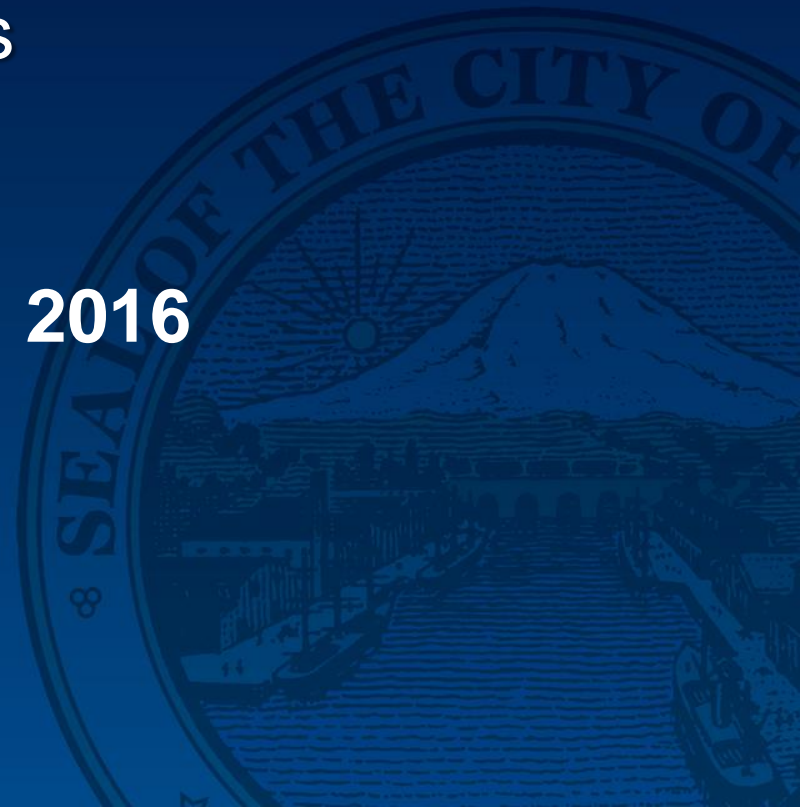


North 21st Power Pole Replacement and Roadway Projects

City of Tacoma:

Tacoma Power, Public Works

September 28, 2016



Pole Replacement Project

Scope

- Upgrade Pearl Substation along with Hilltop and Cedar substations - **Complete**
- Replace Towers in North 21st Street and Westgate Center:
 - Remove 20 towers and old wire
 - Replace with 12 steel poles and new wire
- Retire Cushman Substation by bypassing it



North 21st Street Now

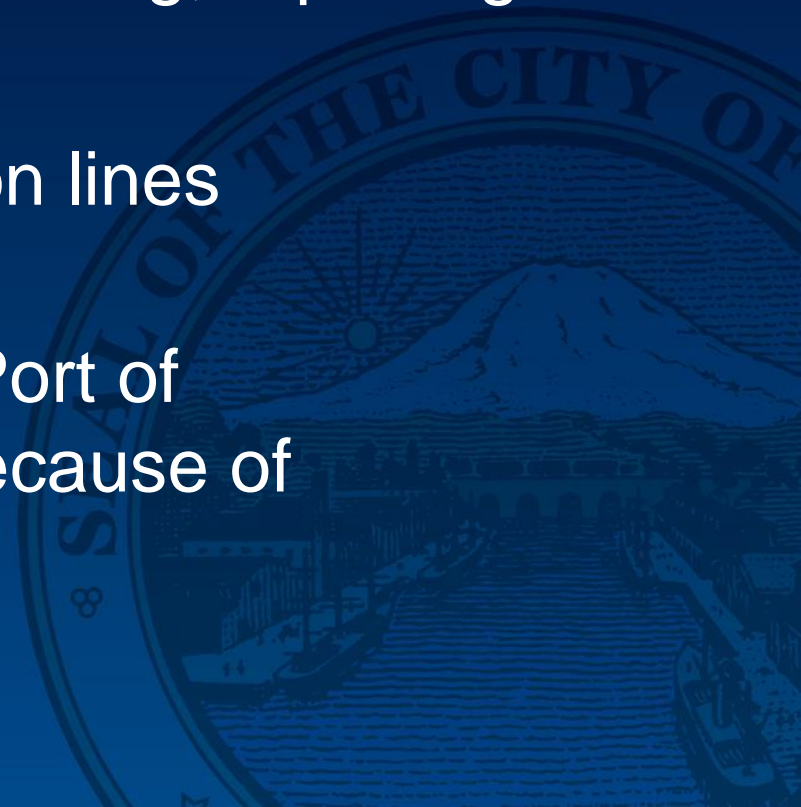


North 21st Street Soon



Why Not Go Underground?

- Costs 5 to 10 times as much as overhead lines
- Differences in building, maintaining, repairing
- Unusual to locate transmission lines underground
 - We have done it in at the Port of Tacoma/Blair Waterway because of height of ship antennae



Future Of Cushman Substation

- Cushman Substation will no longer be part of the electrical system
- The equipment outside will be removed
- Classic building will remain



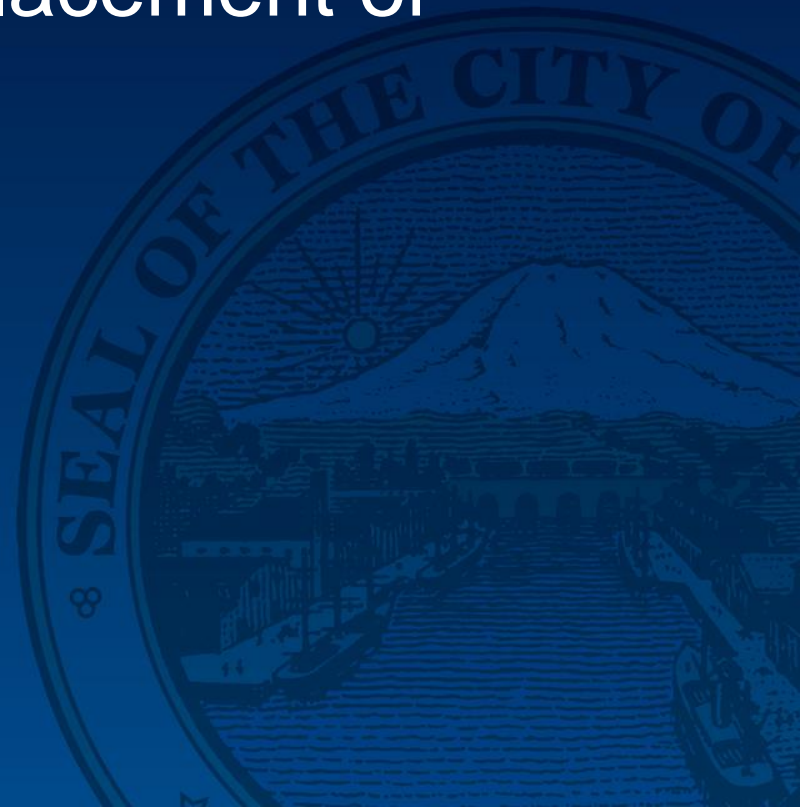
Proposed Project Schedule

- Spring, summer 2017: Demolition and construction
 - Most likely April - September
- End of 2017: Equipment removed from Cushman Substation yard



From poles to street design

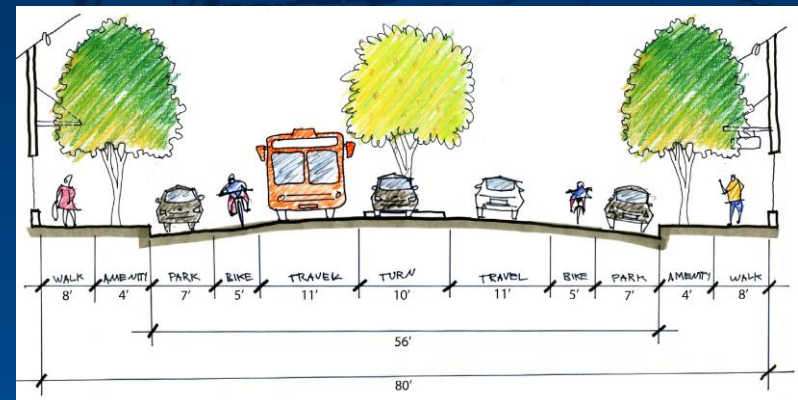
- Two groups, two different projects
- Street concept guides placement of power poles



Roadway Planning Process



- 2008 – Corridor Study, Alder-Proctor
- 2009 – Complete Streets Resolution
- 2010 – Mobility Master Plan
- 2015 – Transportation Master Plan / Comprehensive Plan update



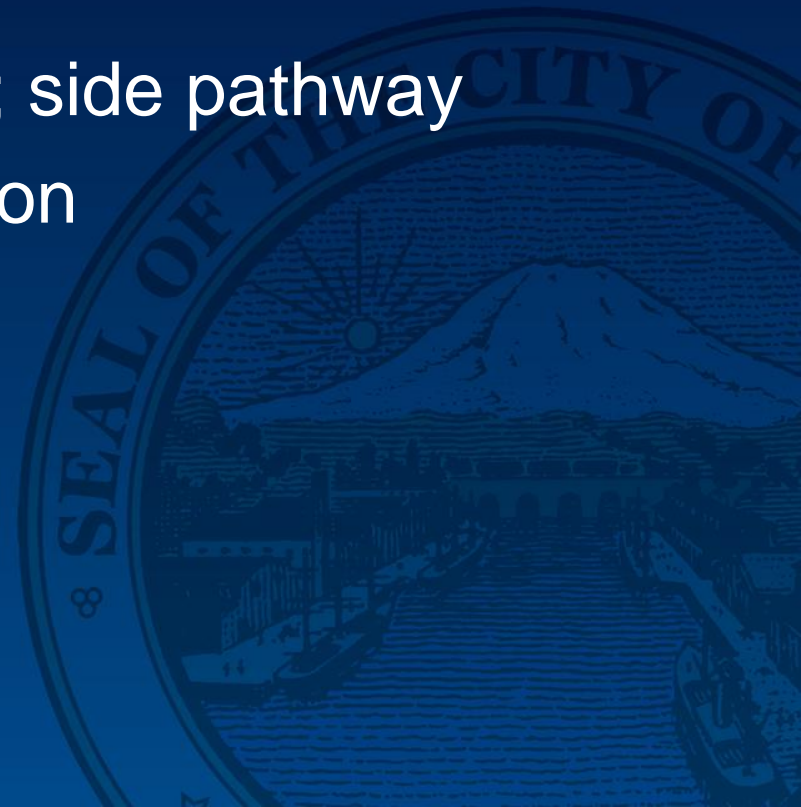
Transportation Master Plan Priorities

- Every street is a pedestrian priority street.
- The TMP identifies priority corridors for each mode.
- North 21st is a priority corridor for automobiles, transit, and bicycles.



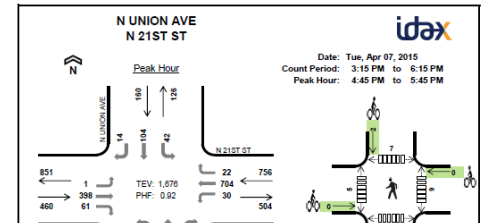
Options Evaluated

- Existing (for comparison)
- Center pathway
- Poles shifted to one side; side pathway
- Two lanes in each direction
- One lane each direction
- Two lanes westbound



Traffic Study

- 20-year forecast of future volumes
- Used to determine constraints
- Left turn lanes reduce delays



N 21st St. – Pearl to Proctor TRAFFIC STUDY

1. The through travelers will be discouraged to use either northerly/southerly curbside lane due to lane reduction at the downstream of the Proctor and Pearl intersections. It would hamper on the overall curbside approach lane utilization.
2. The traffic from the curbside lane will be competing with the traffic from the inside through lane in order to merge into the inside lane to go straight. The lane change would create additional weaving.

An in-depth analysis was conducted to assess the possible impacts of the partial ATL and downstream/upstream ATL length.



LE	10-min
1	356
2	437
3	298
4	1,676

LE	10-min
1	356
2	437
3	298
4	1,676

N 21st St. – Pearl to Proctor TRAFFIC STUDY

3.2 Scenario 2 – One Westbound (WB) Continuous through lane (CTL):

This alternative would reduce EB-WB through lane to one through lane between west of Proctor and east of Winnifred St. This alternative would reduce the WB CTL (i.e. an approach through lane that runs continuous for at least one-half mile upstream and downstream of the intersection are called CTL) to one lane at Proctor. The N 21st St. would become a three-lane roadway with one EB and WB lane, and a TWLTL in the middle. The intersection lane configuration is shown in Figure 5: Scenario 2



Figure 5: Scenario 2

4. Traffic Operational Analysis:

4.1. 24 Hours Traffic Analysis:

24 hours traffic counts were conducted during three (3) weekdays at three different locations and the three days average traffic data is graphically represented for each location in Figure 6: 24 Hours Directional Traffic Counts. 2 traffic count locations were between Pearl and Proctor, the other was between Proctor and Union. The 3rd traffic data collection location was considered for two reasons, 1st, to understand the existing traffic demand between Proctor and Union, and 2nd to assess the potential impacts due to potential changes between Pearl and Proctor. The EB and WB averages weekday traffic were 4,744 and 5,231 respectively

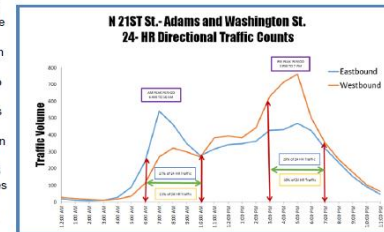


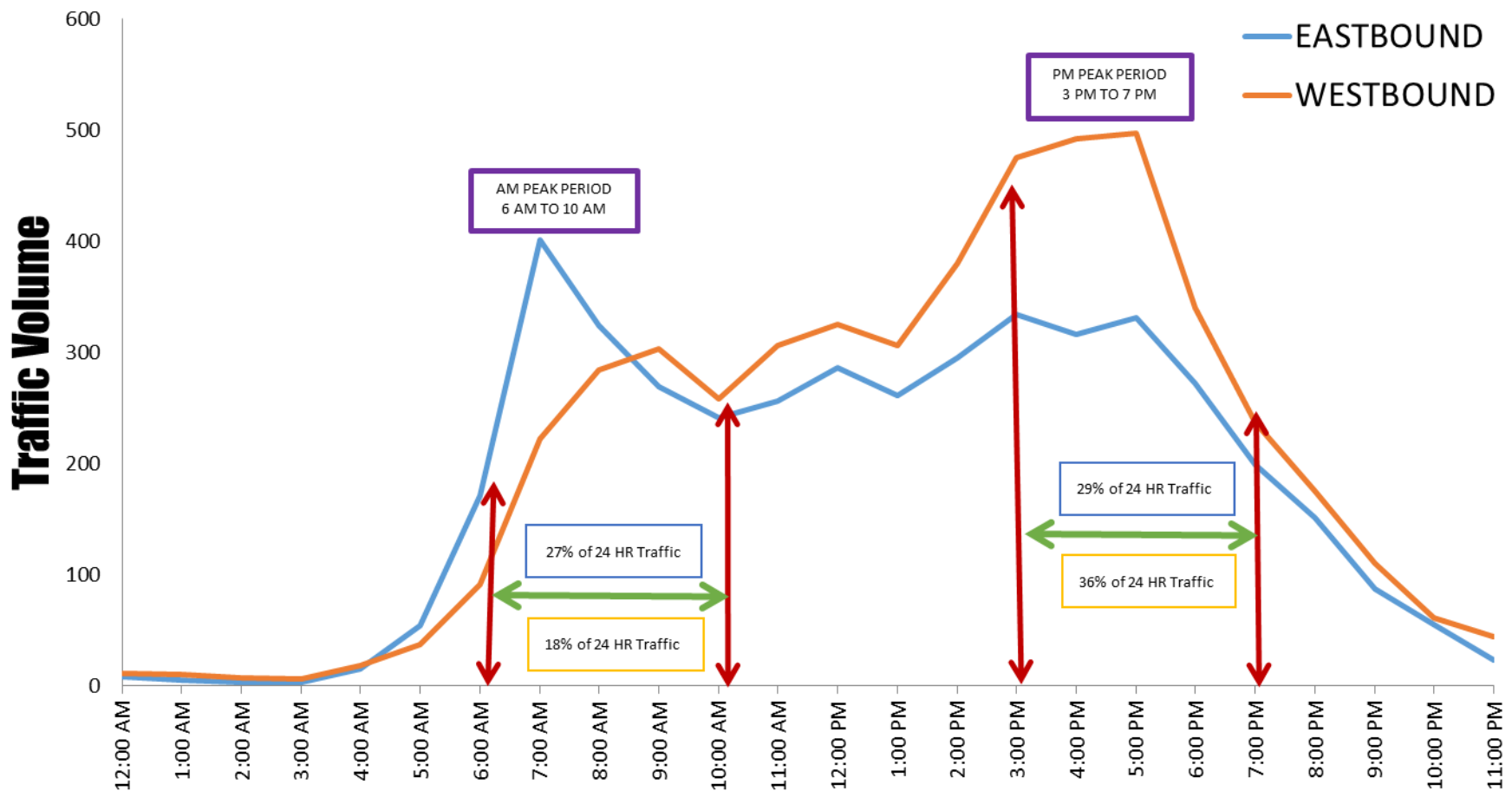
Figure 6: 24 Hours Directional Traffic Counts

curbside CTL to a partial ys between Winnifred and 3-WB through lane may inside CTL to go straight. It n traffic operation at Pearl

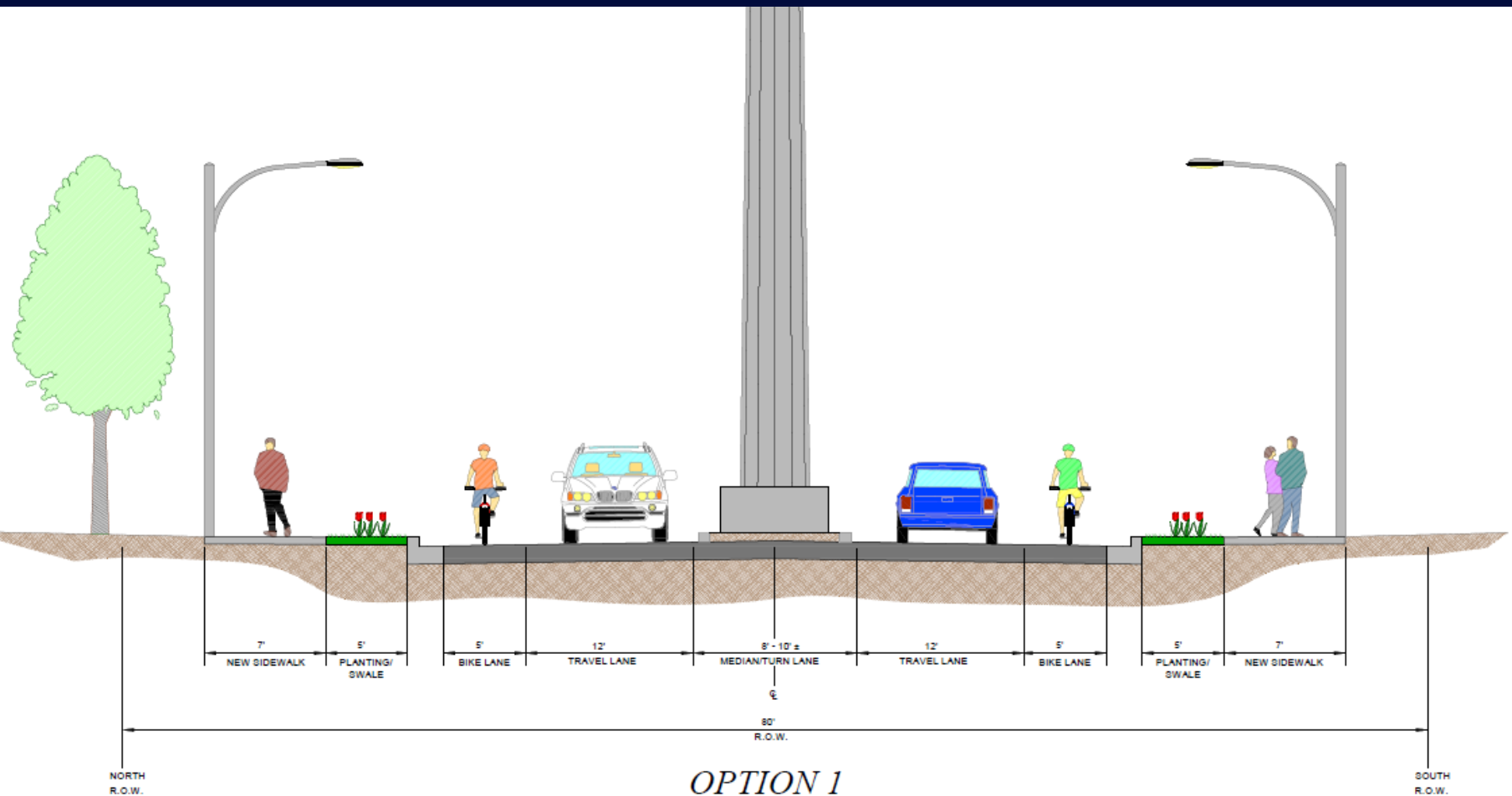
ducted to estimate the 7% of the EB through traffic curbside lane utilization is a sections that are causing the to EB inside lane usage. traffic counts at east leg of lane, and 47% use the

Directional Volumes

N 21ST St.- Winnifred and Bennett St. 24- HR Directional Traffic Counts

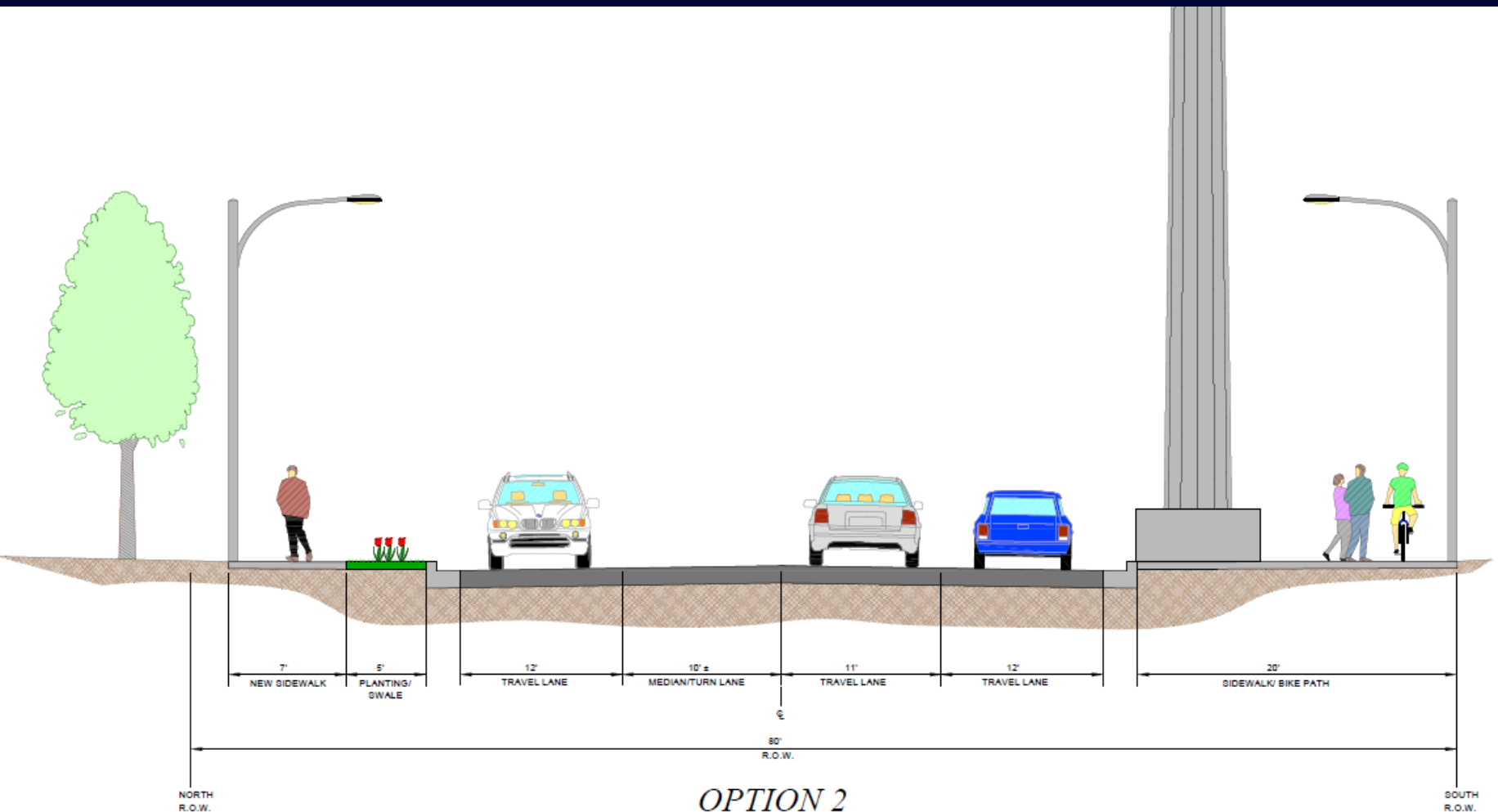


Option 1



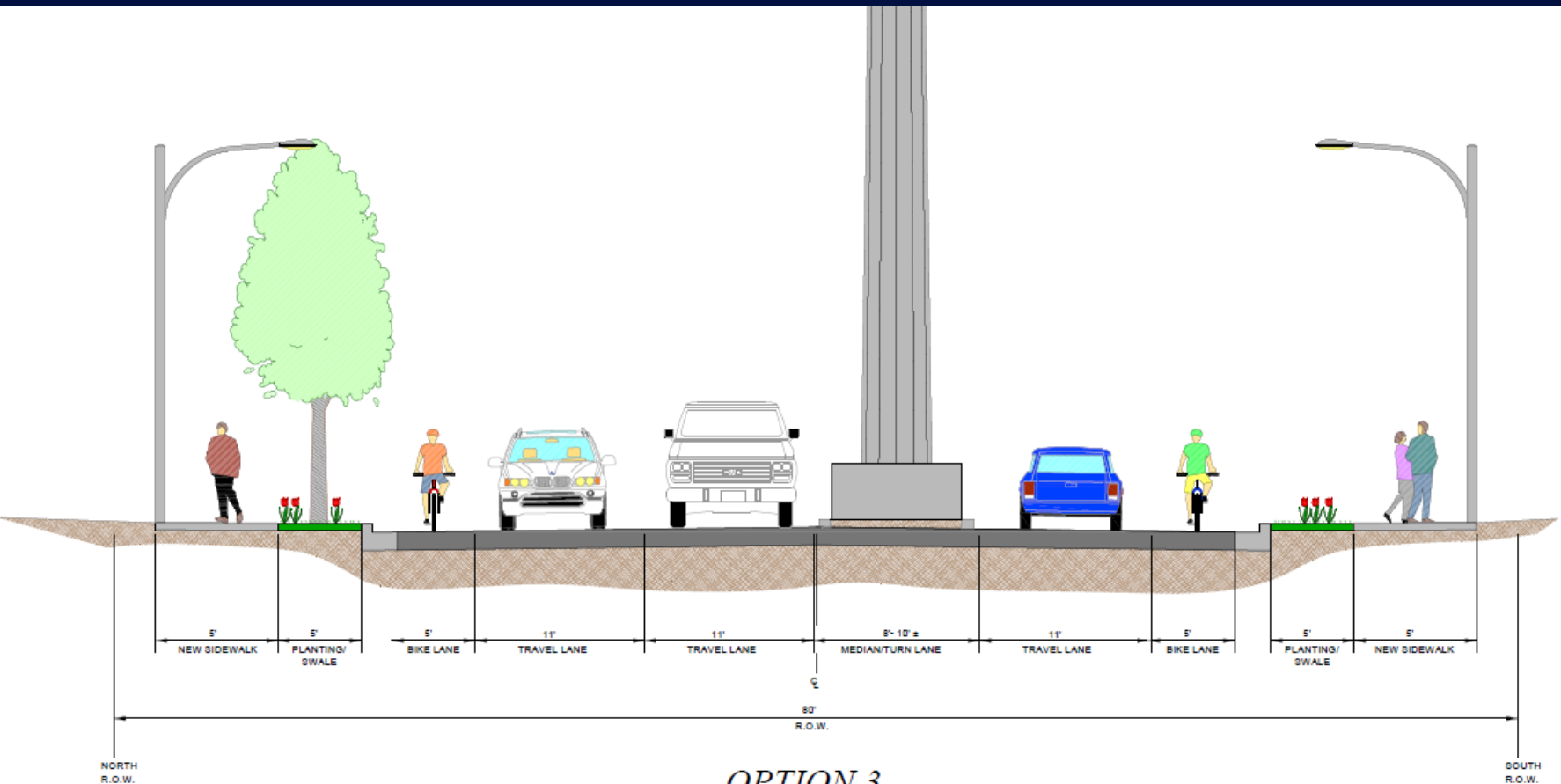
OPTION 1
N. 21ST ST. BETWEEN N. PROCTOR ST. AND N. PEARL ST.
LOOKING EASTBOUND
N.T.S.

Option 2



OPTION 2
N. 21ST ST. BETWEEN N. PROCTOR ST. AND N. PEARL ST.
LOOKING EASTBOUND
N.T.S.

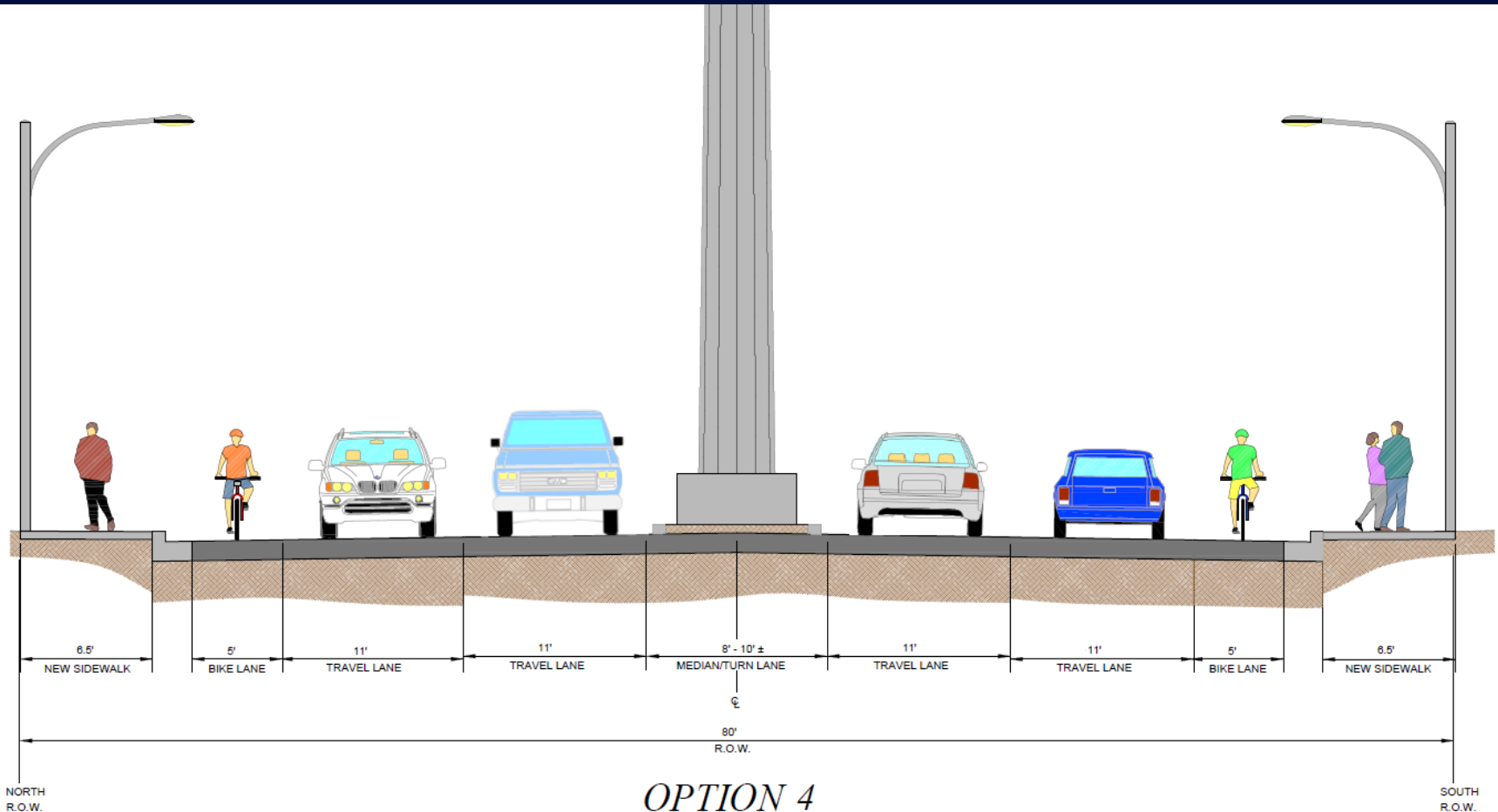
Option 3



OPTION 3
N. 21ST ST. BETWEEN N. PROCTOR ST. AND N. PEARL ST.
LOOKING EASTBOUND

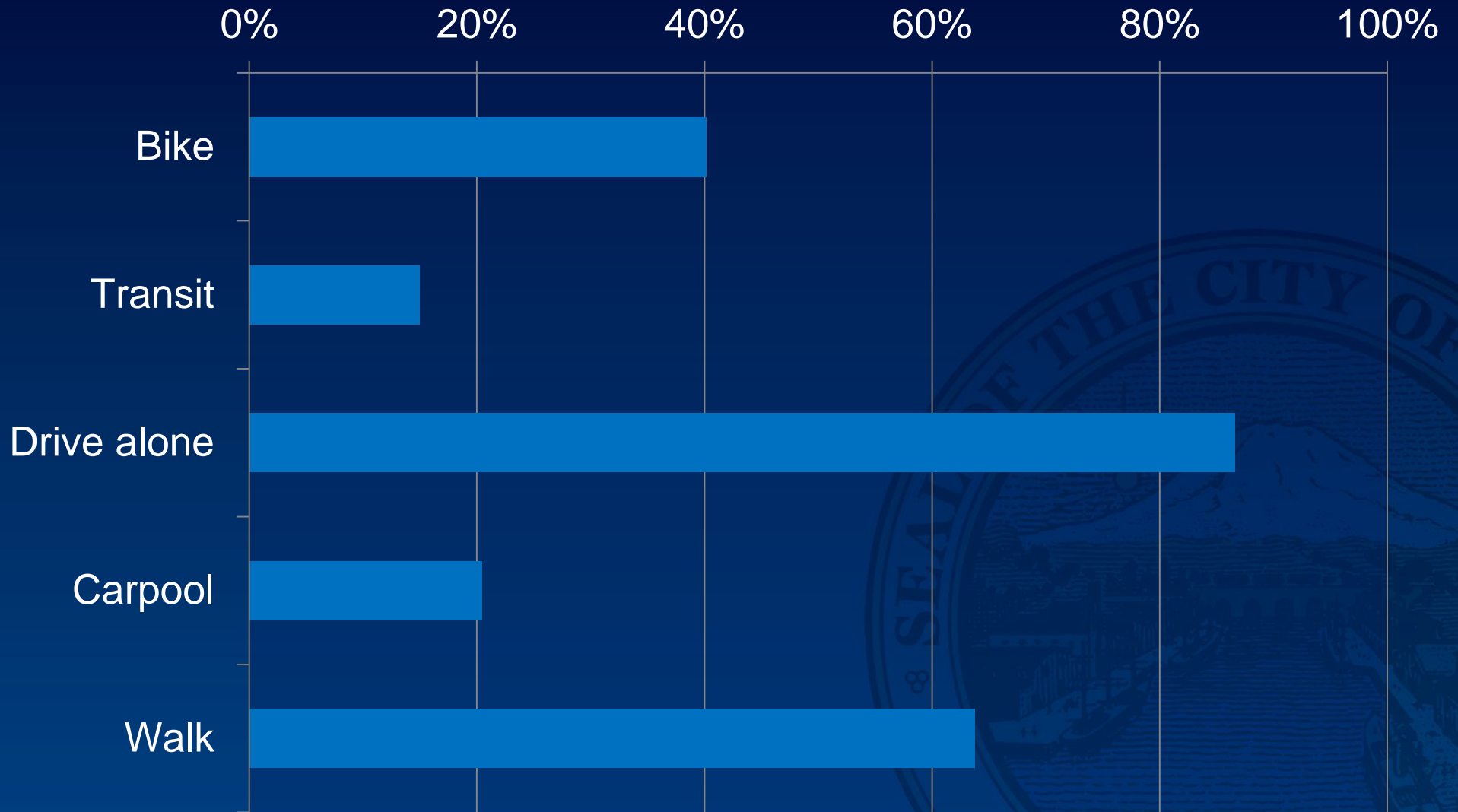
N.T.S.

Option 4



OPTION 4
N. 21ST ST. BETWEEN N. PROCTOR ST. AND N. PEARL ST.
LOOKING EASTBOUND
N.T.S.

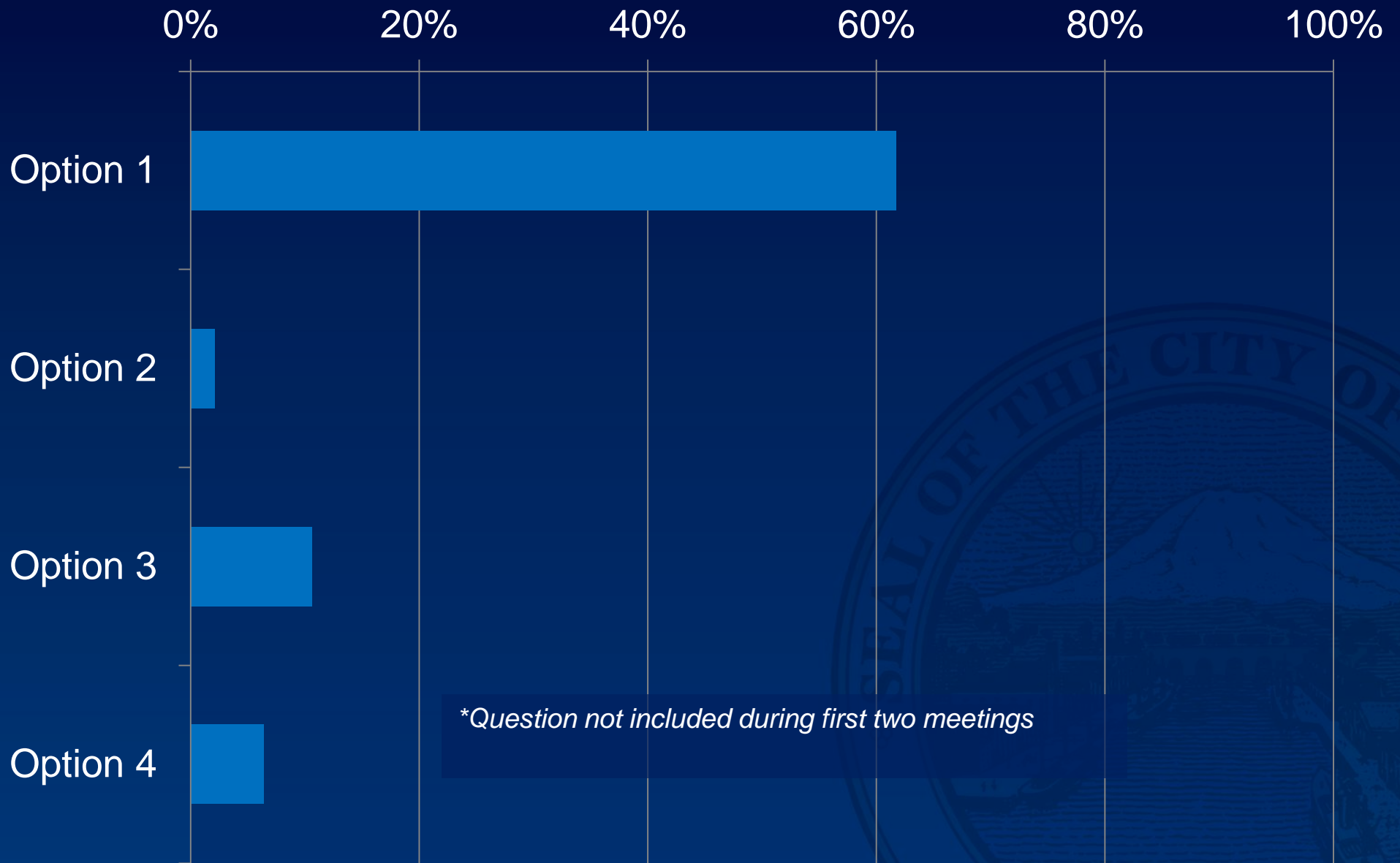
Which modes of transportation do you use?



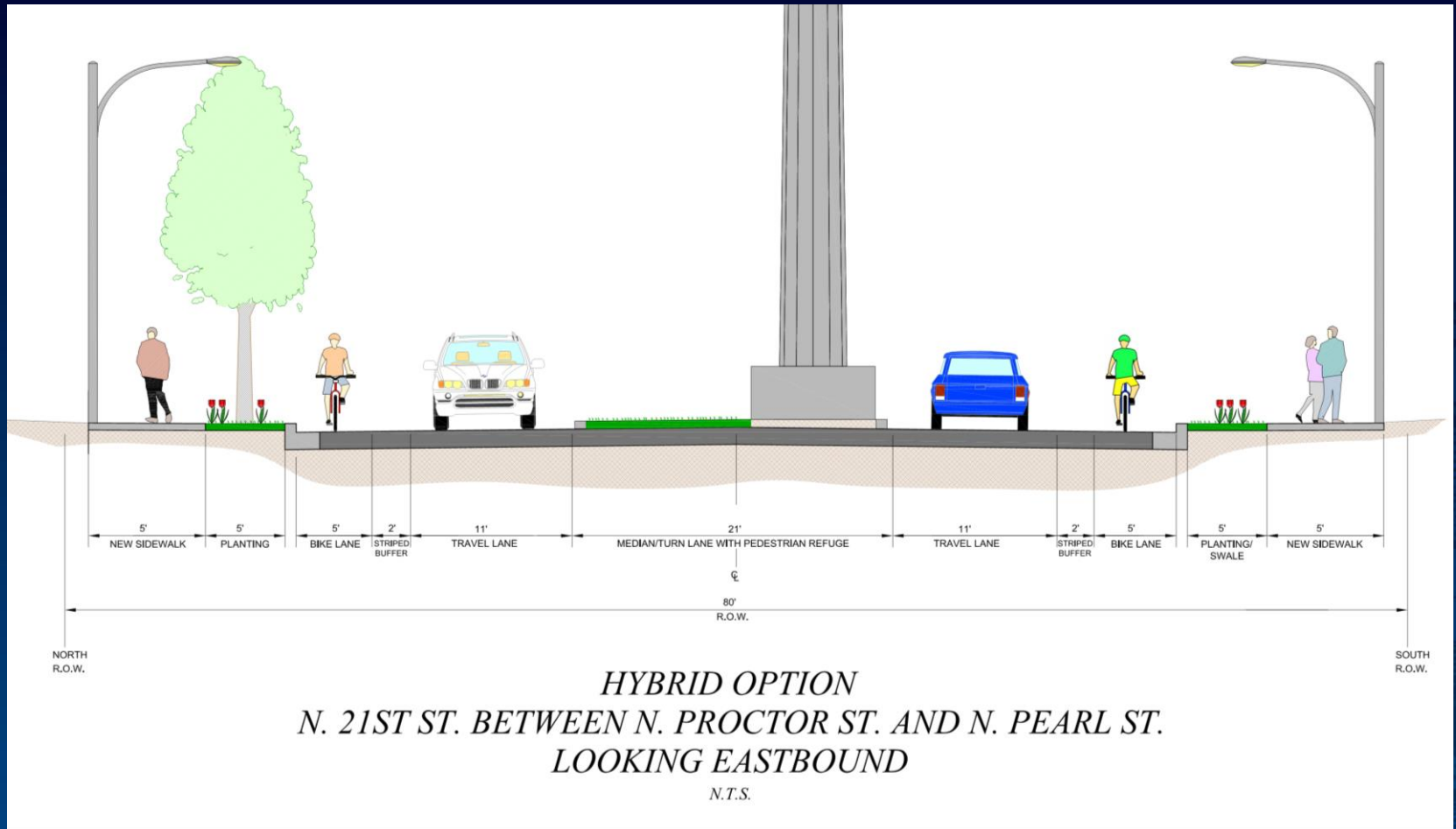
Representative Comments

- “Priority is pedestrian and bike safety.”
- “Need to plan for 20-plus years.”
- “I want it all – ride, bike, walk.”
- “Do not widen lanes. Get speeds lower.”
- “4 lanes as is – put bikes on side streets.”
- “Need to control/enforce speed limits.”
- “Protected lanes somewhere!”
- “Option 1 makes sense for kids needing to cross.”

Which street option do you prefer?



Hybrid Option 3



Recommendations / Next Steps

- Staff recommendation presented to Council Infrastructure, Planning, and Sustainability Committee
- TPU selects pole location
- PW will design the roadway in 2017, and then apply for construction grants



Information Available to Public

- MyTPU.org/21street
- (253) 502-8117

