

STEERING COMMITTEE MEETING #2
June 14, 2011













Park Boulevard – Right-of-Way

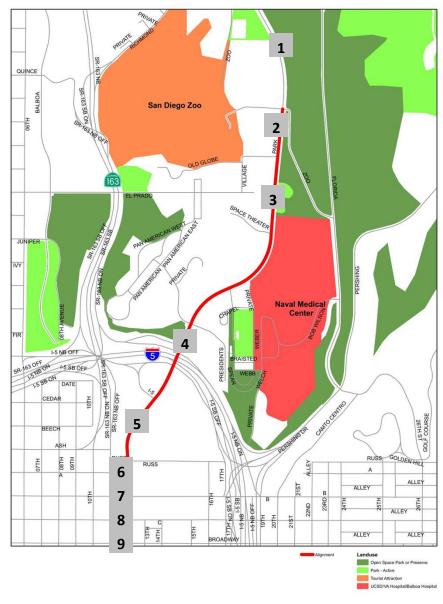
# Park Boulevard Cross Sections

- Zoo Place to "B" Street: 82' curb to curb (min.)
- C Street to Broadway: 40' to 54' curb to curb
- South of Broadway: 40' curb to curb
- Presidents Way: 40' curb to curb









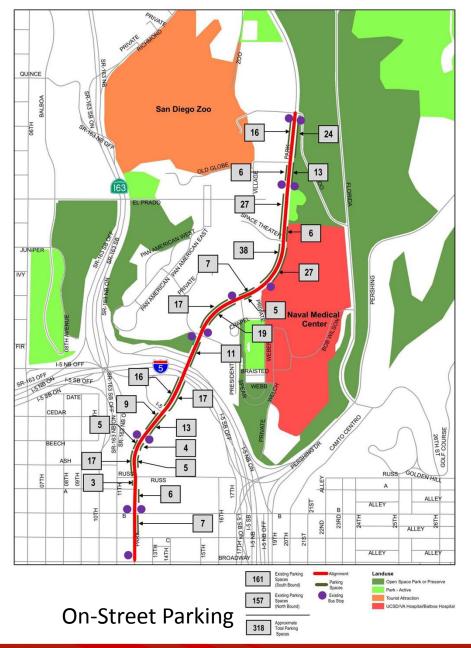
# Park Boulevard – Level of Service (LOS)

1.	Zoo Place to Morley Field Dr:	LOS C
2.	Village Place to Zoo Place:	LOS C
3.	Space Theater Way to Village Pl.:	LOS B
4.	I-5 Ramps to Presidents Way:	LOS B
5.	Russ Blvd to 1-5 Ramps:	LOS A
6.	A Street to Russ Blvd:	LOS B
7.	B Street to A Street:	LOS C
8.	C Street to B Street:	LOS A
9.	Broadway to C Street:	LOS A

Park Boulevard –Traffic Patterns







1. Park Boulevard 318East Side 157West Side 161

2. Presidents Way

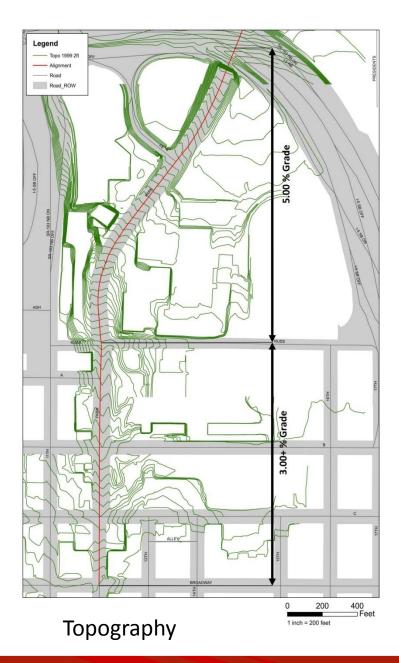
South Side 17



Looking south toward downtown







# Park Boulevard – Topography Average

Broadway to Russ: 3%

Russ to I- 5: 5%

■ I-5 to Presidents Way: 2.5%

Presidents Way to Space Theater: 3.2%

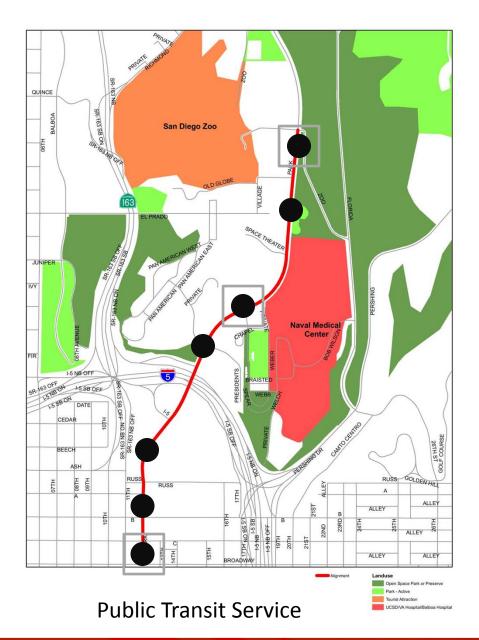
Space Theater to Zoo Place: Less than 1%



Looking north from San Diego High School







# <u>Park Boulevard – Transit Service</u>

#### 1. Route 7

- Frequency: 6-minute peak period headway
- 7-stations in corridor

#### 2. Mid-City Rapid

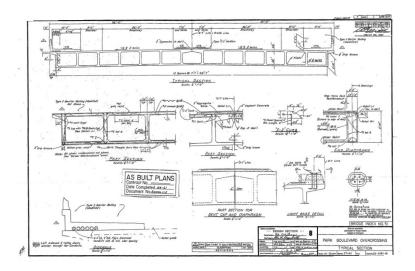
- Frequency: 10-minute peak period headway
- 3-stations in corridor

#### 3. SANDAG RTP 2050

- Future Light Rail Service on Park Blvd.
- Streetcar network in urban San Diego









Looking north toward Balboa Park from the I-5 bridge

### 1. Structural capacity

- Built in 1961
- Does not have the structural capacity for added weight of infrastructure and/or streetcar
- Several options explored

#### 2. Stray Current

- Bridge structure is not "grounded" to address stray current
- Stray current will seek the structural rebar and cause deterioration

#### 3. CALTRANS

 Discussion with CALTRANS will need to take place to refine acceptable solution

Interstate 5 Bridge







Looking north towards pedestrian bridge

### 1. Existing Clearance

- 16-feet outside lane (right side)
- 17-feet inside lane (left side)

#### 2. California Public Utility Commission (CPUC)

- Requires a minimum of 19-feet clearance for OCS
- Deviation from CPUC will be required
- Additional railing required

#### 3. ADA Accessibility

- Access to bridge does not meet ADA accessibility requirements.
- Station requires at grade pedestrian crossing

#### 4. Explore Potential Options

- Acquire deviation CPUC
- Construct new bridge
- Lower street

Park Boulevard - Pedestrian Bridge







City's Bicycle Master Plan - Priority Project



"Sharrow" in Park Blvd. north of Presidents Way

## Bike and Pedestrian Facilities

#### Park Boulevard

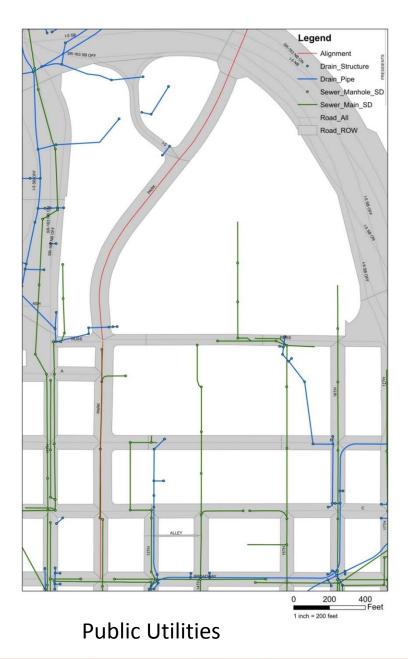
- 1. Bike Facilities
  - Existing "Sharrow"
  - Future Class 2 Bike Lane

#### 2. Pedestrian Facilities

- Existing sidewalks both side of Park Blvd.
- Lack of sidewalks on east side of Park Blvd. north of Village Place
- Future "Bay to Park Link"







# <u>Park Boulevard – Utilities</u>

- There are no major utilities in Park Blvd. north of Russ Street
- Several storm drain lines cross Park Blvd.
- 3. South of Russ Street sewer and storm drain lines are located within Park Blvd.















# Modern Streetcar -1

# VEHICLE TYPES

# <u>Inekon Trio -12 Streetcar</u>

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 157 (8 per m2)

4. Length: 66 feet

5. ADA Loading: Low Floor

6. System Integration: Yes

7. Current Operations: Seattle, WA









# Modern Streetcar - 2

# <u>United Streetcar 100</u>

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 157

4. Length: 66 feet

5. ADA Loading: Low Floor

6. System Integration: Yes

7. Current Operations: Portland, OR.







Modern Streetcar - 3

# ameriTRAM 300 Streetcar

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 116

4. Length: 65 feet

5. ADA Loading: Low Floor

6. System Integration: Yes/No

7. Current Operations:







### Siemens S70 Ultra Short

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 160

4. Length: 80 feet

5. ADA Loading: Low Floor

6. System Integration: Yes

7. Current Operations: San Diego



Modern Streetcar - 4









# President's Conference Committee (PCC)

1. End Type: Single Ended

2. Door Type: Single Sided

3. Passenger Counts: Up to 100

4. ADA Loading: On-board lift

5. System Integration: Yes (Silver Line)

6. Number of Vehicle Available: 6

√ 1-Fully restored

✓ 5- Available for restoration.



Vintage Streetcar -1









# SD Class 1 Streetcar

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 90

4. ADA Loading: Undetermined

5. Systems Integration: Possible

6. Number of Vehicle Available: 3

1- Partially restored

2- Available for restoration.

Vintage Streetcar -2









# **Geomaco Double-Truck Streetcar**

1. End Type: Double Ended

2. Door Type: Double Sided

3. Passenger Counts: 89

4. Length: 50-feet

5. ADA Loading: High Platform

5. Systems Integration: Yes/No

7. Current Operations: Tampa Bay, FL

Replica Vintage Streetcar





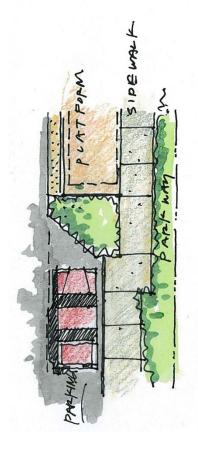


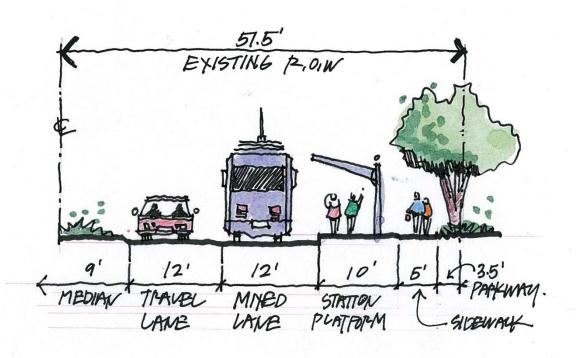




# **OPTION 1: Maintain Existing Right of Way**

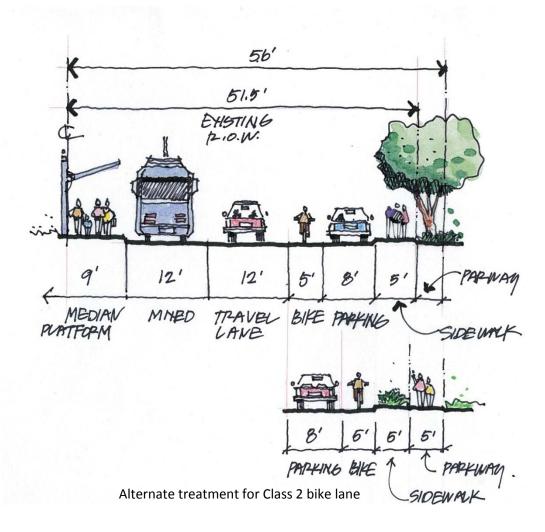
- 1. Mixed lane within existing street section
- 2. May eliminate on-street parking at station
- 3. Doesn't allow for future bike lane











### OPTION 2: Left-side running w/ bike lane

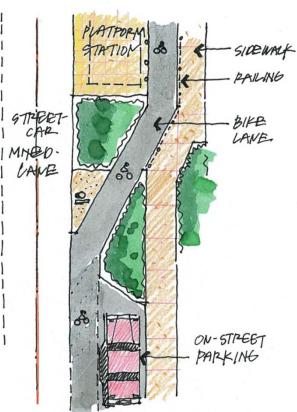
- 1. Provides for Class 2 bike lane
- 2. Separates streetcar from bikes
- 3. Uses median for platforms
- 4. Requires transit patrons to cross road
- 5. Streetcars stop in left lane
- 6. Requires expansion of curb to curb section
- 7. "Complete Street" approach
- 8. Accommodates dual end/sided vehicles





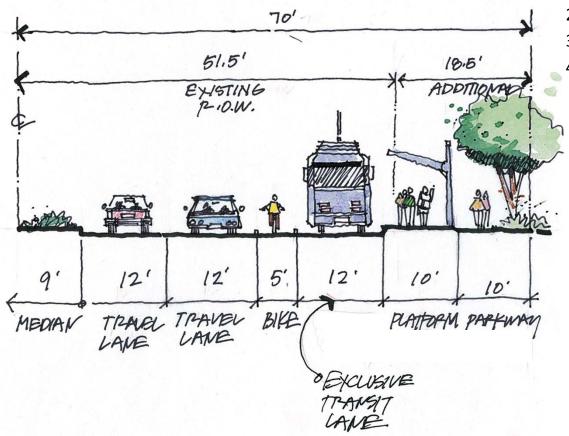
# 56' 51.51 12' 13" 12' TRAVEL MNED SIDEWALK MEDIAN PAILING.

# OPTION 3: Right-lane running w/ bike lane









# **OPTION 4: Exclusive Lane**

- 1. Addresses future operational plans
- 2. Eliminates on-street parking
- 3. Accommodates all streetcar types
- Bike / rail conflict





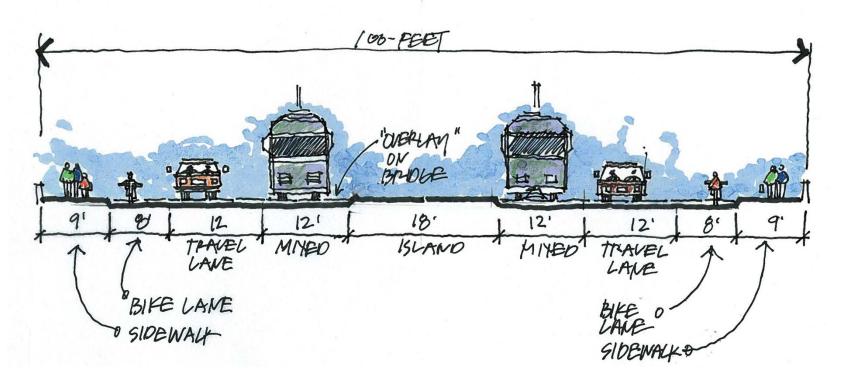






# OPTION 1: Mixed Flow Track / Overlay

- 1. New tracks
- 2. Provide overlay to all mixed travel lane
- 3. Overall Added Weight
- 4. Stray Current Isolation

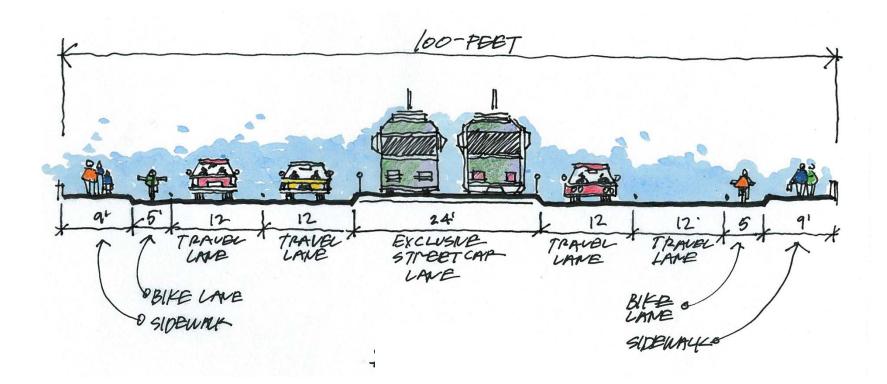






#### **OPTION 2: Dual Track Center Median**

- 1. Stray Current Isolation Rubber Rail Interface
- 2. Live Load / Dead Load

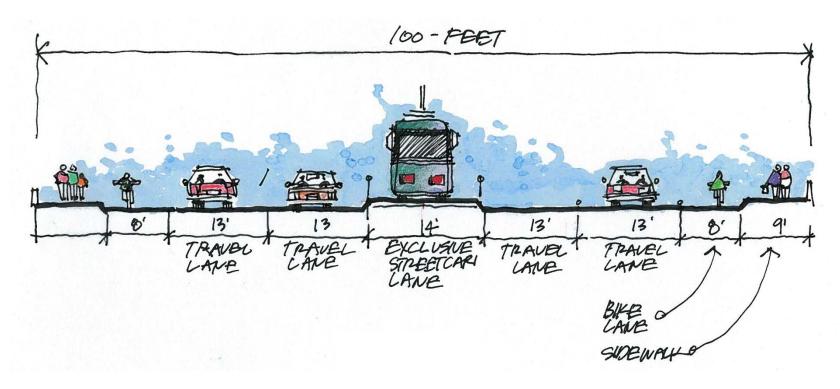






# **OPTION 3: Single Track Center Median**

- 1. Stray Current Isolation Rubber Rail Interface
- 2. Live Load / Dead Load

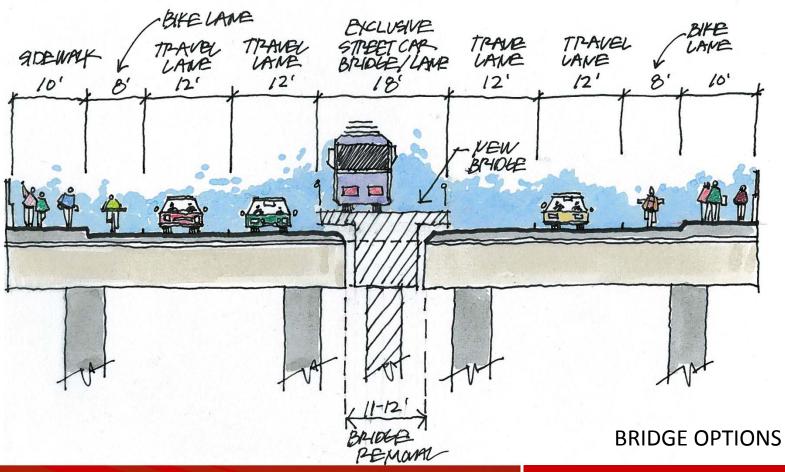






### OPTION 4: Bridge within Bridge – Single Track

- 1. Stray current, live / dead load addressed
- 2. Design handles all type vehicle types
- 3. Operation issues for single track

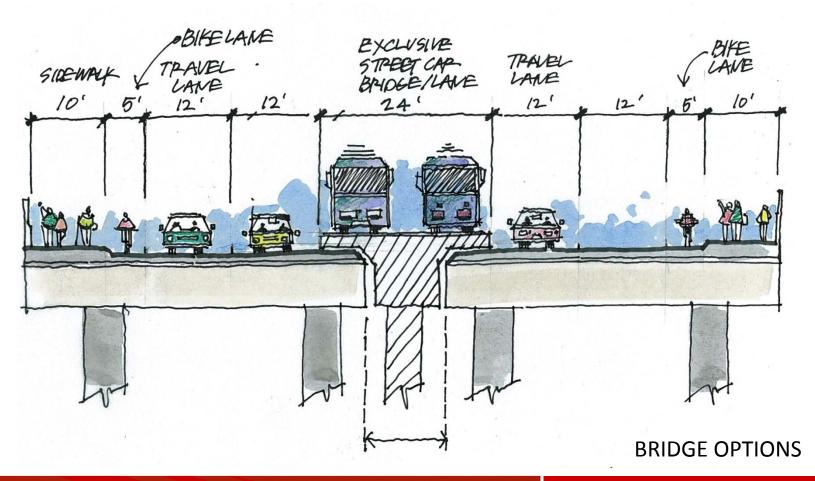






# <u>OPTION 5: Bridge within Bridge – Two Tracks</u>

- 1. Stray current, live / dead load addressed
- 2. Design handles all type vehicle types
- 3. Operation flexibility

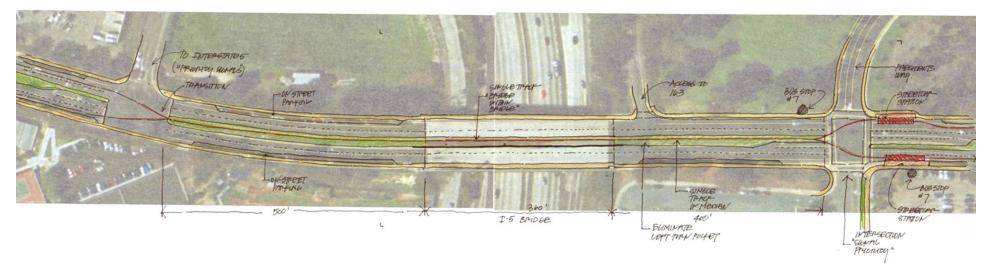






# OPTION 1: Single Track Median / Bridge

- 1. Single Track over 1,200-feet long
- 2. Fits within existing median
- 3. Eliminates north bound left turn movement to 163
- 4. Uses existing intersections for transitions
- 5. "Holding Zone" protected for south-bound only
- 6. Operational issues



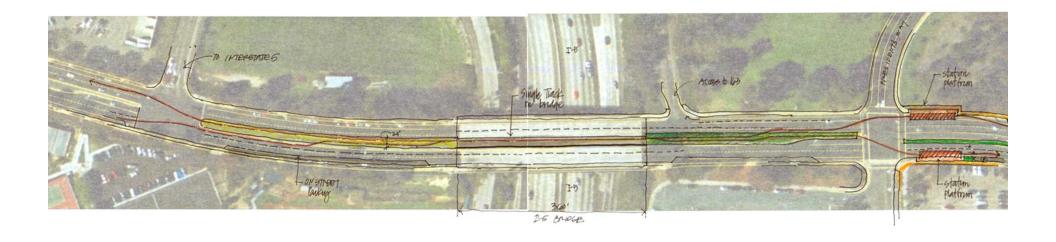
**I-5 BRIDGE ALIGNMENT OPTIONS** 





### **OPTION 2: Partial Dual Track Median**

- 1. Minimizes single track to bridge section
- 2. Eliminates north bound left turn movement to 163
- 3. Portion of median is increased in size
- 4. Increase curb to curb section
- 5. Uses existing intersections for transitions
- 6. "Holding Zone" in protected median area
- 7. Minimizes Operational issues



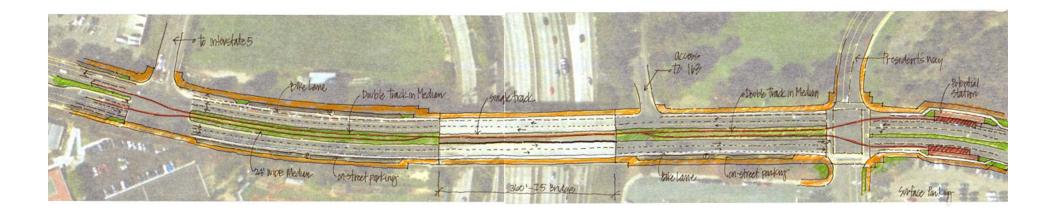
#### **I-5 BRIDGE ALIGNMENT OPTIONS**





## **OPTION 3: Dual Track Median**

- 1. Minimizes single track to bridge section
- 2. Increased size of median
- 3. Increase curb to curb section
- 4. Uses existing intersections for transitions
- 5. "Holding Zone" in protected median area
- 6. Dual track on bridge eliminates operational issues

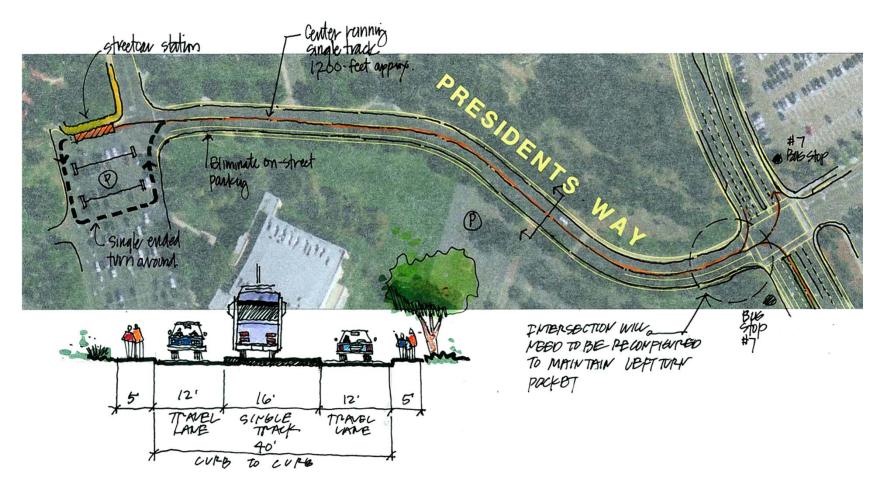


# **I-5 BRIDGE ALIGNMENT OPTIONS**





#### OPTION 5: President's Way – Median









**END OF LINE OPTIONS** 







# Single Ended-Single Sided Vehicle

- 830-feet of additional track needed to accommodate turnaround
- 2. Requires priority-treatment at intersections
- 3. Two stations may be needed
- 4. Stop over/wait area on 13<sup>th</sup> St.

Downtown - South End









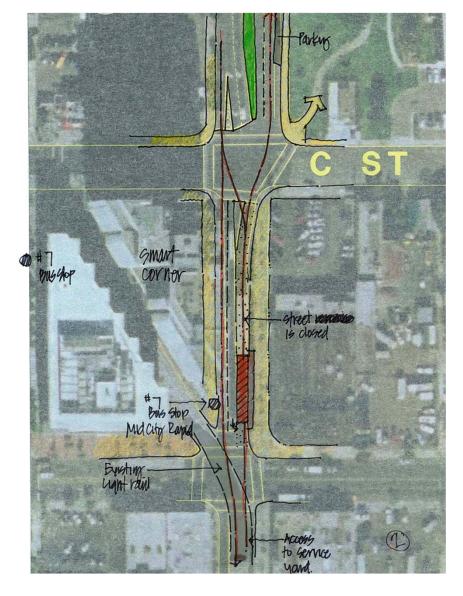
Downtown - South End

## Double Ended-Double Sided Option 1

- L. Utilizes expanded area on C St.
- 2. Ease of transfer with trolley station
- 3. Impacts Smart Corner service area
- 4. "End of day" run not served well







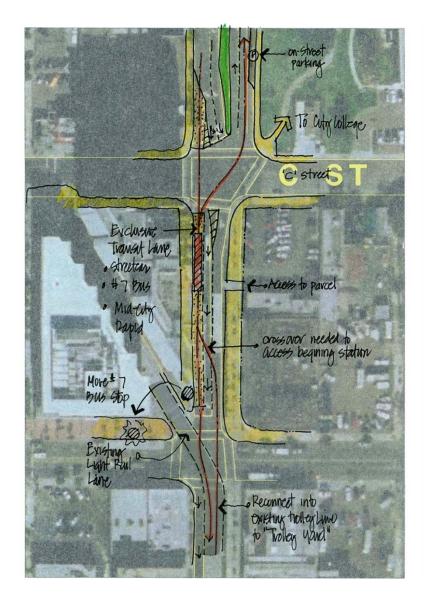
# Downtown - South End

# Double Ended-Double Sided Option 2

- Park Blvd. north bound lane is closed
- 2. Exclusive streetcar lane is provided
- 3. Access to east parcel
- 4. Ease of transfer with trolley station
- Maintains a separate station for # 7Bus and Mid-City Rapid
- 6. "End of day" run not served well.
- 7. Needs cross over to go south bound to trolley yard
- 8. Priority-treatment needed at intersections







#### Double Ended-Double Sided Option 3

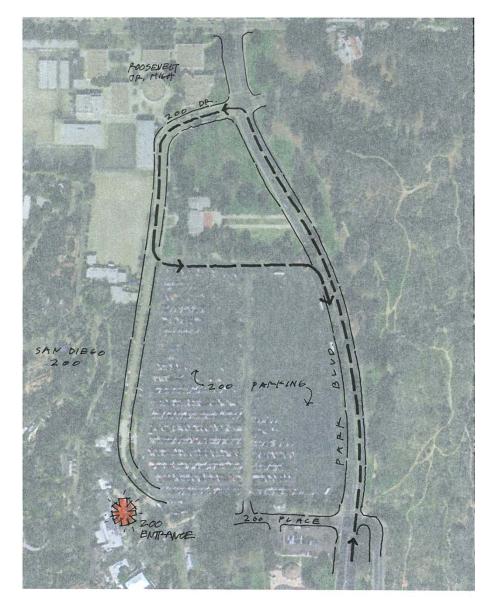
- Park Blvd. south bound (right) lane is closed
- 2. Exclusive lane is provided for:
  - Streetcar
  - Mid-City Rapid
  - #7 Bus
- 3. Access to east parcel remains open
- 4. Ease of transfer with trolley station
- 5. "End of day" run to trolley yard is well served
- 6. "Beginning of day" run uses crossover
- 7. Priority-treatment needed at intersections

Downtown - South End









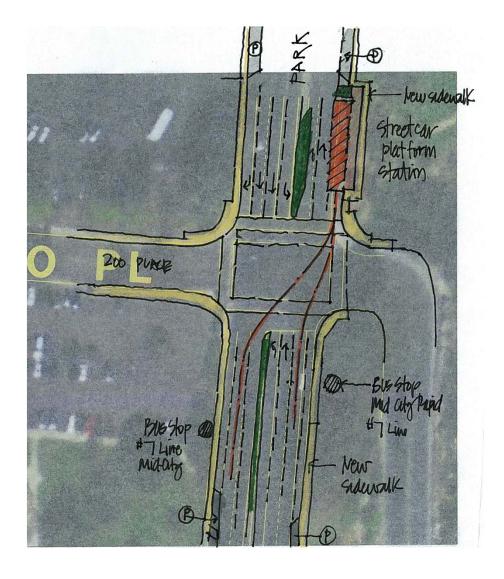
# Single Ended-Single Sided Vehicle

- Turn-around extends track an additional
   3,350 feet 1860 feet to Zoo Drive
- 2. Potential for an additional station serving Roosevelt Jr. High
- 3. Potential 1500-feet of "throw-away" track outside of Park Blvd.

Balboa Park - North End





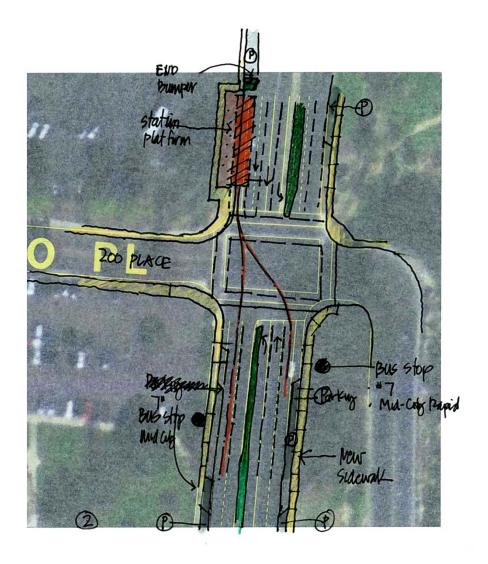


- 1. Thru-movement to Station platform
- 2. Requires priority treatment at intersection to reverse direction
- 3. Station would be used for future streetcar network
- 4. Places patrons on east side of street

Balboa Park - North End





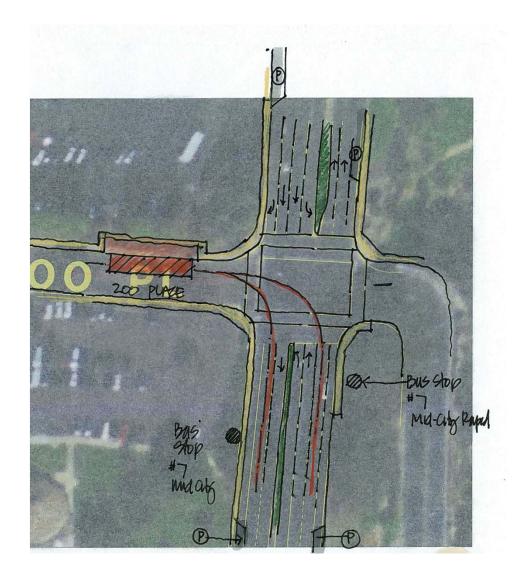


- Thru-movement to Station platform requires priority treatment at intersection
- 2. Station would be used for future streetcar network
- 3. Places patrons on west side of street

Balboa Park - North End







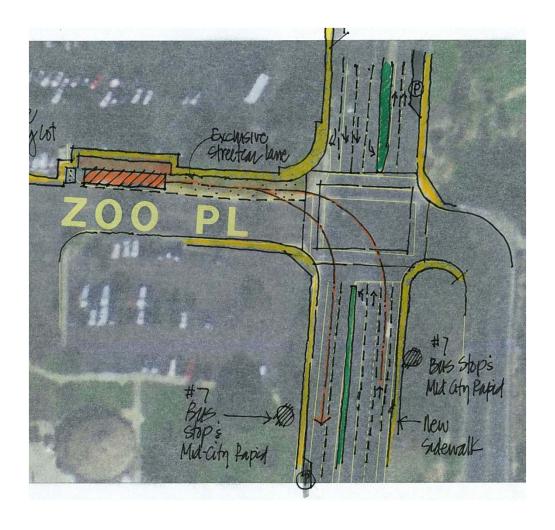
- Thru-movement to station platform requires priority treatment at intersection
- 2. Station would not be used for future streetcar network
- 3. Places patrons on sidewalk to zoo entrance
- 4. Streetcar stops right lane vehicles
- 5. Backs up into incoming traffic to go south

Balboa Park - North End









- Thru-movement to station platform requires priority treatment at intersection
- 2. Station would not be used for future streetcar network
- 3. Places patrons on sidewalk to zoo entrance
- 4. Streetcar is in exclusive lane for station stop stops right lane vehicles
- 5. Priority treatment at intersection to proceed south

Balboa Park - North End



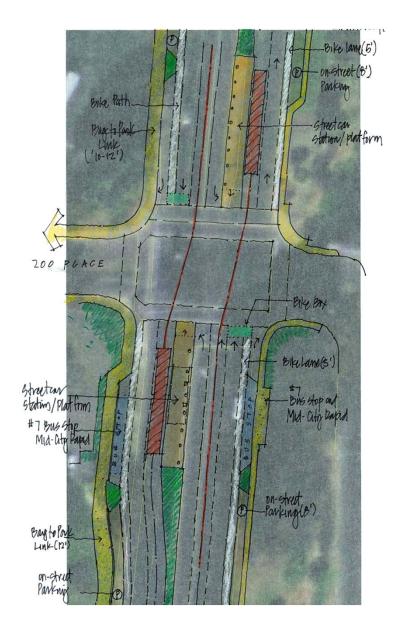










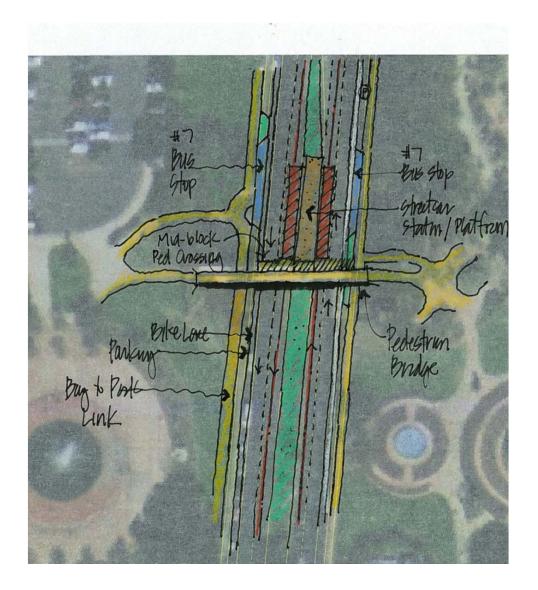


### **Zoo Place Station**

- 1. 15-foot median platform
- 2. Passengers need to cross street
- 3. Additional curb to curb section needed
- 4. Provides for Class 2 bike lane
- 5. Provides for Bay to Park Link on west side
- 6. Separates #7 station from streetcar
- 7. Mid-City Rapid could share streetcar station
- 8. "Complete" street approach





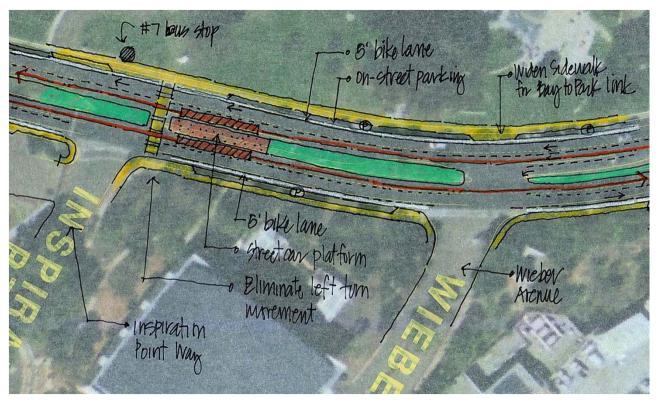


#### **Prado Station**

- 1. 15-foot median platform
- 2. Passengers need to cross street
- 3. Additional curb to curb section needed
- 4. Provides for Class 2 bike lane
- 5. Provides Bay to Park Link on west side
- 6. Separates #7 bus station and Mid-City Rapid stations from streetcar
- 7. "Complete" street approach





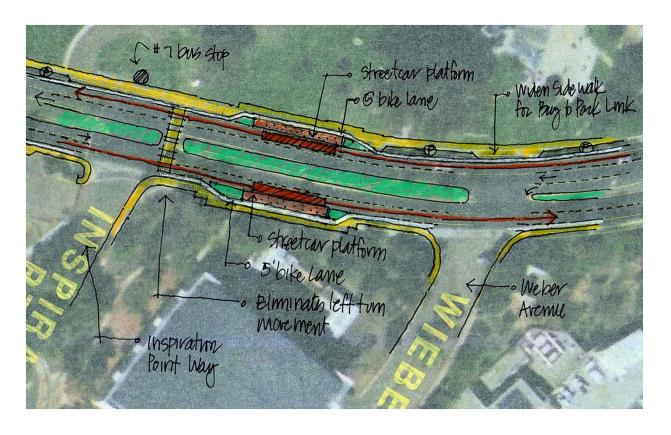


#### **Naval Medical Center Station**

- 1. 15-foot median platform
- 2. Passengers need to cross street
- 3. Eliminates left turn movement to Inspiration Point Way
- 4. Additional curb to curb section needed
- 5. Provides for Class 2 bike lane
- 6. Provides Bay to Park Link on west side
- 7. Separates #7 bus station and Mid-City Rapid stations from streetcar
- 8. "Complete" street approach





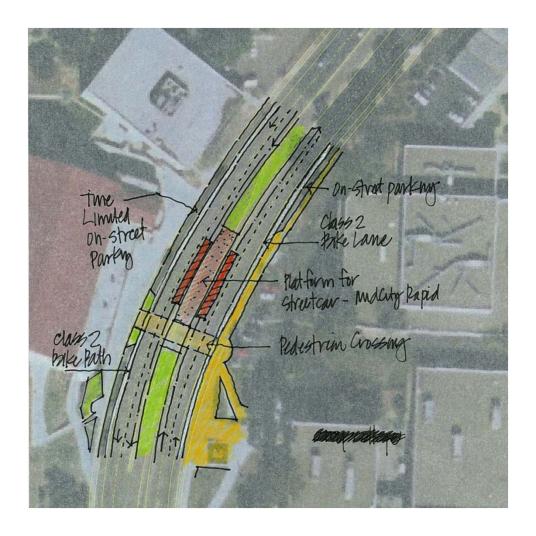


#### **Naval Medical Center Station**

- 1. Curbside platform
- 2. Passengers need to cross street
- 3. Eliminates left turn movement to Inspiration Point Way
- 4. Additional curb to curb section needed
- 5. Provides for Class 2 bike lane
- 6. Provides Bay to Park Link on west side
- 7. Combines #7 bus station, Mid-City Rapid, and streetcar stations
- 8. "Complete" street approach





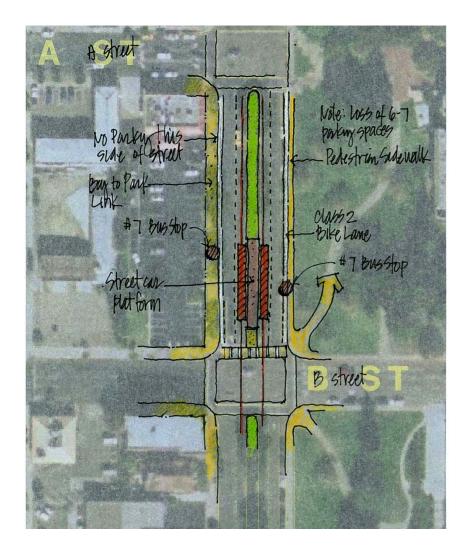


# San Diego High School Station

- 1. 15-foot median platform
- 2. Passengers need to cross street
- 3. Additional width may be needed
- 4. Provides for Class 2 bike lane
- 5. Provides Bay to Park Link on west side
- 6. New location for #7 bus station
- 7. "Complete" street approach







# **City College Station**

- 1. 15-foot median platform
- 2. Passengers need to cross street
- 3. Additional width may be needed
- 4. Provides for Class 2 bike lane
- 5. Loss of 6-7 parking spaces
- 6. No on-street parking on the west side
- 7. Provides Bay to Park Link on west side
- 8. Location for #7 bus station remains
- 9. "Complete" street approach

City College







## **City College Station**

- 1. Right running lane
- 2. Station platform curb side
- 3. Provides for Class 2 bike lane
- 4. Bike goes behind station platform
- 5. Bike lane separates passengers from sidewalk
- 6. Loss of 6-7 on-street parking on east side
- 7. No on-street parking on west side
- 8. No additional width required
- 9. Provides Bay to Park Link on west side
- 10. #7 bus and streetcar could share station
- 11. "Complete" street approach

City College







**Q&A - EXERCISE** 



