

# Traffic Modeling of East Main Station Area Redevelopment Scenarios

June 9, 2015



# Traffic Forecast and Analysis

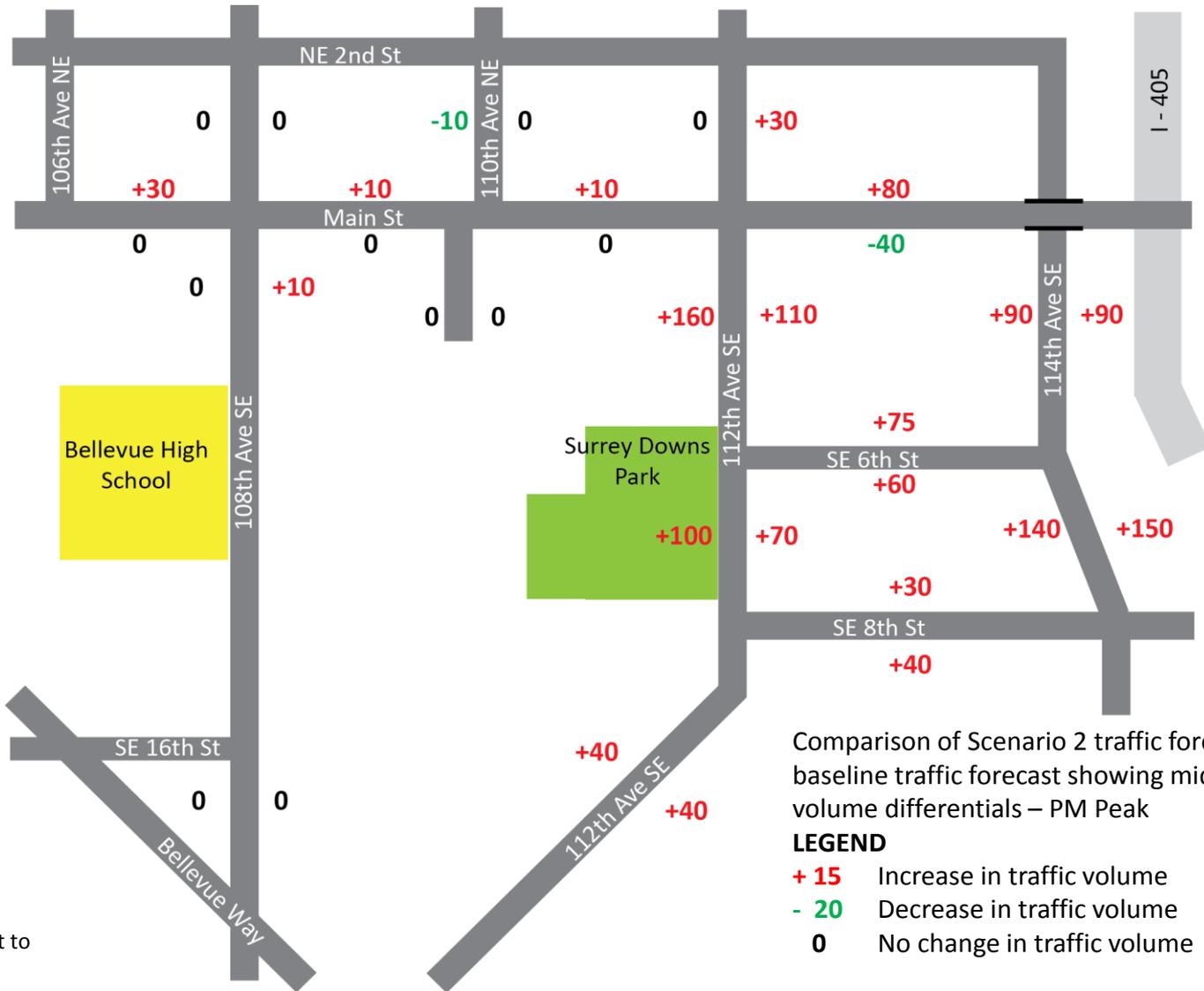
- Vehicle traffic:
  - Conservative model forecast – assume people would travel the same way as they do today
  - Refinement to the preliminary traffic forecasts presented at the May 26 CAC meeting.
  - Intersection Level of Service (LOS) analysis.
  - Focused on three scenarios – Baseline, Scenario 2 (Midrise) and Scenario 4 (High Bookend)
  - Sensitivity tests of 10% and 20% traffic reductions
- East Link Ridership:
  - Refined the projection by boarding and alighting and by direction



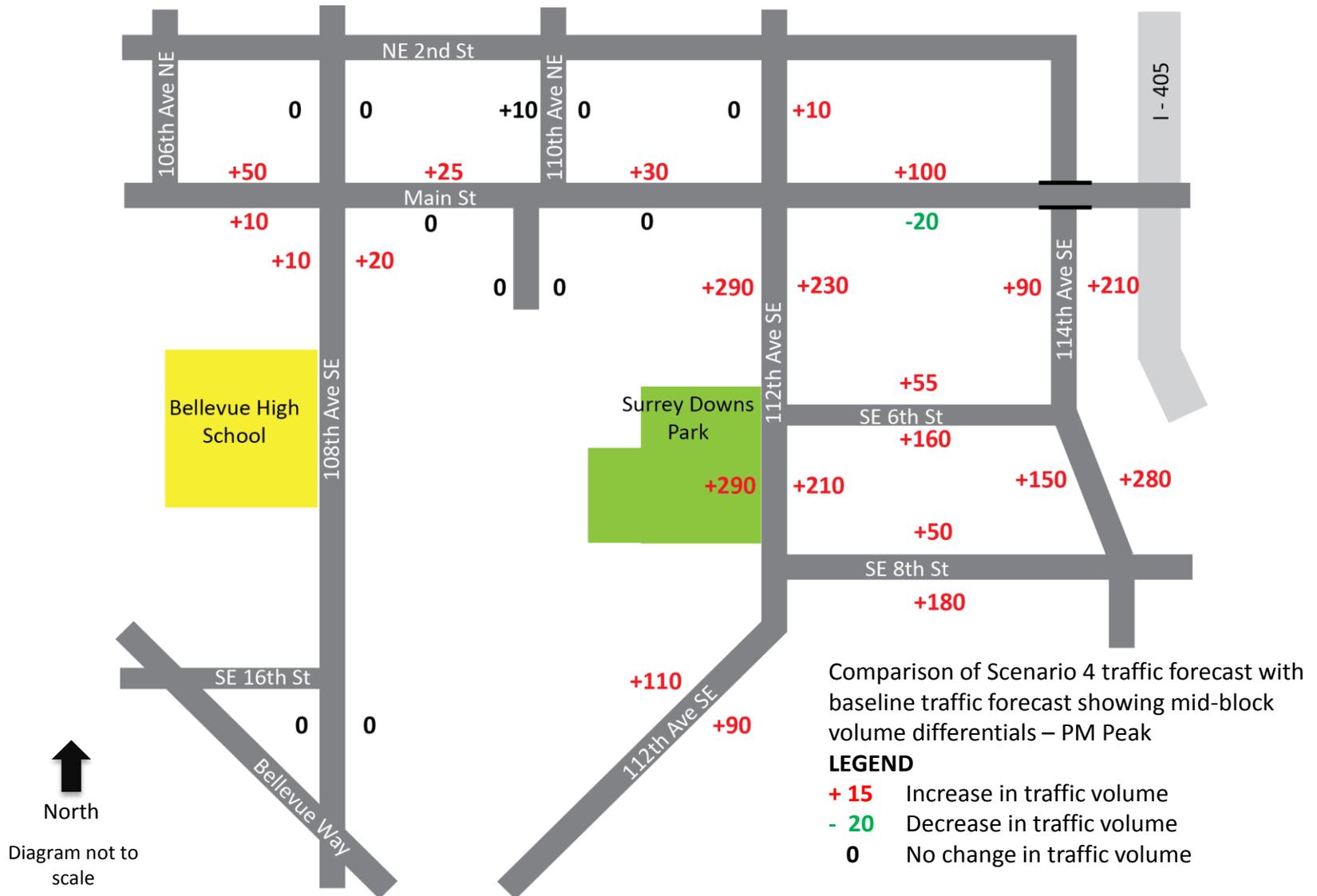
# Comparison of existing traffic volume with 2035 baseline



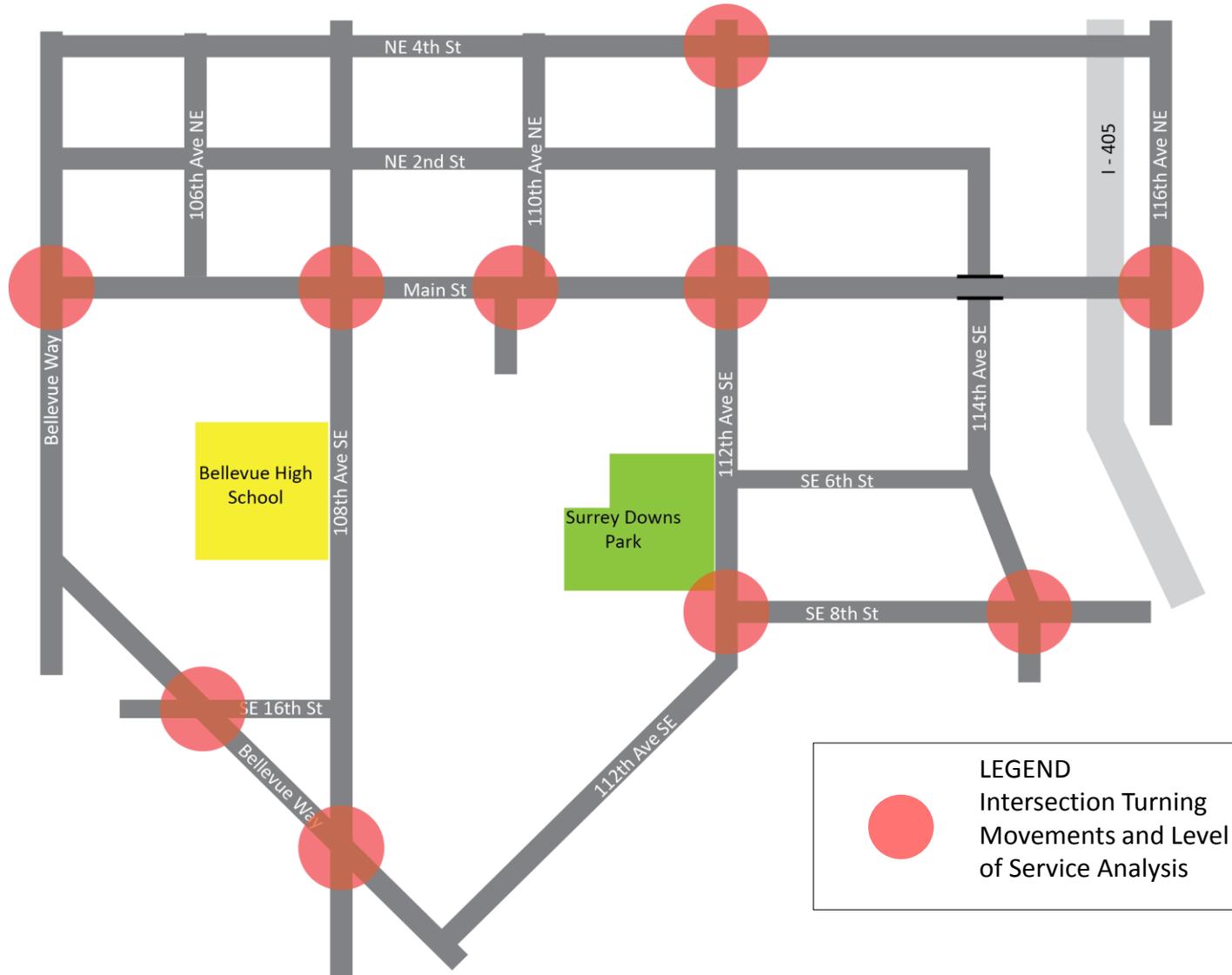
# Scenario 2 compared to Baseline



# Scenario 4 compared to Baseline



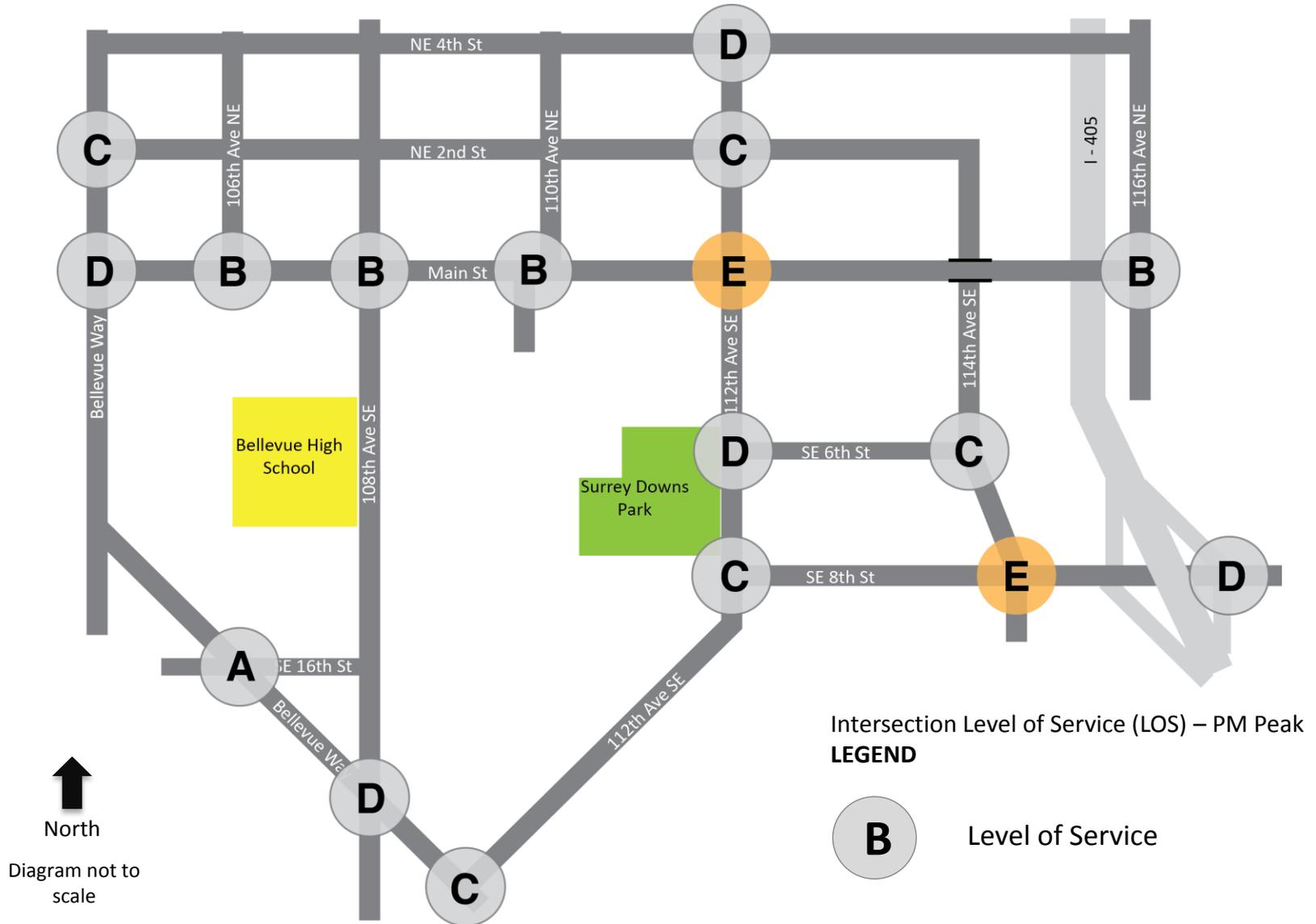
# Analysis of Critical Intersections



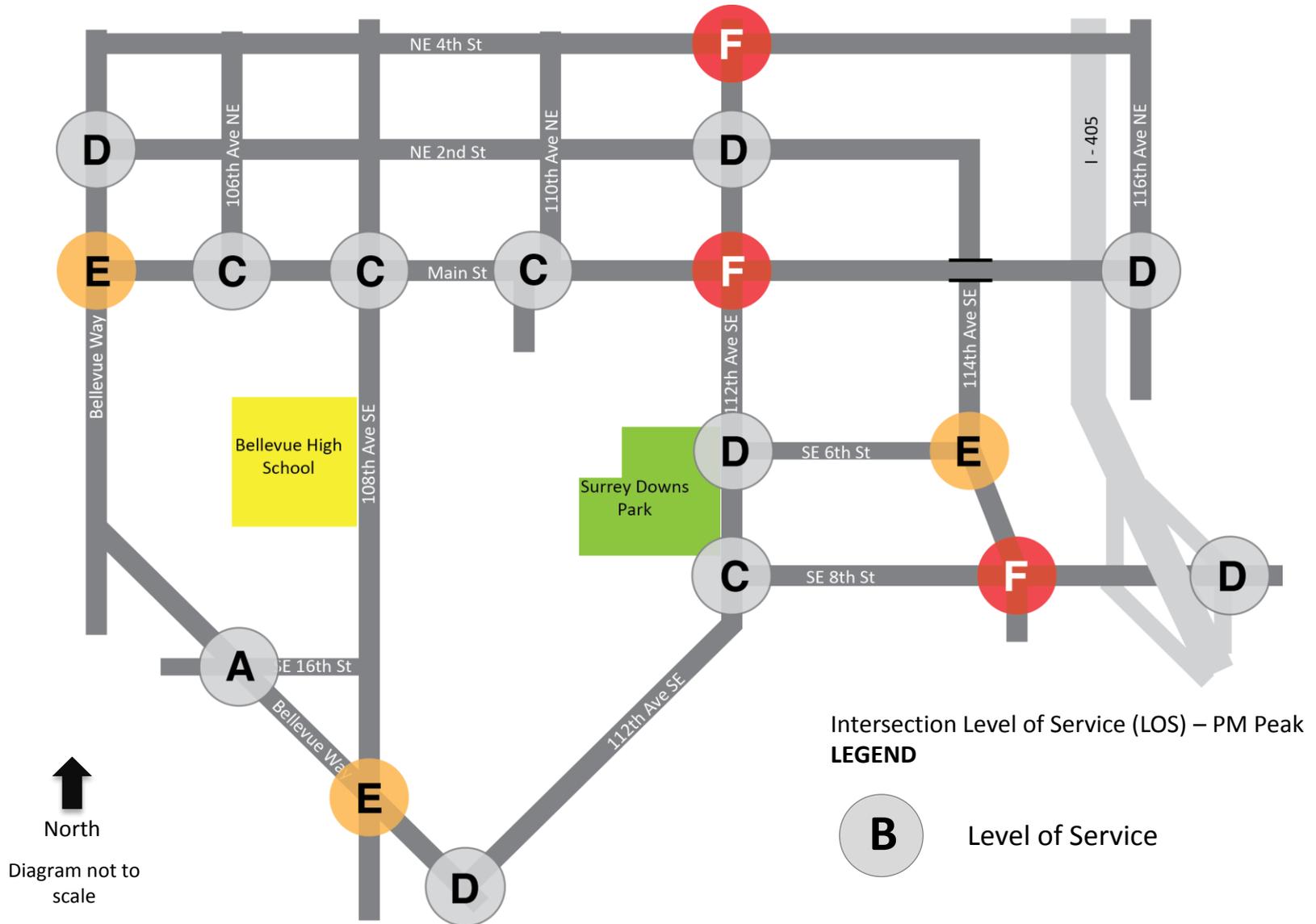
# Signalized Intersection Level of Service (LOS) Definition

LOS	Delay (s/veh)
A	$\leq 10$
B	10 – 20
C	20 – 35
D	35 – 55
E	55 – 80
F	$> 80$

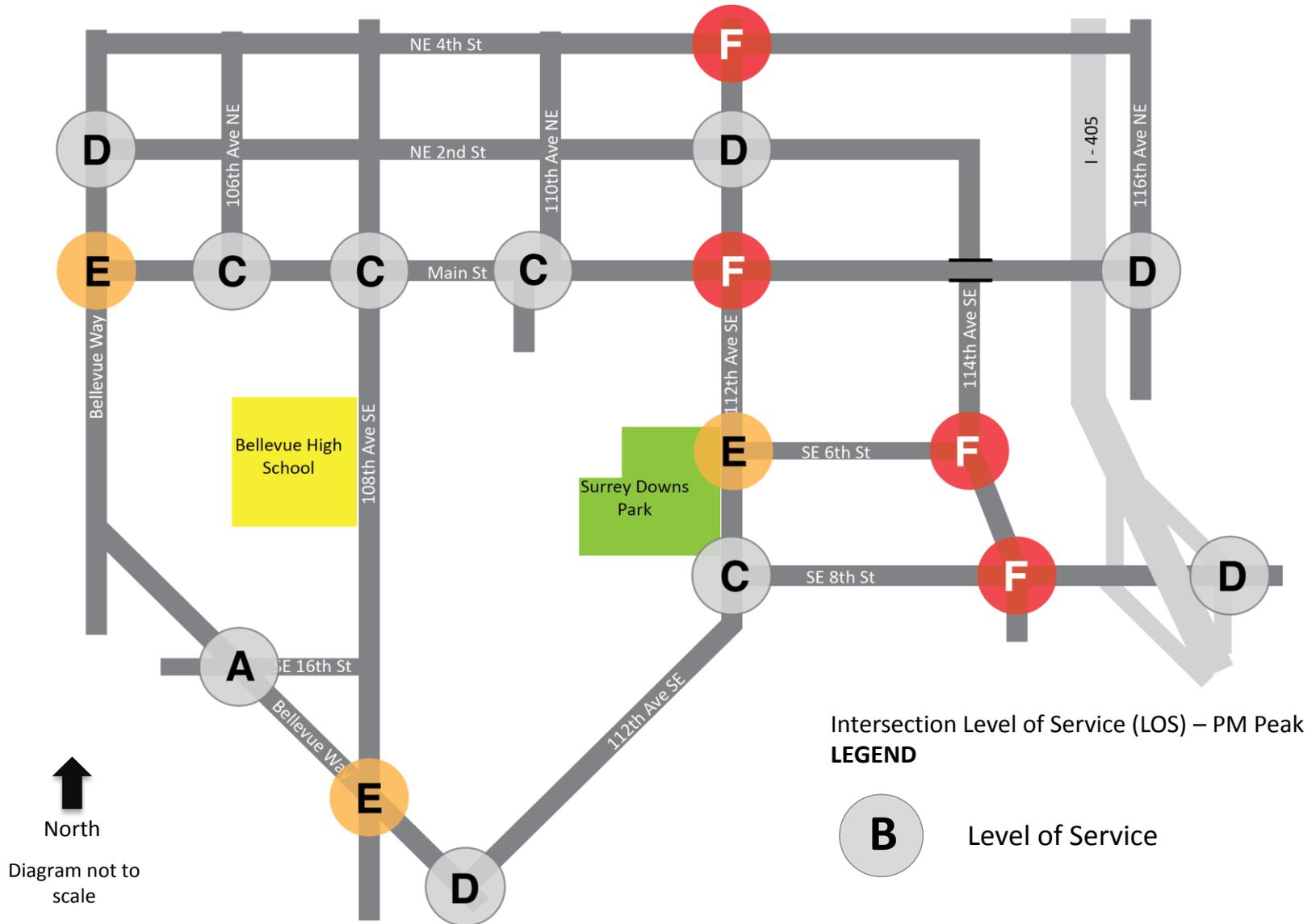
# Intersection Level of Service – Existing Conditions



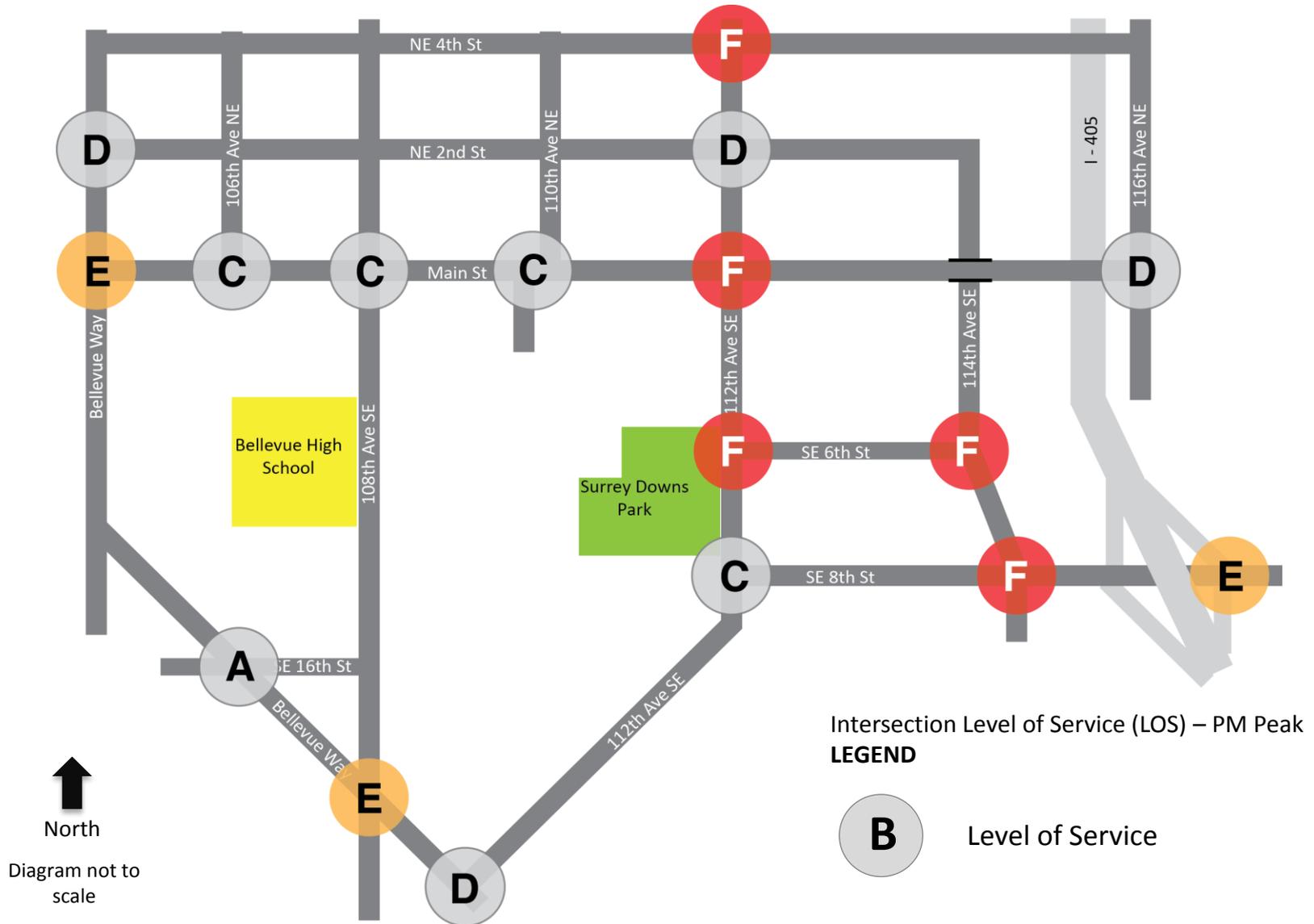
# Intersection Level of Service – Baseline



# Intersection Level of Service – Scenario 2 (midrise)



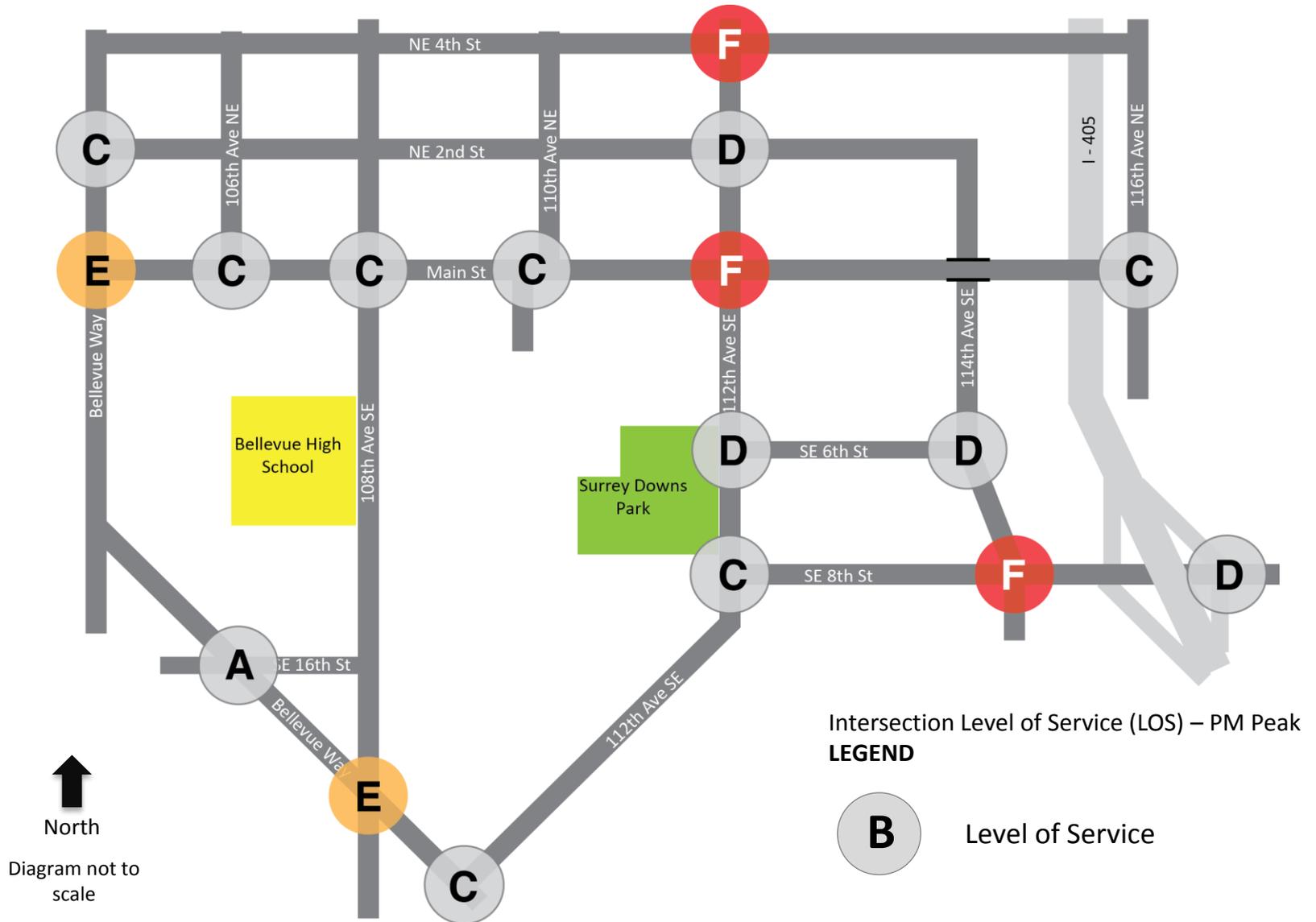
# Intersection Level of Service – Scenario 4 (High Bookend)



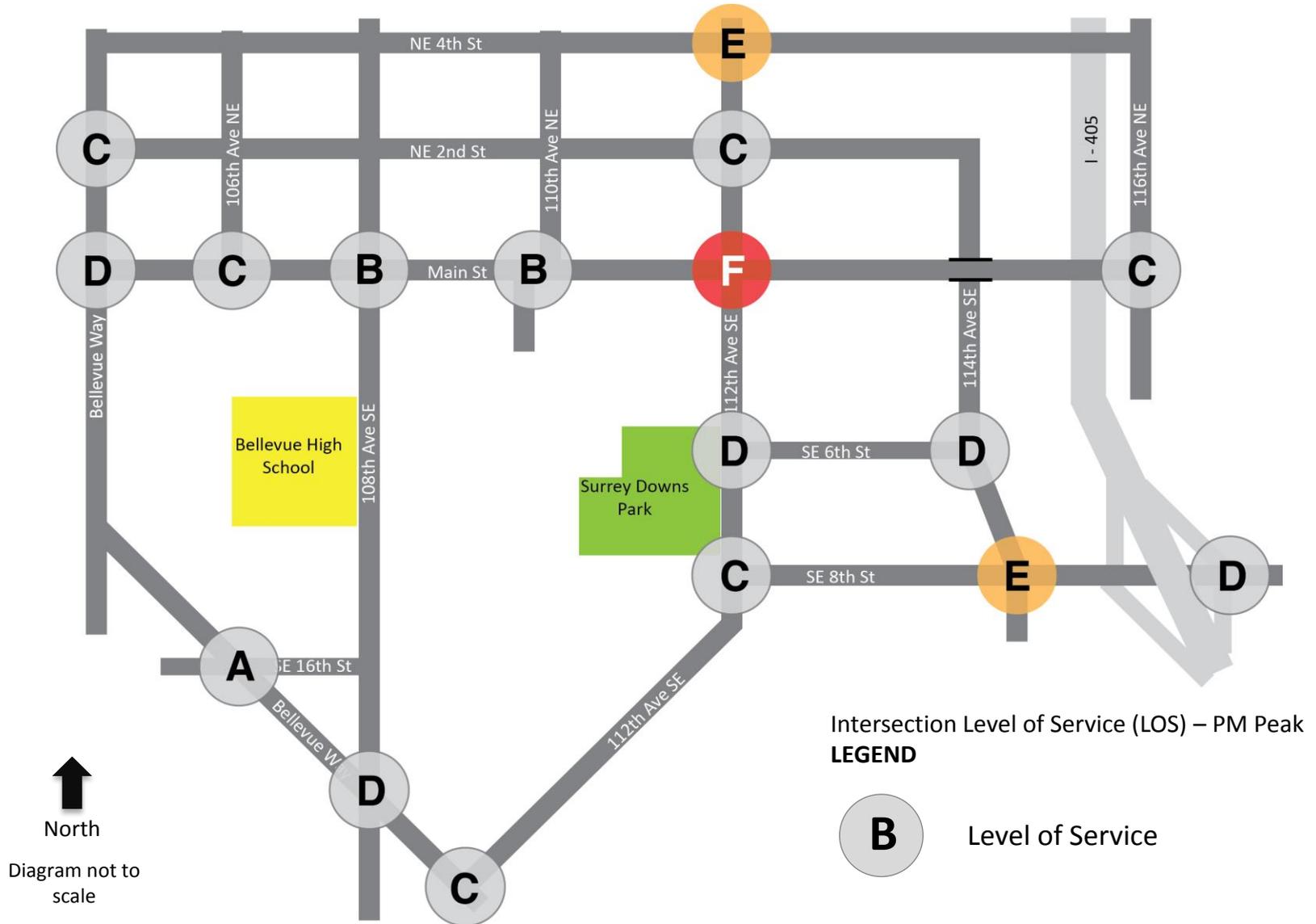
# Traffic Mitigation Measures

- Planned projects:
  - NE 2<sup>nd</sup> St. widening
  - NE 6<sup>th</sup> St. extension to 116<sup>th</sup>
- Potential additional improvements:
  - Adding turn lanes (EBR and NBR at Main/112<sup>th</sup>)
  - Improve intersection signal timing/coordination
  - PM peak turn restriction for NBL @ SE 6<sup>th</sup>/114<sup>th</sup>
- Travel demand management strategies
  - Bus passes
  - Parking charge
  - Telecommuting/online shopping
  - Tolling/VMT charges
  - Higher gas prices

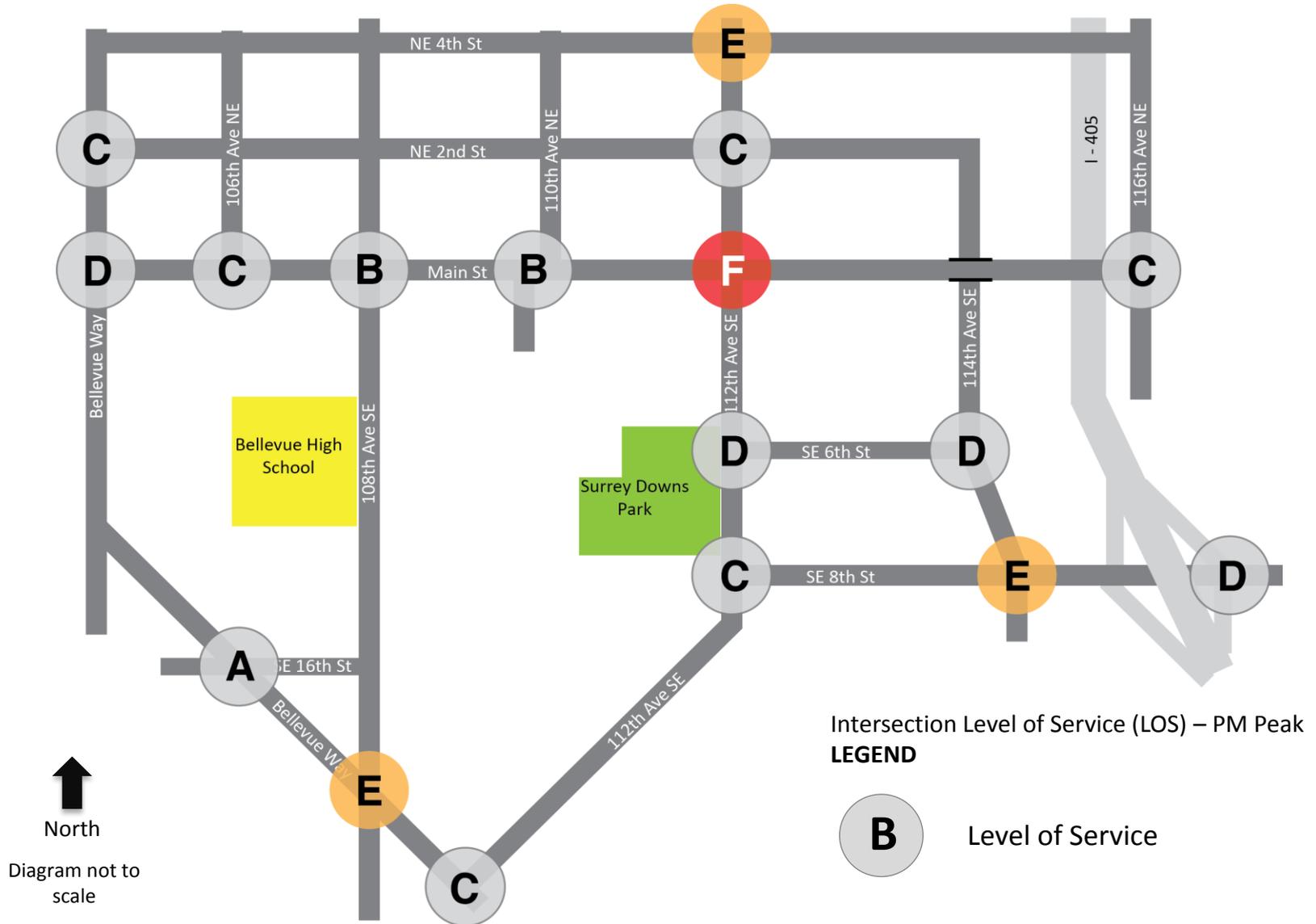
# 10% Reduction - Level of Service – Scenario 2



# 20% Reduction - Level of Service – Scenario 2



# 20% Reduction - Level of Service – Scenario 4



# LOS Sensitivity Test – Scenario 4 (High Bookend)

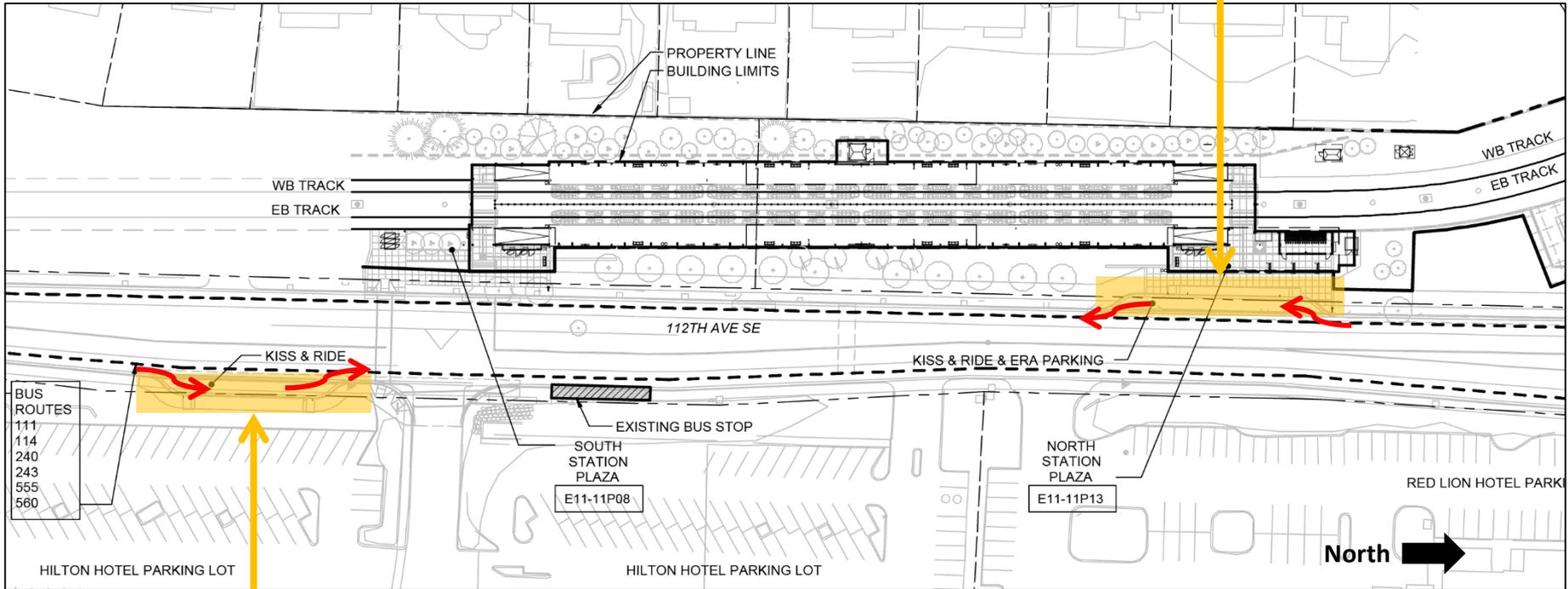
## Potential intersection improvements:

- Main/112<sup>th</sup> Ave: add EBR and NBR exclusive lanes
- 114<sup>th</sup>/SE 8<sup>th</sup>: restrict NBL movement at SE 6<sup>th</sup> during the PM peak period, this effectively extends the SBL turn lane on 114<sup>th</sup> at SE 8<sup>th</sup> by over 700 ft.

# East Main Station – Drop-offs

2035 PM Peak – Scenario 4

**Southbound**  
 Drop offs: 53  
 Pick ups: 25



**Northbound**  
 Drop offs: 32  
 Pick ups: 30

Extrapolated from Sound Transit Environmental Impact Statement 2030 Forecast to 2035  
 Source: Sound Transit East Link Environmental Impact Statement

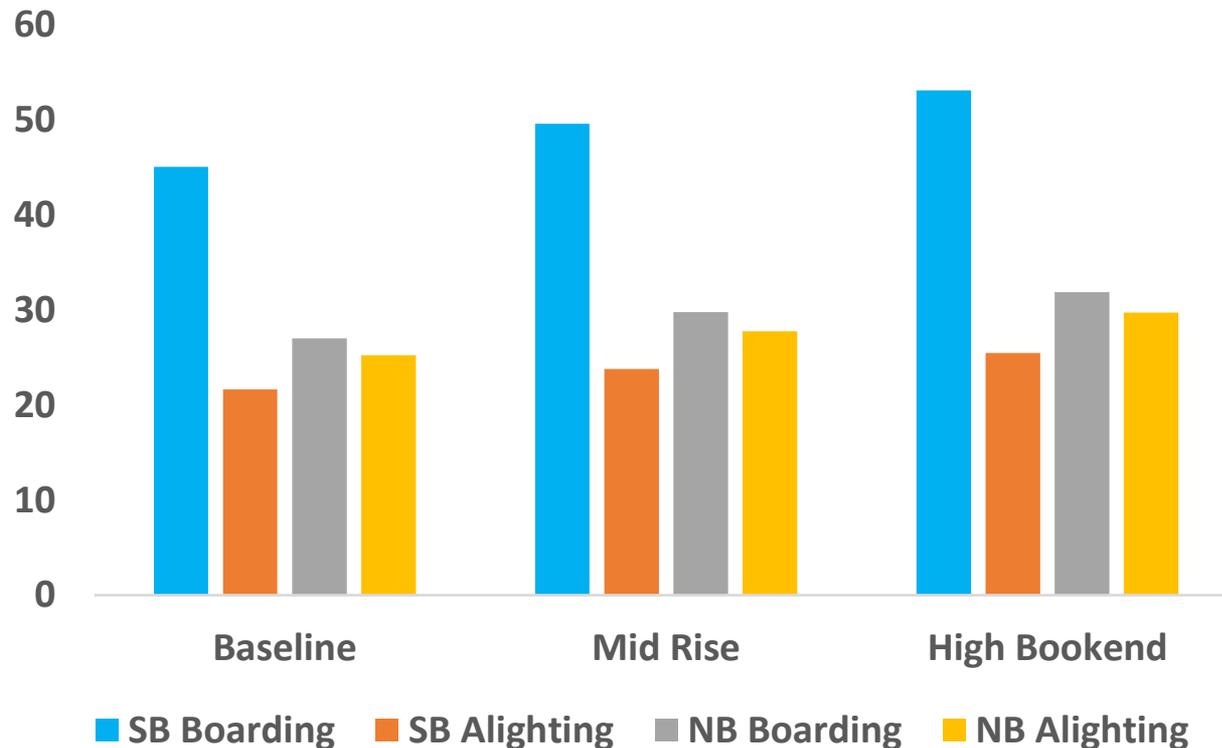
# Questions - Discussion



# Appendix



# Number of Boarding and Alighting By Direction at East Main Station (2035 PM Peak Hour)





# Downtown Land Use Forecast

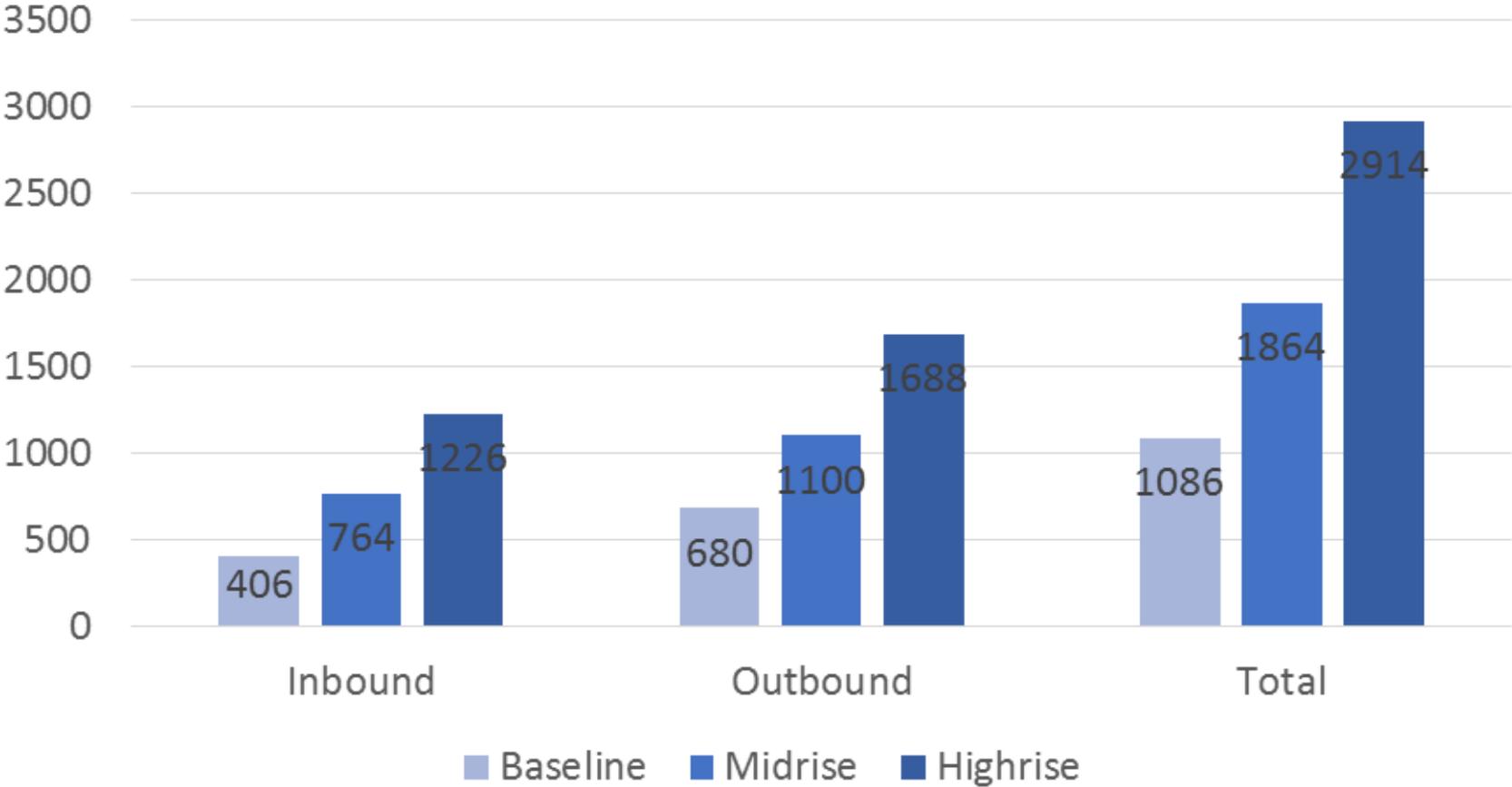
	1990	2000	2010	2012	2030	2035	2010/2030 Growth	2010/2035 Growth
Employment	22,257	34,042	42,525	44,800	70,300	76,800	+27,775	+34,275
Population	1,182	2,588	7,147	10,500	19,000	20,500	+11,853	+13,353



The past 20+ years  
volume history:  
108<sup>th</sup> Ave s/o Main St

Year	A/D Vol	NB	SB	Total S- leg Vol
1992	1983	139	222	361
1993	1961	142	211	353
1994	1998	150	189	339
1995	1990	137	189	326
1996	2016	144	189	333
1997	2115	164	218	382
1998	2072	147	178	325
1999	2106	144	182	326
2000	2092	139	205	344
2001	1913	124	175	299
2002	1831	124	151	275
2003	2216	101	186	287
2004	2098	121	233	354
2005	2140	171	243	414
2006	2263	138	277	415
2007	1922	123	246	369
2008	1977	151	255	406
2009	2034	168	242	410
2010	2034	168	242	410
2011	2017	156	249	405
2012	2017	156	249	405
2013	1981	153	245	398

# Total Vehicle Trips by the Redevelopment Zone PM Peak Hour



# Unsignalized Intersections

LOS	Delay (s/veh)
A	$\leq 10$
B	10 – 15
C	15 – 25
D	25 – 35
E	35 – 50
F	$> 50$

