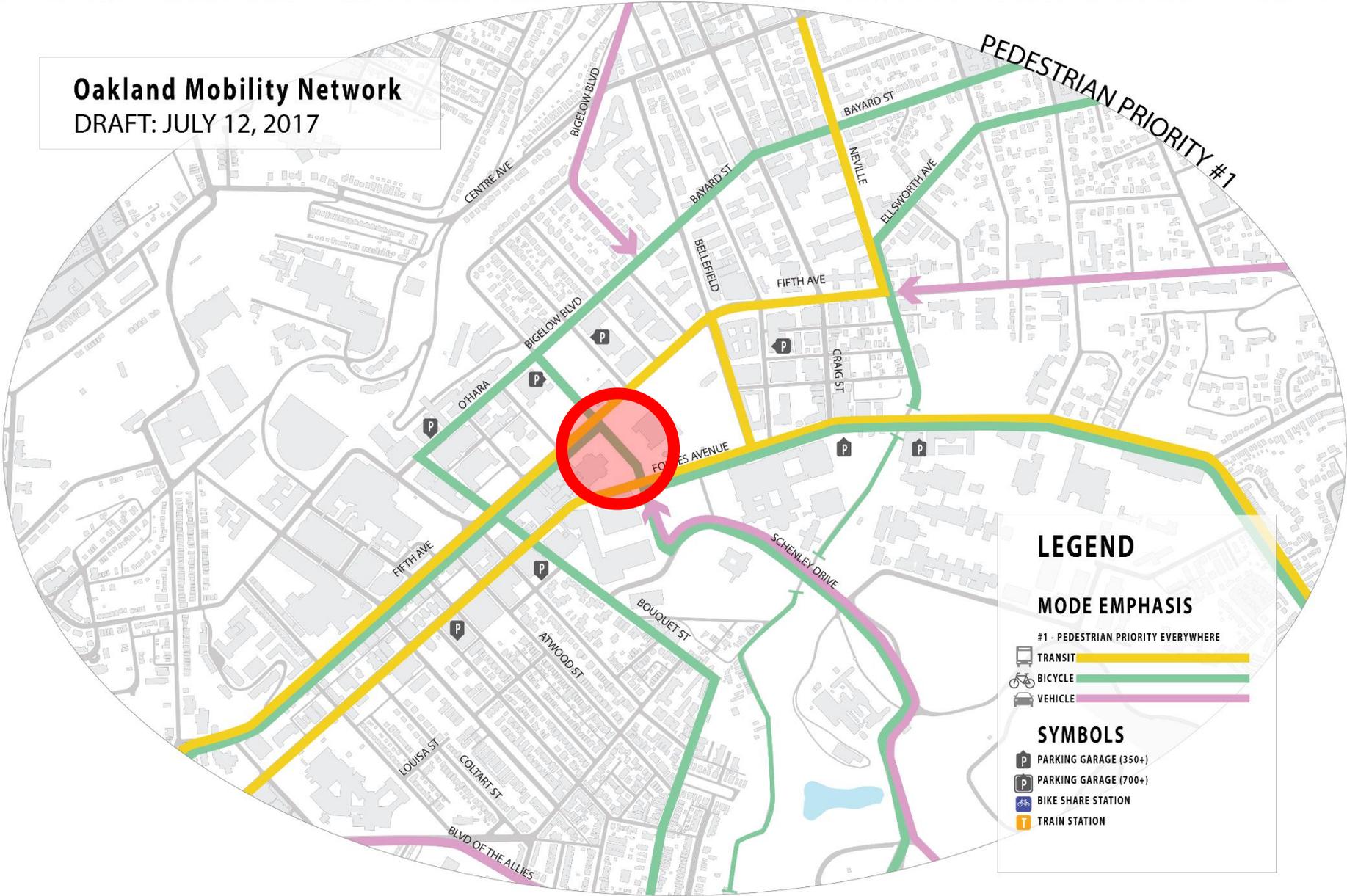


Illustration: NACTO Urban Street Design Guide

Complete Streets are streets designed with everyone in mind: pedestrians, bicyclists, motorists, and transit riders.

Bigelow Blvd: At the center of it all...

Oakland Mobility Network
DRAFT: JULY 12, 2017



LEGEND

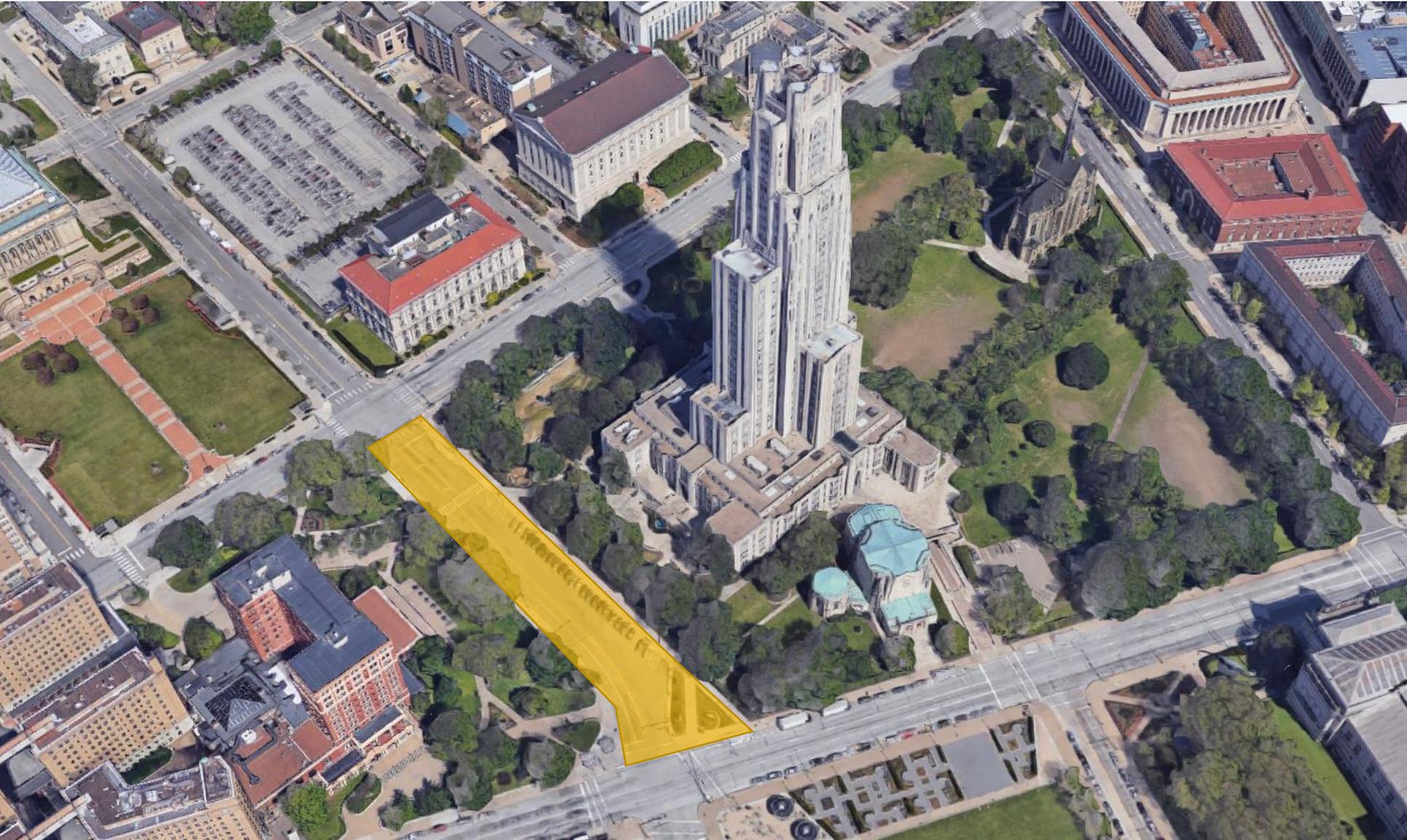
MODE EMPHASIS

- #1 - PEDESTRIAN PRIORITY EVERYWHERE
- TRANSIT (Yellow line)
- BICYCLE (Green line)
- VEHICLE (Purple line)

SYMBOLS

- P PARKING GARAGE (350+)
- P PARKING GARAGE (700+)
- B BIKE SHARE STATION
- T TRAIN STATION

Bigelow Blvd Today



Bigelow Blvd Design Objectives

- **Pedestrian Safety**
- **City Complete Streets Initiative**
 - **Accommodate all mobility modes**
- **Place-making**
 - **Connectivity to Schenley Plaza**
 - **Continuity with campus context**
 - **Superior urban design**
- **Sustainability and maintenance**

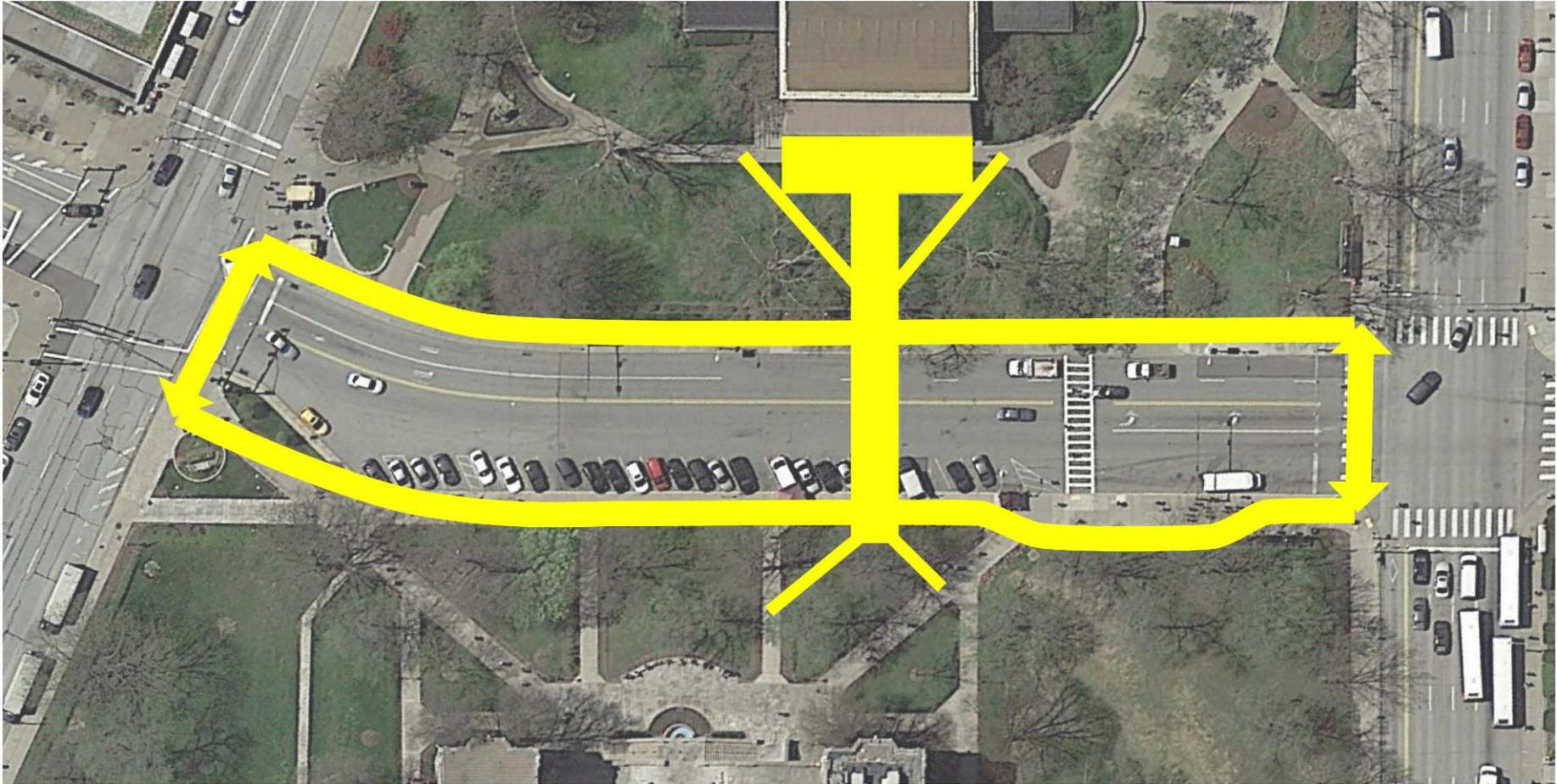
Bigelow Blvd Today



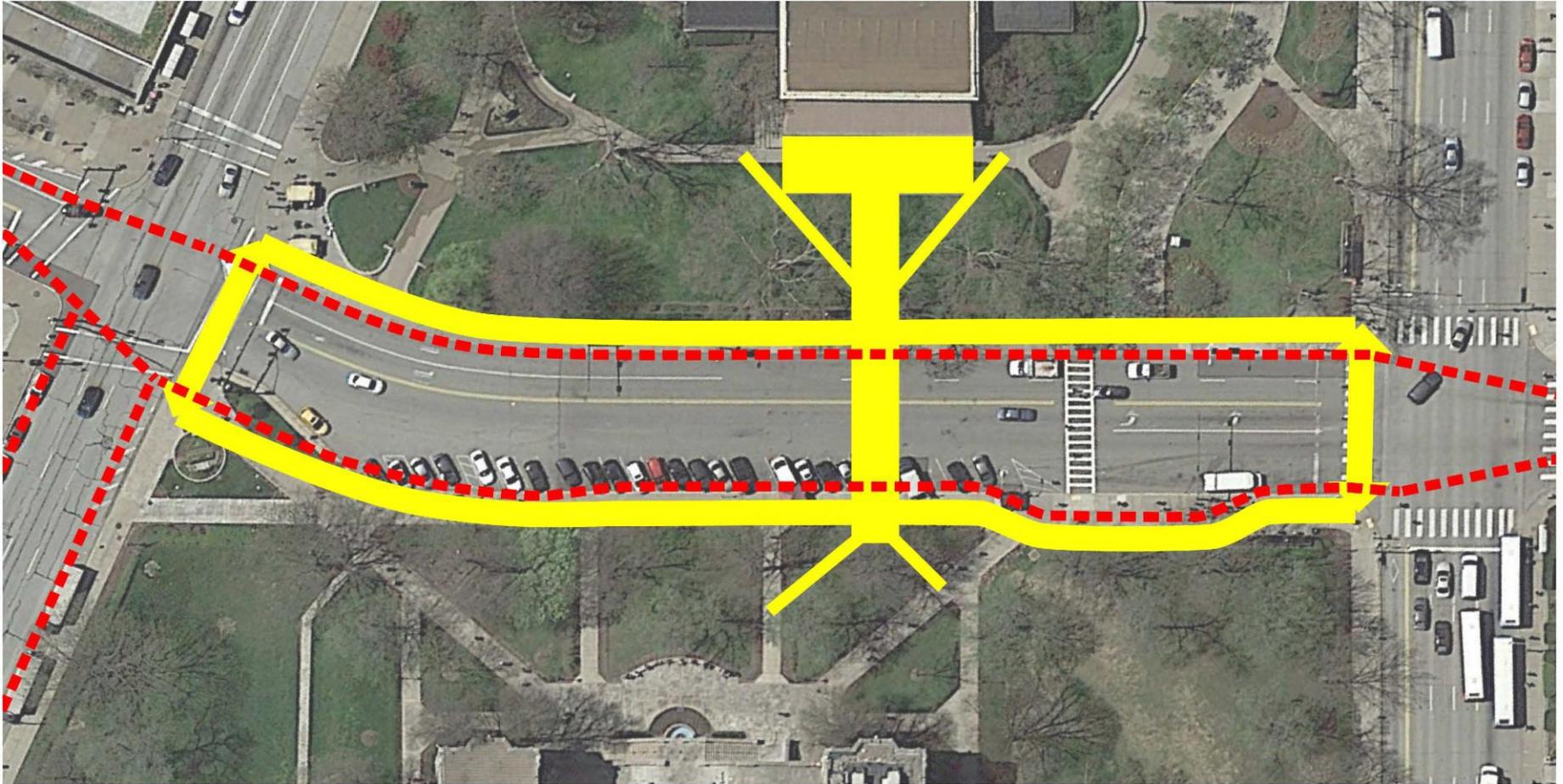
Pedestrian Desire Lines



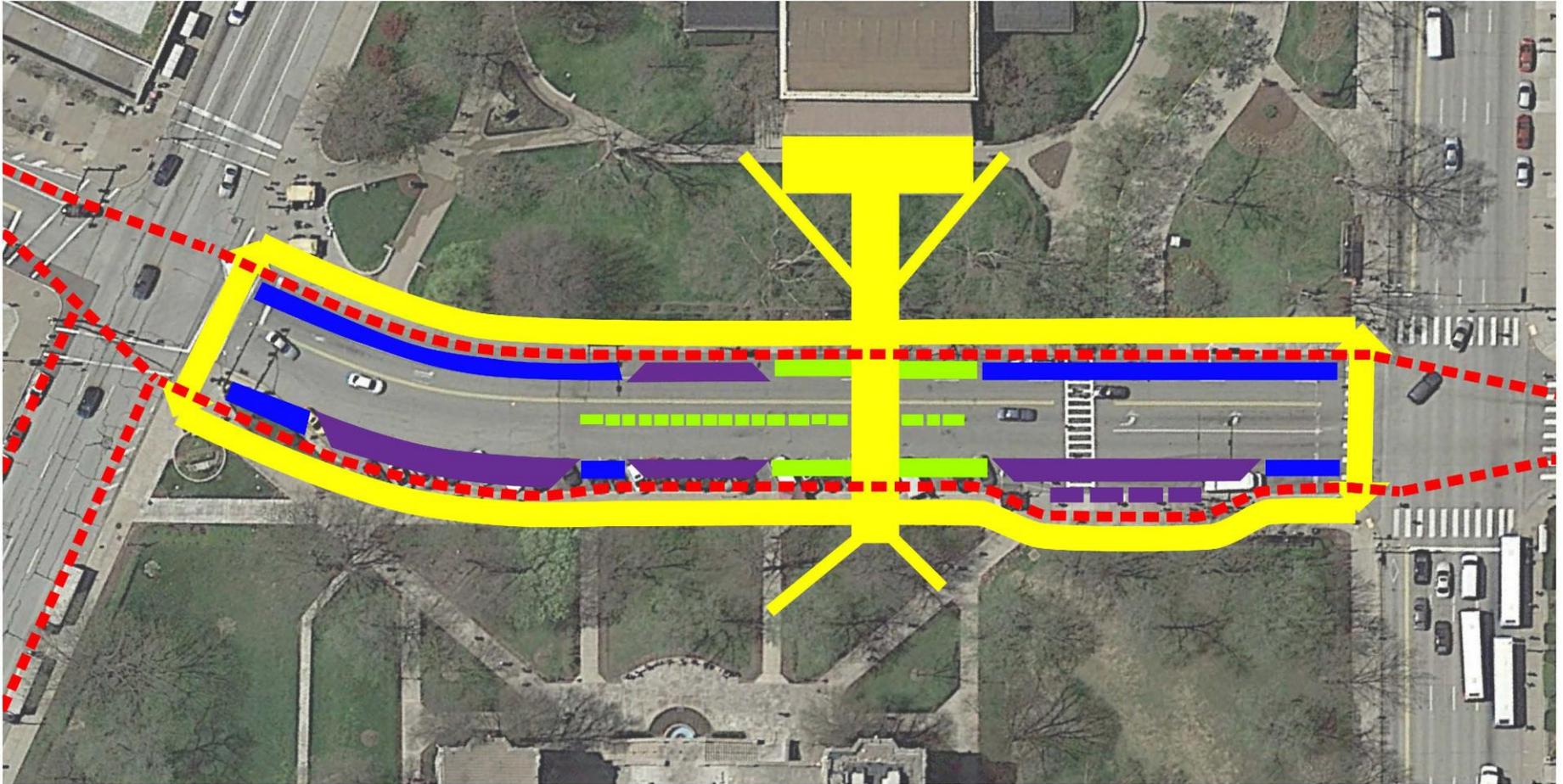
Pedestrian Desire Lines



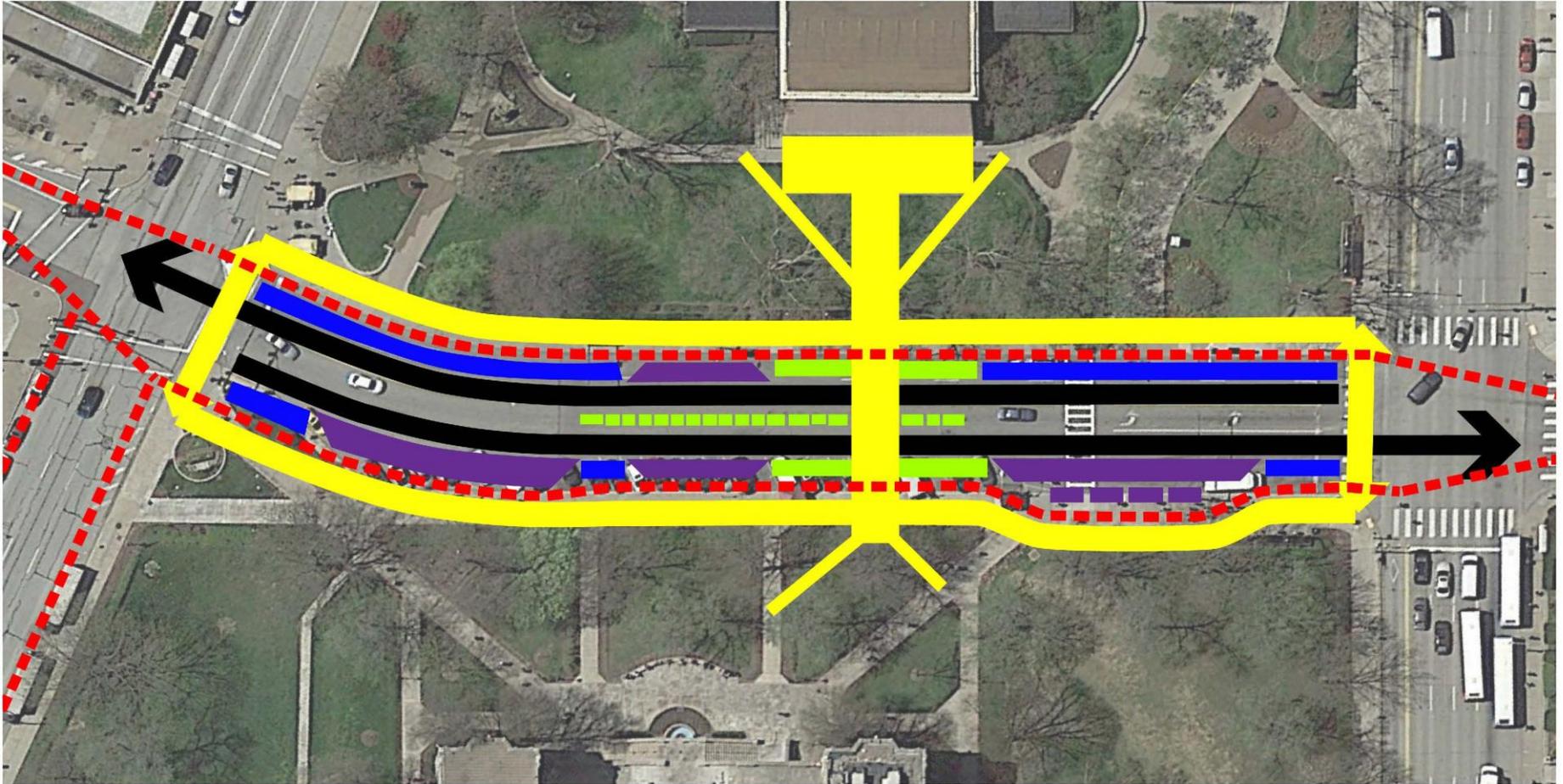
Bicycle Connections



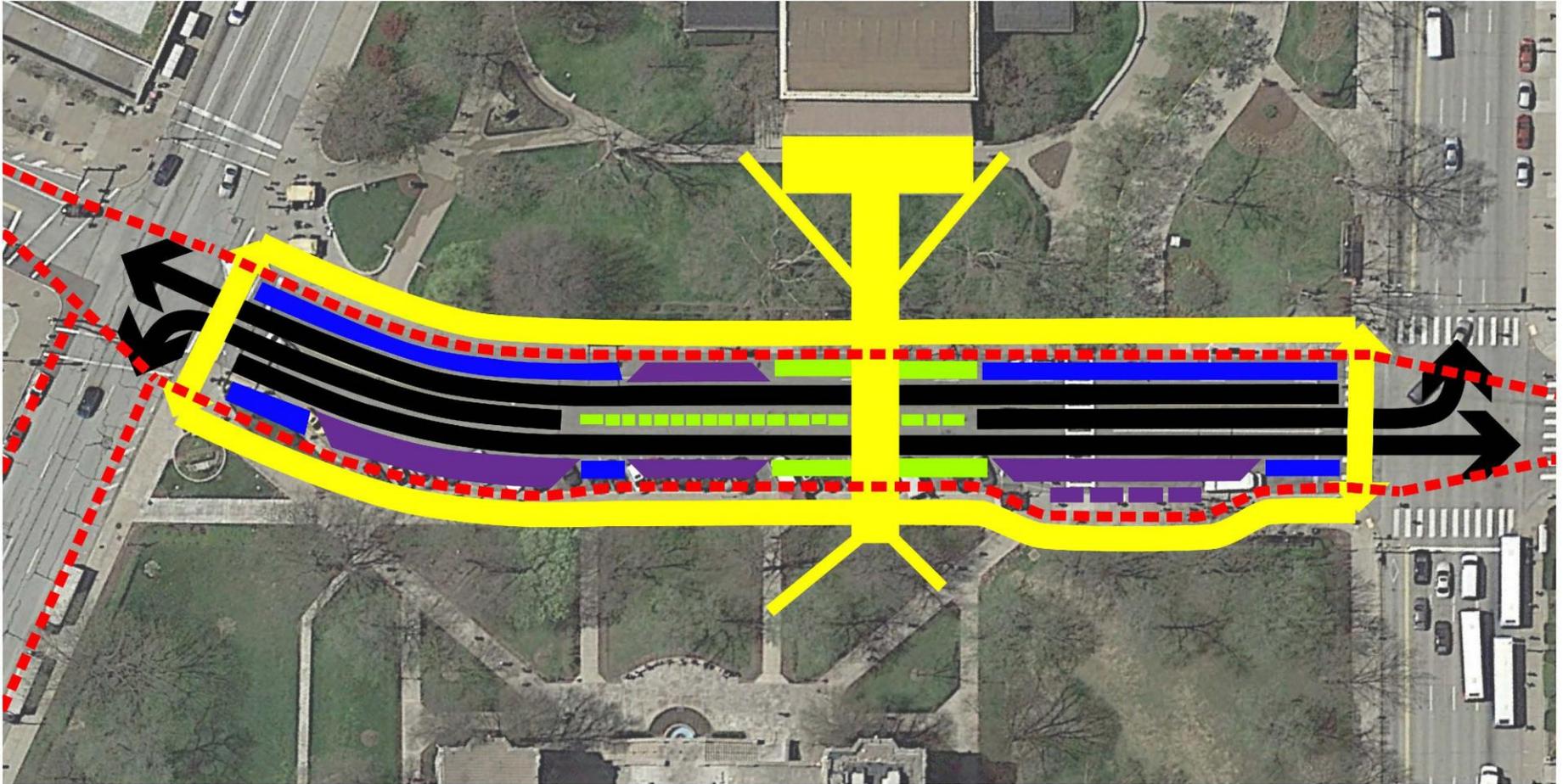
Curbside Transactions + Buffers



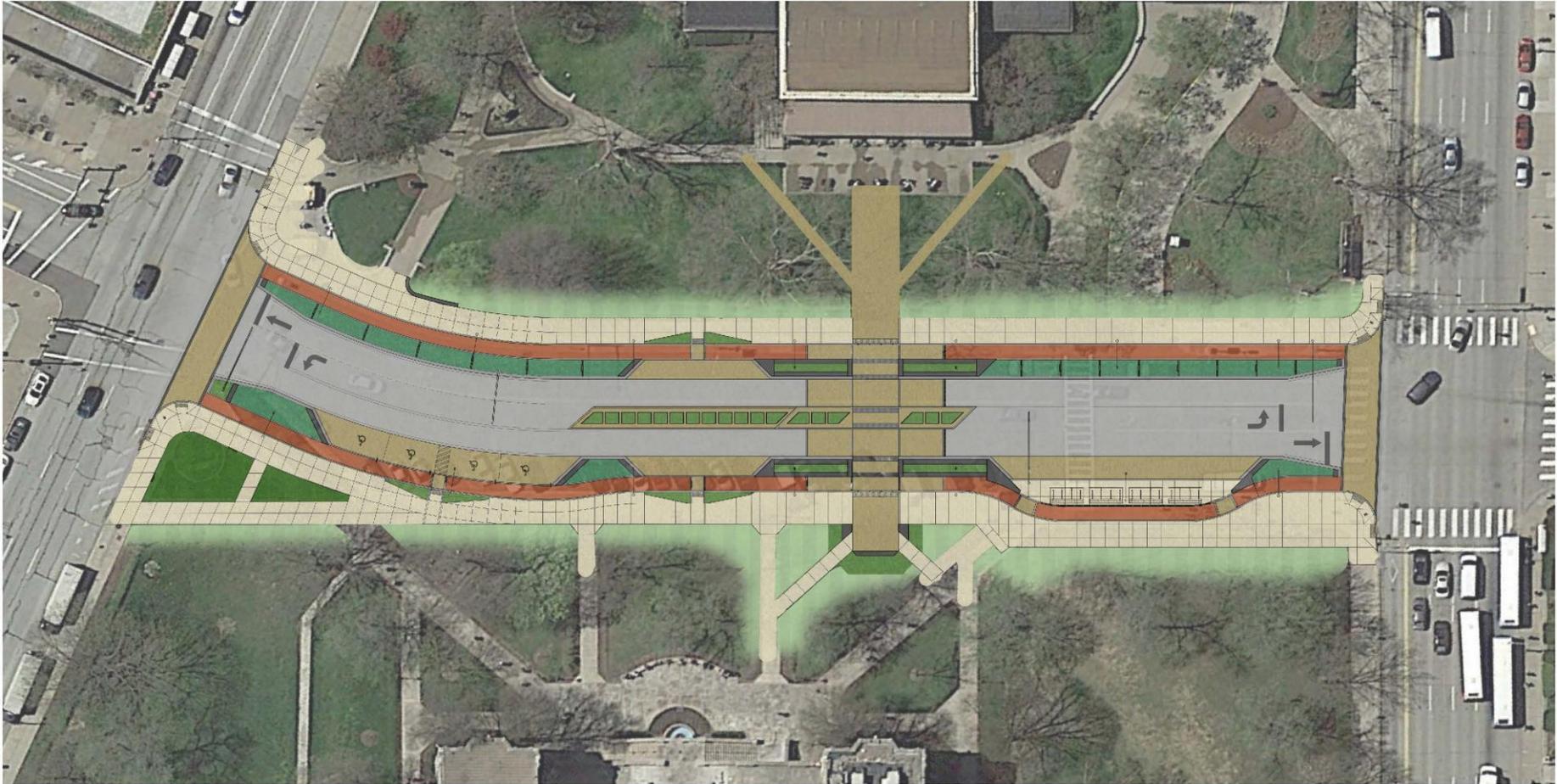
Vehicular Connections



Vehicular Connections + Turns



Proposal for Bigelow Blvd



Proposal for Bigelow Blvd



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Proposal for Bigelow Blvd



© DEPICTION, LLC 2017



Proposal for Bigelow Blvd



Project Logistics

Project cost

- \$4.4 million
- Funding sources: DCED Multi-modal Fund, University of Pittsburgh

Construction process

- Final determination on full closure vs. phased forthcoming

Schedule

- 60% design complete
- Art Commission: June 27
- Design completion: October 2018
- Bidding and award: November/December 2018
- Construction start: January 2019
- Completion: August 2019

What We Heard Last Time

“What are Pitt’s enrollment numbers?”

YEAR	UNDERGRAD.	GRADUATE	TOTAL
2014	18,615	10,034	28,649
2015	18,757	9,860	28,617
2016	18,909	9,741	28,649
2017	19,123	9,541	28,664
2018	19,326	9,316	28,642

**Source: University of Pittsburgh Fact Book
Office of Institutional Research**

What We Heard Last Time

“How often does the University close Bigelow?”

EVENT	# DAYS	TIMING
Buses Home Spring Break	1	Afternoon only
Bigelow Bash	3	Friday, Saturday, Sunday
Staff Picnic	1	All day
Student Arrival	4	Monday-Thursday
Welcome Back Carnival	2	Saturday
Fall Fest	3	Friday/Saturday/Sunday
Homecoming	3	Thursday/Friday
PMADD	1	Saturday
Buses Home Thanksgiving	1	Afternoon only
Buses Home for Holidays	2	Friday/Saturday afternoons
Football Games (x6)	6	4 Saturday games (one each on Thursday and Friday)
3 on 3 Tournament	2	Saturday/Sunday

Summary: 13 Weekend days, 12 Weekdays, 2 Weekday evenings

What We Heard Last Time

“Where’s your traffic study? How many people cross at Bigelow?”

- **We’ve done two traffic studies for this area:**
 - **The big one: Bus Rapid Transit project**
 - **Analyzed volumes, queuing times, and overall traffic impacts of the proposed lane arrangements for Fifth and Forbes, which impacts Bigelow (as well as all other cross-streets in Oakland).**
 - **The smaller one: Bigelow Blvd-specific**
 - **Analyzed pedestrian & vehicle counts + queuing**

BRT Traffic Study

Initial data collected 2013, re-evaluated 2018

Synchro analysis:

- Calculates traffic volumes, expected motorist delay, etc.
- Recommends signal cycle length based on factors such as pedestrian flow, turning volume, peak hour volumes, etc.

HCM Signalized Intersection Capacity Analysis
309: Schenley Drive/Bigelow Blvd & Forbes Ave
2020 Build PM - PL.syn
07/10/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕					↕	↕	↕	↕	
Traffic Volume (vph)	277	1278	70	0	0	0	0	120	37	153	388	0
Future Volume (vph)	277	1278	70	0	0	0	0	120	37	153	388	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	10	10	10
Grade (%)		-1%			0%			0%			-2%	
Total Lost time (s)		6.0						6.0	6.0	6.0	6.0	
Lane Util. Factor		0.95						1.00	1.00	1.00	1.00	
Frb, ped/bikes		0.96						1.00	0.46	1.00	1.00	
Flpb, ped/bikes		0.85						1.00	1.00	0.55	1.00	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.99						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		2729						1845	719	910	1739	
Flt Permitted		0.99						1.00	1.00	0.67	1.00	
Satd. Flow (perm)		2729						1845	719	644	1739	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	308	1420	78	0	0	0	0	133	41	170	431	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1806	0	0	0	0	0	133	41	170	431	0
Confl. Peds. (#/hr)	2811		2811						2034	2034		
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		53.0						25.0	25.0	25.0	25.0	
Effective Green, g (s)		53.0						25.0	25.0	25.0	25.0	
Actuated g/C Ratio		0.59						0.28	0.28	0.28	0.28	
Clearance Time (s)		6.0						6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1607						512	199	178	483	
v/s Ratio Prot								0.07			0.25	
v/s Ratio Perm		0.66							0.06	0.26		
v/c Ratio		1.12						0.26	0.21	0.96	0.89	
Uniform Delay, d1		18.5						25.3	24.9	31.9	31.2	
Progression Factor		1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2		64.5						0.3	0.5	53.9	18.4	
Delay (s)		83.0						25.6	25.4	85.9	49.6	
Level of Service		F						C	C	F	D	
Approach Delay (s)		83.0			0.0			25.5			59.9	
Approach LOS		F			A			C			E	
Intersection Summary												
HCM 2000 Control Delay			73.7									E
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			90.0						17.0			
Intersection Capacity Utilization			88.2%									E
Analysis Period (min)			15									
c Critical Lane Group												

BRT Downtown to Oakland 02/09/2013 2020 Build Condition
Synchro 9 Report

BRT Traffic Study

Initial data collected 2013, re-evaluated 2018

Synchro analysis:

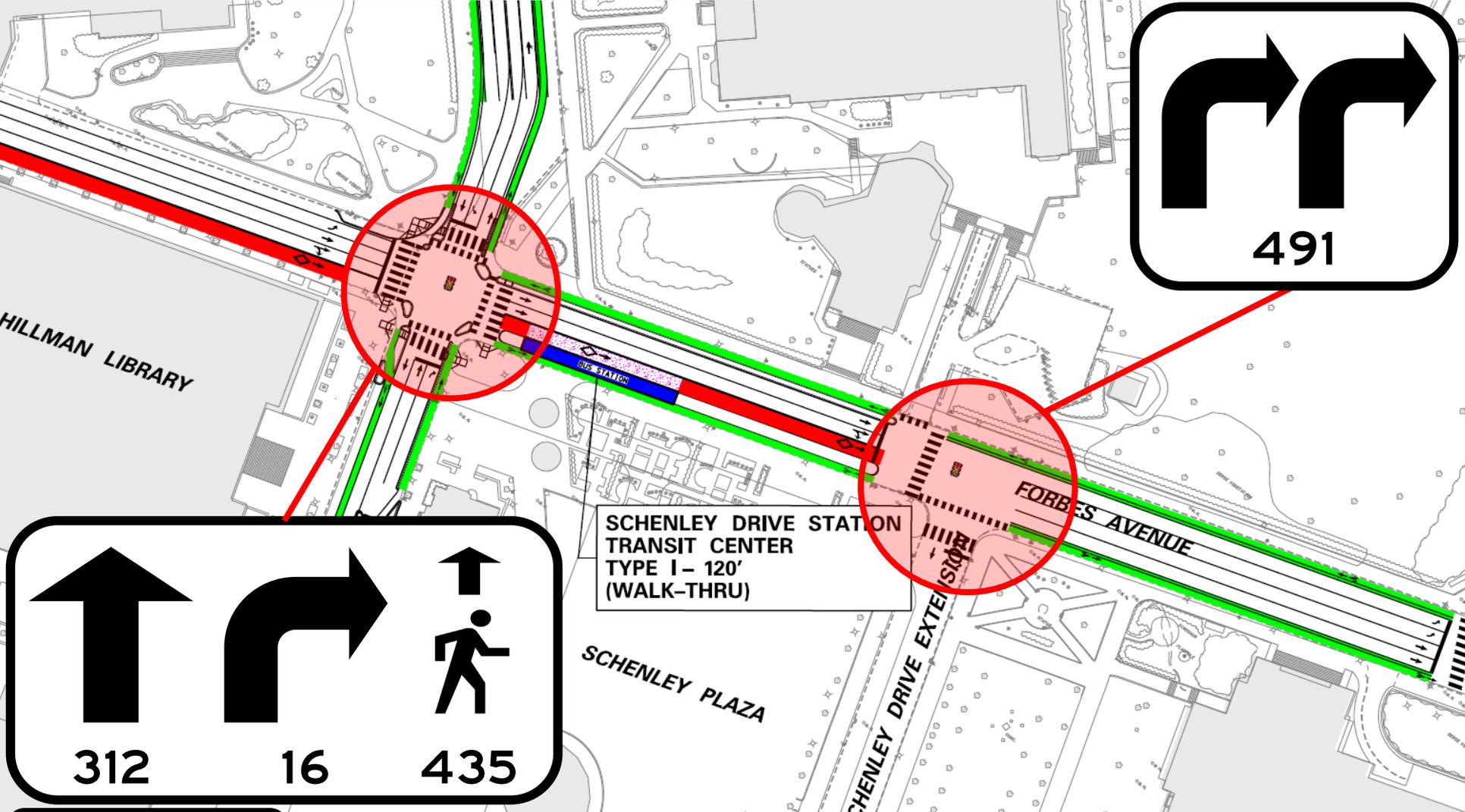
- BRT build scenario shows additional delay for eastbound Forbes, westbound Fifth
- Not substantially different than no-build scenario
 - Except eastbound Forbes—delay increases by about 1 min for vehicles in original study
 - Currently re-evaluating based on adding left turn lane
- Bigelow thru and turns are similar in BRT build and no-build

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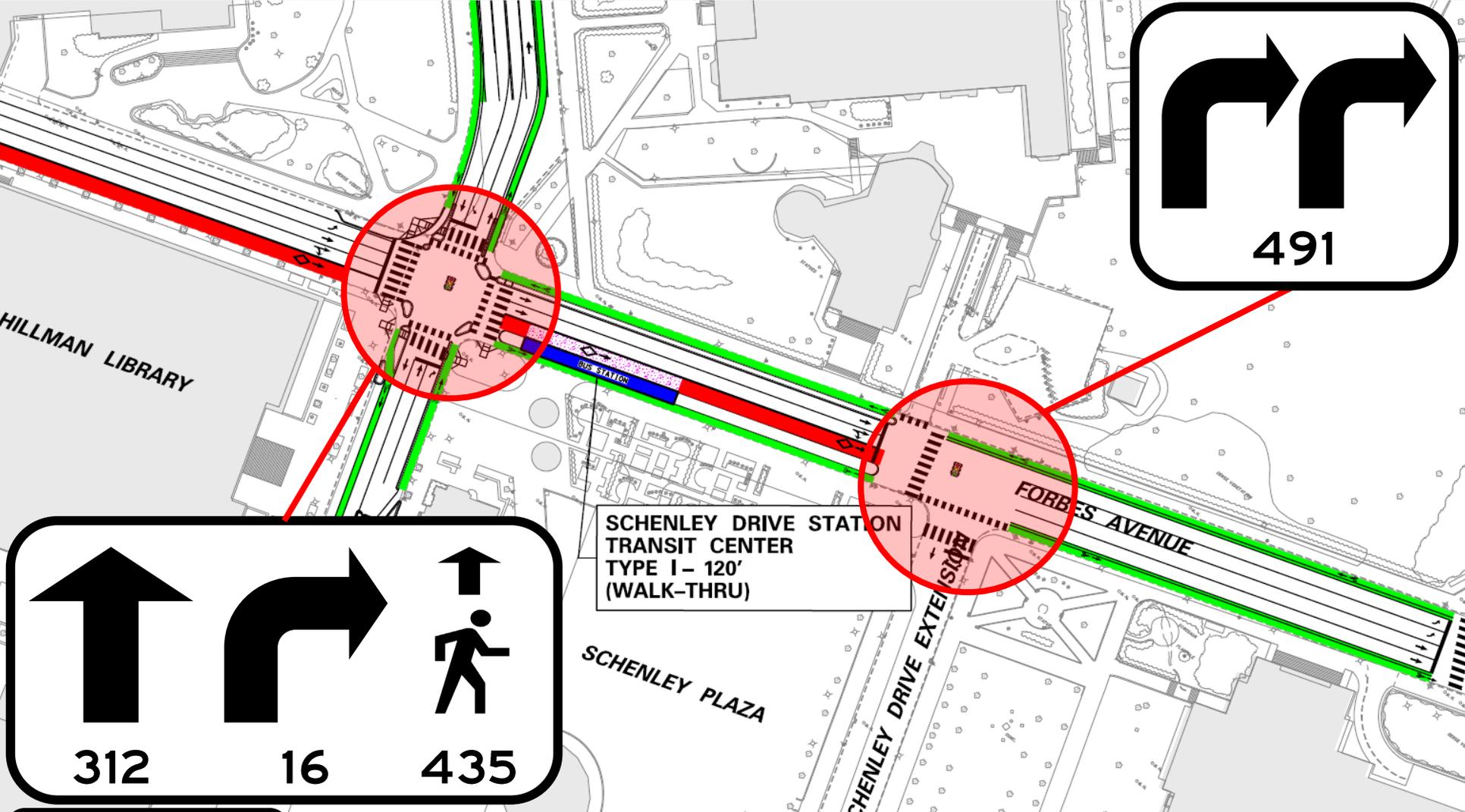
BRT Downtown to Oakland 02/09/2013 2020 Build Condition
 Synchro 9 Report

BRT Traffic Study



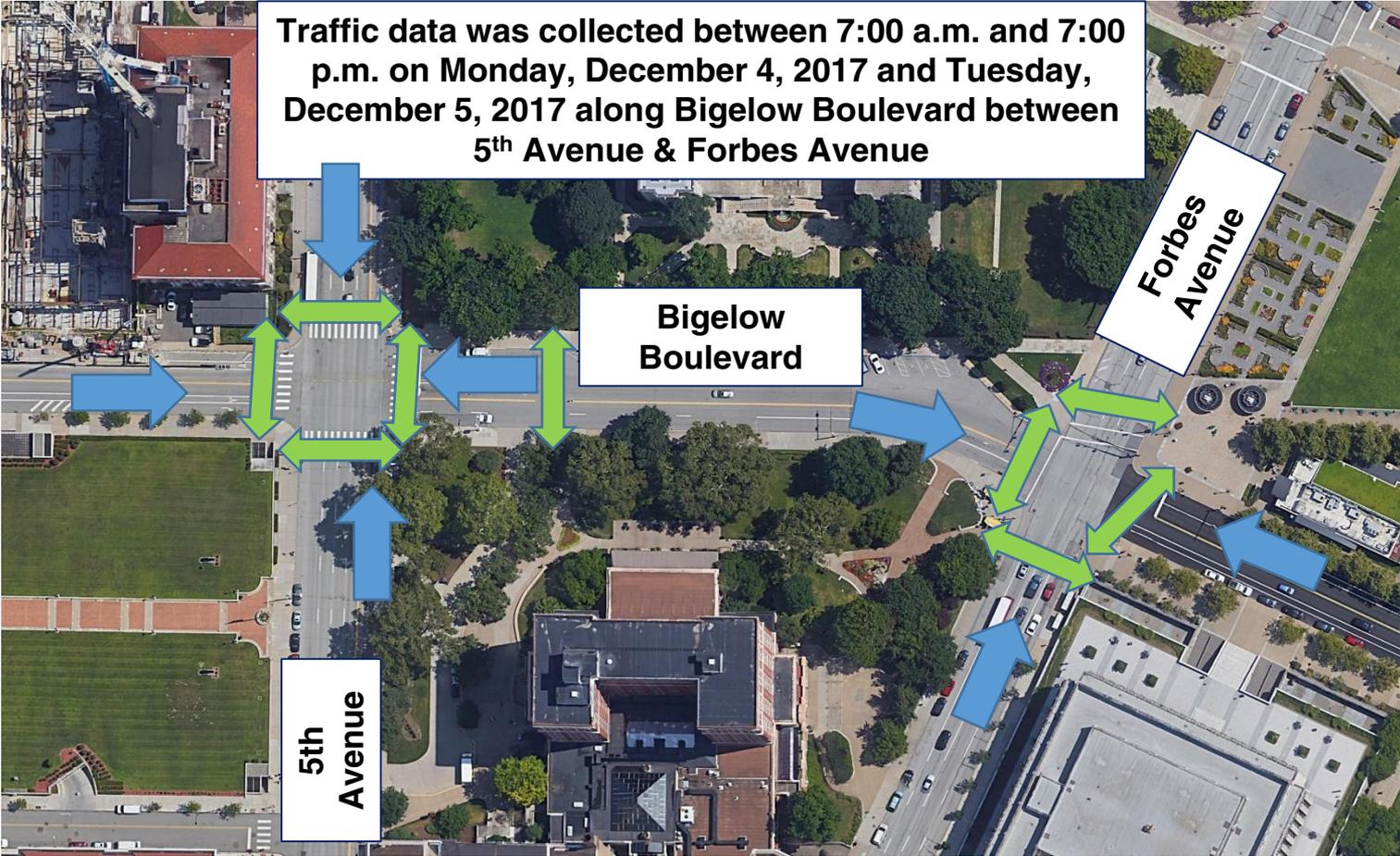
AM PEAK

BRT Traffic Study



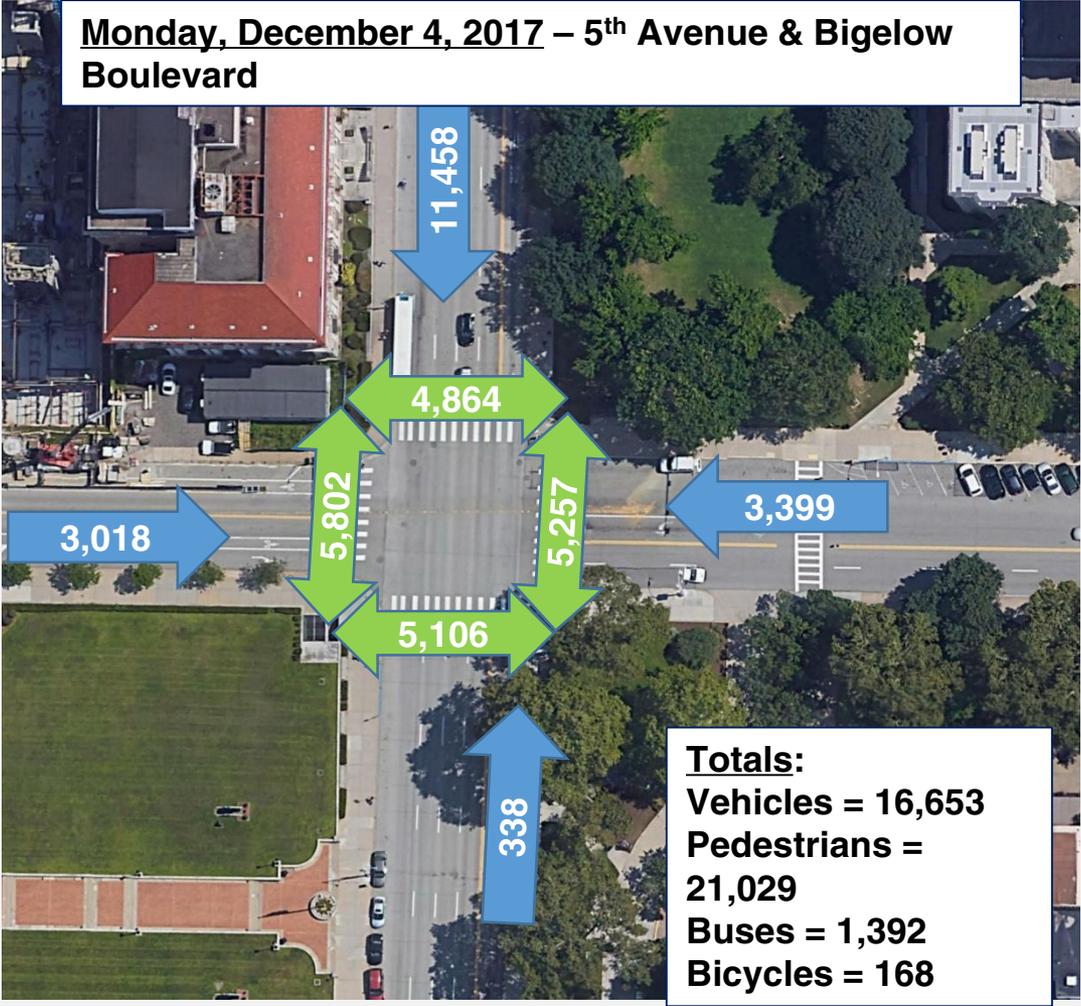
AM PEAK

Bigelow Traffic Study



Bigelow Traffic Study

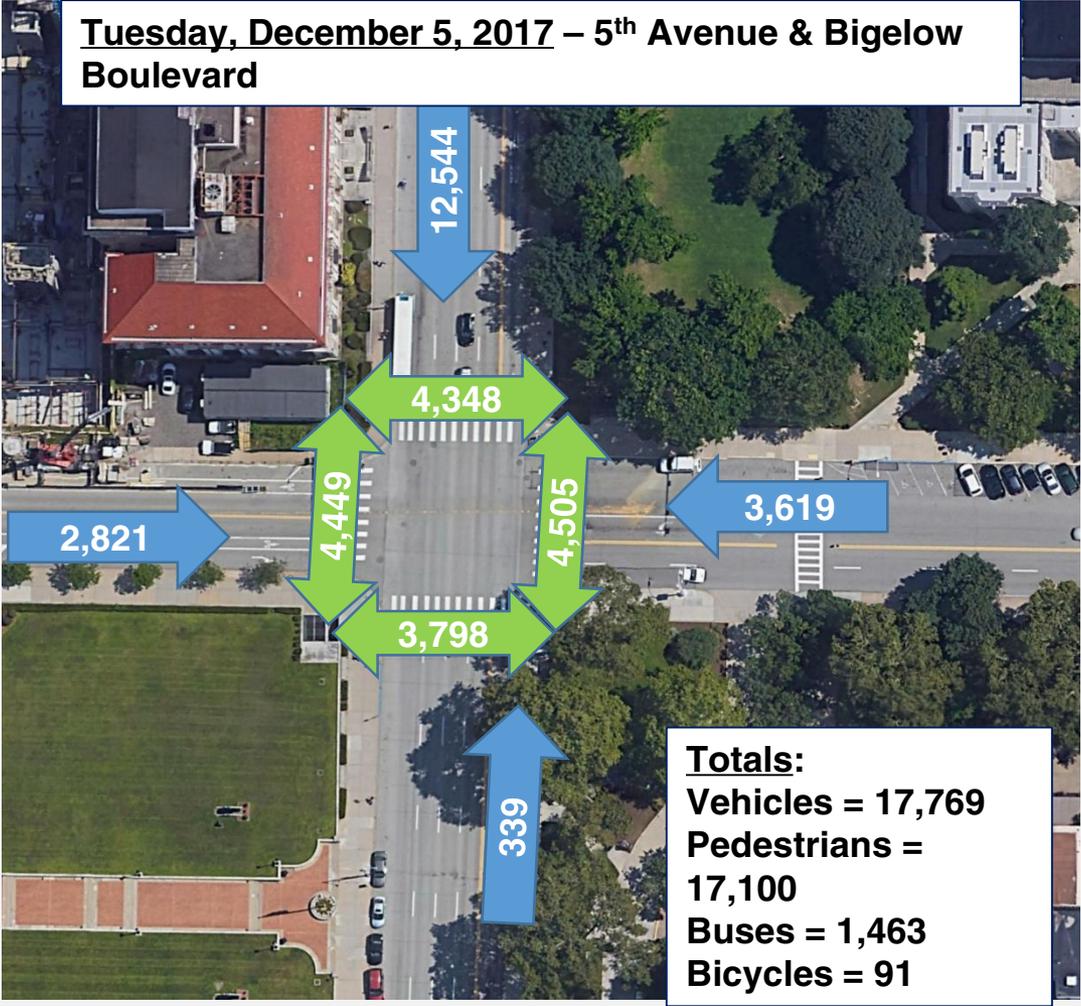
Monday, December 4, 2017 – 5th Avenue & Bigelow Boulevard



Totals:
Vehicles = 16,653
Pedestrians = 21,029
Buses = 1,392
Bicycles = 168

Bigelow Traffic Study

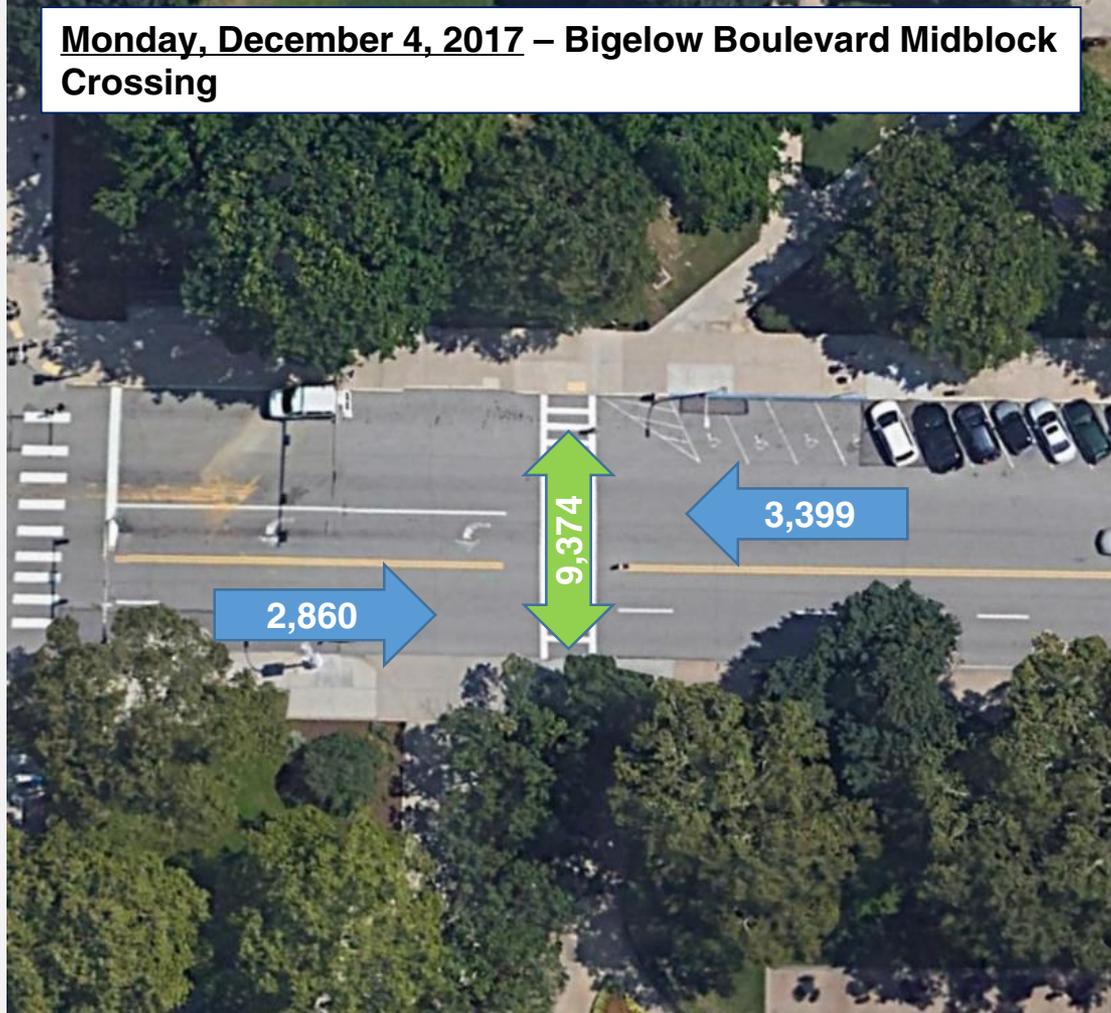
Tuesday, December 5, 2017 – 5th Avenue & Bigelow Boulevard



Totals:
Vehicles = 17,769
Pedestrians = 17,100
Buses = 1,463
Bicycles = 91

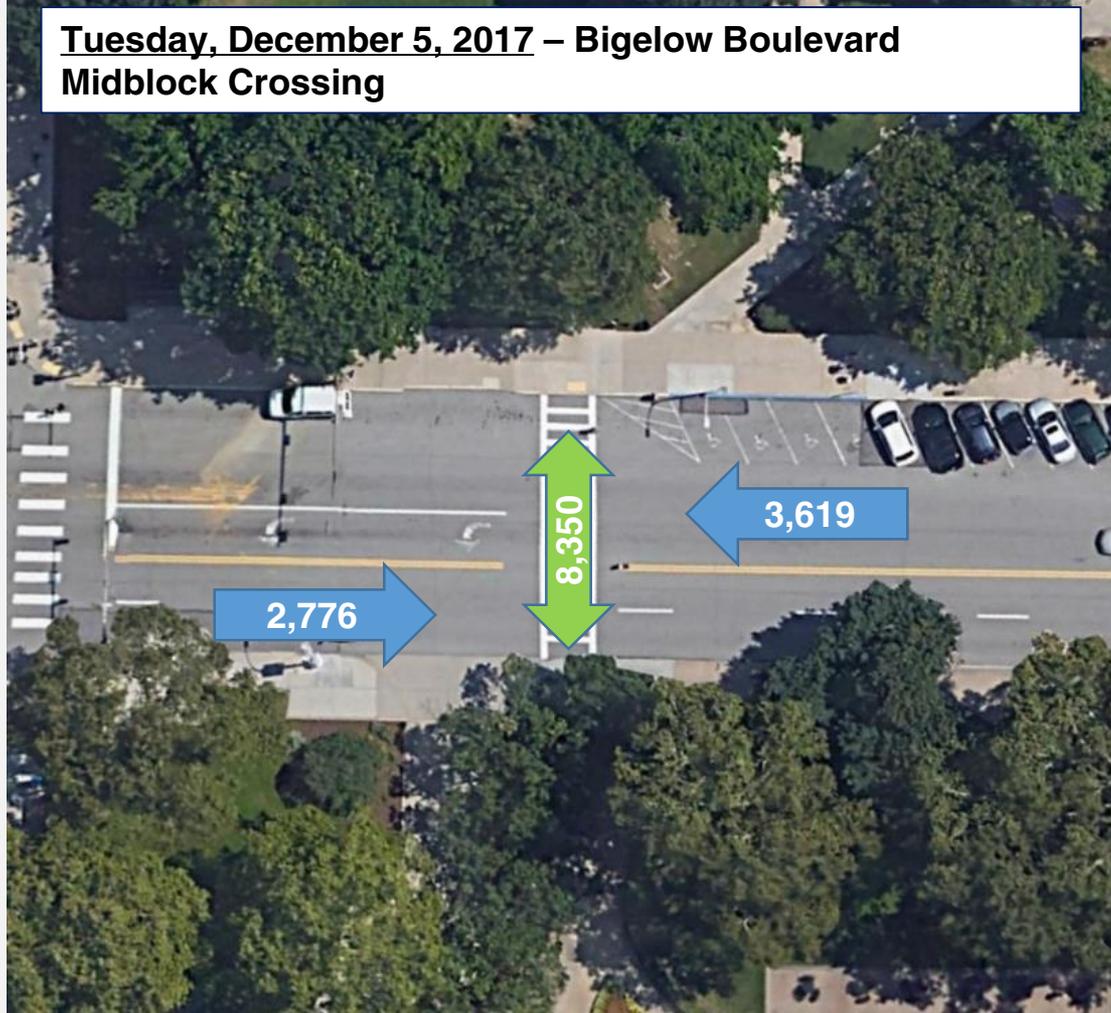
Bigelow Traffic Study

Monday, December 4, 2017 – Bigelow Boulevard Midblock Crossing



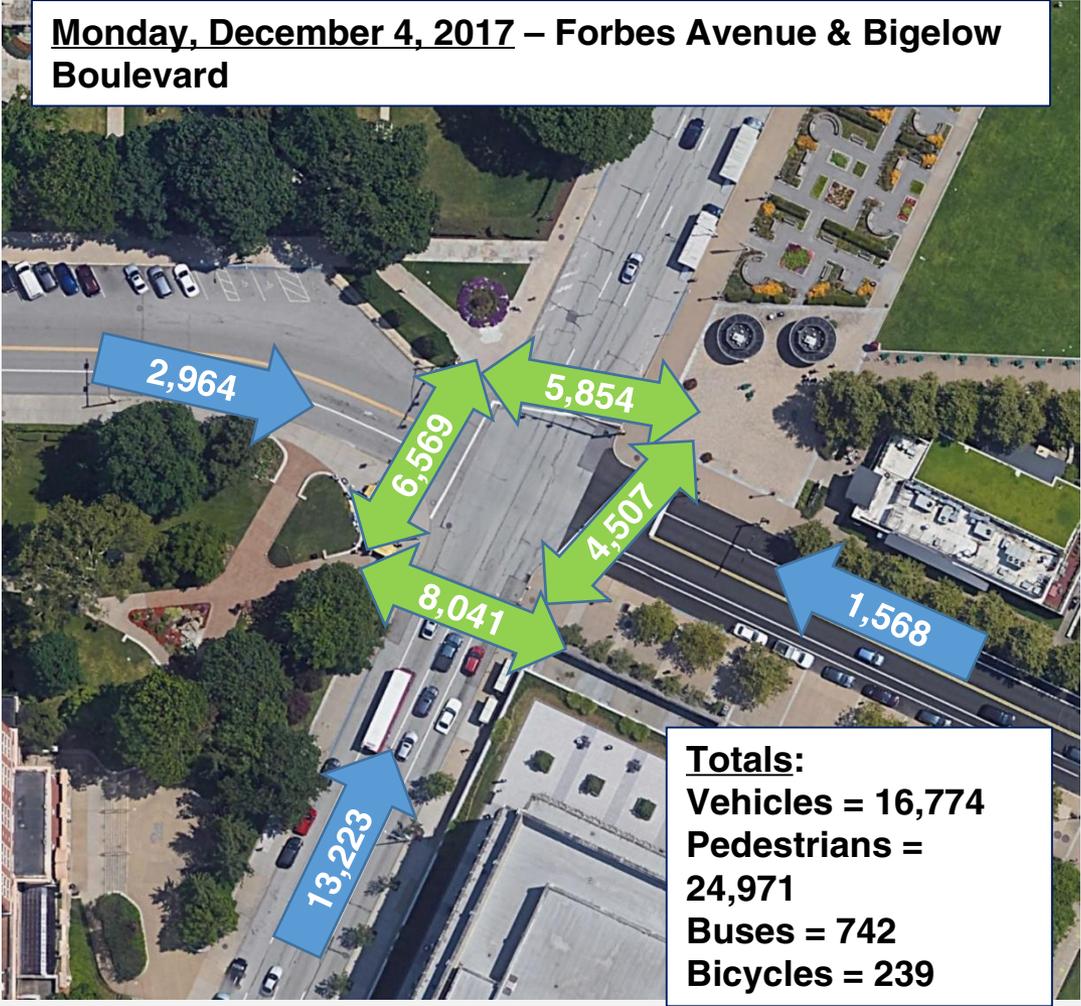
Bigelow Traffic Study

**Tuesday, December 5, 2017 – Bigelow Boulevard
Midblock Crossing**



Bigelow Traffic Study

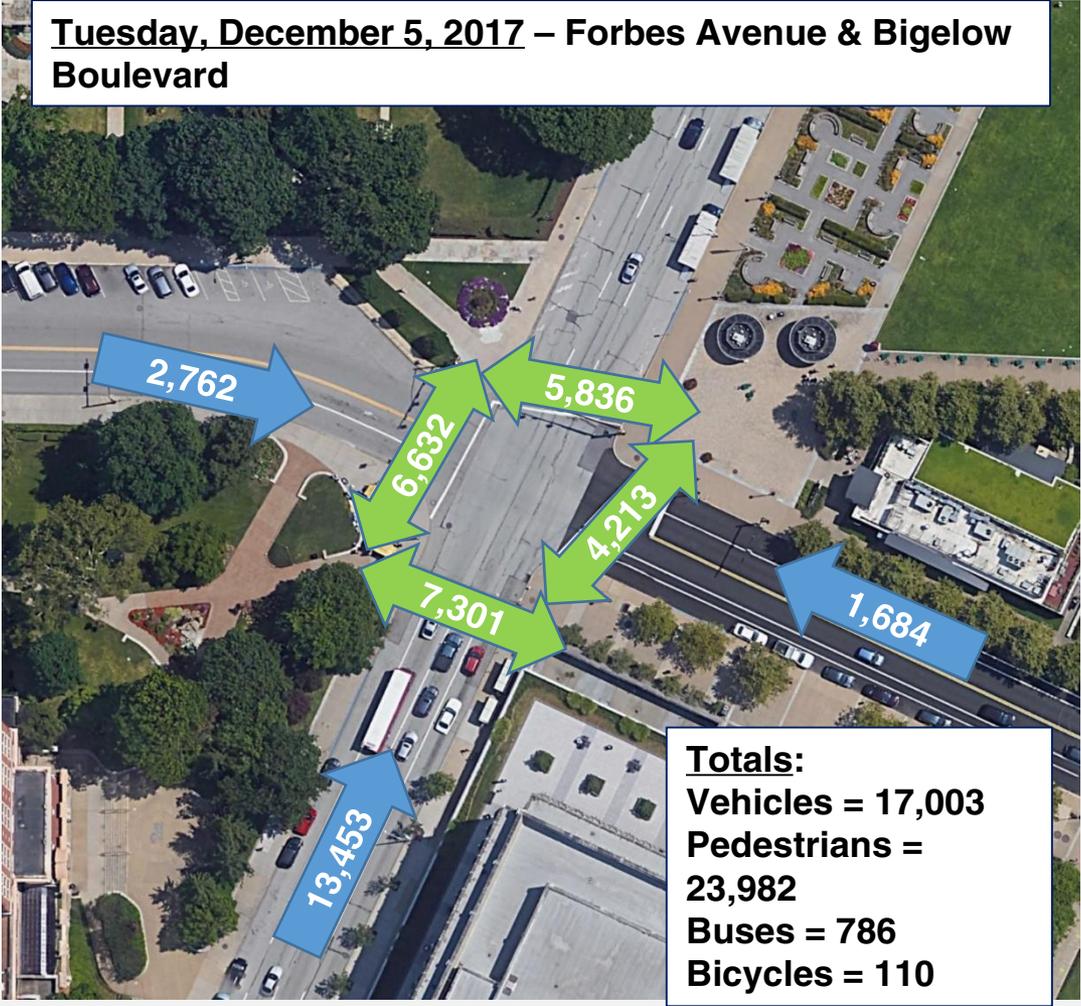
Monday, December 4, 2017 – Forbes Avenue & Bigelow Boulevard



Totals:
Vehicles = 16,774
Pedestrians = 24,971
Buses = 742
Bicycles = 239

Bigelow Traffic Study

Tuesday, December 5, 2017 – Forbes Avenue & Bigelow Boulevard



Totals:
Vehicles = 17,003
Pedestrians = 23,982
Buses = 786
Bicycles = 110

What We Heard Last Time

“Why keep the mid-block crossing? Where else are they used? What about a signal / bridge/ tunnel?”

- **Midblock crossings are a common street feature worldwide, including many in Pittsburgh**
- **NACTO recommends implementation in areas where significant desire lines exist, and pedestrian volumes are significant**
- **Common locations are near schools, parks, business districts, and other regional destinations**
- **When coupled with other safety features such as lighting, medians, high-visibility markings, and raised pavement, midblock crossings can be safer than corner crosswalks**

What We Heard Last Time

“Why keep the mid-block crossing? Where else are they used? What about a signal / bridge/ tunnel?”



Credit: NACTO

What We Heard Last Time

“Can Pitt provide a crossing guard at the mid-block location to keep traffic moving?”

- **The University will provide a crossing guard to assist with pedestrian safety and traffic flow**
- **The timing and exact traffic management procedures are still to be determined**

What We Heard Last Time

“What impact will future campus development have on Bigelow?”

- **Pitt to discuss One Bigelow and overall campus master plan process**
- **Other development happening nearby (PAA, etc.)**

What We Heard Last Time

“What’s being done about ADA parking?”

- **City and University are working together to catalog not only locations of current ADA parking spots, but determining the best locations and quantities for these spaces as ongoing projects (such as BRT, Bigelow, etc.) are going to be impacting the current supply.**
- **This work is anticipated to be completed later this year, to dovetail with BRT final design and Bigelow construction coming in 2019**

Wrap-up + Q&A

