



Crenshaw/LAX Transit Corridor Study

Summary of Grade Separation Determinations

March 2010



Four Criteria for Considering Grade Separations (for LRT)

- A. Grade Crossing Policy
- B. Right-of-Way / Physical Constraints
- C. Environmental Impacts
- D. Other Factors

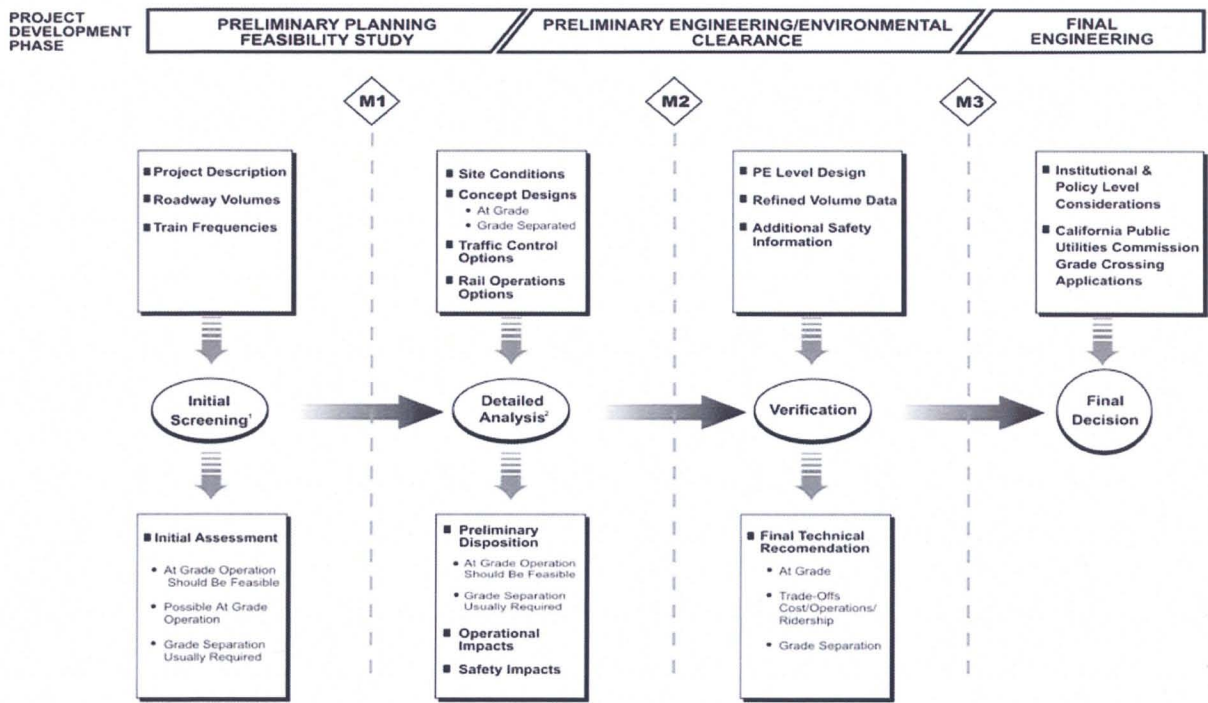
For Light Rail, each crossing and section of crossings is evaluated on a case-by-case basis.

The Crenshaw / LAX corridor follows Light Rail criteria, not Heavy Rail criteria, due to:

- Low to Moderate Density (Existing or Planned)
- Moderate Ridership Estimates
- Logical Extension of Existing Light Rail (e.g. Metro Green Line)

A. Grade Crossing Policy

- Three Steps:
 - Initial Screening
 - Detailed Analysis
 - Verification



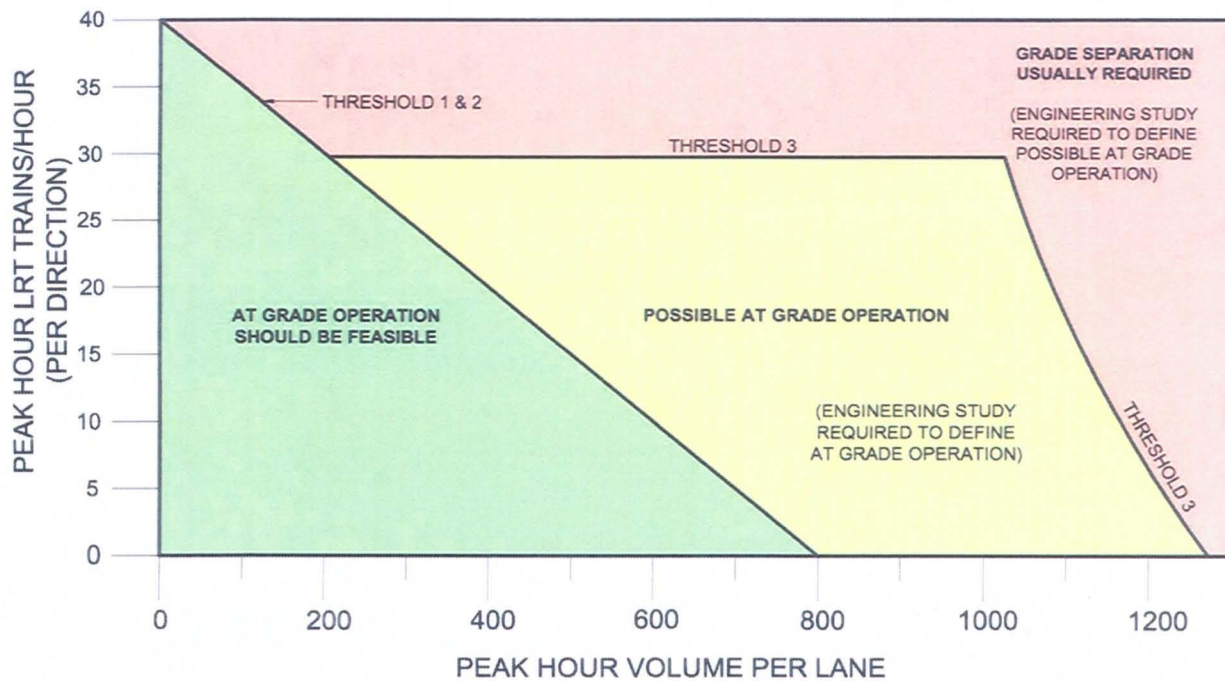
¹ See Initial Screening Chart

◇ = Milestone

² See Detailed Analysis Flowchart

A. Grade Crossing Policy – Initial Screening

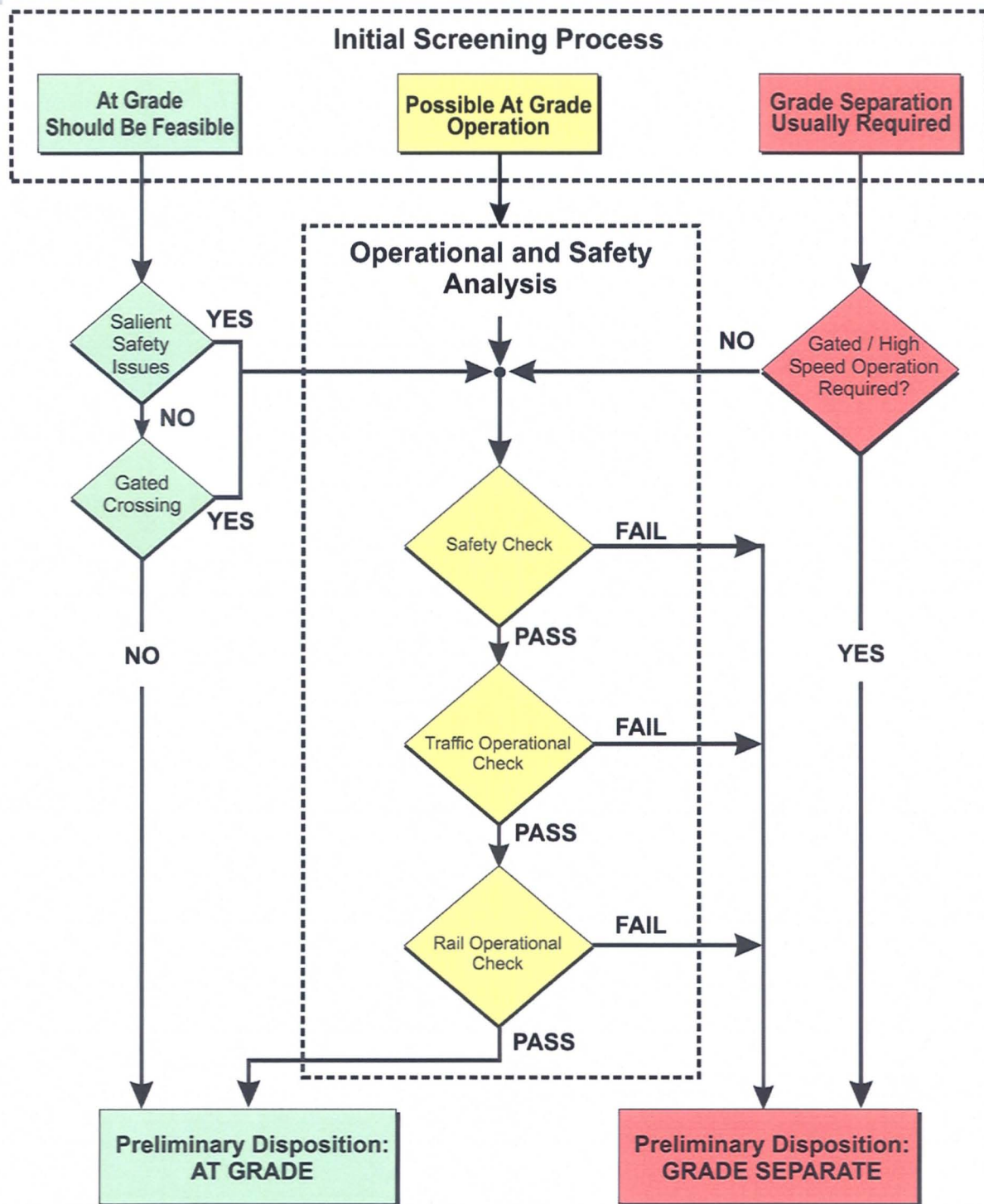
INITIAL SCREENING: Evaluate Train Movements and Traffic Volumes to Classify Crossings into Three Categories



NOTES:

- ROADWAY VOLUME IS PEAK HOUR, HIGHEST PER LANE FLOW RATE
- ADAPTED FROM INSTITUTE OF TRANSPORTATION ENGINEERS INFORMATIONAL REPORT, LIGHT RAIL TRANSIT GRADE SEPARATION GUIDELINES, 1992, THRESHOLD 1 AND THRESHOLD 2 COMBINED.

A. Grade Crossing Policy – Initial Screening



A. Grade Crossing Policy – Initial Screening – Summary

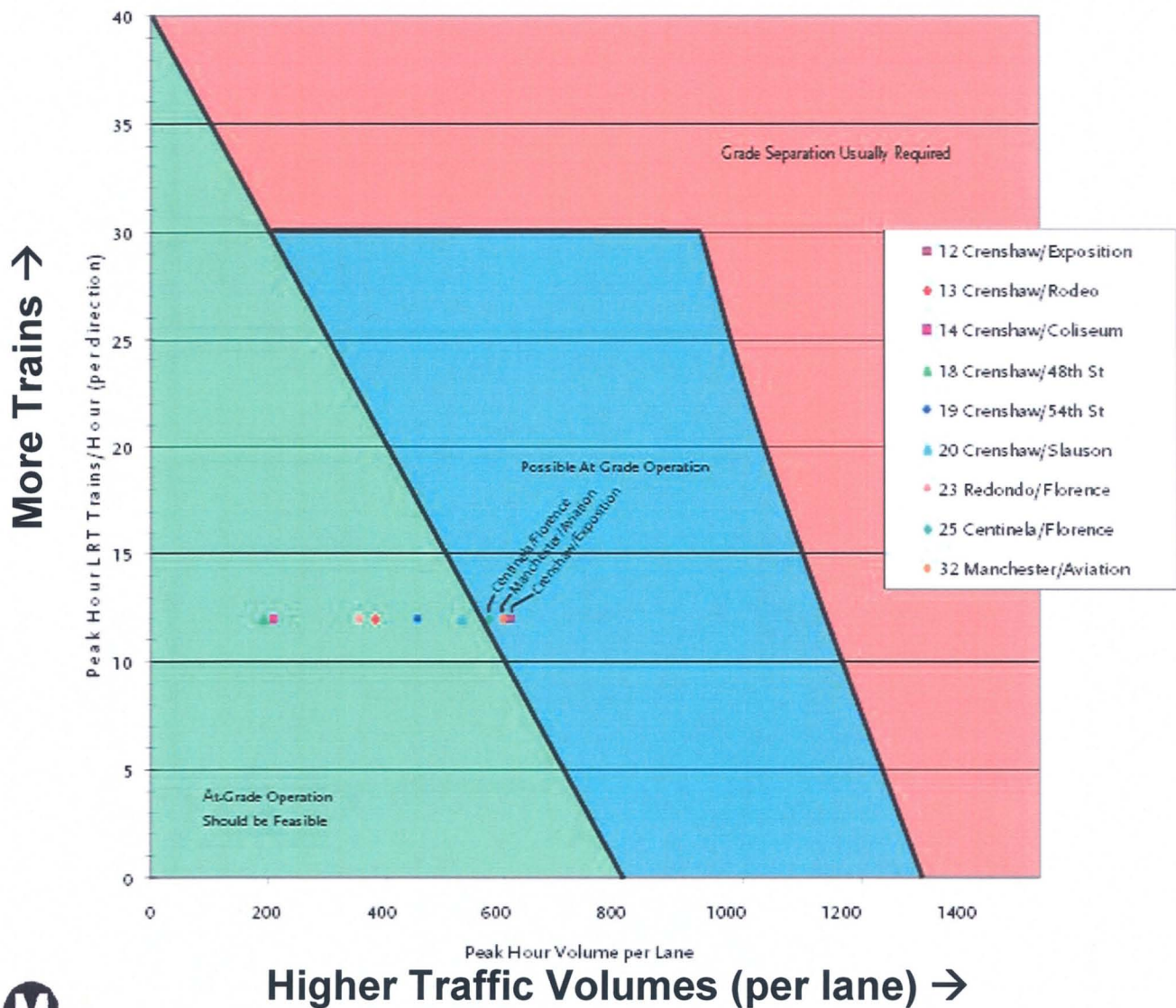
- Initial Screening (plus review of traffic impacts and available right-of-way) indicate need for grade separation at:
 - La Brea
 - La Cienega / I-405
 - Century



A. Grade Crossing Policy – Detailed Analysis

Three Crossings Required Detailed Analysis

- Crenshaw / Exposition
- Centinela / Florence
- Manchester Aviation

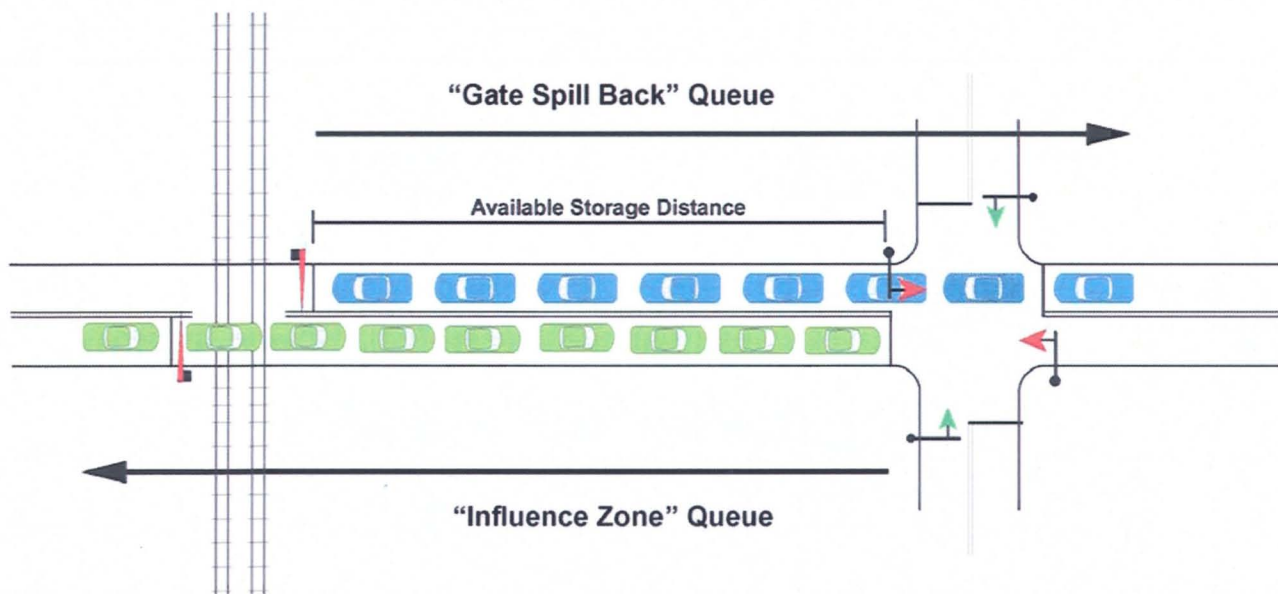


A. Grade Crossing Policy – Detailed Analysis



A. Grade Crossing Policy – Detailed Analysis

- Detailed Analysis Involves Review of:
 - Site Conditions
 - Potential Configurations
 - Traffic Control Strategies (including Safety Treatments)
 - Rail Operation Strategies



Example: Analysis of Queuing Capacity and Safety at a Crossing

A. Grade Crossing Policy – Detailed Analysis

- **Mitigation Measures are Explored for Potential Safety Concerns:**
 - Traffic Queuing
 - Approach and Corner Sight Distance
 - Visual Confusion/Sign or Signal Clutter
 - Prevailing Traffic Speed
 - Large Truck Percentage
 - Heavy Pedestrian Volumes
 - School Access Route
 - Emergency Vehicle Route
 - Accident History
 - Gate Drive Around Potential
 - Delineation and Roadway Marking
 - Traffic Control Observance

A. Grade Crossing Policy – Detailed Analysis – Summary

- Grade separation required at:
 - Manchester
- Consultation with CPUC , further design to make final determination required at:
 - Exposition / Crenshaw
 - Centinela



B. Right-of-Way Constraints

- Sections with Constrained Right-of-Way:
 - Leimert Park Village (39th to 48th)
 - Hyde Park (59th to Victoria)
 - La Brea
 - La Cienega / I-405
- New Constraint due to a development proposal
 - Crenshaw near Rodeo

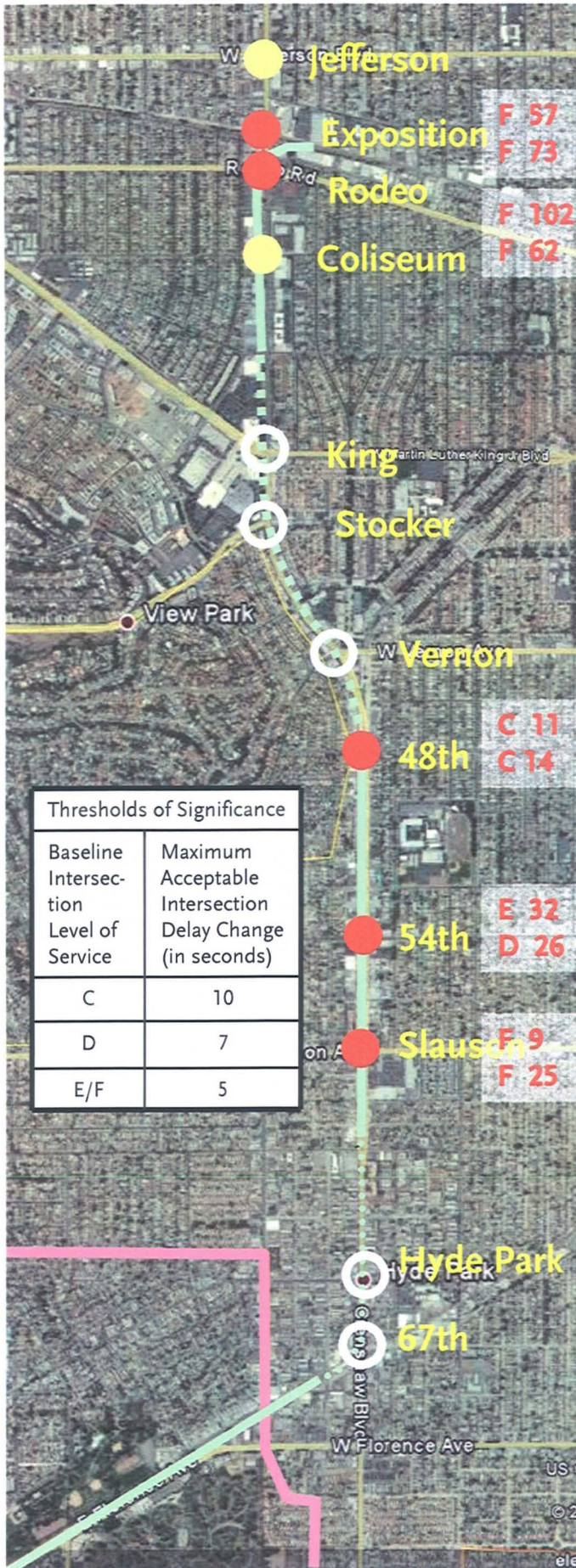


SUMMARY: Grade separations recommended along Crenshaw (1) between 39th and 48th and (2) between 59th and Victoria (in addition to those already subject to Grade Separation Policy).

C. Environmental Impacts

- Several Environmental Impacts may suggest Grade Separation mitigations:
 - Traffic
 - Displacements
 - Community
 - Economic
- Other Environmental Impacts may affect the Type of Grade Separation (Aerial or Below Grade):
 - Visual
 - Historic
 - Environmental Justice

Traffic Impacts – Initial



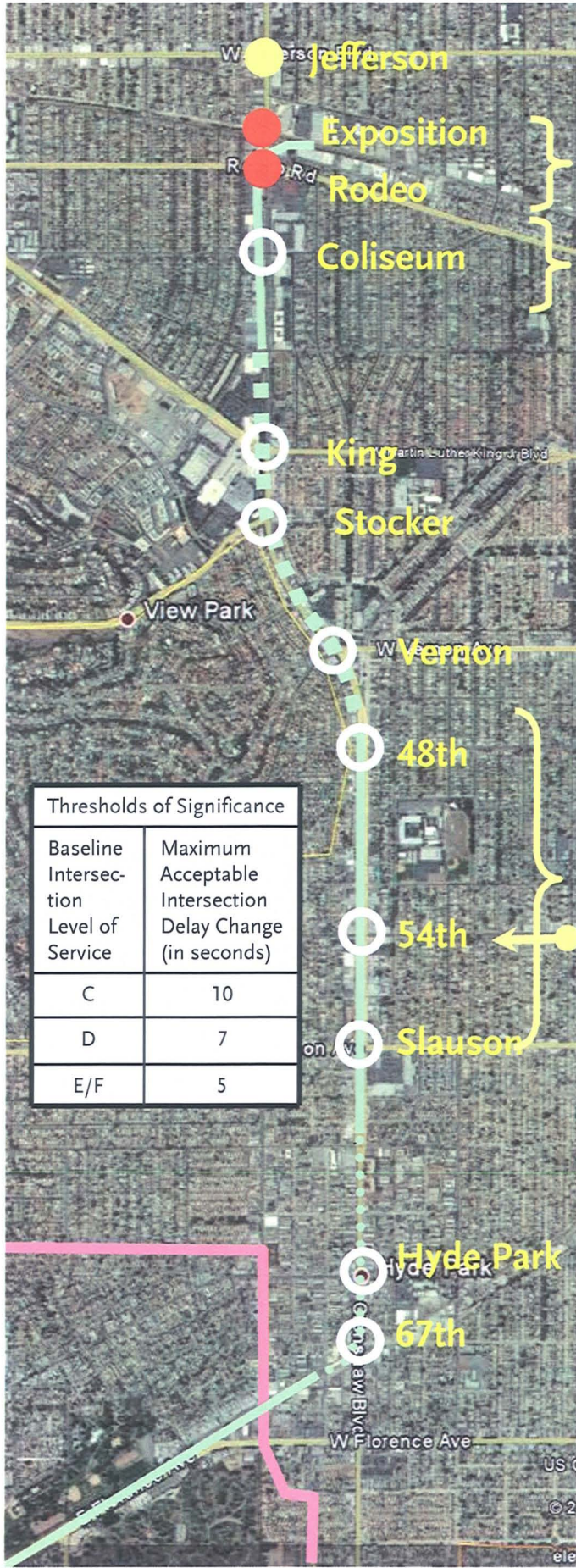
Configuration

- At-Grade
- Aerial / Above Grade
- Below Grade

Traffic Impact

- No Significant Impact
- Significant Impact in 1 direction
- Significant Impact (both directions)

AM **F 57**
 PM **F 94**
 LOS Delay Change (seconds)



Traffic Impacts – with Mitigation

Impacts near Crenshaw and Exposition still need to be resolved

No separate LRT signal phase (“Street-running” priority operation)

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At 54th, prohibit Left Turns (Left turn volume is low)

(Contingent upon LADOT/CPUC acceptance of mitigations.)

Configuration

- At-Grade
- Aerial / Above Grade
- - - - Below Grade

Traffic Impact

- No Significant Impact
- Significant Impact in 1 Direction
- Significant Impact (both directions)

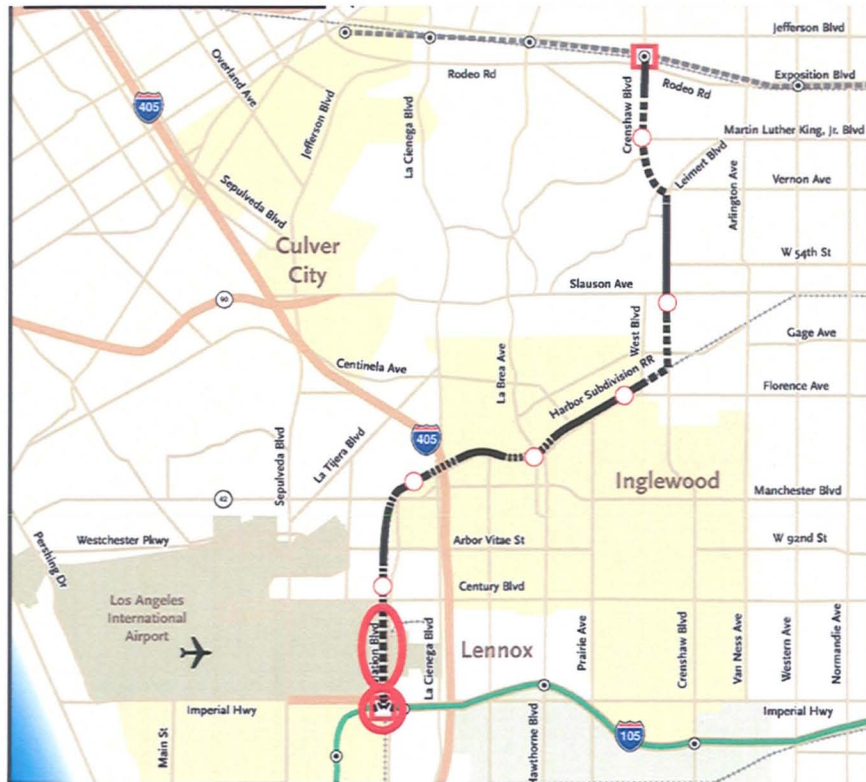
C. Environmental Impacts – Summary

- Traffic Impacts result in the need for grade separations at:
 - Leimert Park Village (39th to 48th)
 - Recommended below grade due to impacts to historic resources, visual resources
 - Hyde Park (59th to Victoria)
 - Recommended below grade due to impacts to visual resources, environmental justice
- To be Determined (after additional design and CPUC / LADOT Consultation):
 - Crenshaw near Exposition
- No Grade Separation Necessary between 48th and 59th
 - Recommended At-Grade ■ ■ ■
 - Mitigations subject to LADOT acceptance



D. Other Factors

Location	Factor
Adjacent to South Runways	Below Grade to avoid FAA constraints
At connection to Metro Green Line	Aerial to connect to existing aerial Light Rail



SUMMARY:

Determination of Grade Separations by Section

	Section	Extent	A. Grade Crossing Policy	B. Right-of-Way Availability	C. Environmental Impacts	D. Other Factors	Grade
A	Exposition Connection	Exposition to 39th	TBD		TBD		TBD
B	Leimert Park Village	39th to 48th		●	●		↓
C	Park Mesa Heights	48th to 60th					—
D	Hyde Park	60th to Victoria		●	●		↓
E	Centinela Park	Victoria to Prairie					—
F	Centinela Crossing	Prairie to Locust	TBD				TBD
G	Downtown Inglewood	Locust to Inglewood	●	●	●		↑
H	Western Inglewood	Inglewood to Ash					—
I	La Cienega / I-405	Ash to Hindry	●	●			↑
J	Hindry	Glasgow to Isis					—
K	Manchester Crossing	Isis to Hillcrest	●				↑
L	Westchester Industrial	Hillcrest to 96 th					—
M	Aviation / Century (LAX Connection)	96 th to 104 th	●		●		↑
N	South Runway Adjacent	104th to 111 th				●	↓ (Trench)
O	Green Line Connection	111 th to Imperial				●	↑

↑	Above Grade	—	At-Grade	↓	Below Grade	TBD	TBD pending additional analysis
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Map of sections on following page

