

# Attachment D

## Eastside Transit Corridor Phase 2 Technical Study

### Route Options Screening Analysis and Community Outreach

Executive Summary – April 2017

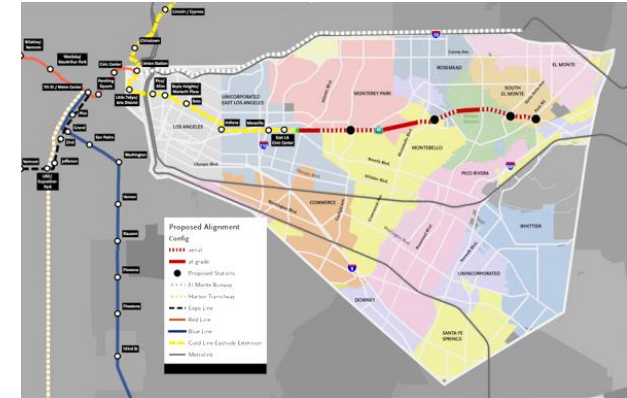


# Technical Study Scope

## □ Nov 2014: Board-directed Technical Study to:

### ✓ Address Agency Comments regarding the SR 60 North Side Design Variation (NSDV) LRT Alternative

- US Environmental Protection Agency (USEPA)
- US Army Corps of Engineers (USACE)
- California Department of Transportation (Caltrans)
- California Department of Fish and Wildlife (CDFW)
- Southern California Edison (SCE)

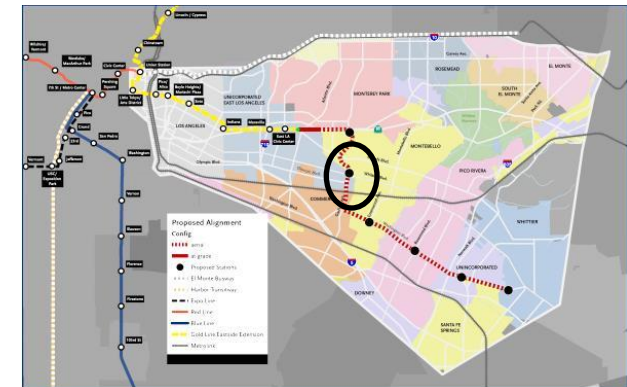


SR 60 NSDV Alternative

### ✓ Eliminate Aerial on Garfield Ave between Via Campo and Whittier Bl.

### ✓ Identify a New North/South Connection to Washington Blvd.

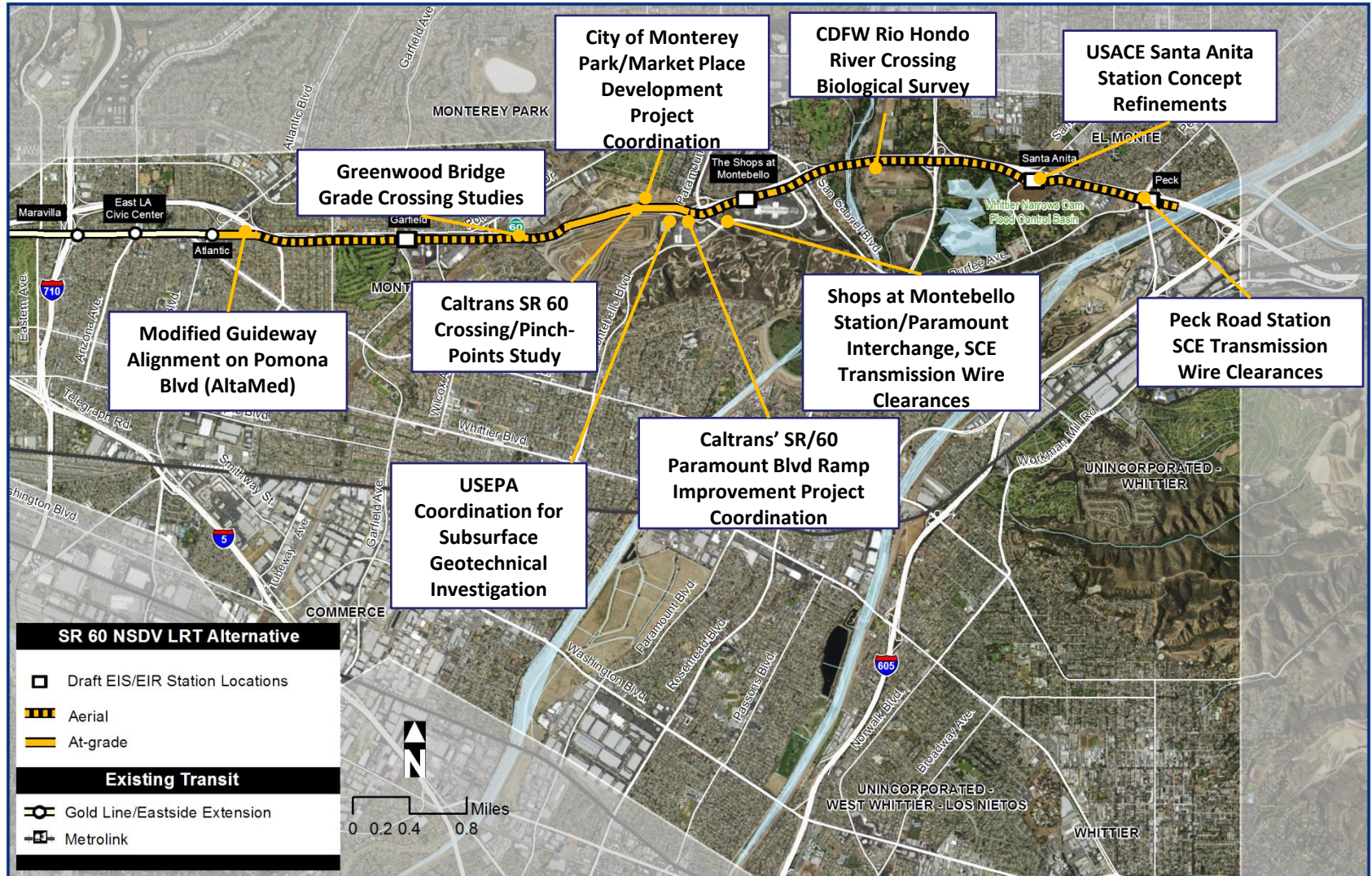
### ✓ Explore Feasibility of Operating Both SR 60 and Washington Blvd. Alternatives



Washington Blvd Alternative via Garfield Aerial



# SR 60 NSDV LRT Alternative technical investigations addressed numerous resource agency comments





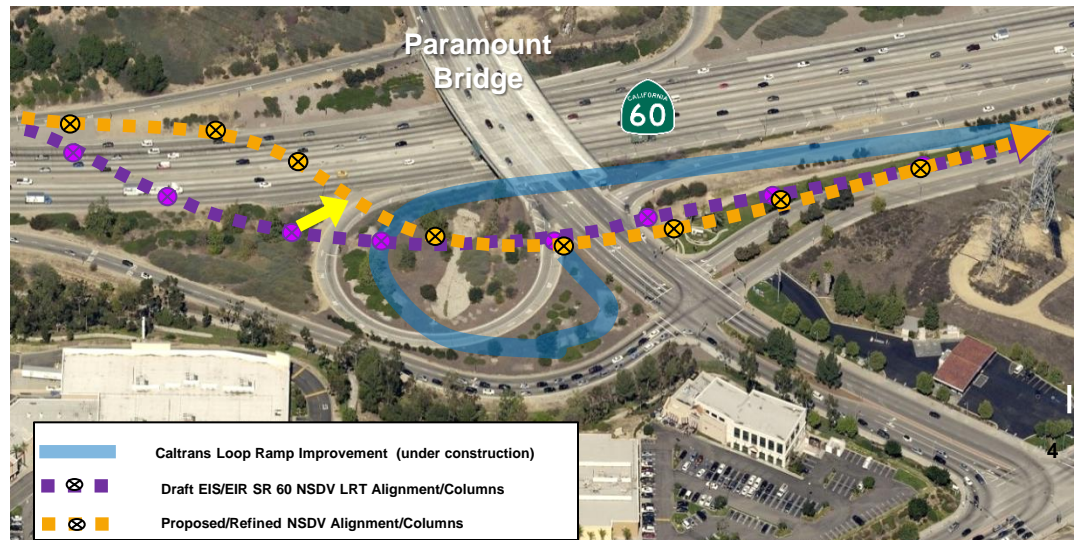
# Caltrans requested additional design studies to resolve potential conflicts on SR 60 NSDV LRT Alternative

## Caltrans Comment:

- NSDV flyover structures may impose non-standard Caltrans design elements and impact their feasibility for future widening of the SR-60 Freeway
- The proposed flyover structure (west of Paramount Blvd.) would conflict with the new SR 60 ramps at Paramount Blvd.

## Metro Actions:

- Developed NSDV cross-sections within the limits of the NSDV to list any existing non-standard Caltrans design features and all non-standard design features which may be imposed with the construction of NSDV
- Modified NSDV to place columns of aerial structure in locations that do not conflict with new SR 60 Ramps at Paramount Boulevard.
- Additional coordination with Caltrans will be required in the next study phase to refine the NSDV concept.





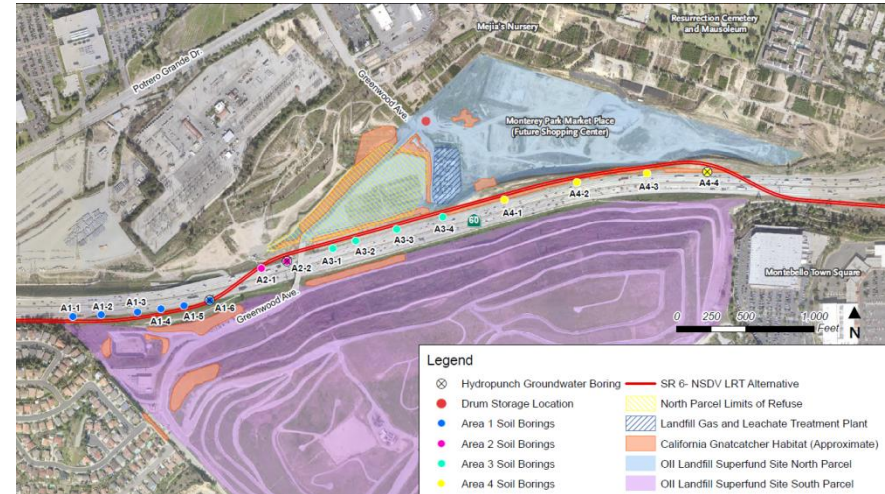
# USEPA requested additional studies at Oil Superfund Site

## USEPA Comments:

- Construction of the NSDV alignment may result in possible hazardous materials release, potential impact to the remedy, operating perimeter liquids control systems and fill integrity, and concerns for landslide risk and seismic stability

## Metro Actions:

- Conducted field survey activities from July 25 - August 4, 2016, which indicated:
  - ✓ Fill is reasonably adequate
  - ✓ Would not pose significant issue for design of NSDV segment
- Conducted grade crossing analysis and underpass study for Greenwood Bridge
- During next environmental process, additional geotechnical borings to assess presence of landslide deposits and slope stability analysis



# The City of Monterey Park expressed concern that the SR 60 NSDV LRT Alternative may block the view of the Marketplace development

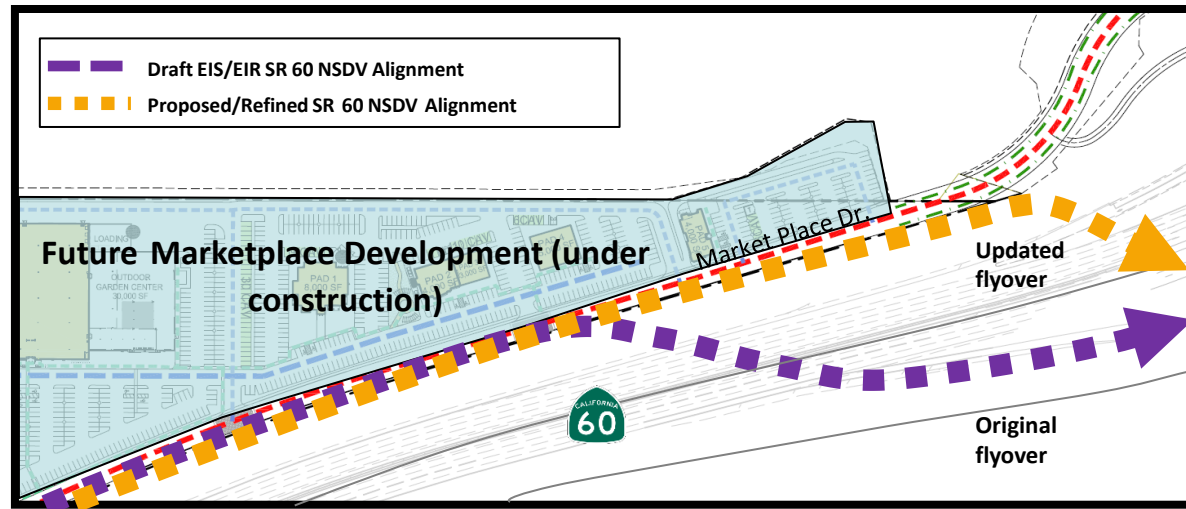
## City of Monterey Park Comment:

- The proposed flyover structure (west of Paramount Blvd.) would result in visual and physical impacts to the 500,000 square-foot Monterey Park Marketplace Development (under construction)



## Metro Actions:

- Modified the design of the SR 60 NSDV LRT Alternative (Draft EIS/EIR Concept 2) by shifting the proposed guideway and flyover structure further east to avoid visual and physical conflicts with the Marketplace Development





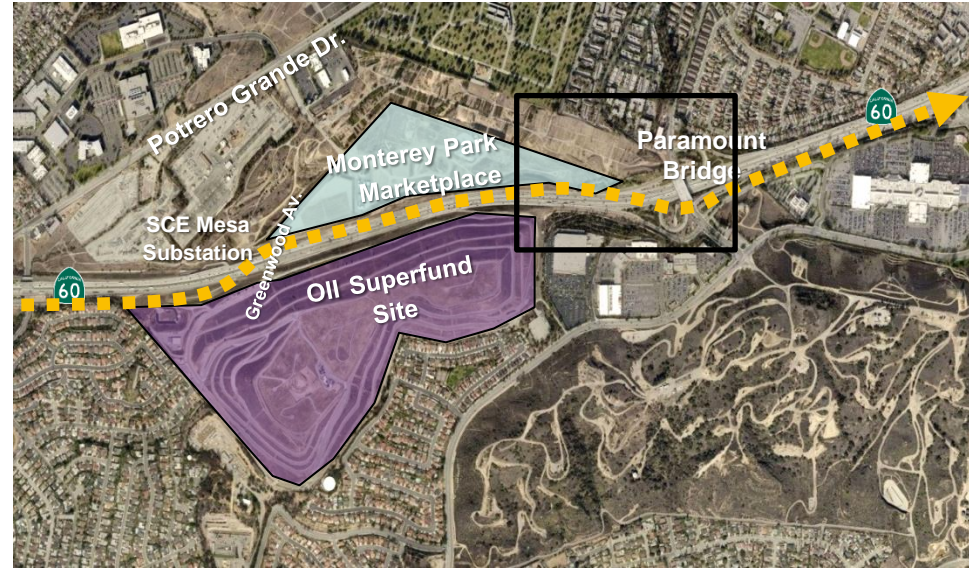
# SCE expressed concerns over insufficient clearances at SR 60 NSDV LRT Alternative crossings with SCE transmission lines

## SCE Comment:

- The proposed design would not provide sufficient clearance between the top of the LRT catenary wire and the existing SCE transmission lines

## Metro Actions:

- Conducted a new wire survey to confirm the height of the existing wires at Paramount Interchange
- Confirmed the wire clearance requirements and identified potential crossing conflicts at Paramount Blvd and at Peck Road
- Developed a preliminary plan to raise the SCE tower heights to provide sufficient clearance at Paramount Interchange
- Revised the Peck Road Station Concept to remove the conflict with SCE wires



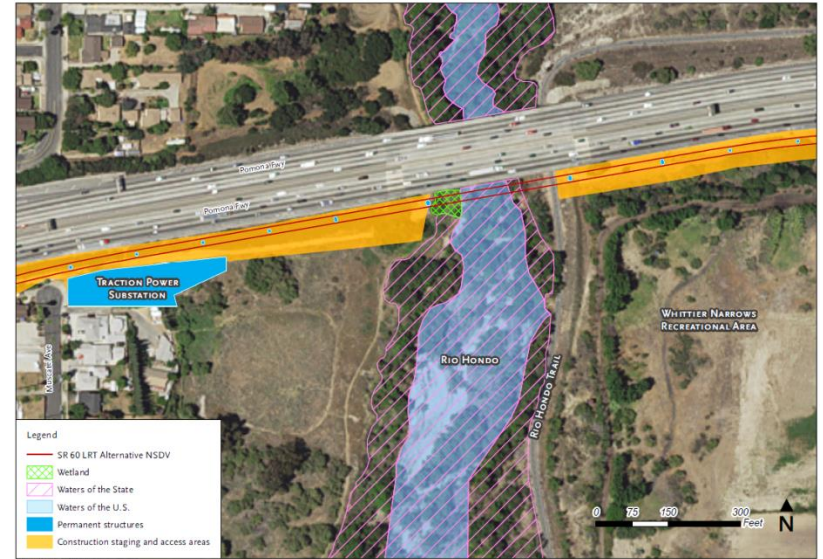
# California Department of Fish and Wildlife (CDFW) requested additional biological surveys

## CDFW Comments:

- Define areas of potential effects for biological resources in the study area
- Conduct surveys for rare natural communities and sensitive species
- Prepare vegetation mapping
- Define areas and conduct jurisdictional delineations

## Metro Actions:

- Conducted additional biological surveys of rare natural communities and sensitive species for Whittier Narrows Basin and river crossings, conducted jurisdictional delineations, and vegetation mapping, in Spring 2016:
  - ✓ Based on the delineation and construction information known, no temporary impacts on wetlands or waters as a result of construction
  - ✓ Additional biological studies, mapping and surveys will be conducted in the next study phase





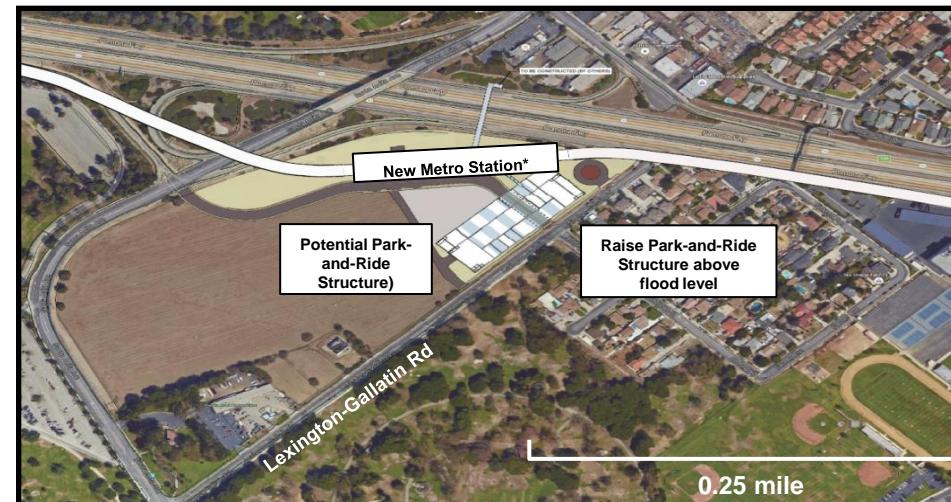
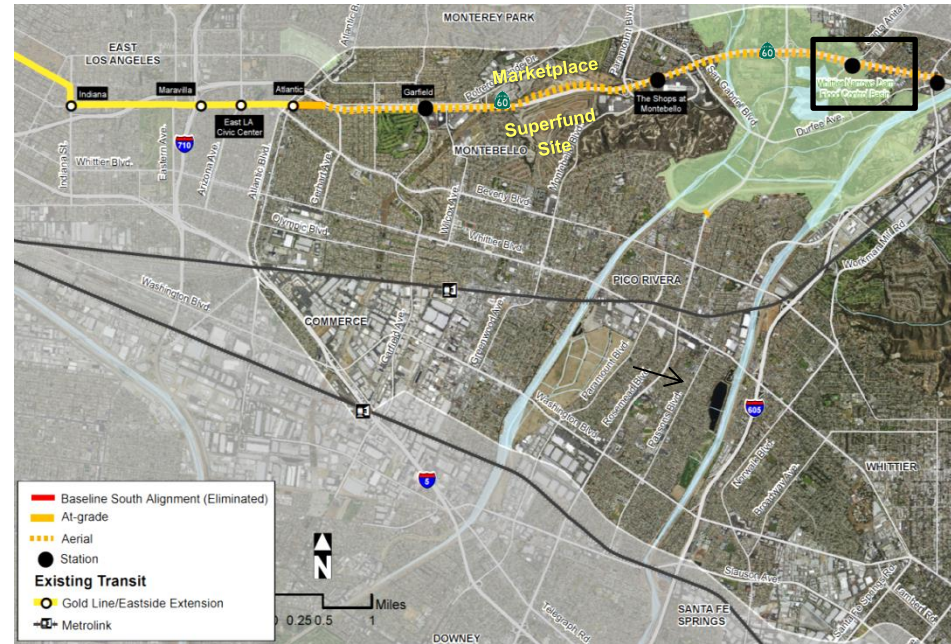
# USACE requested additional information on the Santa Anita Station Design Concept in Whittier Narrows Flood Control Basin

## USACE Comment:

- Concerns with potential flooding and emergency evacuation routes at the Santa Anita Station and parking structure in the event of a 100-year flood event
- Request for additional analysis regarding the identification of a practicable alternative outside the floodplain
- Additional explanation of the necessary approvals required from USACE

## Metro Actions:

- Developed more detailed exhibits demonstrating a raised station and parking structure included in the Draft EIS/EIR.
- Modified the configuration of the station access and circulation to not preclude the City of South El Monte's vision for a potential Transit-Oriented-Development (TOD) footprint
- Supplemented the E.O. 11988 alternatives analysis
- Prepared additional permit and approval process information



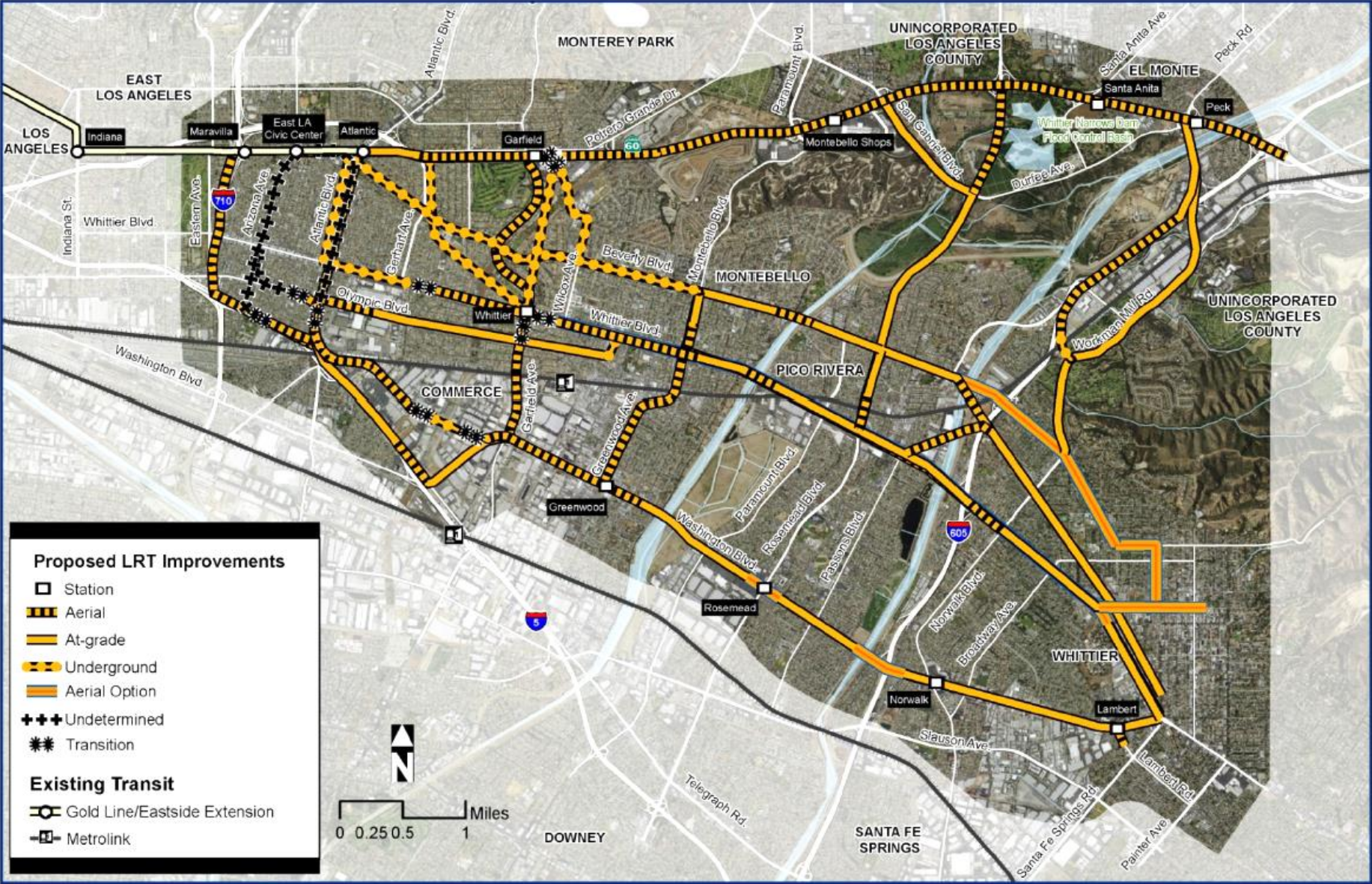
\*Station location and park-and-ride structure design concept are subject to change as technical analysis continues







# The Washington Alternative north-south connection study started with 27 LRT route options





# Several initial screening criteria were used to narrow down north-south route options



## TRANSIT BENEFITS

Improve transit access and attract riders



## ROM CAPITAL COST

Rough -order-of-magnitude cost estimates of total capital cost



## COMMUNITY PLANS & GOALS

Consistency with adopted city, community land use plans and policies



## TOC POTENTIAL

Rough -order-of-magnitude cost estimates of total capital cost



## TRANSPORTATION & CIRCULATION

Potential traffic and ROW impacts to the transportation system



## ENVIRONMENTAL EFFECTS

Effects on communities & sensitive receptors



## OPERATIONAL

Improve transit access and attract riders

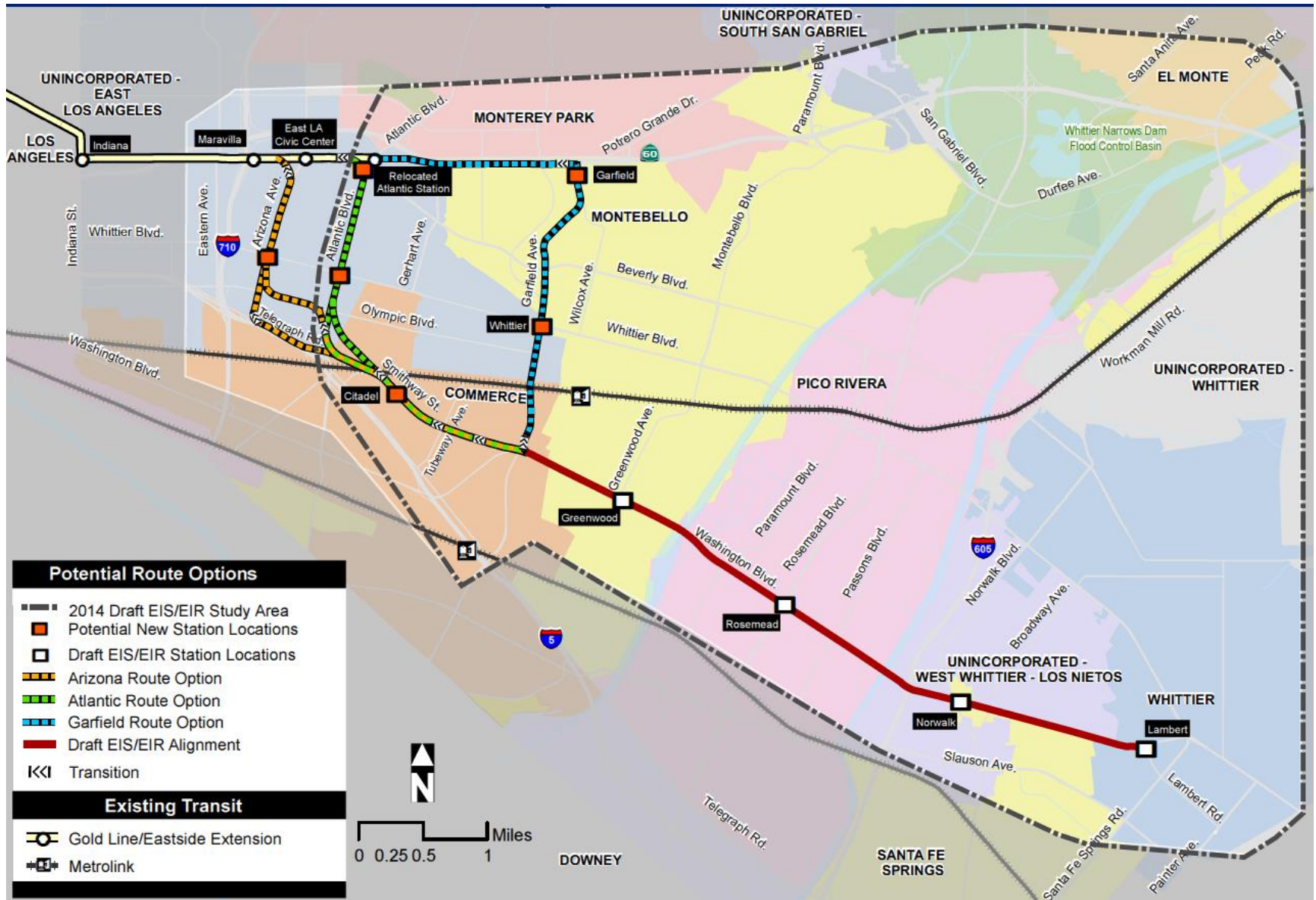


## CONSTRUCTABILITY







Improve transit access and attract riders



# Three (3) north-south route options were carried into detailed technical analysis – Garfield (below-grade), Atlantic and Arizona



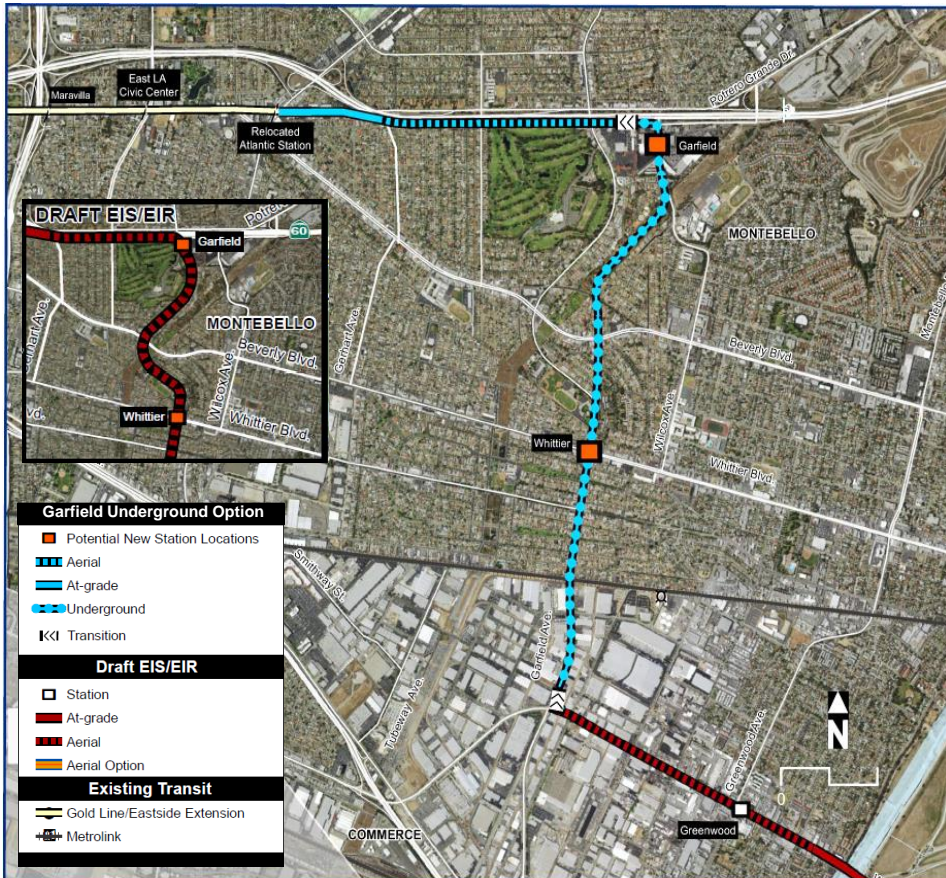
# The Atlantic Underground Route Option performed the best

Factors	Draft EIS/EIR Washington Blvd LRT Alternative	Arizona		Atlantic		Garfield
		At-Grade	Underground	At-grade	Underground	Underground
Fundamentally Consistent with Community Goals/Priorities?	NO	NO	NO	NO	<b>YES</b>	NO
Operationally Feasible?	YES	NO	NO	YES	<b>YES</b>	YES
Ridership (Daily Boardings)*	19,920	17,280 to 18,680	18,270 to 19,770	17,950 to 19,280	<b>19,610 to 21,070</b>	19,120
Rough Order-of-Magnitude (ROM) Capital Costs (in 2010 \$)*	\$1.4 to 1.7 billion	+10% to 20%	+60% to 70%	+10% to 20%	<b>+90% to +100%</b>	+80% to +90%
Preliminary Travel Time (in minutes)	18-19 min.	20-21 min	18-19 min.	20-21 min.	<b>17-18 min.</b>	18-19 min.
Potential Traffic/Circulation Impacts	Minimal	Significant	Minimal	Significant	<b>Minimal</b>	Minimal
Recommendation						

\*Cost and ridership data is subject to change as design refinement and more detailed technical work continues.



# There were several reasons for eliminating the Garfield Underground Option



1. Operational challenge for a guideway structure with a tight horizontal curve just west of Via Campo and Wilcox Ave in the City of Montebello
2. Construction challenge to relocate complex storm drains and sewer lines along Garfield Ave.
3. A proposed Metro station at Garfield Ave. and Whittier Blvd. lacks the intensity of activity typically associated with a subway station.
4. The Garfield Underground Route Option misses the Commerce Citadel and Casino area, which would attract the study area's highest ridership potential.
5. Significant impacts during construction, including property acquisition, business disruption and traffic/circulation impacts to sensitive uses near SR 60

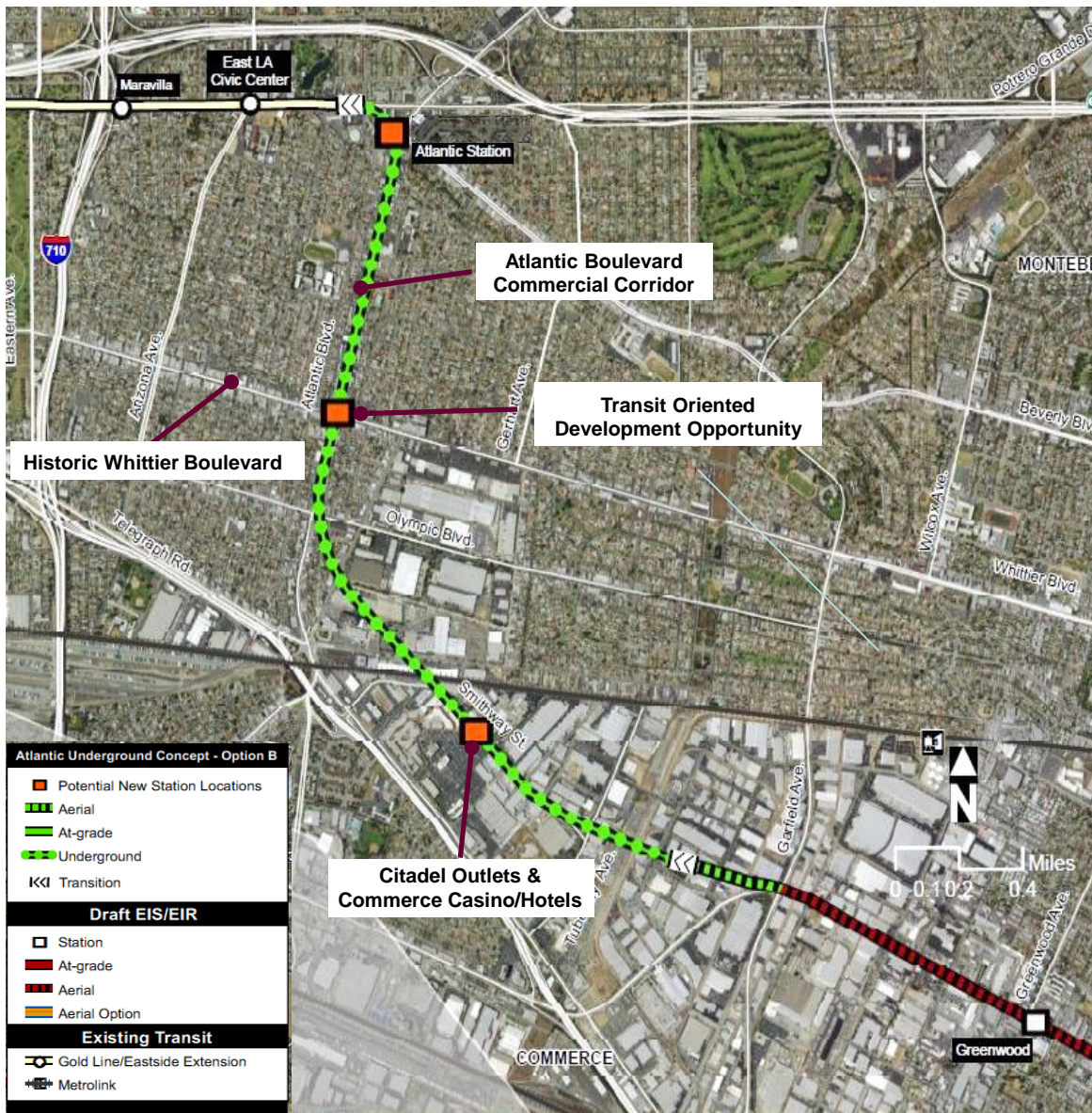
# The Arizona Route Option had several fundamental flaws and issues that render it infeasible



1. Any LRT extension along Arizona Ave. is wholly inconsistent with community priorities and goals.
2. Any LRT extension (regardless of the configuration) would create potentially significant impacts to the following:
  - Existing Civic Center Station and Gold Line operations
  - Residential properties
  - Sensitive uses
  - Traffic, access and parking
  - Pedestrian and bicycle safety
3. Arizona Route Option was not recommended for further consideration



# The Atlantic Underground Concept offers several benefits / opportunities and is recommended as the new Washington Alternative



1. Best meets community goals by minimizing surface operational disruptions
2. Provides connectivity to local and regional destinations and activity centers in unincorporated East Los Angeles and the City of Commerce
3. Provides opportunity for Transit Oriented Community (TOC) development opportunities near proposed station locations
4. Performs well on a number of key measures, including projected high ridership (19,610-21,070 boardings) and faster travel time (17-18 minutes)
5. Serves transit dependent communities



# The next step for the new Washington Alternative is to advance the design of the Atlantic Underground Option

Further study is recommended to develop conceptual design plans and identify right-of-way (ROW) need in the re-initiated Environmental Document:

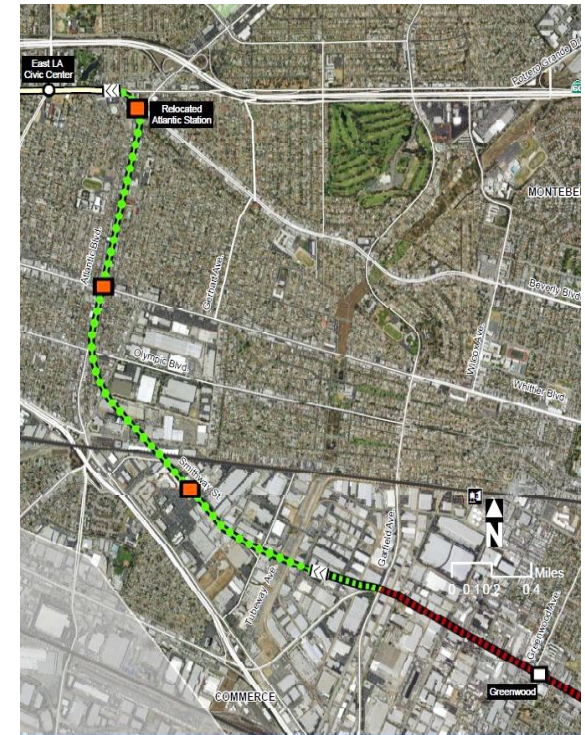
1. Identify two locations to launch and extract a Tunnel Boring Machine (TBM), one north and the other south
2. Identify locations for excavation of station and construction staging areas



Tunnel Boring Machine



Example of a Construction Staging Site

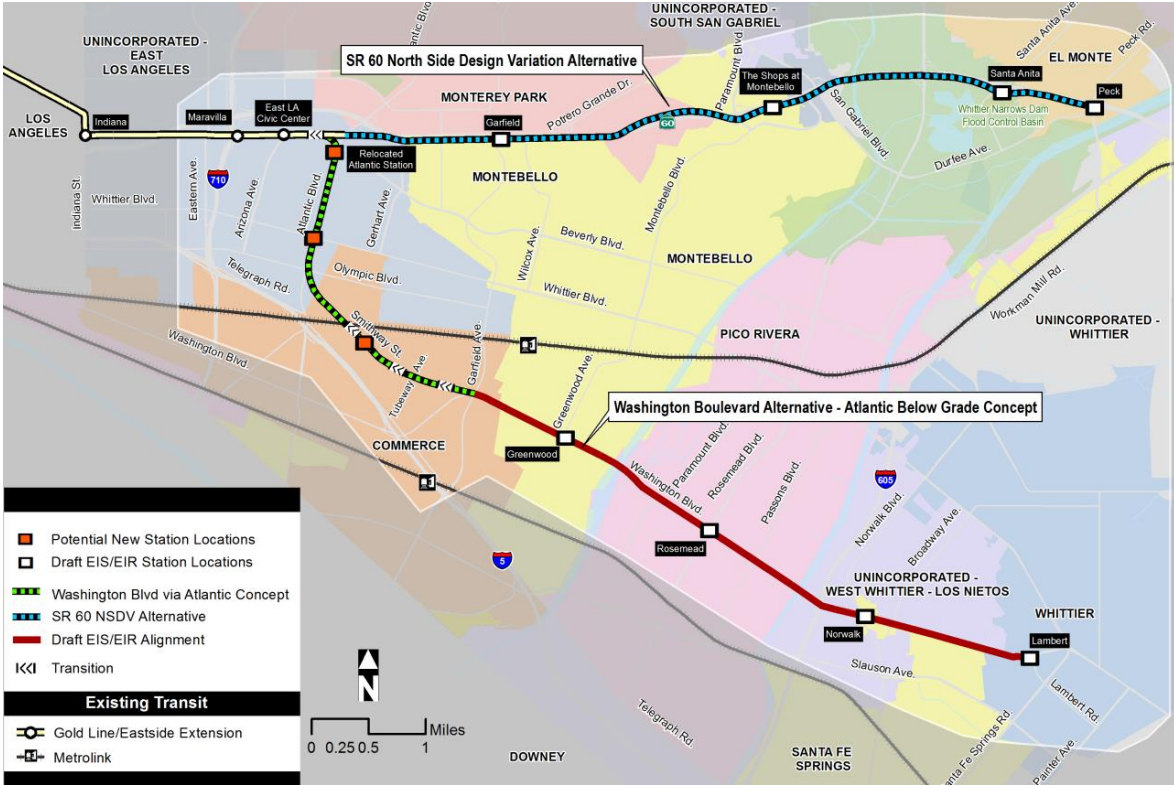


Atlantic Underground Route Option

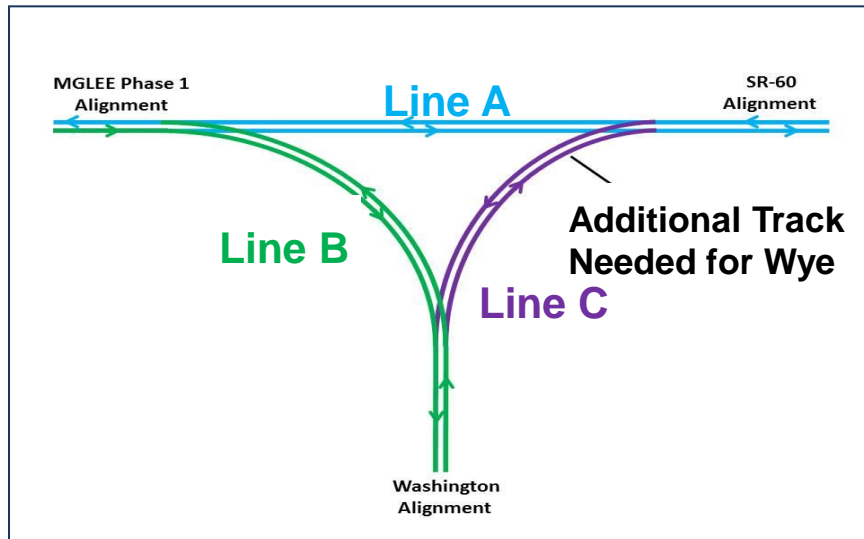
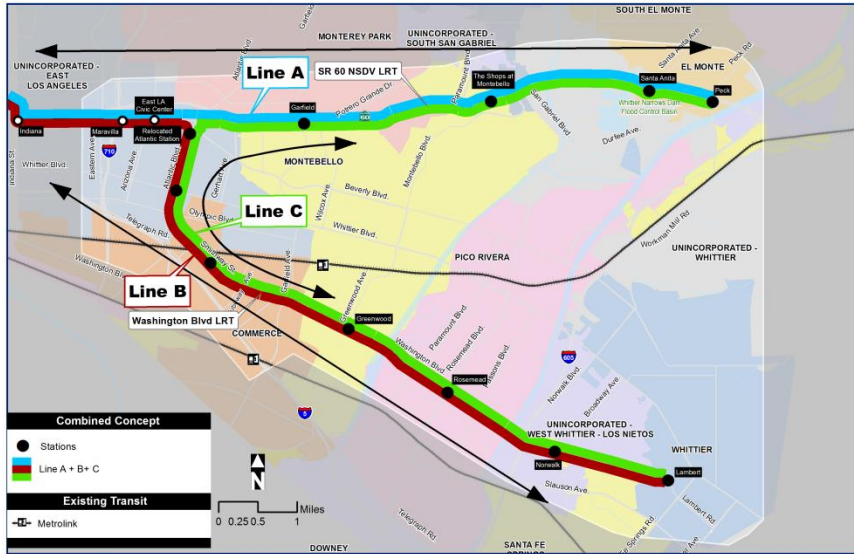


# Operating both segments (SR 60 and Washington Blvd.) is feasible, but will require additional infrastructure

- 1. Provision of one maintenance facility to service rail vehicles
- 2. Provision of infrastructure and operational elements that would not be required if only one or the other alternative were operated as a 'stand-alone' line.
- 3. Provision of a potential underground three-way junction merge



# The Combined Concept Alternative can support 5-minute headways with a third line



- MGLEE trains will operate in an east-west direction using Regional Connector to allow train movements between MGLEE and Expo Line, to Downtown Santa Monica**
  - ✓ Line A (SR 60 Branch Line): Extend MGLEE Line, East LA Civic Center Station through underground wye at Atlantic Station, to terminus of SR 60 NSDV LRT Alignment
  - ✓ Line B (Washington Branch Line): Extend MGLEE Line, East LA Civic Center Station and stop at Atlantic Station, to terminus of Washington LRT Alignment
- A three-way junction could support a third line from South El Monte to Whittier (C line), potentially allowing for 5-minute service on each branch.**
  - ✓ Line C (SR 60 to Washington Loop Line): Originate at SR 60 Peck Rd Station, traveling west through the underground wye, then south to terminus of Washington LRT Alignment



# Metro conducted extensive outreach to provide updates and receive feedback



## **Community Meetings (10)**

March 2016 – February 2017

- East Los Angeles (3)
- Whittier (2)
- Montebello (2)
- South El Monte (2)
- Commerce (1)



## **Monthly Coalition Briefings (30)**

- SR-60 Coalition
- Washington Blvd Coalition

## **Tours (2)**

Tours of Maintenance Facilities

- Santa Monica
- Monrovia



## **Other Stakeholder Briefings (70)**

- Councils of Government and Service Councils
  - San Gabriel Valley
  - Gateway Cities
- City Council members and staff
- State and Local Elected Officials
- Chambers/Business Associations
- Major Property Owners/Developers
- East Los Angeles residents, businesses, neighborhood and community groups

**Over 110 meetings or briefings were held between August 2015 and March 2017**

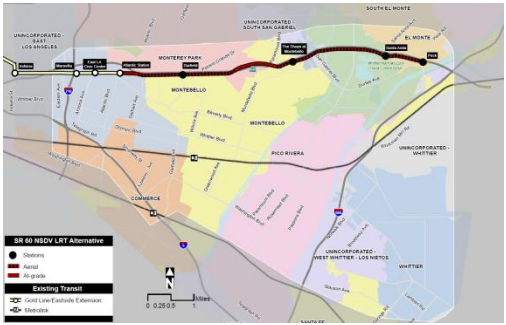
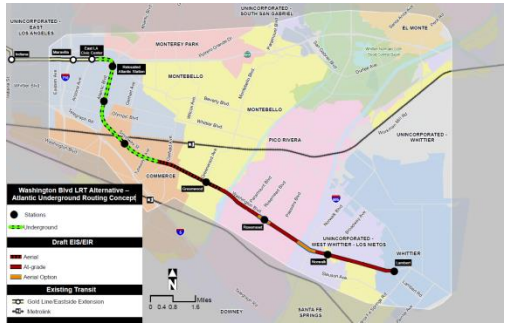

# Community Outreach Meeting: What We've Heard

1. Overwhelming support for the Eastside Phase 2 project, including Washington Alternative via Atlantic underground, SR-60 NSDV Alternative, and the Combined Alternative
2. Interest in connecting communities and improving access to employment centers and Metro's regional transit system
3. Concerns regarding impacts to businesses during construction
4. Interest in potential economic development opportunities along the corridor
5. Emphasized the importance of station accessibility and safety





# Recap of updated Project Definition

Alternative	Map	Key Features (Post Draft EIS/R)
SR 60 NSDV LRT		<ol style="list-style-type: none"> <li>1. Modified the guideway eastern flyover alignment between Greenwood Bridge and Paramount Bridge to avoid visual conflicts with Monterey Park Marketplace development</li> <li>2. Shifted the guideway alignment at Paramount to avoid conflicts with Caltrans' redesigned ramps</li> <li>3. Developed a preliminary plan to raise the SCE transmission wires at Paramount Interchange</li> <li>4. Raised Santa Anita Station concept and parking structure by 100 feet to address USACE concerns with potential flooding</li> </ol>
Washington Boulevard LRT Alternative (Atlantic Underground Option)		<ol style="list-style-type: none"> <li>1. Developed the new north-south connection along Atlantic Blvd</li> <li>2. One-third of the alignment could be an underground segment along Atlantic Blvd and Smithway St</li> <li>3. Two new underground stations <ul style="list-style-type: none"> <li>• Atlantic/Whittier</li> <li>• Commerce Citadel</li> </ul> </li> <li>4. May require potential relocation of existing Atlantic Station</li> </ol>
Combined Alternative		<ol style="list-style-type: none"> <li>1. Operating the combined alternative is feasible, yet requires a new three-way junction</li> <li>2. Only one Maintenance Yard to serve all lines</li> <li>3. Provide 5-minute service on each branch by allowing for a third line between South El Monte and Whittier</li> </ol>

# The Eastside Phase 2 Technical Refinement Study presents the following staff recommendations

- ❑ APPROVE an updated Project Definition for Environmental Clearance, including three alternatives:
  - ✓ SR 60 North Side Design Variation LRT Alternative
  - ✓ Washington Boulevard Alternative with Atlantic Below Grade Option
  - ✓ Combined Alternative with both SR 60 and Washington Boulevard via Atlantic Segments
  
- ❑ RECEIVE AND FILE the Eastside Phase 2 Technical Study Report. The full report is available upon request.