The Caltrain Station Planning Toolbox

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Key Presentation Take-Aways

- What is the Station Planning Toolbox?
- Why is it needed?
- Technical Input
- Toolbox Demonstration

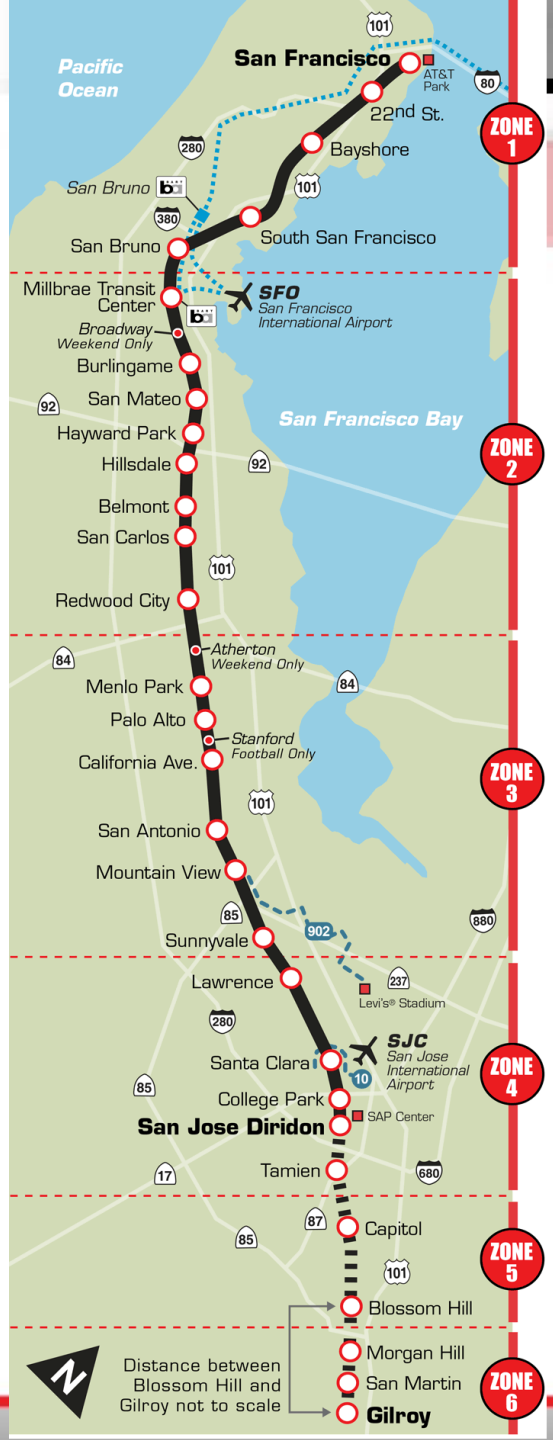
About Caltrain

- Peninsula Corridor Joint Powers Board – governing body
- Bay Area commuter rail serves San Francisco, San Mateo, and Santa Clara counties
- Service dates to 1860s
- Average weekday ridership: ~65,000 riders

Caltrain Corridor

Caltrain owns right-of-way from San Francisco to San Jose to Tamien Station (51 miles)

UPRR owns corridor south of Tamien Station; Caltrain has limited trackage rights



- Primarily two track system with some 4-track segments
- Varying right-of-way widths throughout corridor
- 42 At-Grade crossings, viaducts, and bridges
- 32 Passenger Stations
- 92 Weekday trains (Baby Bullet/Limited/Local Services)
- Diesel push/pull
- Corridor Electrification is under construction

Station Management Toolbox

- **Purpose**: Provide a decision-making tool and technical analysis to help assess potential outcomes and trade-offs associated with access improvements and TOD at stations
- Funded by FTA planning grant and local match
- **Objectives**:
  - Establish performance goals and metrics related to Caltrain's station-based assets and programs
  - Provide Caltrain with a methodology to quickly and transparently evaluate the performance of potential access investments and transit oriented developments at and near stations.

Station Management Toolbox

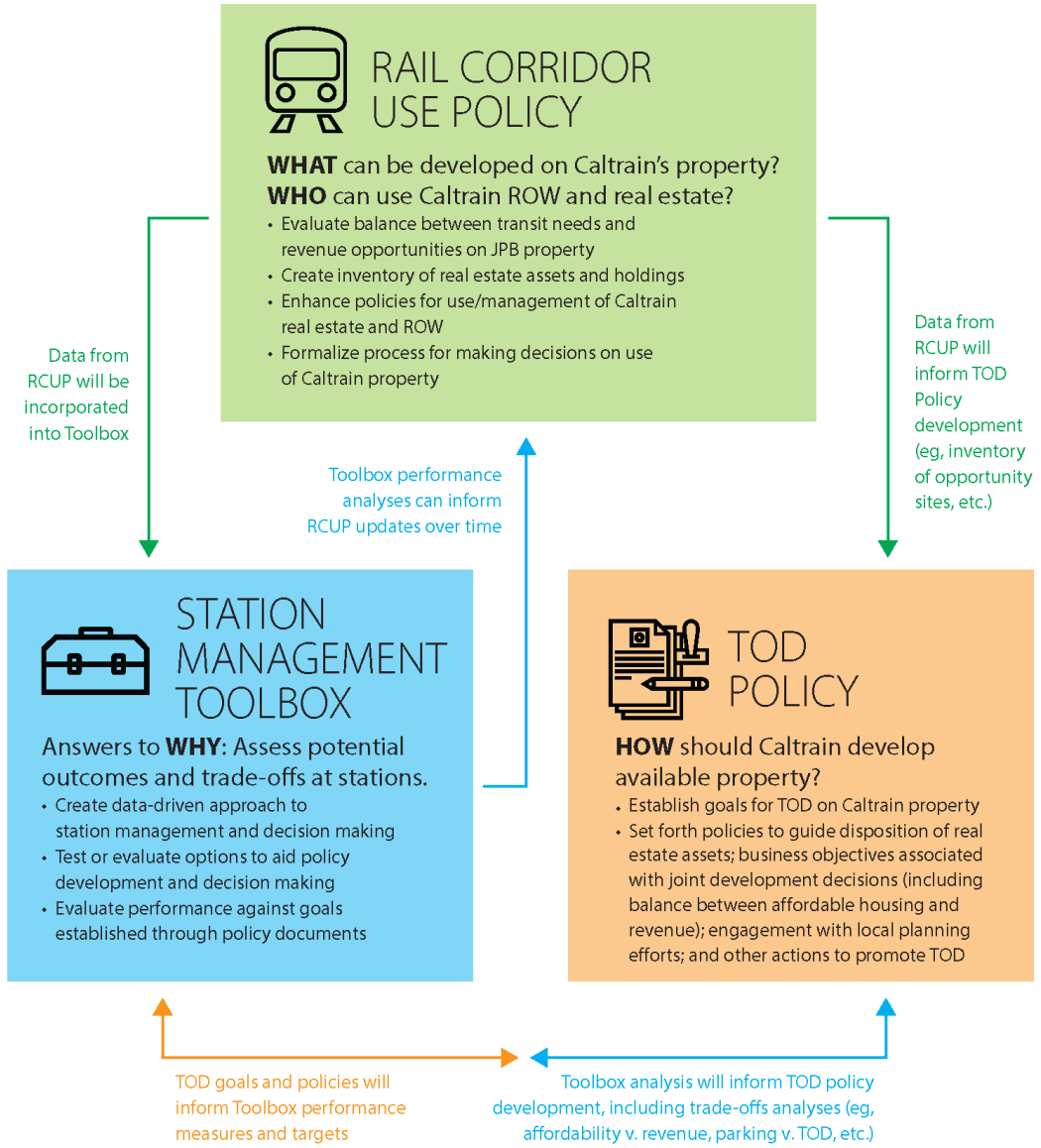
- Tasks include:
  - Phase 1 – Create the Toolbox Framework: Establish the range of decision and planning scenarios where the Toolbox is needed, and propose tools for quantitative analysis to aid in decision-making
  - Phase 2 – Build the Toolbox: Create the set of tools that will comprise the Toolbox and facilitate technical analysis
  - Phase 3 – Test the Toolbox: Use case studies of three Caltrain stations (South San Francisco, Belmont, and Redwood City) to test the Toolbox and develop case study plans
- Timing: Phase 1 and 2 – summer 2018

  Phase 3 TBD – aligning with Business Plan

TOD and Station Access at Caltrain Stations: What, Who, How, and Why

Relationship between the three projects

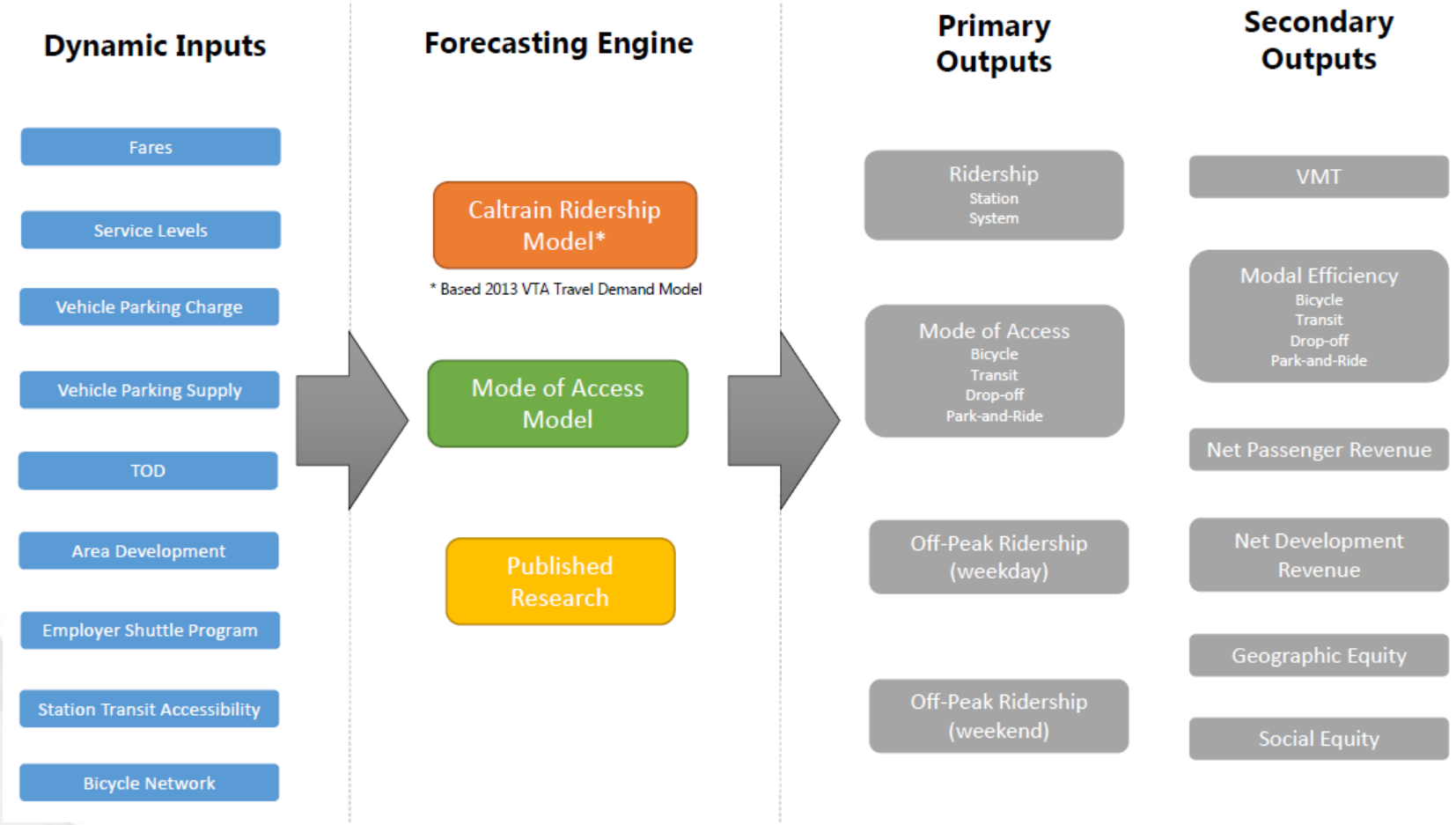
TRANSIT-ORIENTED DEVELOPMENT (TOD) AND STATION ACCESS AT CALTRAIN STATIONS: WHAT, WHO, HOW, AND WHY



Caltrain Planning Tools

- Three interrelated planning and policy analyses to address station access and transit-oriented development (TOD)
- Key questions for each project:
  - **Rail Corridor Use Policy:** What can be developed on JPB property? Who can use JPB right-of-way and real estate?
  - **TOD Policy:** How should Caltrain develop available property?
  - **Station Management Toolbox:** Help answer "Why?" questions, to help assess outcomes and trade-offs of station access and TOD decisions

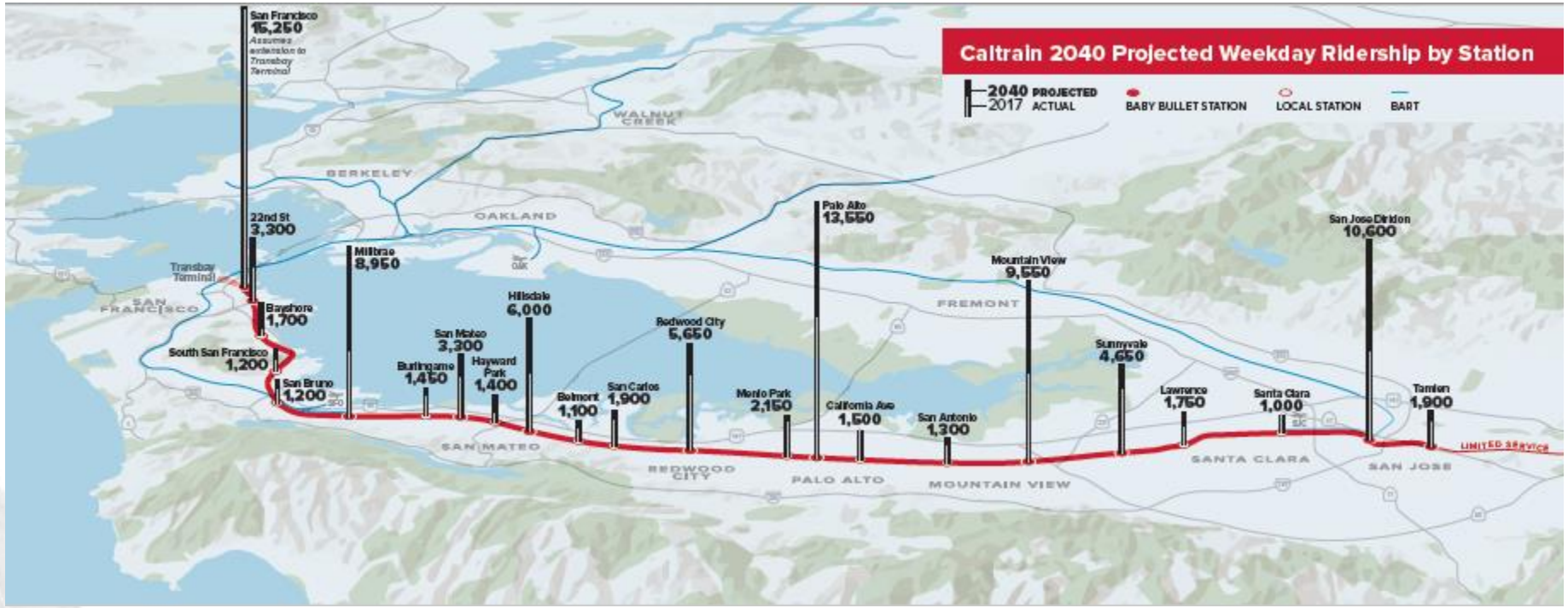
Toolbox Framework



Caltrain Ridership Model

- Regional Travel Demand Model
  - Good for system-wide ridership but misses station-level detail
  - Changes from model baseline estimated using elasticities for population, employment, fare, service level
- Direct Ridership Calibration
  - Adjusts station level ridership via linear regression models
  - Improves sensitivity to station area population, employment, accessibility
- TOD Ridership Calculation
  - Ridership from TOD development calculated separately based on trip rates from research

Caltrain Ridership Model



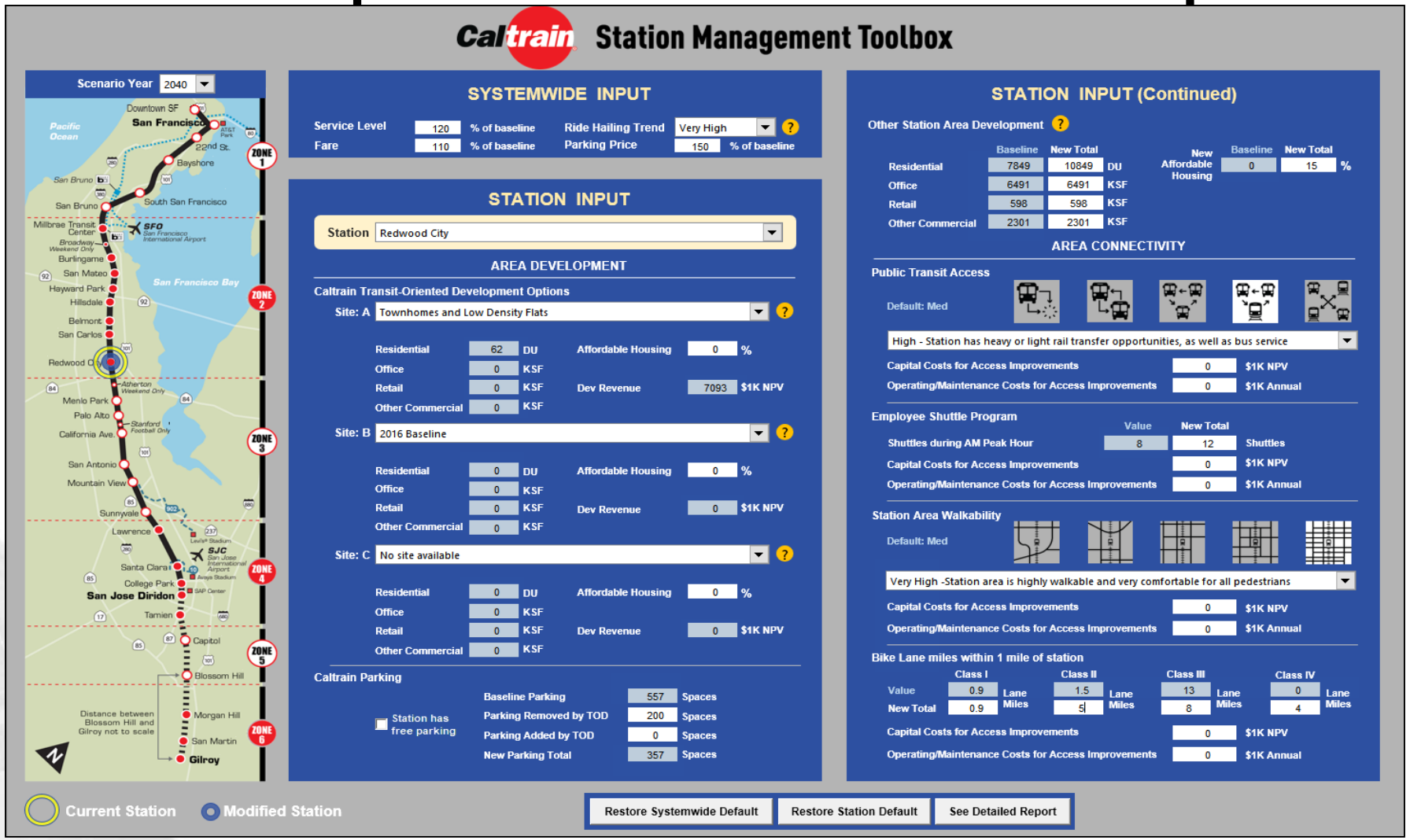
Mode of Access Model

- Models estimated from 2016 rider survey
  - Separate models for AM vs PM peaks and for access vs egress
  - Predictor variables include population, employment, accessibility by walk, bike, transit, shuttles, parking availability & cost, Caltrain frequency
  - Logit models transformed to linear regression via Berkson method
- Adjustments to initial access/egress models
  - TOD mode of access/egress
  - Ride-hailing trend
  - Changes in station parking

Ride Hailing Trends

- Effect on Caltrain Ridership
  - Tool can adjust total ridership based on trends in ride hailing
  - Best current research suggests commuter rail not influenced by ride hailing, so current version of tool does not include adjustment
  - Can be updated easily if future research supports it
- Effect on Mode Of Access
  - Tool adjusts mode of access based on trends in ride hailing
  - Ride hail access substitutes for other modes in accord with research and Caltrain-specific data
  - Size of ride hail effect can be selected by user

Station Management Toolbox – Graphic User Interface for Tool Inputs



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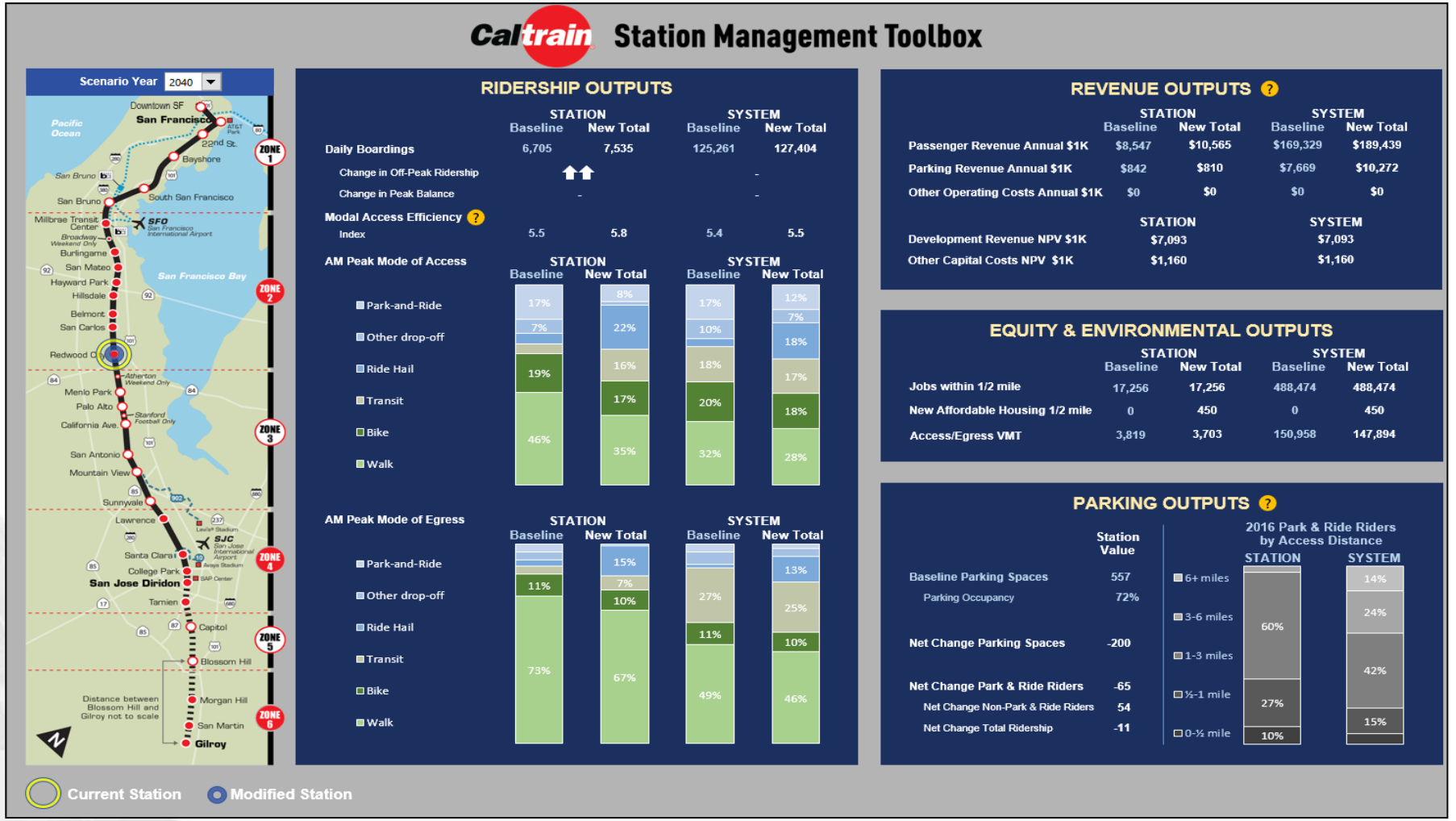
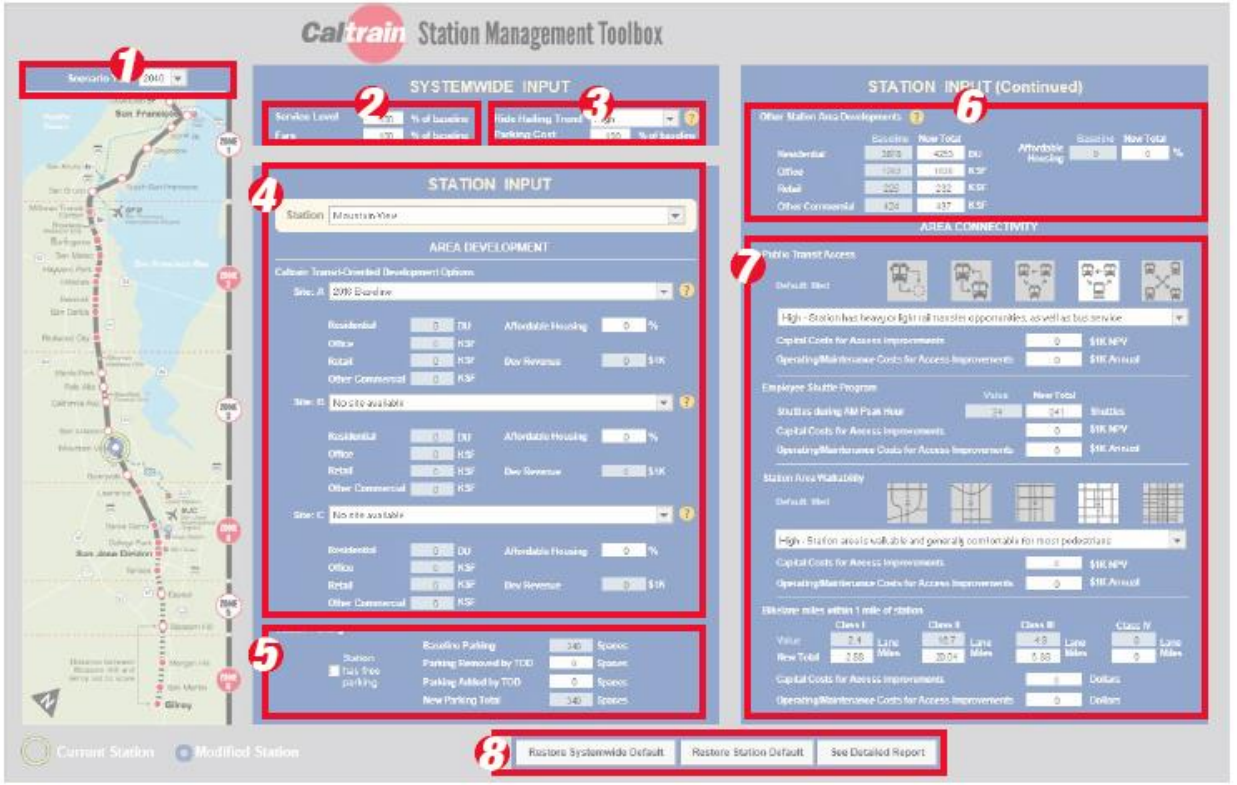


Demonstration



STATION INPUTS

4 **Station:** Choose the station you'd like to modify. The chosen station will be circled yellow on the map. Stations you've already modified will be blue.

Caltrain Transit-Oriented Development Options: The drop-down menus for Site A, B, and C will be auto-populated with the chosen station's available sites and development options. For each site, choose from the drop-down the appropriate development option. If you'd like to customize a development, choose "Custom" and manually input the land use and revenue information.

5 **"Station Has Free Parking":** Check the box if free parking will be provided at the station in the Scenario Year.

Caltrain Parking Inputs: Input the parking either added or removed by the TODs entered in Step 4.

6 **Other Station Area Developments:** Add any additional development within the Station Area. The values should represent the new total land use.

7 **For transit, employee shuttles, walking, and biking, input:**

Access: Choose the level of accessibility for each transportation mode that matches the Scenario.

Capital Costs for Access Improvements: Input the expected capital costs (Net Present Value) Caltrain would allocate for the planned accessibility improvements for each mode.

Operating/Maintenance Costs for Access Improvements: Input the expected annual operating/maintenance costs for the access improvements.

Repeat steps 4-7 for each station that has Station Area modifications for the Scenario.

Thank you!

The Caltrain Station Planning Toolbox

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