Appendix E
LAX SPECIFIC PLAN AMENDMENT STUDY REPORT

Concept Development Process

Appendix E1
LAX SPECIFIC PLAN AMENDMENT STUDY REPORT

Airfield and Terminal Concept Development

July 2012

Prepared for:

Los Angeles World Airports
One World Way
Los Angeles, California 90045

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Provided within Appendix E1 are various technical analyses that were developed and/or considered in conjunction with the formulation of preliminary concepts for north airfield improvements. The analyses include airfield design considerations related to aircraft operations, such as safety clearances, runway protection zones, navigational aids, pilot line-of-sight, and aircraft take-off length requirements, and also include identification of other improvements, such as realignment of Lincoln Boulevard, enclosure of all or part of the Argo Drainage Channel, and removal of existing terminal gates and other airfield facilities due to the relocation of runways and taxiways, that would need to occur in conjunction with certain airfield improvement concepts. Also provided in this appendix is documentation associated with preliminary concepts formulated through numerous meetings with the community and the SPAS Advisory Committee in 2006 and 2007. Provided below is a list of the technical analyses contained in Appendix E1 followed by a matrix identifying which airfield improvement concepts, relative to either relocating Runway 6L/24R northward by a certain distance (e.g., "260' N" represents the concept of moving Runway 6L/24R 260 feet northward), relocating Runway 6R/24L southward by a certain distance (e.g., "340' S" represents the concept of relocating Runway 6R/24L 340 feet southward), or not changing/increasing the existing separation between the two runways (e.g., the "No Sep" option).

- E1-1. LAX Concept Development Report and Planning Illustrations
- E1-2. Runway 6R/24L Relocated 100 ft. South Taxiway-Taxilane Concepts
- E1-3. Runway 6L/24R Relocated North Taxiway-Taxilane Concepts
- E1-4. Runway Visibility for North Airfield Concepts
- E1-5. Los Angeles International Airport Takeoff Length Analysis for Runway 6R/24L
- E1-6. Land Uses Within the Runway Protection Zone
- E1-7. Argo Drainage Channel
- E1-8. Lincoln Boulevard
- E1-9. Specific Plan Amendment Study (SPAS) EIR Airfield Alternatives Westside Navigational Aids/Lighting Overview
- E1-10. Specific Plan Amendment Study (SPAS) EIR Airfield Alternatives Eastside Navigational Aids
- E1-11. North Airfield Abandoned Tunnel Segment
- E1-12. Taxilane D Westerly Extension Impacts

LAX Specific Plan Amendment Study

Summary Matrix of Planning Studies Related to Airfield and Terminal Concepts Development

Issue Addressed	Appendix Number	340' S	100' S	No Sep	100' N	200' N	260' N	300' N	340' N	350' N	400' N
Aircraft Profile Analysis	E1-4				X	X	X	X			X
Argo Drainage Channel	E1-7				X	X		X			X
Terminal Gates	E1-2 & E1-3		X	X	X	X	X	X	X	X	X
Initial Concepts	E1-1		X	X	X				X		
Lincoln Boulevard	E1-8				X	X		X			X
Navigational Aids	E1-9 & E1-10	X	X	X	X		X			X	
North Airfield Abandoned Tunnel Segment	E1-11	X	X		X	X		X			X
Takeoff Length Analysis	E1-5			X[1]	X[1]	X[1]	X[1]	X[1]	X[1]	X[1]	X[1]
Pilot Line-of-Sight Analysis	E1-4				X	X	X	X			X
RPZ Analysis	E1-6				X	X		X			X
Taxilane D Extension	E1-12			X[1]	X[1]	X[1]	X	X[1]	X[1]	X	X[1]

[1] The concepts presented are applicable to any concept that does not relocate Runway 6R/24L.

Source: CDM Smith and Ricondo & Associates, 2012.

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Appendix E1-1
LAX SPECIFIC PLAN AMENDMENT STUDY REPORT

LAX Concept Development Report and Planning Illustrations

May 2007

Prepared for:

Los Angeles World Airports
One World Way
Los Angeles, California 90045

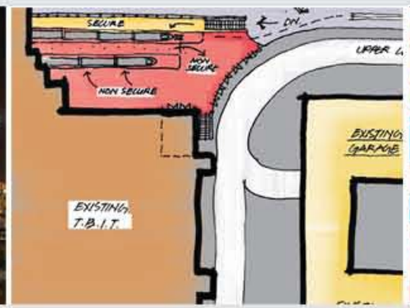
Prepared by:

HNTB Corporation
601 West 5th Street, Suite 1000
Los Angeles, CA 90071

LAX CONCEPT DEVELOPMENT REPORT AND PLANNING ILLUSTRATIONS

Los Angeles World Airports



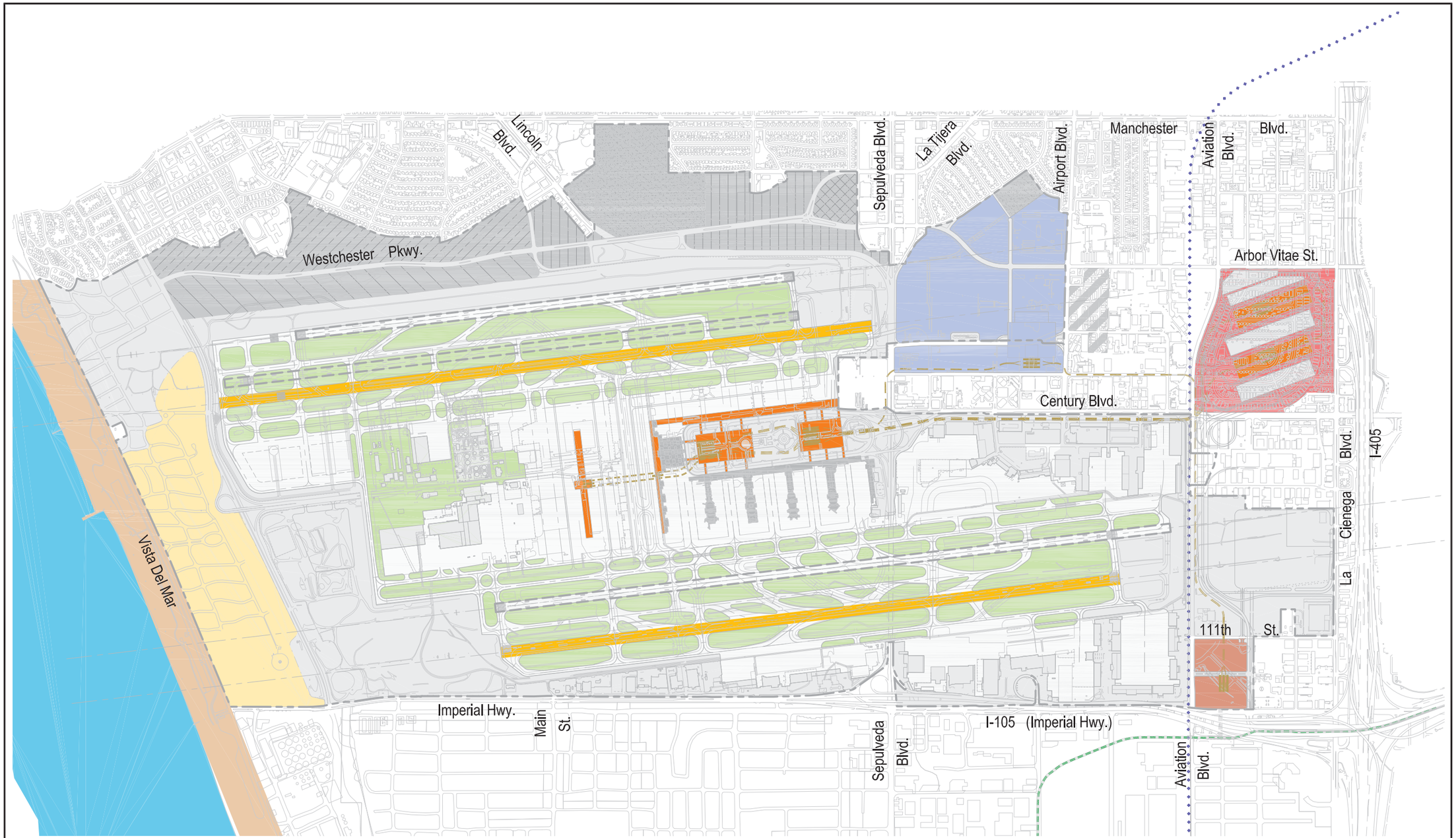



Los Angeles International Airport 1 World Way, Los Angeles, California 90045 (310) 646 5252

MAY 2007

HNTB

THE BEGINNING



Alternative D

Not To Scale

April 5, 2007

THE MEETINGS

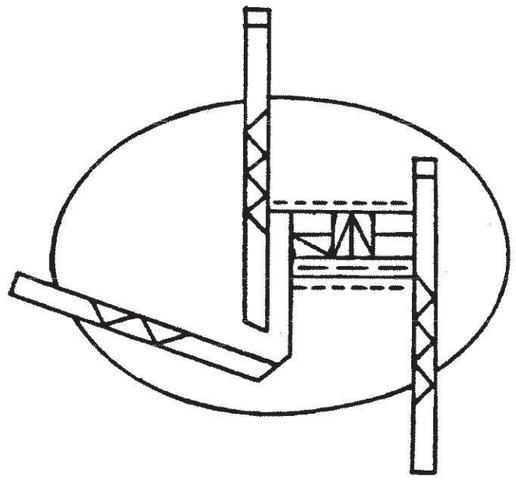
U.S Department of Transportation
Federal Aviation Administration

AIRPORT DESIGN

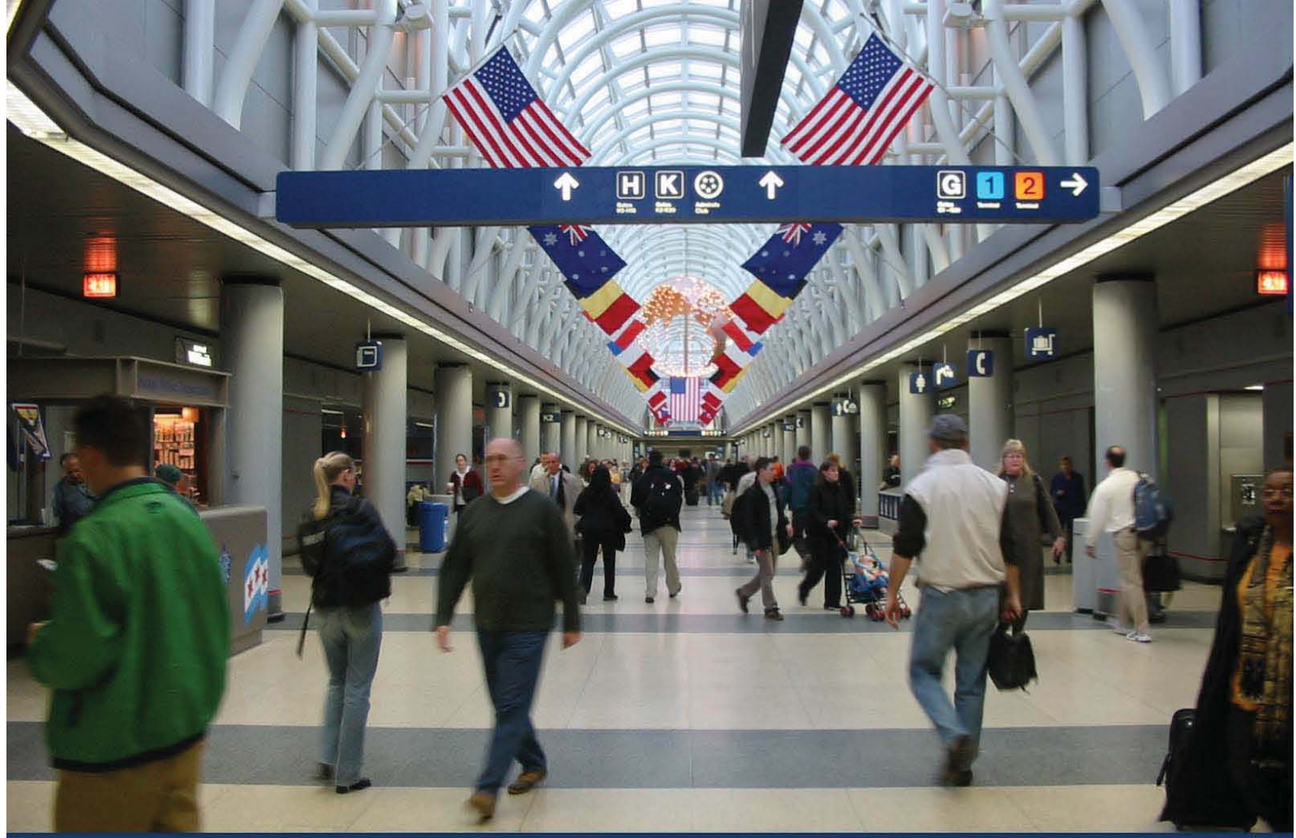
/INCORPORATES CHANGES 1 THRU 5/

AC: **150/5300-13**
Date: **9/29/89**

Advisory Circular



AIRPORT PLANNING 101



Recommended Security Guidelines for Airport Planning, Design and Construction

Revised June 15, 2006

Transportation Security Administration

Property Line

Sepulveda- Green Line Station

96th Street Access

Manchester Square

Proposed ConRAC

New Runway Location

North Terminal

Century Blvd. Access

APM To West

MTA / Intermodal

Green Line Station

West Satellite

West TBIT Gates

APM from ITC

New South Airfield

ITC

Property Line

Proposed Crenshaw Line

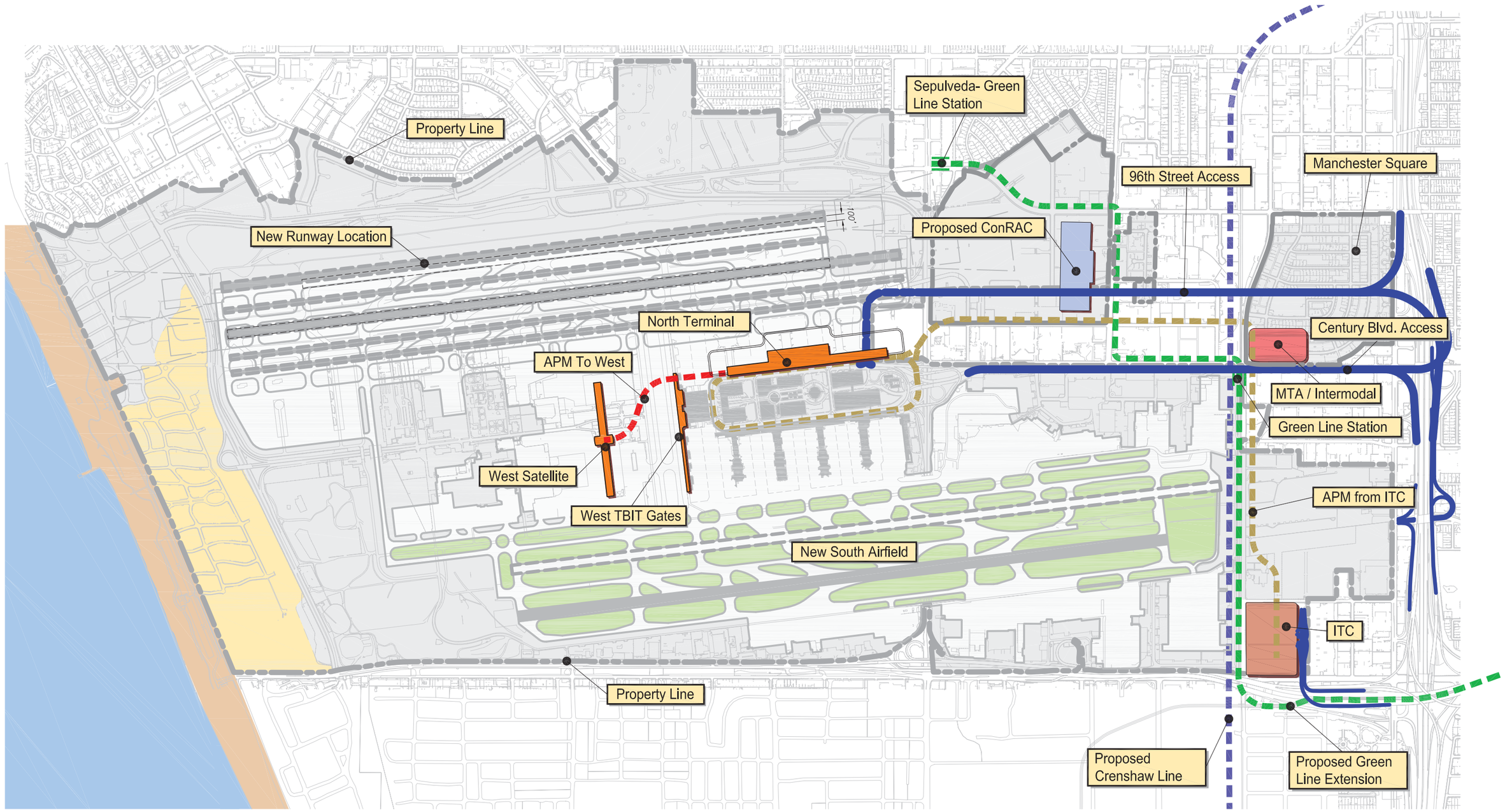
Proposed Green Line Extension

Advisory Committee Concept 1A

Runway 24L 100' South

Not To Scale

January 12, 2007

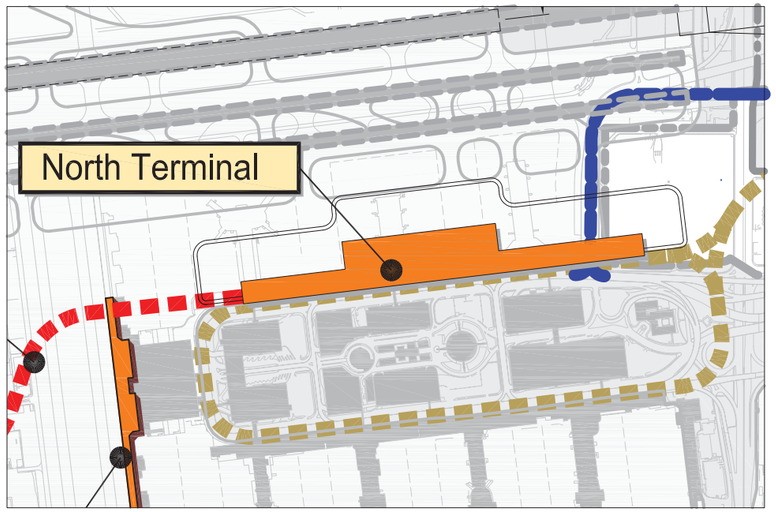


Advisory Committee Concept 1B

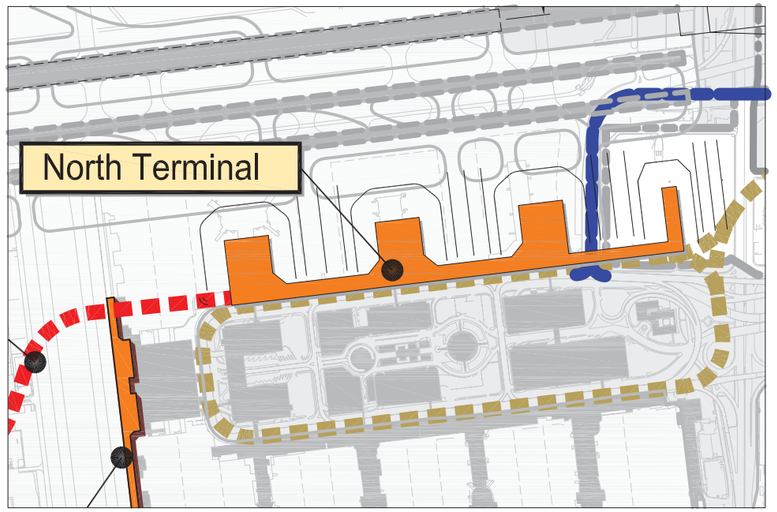
Runway 24R 100' North

Not To Scale

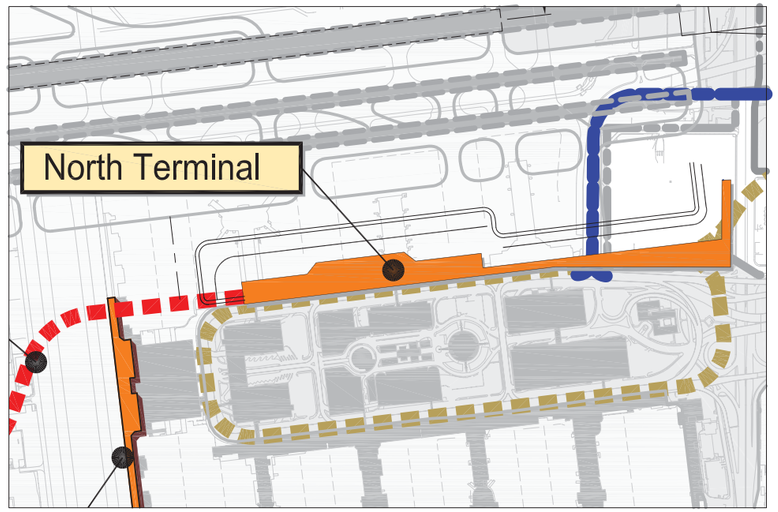
January 12, 2007



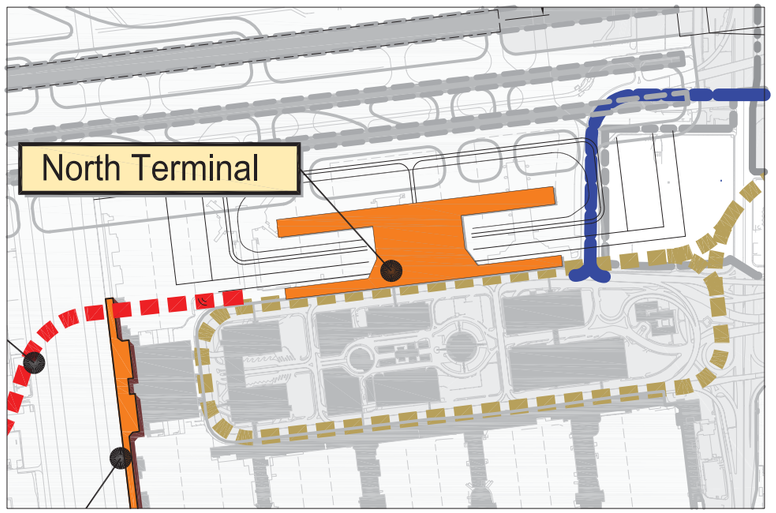
Linear Configuration 3,420 LF AC Frontage



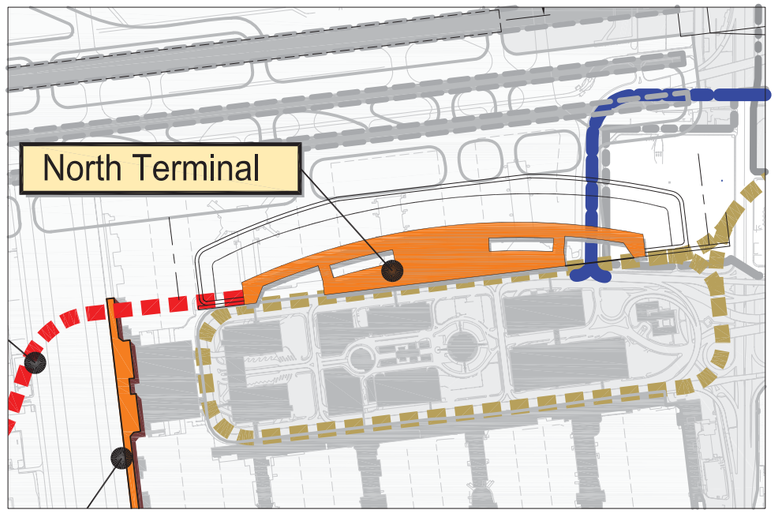
Pier Configuration 5,940 LF AC Frontage



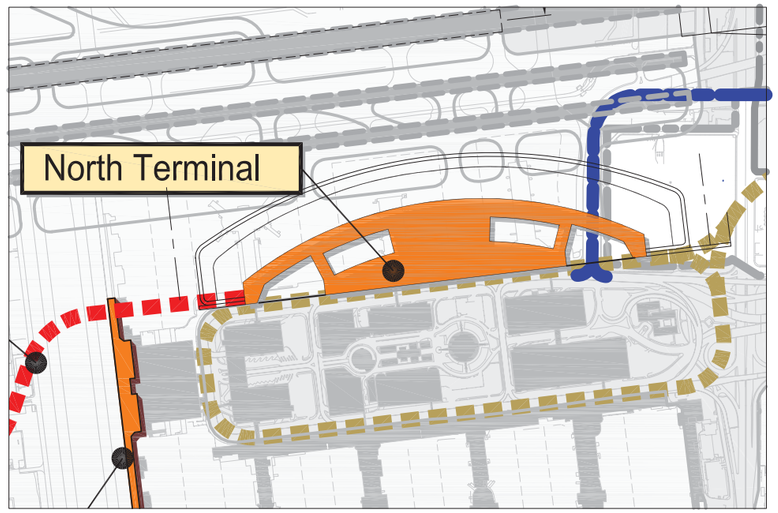
Linea 2 Configuration 3,830 LF AC Frontage



T Configuration 4,850 LF AC Frontage



Arc Configuration 3,775 LF AC Frontage



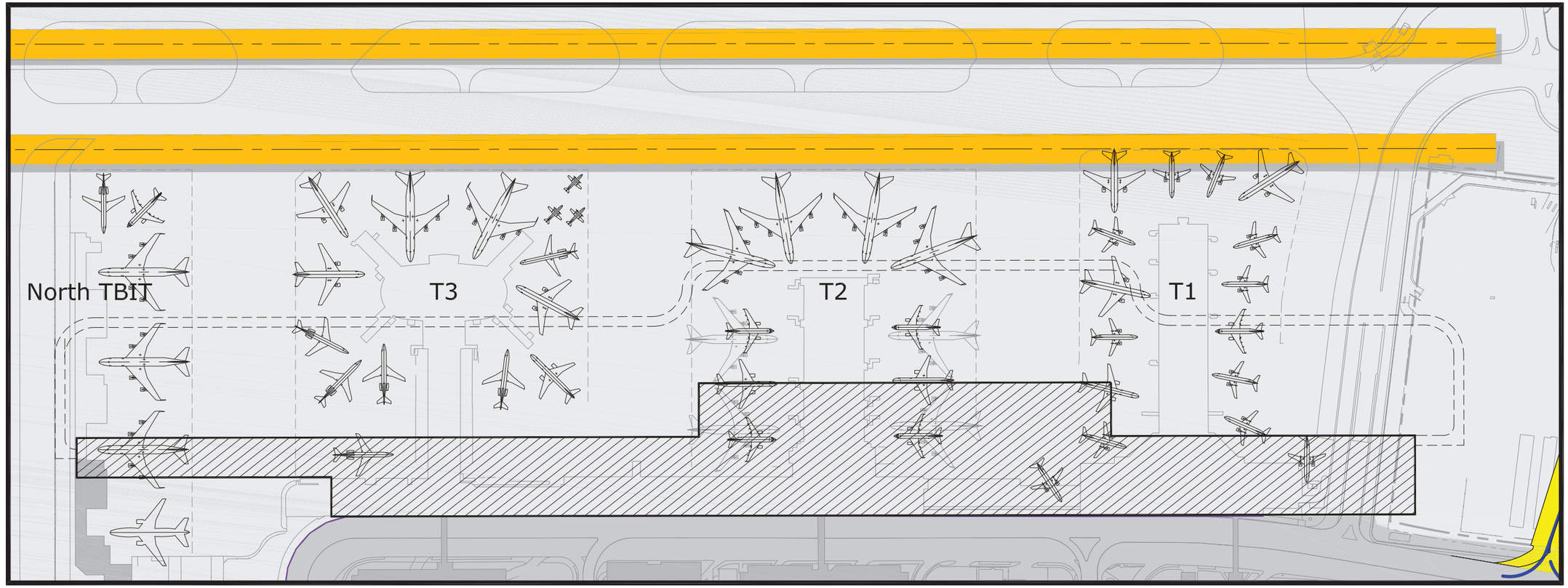
Arc 2 Configuration 3,775 LF AC Frontage

Advisory Committee Concept

North Terminal Concepts

Not To Scale

January 12, 2007



Existing Terminals

- Total Existing Gate Count
  Terminal 1, 2 and 3 = 40-46 Gates
- Existing Aircraft Linear Frontage
  Terminal 1, 2 and 3 = 6,700 L.F
- Number of Gates Lost Due To 100' Runway Relocation = 25-30 Gates

Linear Terminal

- Number of Gates at Linear Terminal Configuration = 12 - 18 Wide Body Gates
- Linear Terminal Configuration Aircraft Linear Frontage = 3,400 LF Aircraft Frontage
- 3 Level Terminal
  Level 3 - Security, Holdroom Areas, Concessions.
  Level 2 - Baggage Claim, Airline Offices.
  Level 1 - FIS
- +- 337 Foot Wide Processor
  +- 240 Foot Wide Concourse

N

1" = 600'

January 12, 2007

Advisory Committee Concept 1A

Existing Aircraft Parking Plan vs. Linear Terminal Configuration

Existing Terminals

- Total Existing Gate Count
  Terminal 1, 2 and 3 = 40-46 Gates
- Existing Aircraft Linear Frontage
  Terminal 1, 2 and 3 = 6,700 L.F
- Number of Gates Lost Due To 100' Runway Relocation = 20-25 Gates

Pier Terminal

- Number of Gates at Linear
  Terminal Configuration = 15 - 20 Wide Body Gates
- Linear Terminal Configuration Aircraft Linear Frontage = 4,300 LF Aircraft Frontage
- 3 Level Terminal
  Level 3 - Security, Holdroom Areas, Concessions.
  Level 2 - Baggage Claim, Airline Offices.
  Level 1 - FIS

N

1" = 100'

January 25, 2007

Advisory Committee Concept 1A

Existing Aircraft Parking Plan vs. Pier Terminal Configuration

PHASING

GATE TOTAL NORTH - (46)

PHASE 1

6 GATES

TBIT

9 GATES
3 COMMUTER

LOSE 2 GATES

T3

LOSE 10 GATES

T2

16 GATES

T1

GATE COUNT

34

PHASE 2

6 GATES

TBIT

LOSE 9 GATES
3 COMMUTER

T3

16 GATES

T1

22

PHASE 3

LOSE 6 GATES

TBIT

ADD 10 GATES

16 GATES

T1

26

PHASE 4

LOSE 16 GATES

ADD 2 GATES

T1

12

PHASE 5

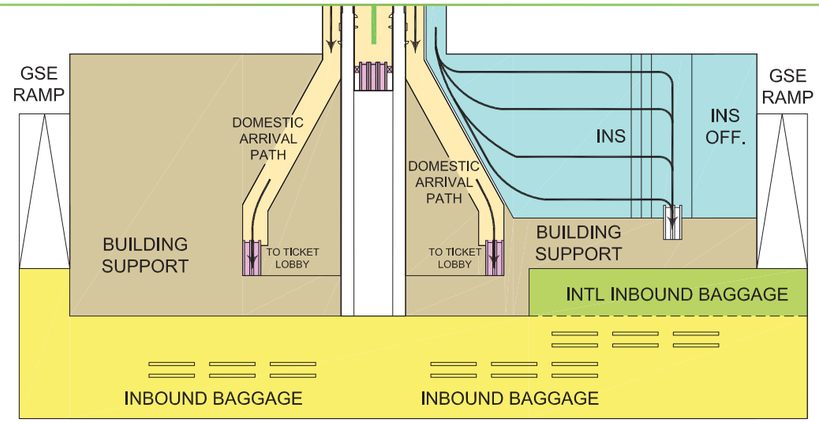
ADD 7 GATES

19

Potential North Terminal Phasing

APM Level

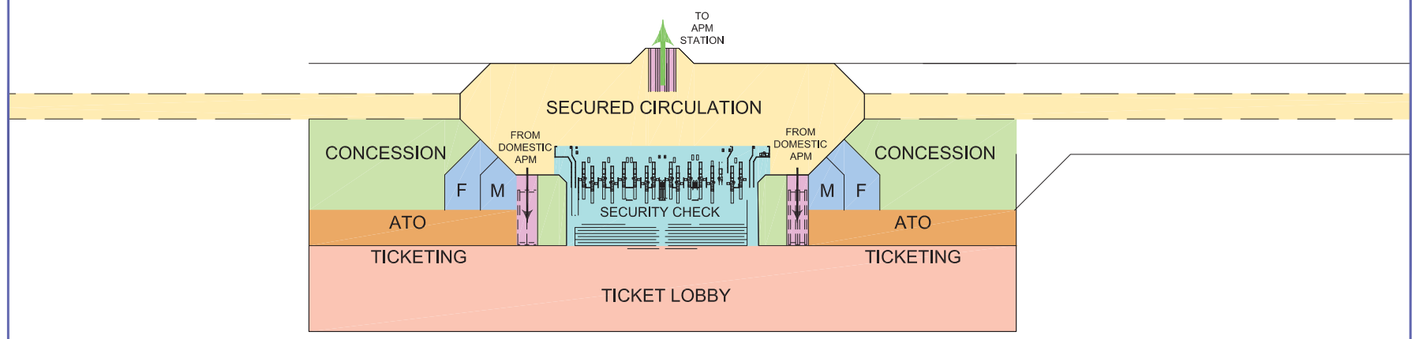
- Inbound Baggage
- Inbound Int'l Baggage
- Building Support
- INS Offices
- GSE Ramps
- Domestic Arrivals Path
- Int'l Arrivals Path



APM/ INS Level

Departures Level Functions

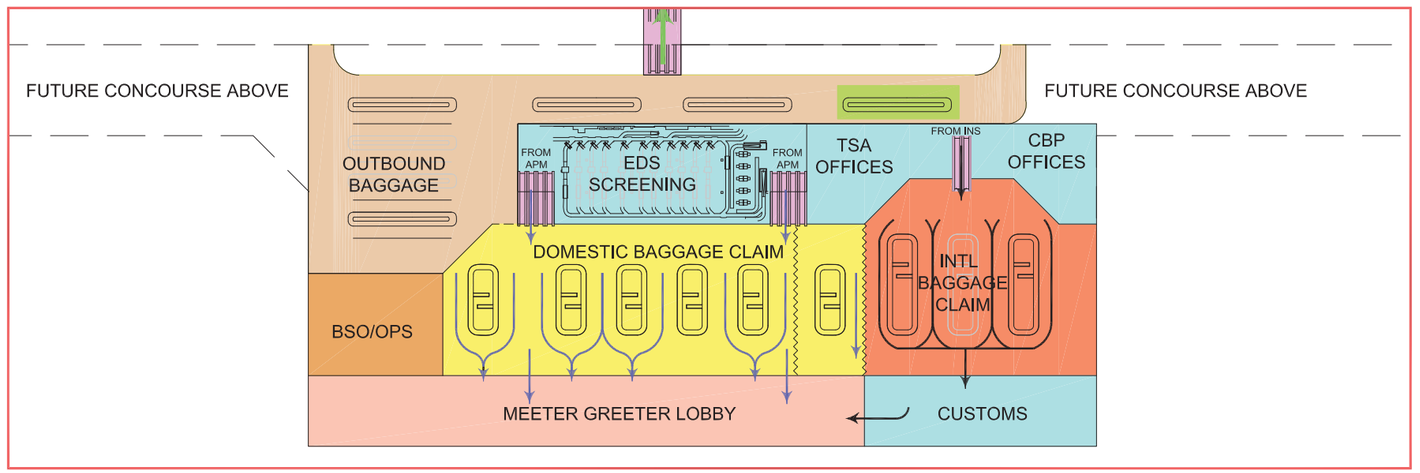
- Ticketing Area / Lobby
- Security Check Point
- Airline Ticket Offices
- Restrooms
- Concessions
- Vertical Circulation



Departures Level

Arrivals Level Functions

- Customs
- TSA/CBP Offices
- Meeter Greeter Lobby
- Airline Operation/BSO
- Domestic baggage Claim
- Outbound Baggage
- TSA Baggage Screening
- International Re-Check
- Int'l baggage Claim



Arrivals Level

THE QUESTIONS ?

RFI	Date	Advisory Committee Comment	Team Response
1	1/18/07	Why does north airfield need to be consistent with the south airfield?	Center taxiway between the two runways will increase safety.
2	1/18/07	How far do the runway hold short markings need to be so that an aircraft does not penetrate the imaginary surfaces?	800' between the runways will provide enough space for Group V aircraft (B747). 1040' between the runways will provide enough space for Group VI aircraft (NLA's).
3	1/18/07	Move 24R 100' (north runway in the north complex) north and keep the width of the runway 150' wide.	That is one of the configurations begin considered. AKA the 100' north concept.
4	1/18/07	El Segundo would like to see 24L widened to 200' to accommodate NLA.	This would enable operations of NLA to be balanced on both the north and south complexes.
5	1/18/07	Does a runway need to be 150' or 200' to accommodate Group VI (NLA) operations?	The FAA is currently reconsidering the width requirements for Group VI with the possible solution being an increase in the shoulder width.
6	1/18/07	What is the importance of the runway and/or taxiway shoulder?	The shoulder provides erosion control from the effects of jet blast from aircraft engines.
7	1/18/07	Move 24L (south runway in the north complex) 100' to the south.	That is one of the configurations begin considered. AKA the 100' south concept.
8	1/18/07	Split the difference of a 100' separation of the north complex runways.	That is one of the configurations being considered. AKA the 50-50 split concept.
9	1/18/07	What is the financial and operational impact to the 50-50 split concept?	The 50-50 split concept would require rebuilding both runways which would be the more expensive than just rebuilding one.
10	1/18/07	What is the reason for extending runway 24R to the west?	This would provide a "Stopway" for west operations.
11	1/18/07	What is a "Stopway"?	"An area beyond the takeoff runway designated by the airport owner for use in decelerating an airplane during an aborted takeoff." AC150/5300 page 23.
12	1/18/07	Can the "Stopway" be used for takeoff in the opposite direction (to the east - runway 6L)?	No. The stopway is not a full strength runway and thus is not usable in both directions.
13	1/18/07	What would be the benefit of increasing the length of 6L-24R with a stopway if it is not usable in both directions?	Aircraft taking off to the west on 24R will include the length of the stopway into their declared distance calculations.
14	1/18/07	What is Declared Distance?	There are many subsets to Declared Distances which are derived from an airplanes performance distances and performance speeds. The most applicable in this situation would be "Accelerate-Stop Distance".
15	1/18/07	What is "Accelerate-Stop Distance"?	The "Accelerate-Stop Distance" is brake release to takeoff decision speed and then aborting the takeoff and coming to a stop (plus safety factors). This distance shall not exceed the runway plus stopway.
16	1/18/07	How is this relevant at LAX?	Aircraft could essentially takeoff with a higher weight; which translates into more passengers, cargo, fuel, etc.
17	1/18/07	Why don't the airplanes use the preferential runway operations with takeoffs on the inboard runways and landings on the outboard runways?	Aircraft operating procedures are at the discretion of the FAA and air traffic controllers.

Advisory Committee Concept Comment Matrix — *Los Angeles International Airport*

RFI	Date	Advisory Committee Comment	Team Response
18	1/18/07	Would the jets roll out all the way to the end of the 24R stopway and thus create an increase in noise closer to Westchester?	Airlines want to get off the runway as soon as possible to get to the terminal and their gate. Usage of the stopway would be extremely rare; only in emergency situations.
19	1/18/07	Are intersection takeoffs still aloud at LAX?	Intersection takeoffs are not a usual practice at major airports due to safety concerns.
20	1/18/07	How many takeoffs a day occur on the outboard runways?	5% of the takeoffs occur on the outboard runways which equates to 80 takeoffs a day given 1,600 total per day.
21	1/18/07	Westchester and Playa del Rey don't want the 100' north concept.	No formal decision has been made at this time.
22	1/18/07	Early turnouts by aircraft go over community homes. 100' north will expand the noise contour to the north.	Aircraft changing course and turning out early only do so at the direction of air traffic control. This issue should be directed to the FAA.
23	1/18/07	On the ground and in the air 100' north is problematic.	Impacts would be analyzed during the environmental process.
24	1/18/07	The 50-50 split would result in huge construction costs.	The 50-50 split concept would require rebuilding both runways which would be the more expensive than just rebuilding one.
25	1/18/07	100' south concept would impact the existing north terminals.	Terminal 1, 2 and 3 would need to be reconfigured to support the 100' south concept.
26	1/18/07	Do not use the term "West Satellite" instead refer to the terminal as the "Bradley Annex" or the "Mid Field Satellite".	Future graphics will refer to the new terminal as the Mid Field Satellite.
27	1/18/07	How many gates are currently at the 3 north terminals?	Approximately 35 gates. A handful of them are international.
28	1/18/07	What is required for international gates?	Passengers need to be processed at Federal Inspections Services (FIS) facilities when arriving from a foreign country.
29	1/18/07	Why do not all international flights get consolidated to TBIT?	Airlines like to have code share partners in close proximity to facilitate connections.
30	1/18/07	How many gates do you get when T1-3 get configured in a linear arrangement?	Linear does not get you the 35 gates that are currently there. Gates would need to be relocated.
31	1/18/07	Build pier on the Midfield Satellite to gain frontage needed to accommodate lost north terminal gates.	Pier configurations are an out dated terminal design. Linear arrangements provide more opportunities for concessions and amenities and a single centralized security checkpoint.
32	1/18/07	Move runway 100' south only.	Consensus by the committee at this time.
33	1/18/07	How many existing gates are lost with the 100' shift south?	12 to 18 gates would be lost with the 100' south shift.
34	1/18/07	Why would a north linear terminal need processing and bag claim?	In Alternative D the processing and bag claim functions were to take place at the GTC. The 100' south concept would put these functions back into the terminal.
35	1/18/07	How would the north terminal gates remain functional during construction?	Phasing issues and schedules require detailed analysis unto themselves. This would be completed during advanced planning.
36	1/18/07	Provide net gain/loss of gates and cost/benefit information for different north terminal configurations.	Graphics to be completed for the next meeting on 01/25/07.

RFI	Date	Advisory Committee Comment	Team Response
37	1/18/07	The community has concerns about how the airfield, terminal and landside would be phased and if even possible.	Phasing issues and schedules require detailed analysis unto themselves. This would be completed during advanced planning.
38	1/18/07	Can ticketing and bag claim occur at the Midfield Satellite?	It is possible; not done anywhere else in the world currently.
39	1/18/07	How would passengers get to the Midfield Satellite?	Underground/above ground APM transfer from the north terminal.
40	1/18/07	Add direct roadway access thru the Park One parking lot.	Graphics to be completed for the next meeting on 01/25/07.
41	1/18/07	Can a rebuilt north terminal with a reduced number of gates handle the same amount of passengers/flights?	They can with a "Common-Use" terminal. Most airports are going in this direction.
42	1/18/07	What are the different configurations for a north terminal.	Linear, pier and arch configurations are being analyzed.
43	1/18/07	What issues other than the number of aircraft that can park is the terminal based on?	The curb along the roadway in front of the terminal needs to be able to handle vehicles during peak travel times and needs to be taken into account during terminal design.
44	1/18/07	Show the 96th Street bridge relocated over Park One to relieve the divert the Century/Sepulveda traffic.	Graphics to be completed for the next meeting on 01/25/07.
45	1/18/07	What is the best terminal geometry to build?	The terminal efficiencies need to be compared given the available land envelope that is available to work with.
46	1/18/07	What are benefits of a linear terminal?	TSA only needs to staff a single (possibly two) checkpoint as opposed to multiple in a pier configuration. Concession opportunities.
47	1/18/07	How do you know where your airline is with a common use terminal?	Daily dynamic signage updates airline locations as they change throughout the day.
48	1/18/07	How do you deal with temporary loss of gates?	Phasing issues and schedules require detailed analysis unto themselves. This would be completed during advanced planning.
49	1/18/07	Why is the curb an issue?	The landside needs to support the terminal.
50	1/18/07	What is the minimum separation of the two runways to provide a center taxiway?	The north airfield needs an additional 100' for a total of 800' between the runways.
51	1/18/07	How much space do you need to make "S" curve taxiways as shown in previous concepts?	Graphics to be completed for the next meeting on 01/25/07.
52	1/18/07	The north airfield is statistically safer than the south was. Why do you need it?	It will increase safety and efficiency. Aircraft will be able to hold on the center taxiway.
53	1/18/07	How many feet do you need for the nose/tail not to penetrate the imaginary surfaces?	800' between the runways will provide enough space for Group V aircraft (B747). 1040' between the runways will provide enough space for Group VI aircraft (NLA's).
54	1/18/07	Can an airplane simply hold short of a runway at an acute angle or perpendicular to the runway?	The optimum hold position that requires the least amount of separation of the runways is for aircraft to be positioned parallel to the runway on a parallel taxiway.
55	1/18/07	Consensus 100' south is ok.	To be shown in all future concepts.
56	1/18/07	Need terminal/gate count range.	To be completed for the next meeting 01/25/07.
57	1/18/07	Need a combination of narrow and wide body aircraft parking positions.	To be completed for the next meeting 01/25/07.

Advisory Committee Concept Comment Matrix — *Los Angeles International Airport*

RFI	Date	Advisory Committee Comment	Team Response
58	1/18/07	How big does the Midfield Satellite need to be?	To be completed for the next meeting 01/25/07.
59	1/18/07	How do you get to the Midfield Satellite?	To be completed for the next meeting 01/25/07.
60	1/18/07	Processing of (Midfield) passengers in the north terminal or at the Satellite?	To be completed for the next meeting 01/25/07.
61	1/18/07	Is the Midfield practicable/feasible?	To be completed for the next meeting 01/25/07.
62	1/18/07	No 340' north or 340' south concept.	No formal decision has been made at this time.
63	1/18/07	Preference 100' south.	To be shown in all future concepts.
64	1/18/07	How long will it take to build a new terminal?	Phasing issues and schedules require detailed analysis unto themselves. This would be completed during advanced planning.
65	1/18/07	100' south is the preferred alternative.	To be shown in all future concepts.
66	1/18/07	Focus of meeting on the airside and terminal.	Look to the landside at the next meeting.
67	1/18/07	How about check-in facilities (mini GTC) at Park One?	To be completed for the next meeting 01/25/07.
68	1/18/07	Are the tunnels under the north terminals able to be used?	The unit cost of retrofitting vs. new construction in this case would be more. Advanced planning would determine if at all feasible.
69	1/18/07	In a pier configuration would you need new construction?	The present condition of the terminals are deteriorating. New construction estimated at $400-450 per SF where as renovation is $450-500 per SF.
70	1/25/07	Scale back the parking at the ITC.	To be completed for the next meeting 01/30/07.
71	1/25/07	Provide direct access from the I-105 to ITC "Kiss and Ride"	To be completed for the next meeting 01/30/07.
72	1/25/07	Utilize current I-105 off-ramp with a signal and then proceed north to ITC.	To be completed for the next meeting 01/30/07.
73	1/25/07	Diversion of traffic.	Community members are concerned with air quality in the central terminal area.
74	1/25/07	ITC located next to the I-105 is good for vehicles coming off the freeway or from the south on surface streets.	ITC to remain in its current location.
75	1/25/07	Third Party to operate remote check-in ("smart curb" concept) supported by the community.	Multiple airlines have supported remote bag checks at multiple locations including hotels, flyaways, etc.
76	1/25/07	Parking is an "old school" revenue source.	Remote baggage check could be an innovative alternative revenue source.
77	1/25/07	Increase the rate to park in the central terminal area structures to discourage people from driving/parking in the CTA.	This would be a policy decision by LAWA and/or require advertising to make people aware of a drastic change.
78	1/25/07	Have APM stop at long term parking lots.	An APM can have frequent stops for convince. LAWA can determine how many as well as the route.
79	1/25/07	Area residents will not ride the Green Line to the airport.	Green Line/APM rider ship might rely heavily on airport employees.
80	1/25/07	Green Line should not stop at the airport.	Only the MTA will ultimately determine the route of the Green Line.
81	1/25/07	Green Line stop could be based on perception; you see an airplane you know you are at the airport.	A potential Green Line stop could be at the Park One lot with an APM connection to the CTA.
82	1/25/07	No one knows the fate of the Crenshaw/Prairie Line.	The Blue Line will be kept on the drawings for now.

RFI	Date	Advisory Committee Comment	Team Response
83	1/25/07	Green Line extension to Aviation/Century.	Only the MTA will ultimately determine the route of the Green Line.
84	1/25/07	"Kiss and Ride" at the ITC.	Show the APM connection to multiple stops including ITC, GTC, and long term parking.
85	1/25/07	LAWA can control the APM.	APM to be shown with frequent stops.
86	1/25/07	No control over the (Green/Blue Lines) MTA.	Rapid Transit will continue to show current routes on future graphics.
87	1/25/07	ITC footprint does not need to be as big as it is shown on the plans.	Excess space could be available for employee parking and/or a long term surface lot.
88	1/25/07	Midfield Satellite location would require the relocation of LAWA offices.	Excess ITC area could potentially be available to relocate displaced LAWA offices.
89	1/25/07	ITC could be like the cell phone lot with little use.	Increase usage by adding amenities such as a Starbucks and/or "Big Screen" flight display like they have in Phoenix. Public awareness through advertisements also works will just like the Flyaways.
90	1/25/07	Discourage use of LAX.	Planning to be consistent with the settlement agreement.
91	1/25/07	Put taxi cabs, supper shuttles, etc. at Century and Aviation.	Then you have to figure out how to get people to/from the terminal with baggage.
92	1/25/07	Air quality issues in the CTA are an issue. Only handicap and hotel shuttles should be allowed to enter.	Multiple APM stations will increase the incentive to alternatives to entering the CTA.
93	1/25/07	Disperse cabs/for hire vehicles at different locations. For example north go to the ConRAC, east go to the GTC and south go to the ITC.	Multiple locations would be met with resistance from the companies. Also this would be a wayfinding issue with passengers who are unfamiliar with the area.
94	1/25/07	APM in CTA build on top of current parking garages.	Ultimate locations of stations and exact track route would need to be determined in a more detailed advanced planning exercise.
95	1/25/07	Integrate parking, APM and freeway access.	Multiple APM stations will increase the incentive to alternatives to entering the CTA.
96	1/25/07	Move all shared ride and taxi to the ConRAC.	Taxi and for hire were at the GTC in Alternative D.
97	1/25/07	Charge private vehicles a toll to enter the CTA.	This would be a policy decision by LAWA and/or require advertising to make people aware of a drastic change.
98	1/25/07	Look at pollutants in the CTA.	Impacts would be analyzed during the environmental process.
99	1/25/07	Use 96th Street bridge at access point from the I-405	This free flow from the freeway would create a choke-point and eventually backup onto the freeway. Doesn't solve anything.
100	1/25/07	Need direct access to long term parking, not the CTA.	To be completed for the next meeting 01/30/07.
101	1/25/07	Provide direct freeway access to the rental car return.	Direct vehicles down a 96th street corridors and provide signage for rental car return.
102	1/25/07	How many gates do you get when T1-3 get configured in a linear arrangement?	12-18 widebody gates.
103	1/25/07	How many gates do you get when T1-3 get configured in a pier arrangement?	20-25 widebody gates.

RFI	Date	Advisory Committee Comment	Team Response
104	1/25/07	Can the north terminal building support processing of passengers for the Midfield Satellite?	Yes, the width of the building is substantial.
105	1/25/07	Can pier configuration be extended to the east?	Yes, if the 96th street bridge concept is removed than another pier can be inserted into the Park One area.
106	1/25/07	Which configuration works better for FIS?	A linear terminal works best for FIS processing.
107	1/25/07	Why do not all international flights get consolidated to TBIT?	Airlines like to have code share partners in close proximity to facilitate connections.
108	1/25/07	Why is an FIS at the Midfield Satellite going to be difficult?	International passengers deplane, get their bags and go thru customs. Don't want to have to recheck bags (Atlanta).
109	1/25/07	Why is a Midfield Satellite needed, can't TBIT have piers added?	You need to have airfield taxiways to connect the north and south runways.
110	1/25/07	Can't you support the same amount of gates from the same curbside?	Yes, you need to disperse the vehicles and passengers along the curb so as to not create congestions/choke points.
111	1/25/07	Check-in for TBIT at the North Terminal and check-in for the Midfield Satellite at TBIT.	This would require more detailed analysis in the advanced planning process.
112	1/25/07	What about a common use terminal?	This would result in more flights with better utilization, thus less of a footprint.
113	1/25/07	Pier configuration is outdated.	Linear terminal provides better security options as well as better concession opportunities.
114	1/25/07	No runway extension on 24R.	A stopway is different from a displaced threshold in that a it can only be used in an emergency and is not rated as a full strength runway.
115	1/25/07	Shift Arc Terminal configuration to the east (Park One).	To be completed for the next meeting 01/30/07.
116	1/25/07	Show the El Segundo Plan which moves the north runway 24R 100' to the north.	To be completed for the next meeting 01/30/07.
117	1/25/07	100' north will leave T1-3 in their current configurations and gate counts.	This would reduce the number of gates needed at the Midfield Satellite.
118	1/25/07	Show T1-3 as they are with additional gates at the Midfield Satellite.	To be completed for the next meeting 01/30/07.
119	1/25/07	Show a "Widened" TBIT with gates all around it/pier configuration as opposed to a Midfield Satellite.	To be completed for the next meeting 01/30/07.
120	1/25/07	Midfield Satellite is the preferred alternative.	TBIT is already operating at a low level of service. Back siding it would only reduce the level of service.

RFI	Advisory Committee Comment	Team Response
1	What prompts N-S taxiways to be moved? Leave well enough alone.. .	Taxiways S & Q need to be relocated west to provide sufficient clearance for additional aircraft gates on the west face of TBIT. Two additional N-S taxiways would be needed west of any proposed Midfield Satellite concourse or terminal.
2	Explain the massive difference in parking facilities. If LAWA doesn't think ITC is necessary why did they insist that it be a green light project?	The ITC parking structure was proposed to relocate the displaced parking supply in the CTA. LAWA replaces the ITC parking on the Westside associated with the West Terminal.
3	How is LAWA addressing the incorporation of the Green Line? It doesn't appear to be costed in the efforts.	The Green Line Extension appears in the Cost Estimates equally for each concept in the "Concept Project Cost Comparison Matrix (Summary)." The line item is under "Ground Access & Parking", "Transit System", "Green Line Extension - MTA". The distance (2.5 miles) and cost ($230M) is consistent in all four concepts.
4	With the tunnel under TBIT to the midfield, there is no need for a people mover going there. Why is it included when there is NONE in the LAWA proposal?	The LAWA Concept Airside APM is in the Cost Estimate for a distance of 16,800 LF ($974M). The ARSAC Concept Airside APM is in the Cost Estimate for a distance of 4,400 LF ($303M). Without an APM, the walking distance would be ½ mile or 2500 feet of additional walking distance. The industry standard for airports is that the maximum unassisted walking distances is about 1000 feet and this far exceeds it.
5	There was no cargo facility changes identified. What is this estimate for?	Some Cargo and Ancillary facilities would need to be relocated and/or reconfigured. The LAWA costs are primarily for the relocation of the facilities along Imperial Blvd and the Advisory Concepts include the costs associated for the midfield facilities displace by the relocation of taxiway S and Q (as well as the relocation of the runway south in the Unified Concept).
6	What is the "extra" $300 in land acquisition?	Land Acquisition for the Community Concepts is related to Ground Access and Parking – should be a line item at the bottom of the list (Optional).
7	On the landside the 405 connection is included with the RAC estimate. Is the rest, about $30M due to the Lennox interchange? This can be deleted to save money.	All Roadway improvements for the Community Concepts appear as "Optional" and are located as a line item below the "Total Project Cost" for comparison purposes.
8	What is the Upgrade to existing terminals 1 -8? If LAWA is not updating them, this one doesn't either.. .	LAWA is upgrading the existing terminals at a cost of $325M. The ARSAC cost of upgrading is $340M. This is due to the difference in time to implement and the additional escalation.
9	$2B for backside Bradley were approved in the settlement agreement. If LAWA doesn't feel that they are necessary, then we shouldn't be forced to spend this much for the smaller number of gates. They can be included in the midfield. Not every gate needs to be NLA capable as the ones that are being replaced are not. This should allow for more gates.	The $2B for the backside of TBIT is a result of an additional 14 gates. If these 14 gates are added to the Midfield Satellite (25 gates + 14 additional = 39 gate satellite), the size of the building will need to be larger thus impacting additional areas i.e. fuel farm and N-S taxiways.

Advisory Committee
Comment Matrix - 041807

Los Angeles International Airport

RFI	Advisory Committee Comment	Team Response
10	The road over Sepulveda from 98th St already exists. Why an additional $54M? Also the $233M elevating 98th is questionable. If LAWA's plan works without it so will ours.	All Roadway improvements for the Community Concepts appear as "Optional" and are located as a line item below the "Total Project Cost" for comparison purposes. The LAWA plan will move 30-40 percent of the traffic to the Westside of the airport while all the community concepts keep all the traffic on the east.
11	We never called for double decking Century. This is another $216M that could be reduced. ..	All Roadway improvements for the Community Concepts appear as "Optional" and are located as a line item below the "Total Project Cost" for comparison purposes.
12	Lennox Rd-La Cienega to Aviation elevated? Why this additional $27M cost? If LAWA plan can live without it so can we..	All Roadway improvements for the Community Concepts appear as "Optional" and are located as a line item below the "Total Project Cost" for comparison purposes. The LAWA plan will move 30-40 percent of the traffic to the Westside of the airport while all the community concepts keep all the traffic on the east.
13	Airside APM listed is not necessary. Additional $303M decrease	Without an APM, the walking distance would be ½ mile or 2500 feet of additional walking distance. The industry standard for airports is that the maximum unassisted walking distances is about 1000 feet and this far exceeds it.
14	Fails to upgrade to Terminals 1-8 or allow for infrastructure maintenance.	LAWA is upgrading the existing terminals at a cost of $325M.
15	Fails to address operationally deficient, wavered taxiways on north.	New airfield infrastructure to the west will be designed to the most current FAA standards.
16	Moves and adds traffic, pollution and cargo operations north into LA City areas more than before.	The LAWA concept disperses traffic and related impacts. Traffic would be distributed north, south and west as opposed to being concentrated in one location (existing CTA).
17	Creates a new, separate airport on West end.	Though the west terminal would not be adjacent to the CTA, LAX would continue to function as a single, cohesive airport with good connections between the facilities.
18	Inconvenience of getting from one airport to the other.	Multiple connections both landside and airside would be provided for transiting from one side of the airport to the other side, this is not two airports.
19	Security issues of going across airfield.	The security issues would be addressed.
20	Submerging Pershing security risk?	Pershing would remain intact as is.
21	Drives more traffic onto Lincoln and Sepulveda.	Traffic modeling will need to be completed. It is possible that the traffic levels will be reduced on these streets in the LAWA plan.
22	Moves cargo traffic to the north.	There are no current or planned cargo processing facilities north of the Taxiway D.

RFI	Advisory Committee Comment	Team Response
23	Creates a new ring road.	The "ring road" was a significantly larger roadway improvement that built a airport dedicated elevated roadway system from an area near the I-90 Marina freeway all the way to the Westside of the airport. In additional it utilized Imperial Blvd, Pershing and Westchester Parkway as airport access roadways. The concept proposed by LAWA is significantly different.
24	Drives pollution into the community.	The LAWA concept disperses traffic and its related impacts. Traffic would be distributed north, south and west as opposed to being concentrated in one location (existing CTA).
25	Submerging of Lincoln Blvd. security risk?	Would require mitigation consistent with Sepulveda tunnel under the South Airfield.
26	Interferes with Westchester business district.	Requires more detailed analysis of potential impacts.
27	Cost exercise doesn't include people mover to new LAX West.	The LAWA Concept Airside APM is in the Cost Estimate for a distance of 16,800 LF ($974M).
28	Fails to accommodate TBIT gates on back side as announced by Mayor.	The Mayor was referring to building gates west of TBIT not the backside of TBIT.
29	How will baggage be transferred from one airport to the other?	LAX would continue to function as a single airport with multiple terminals, as it does today. All inter-terminal baggage transfers would occur from one side of the airport to the other side, this is not two airports.
30	How will passengers be transferred from one airport to the other? Will FAA be restricted in where to send aircraft once on the ground so that people are not stranded in wrong airport?	LAX would continue to function as a single airport with multiple terminals, as it does today. Passengers would be transferred via the proposed airside APM from one side of the airport to the other side, this is not two airports..
31	Why is cost of extending 105 to the west is far less than 405 extension to RAC?	The I-105 extension is in the LAWA cost estimate at $190M. No direct access from the I-405 to the RAC will be included. All concepts will be revised to read "Surface access via 98th street modifications" and will be included in the cost of the RAC consistent in all four concepts.
32	Why no ITC and associated people mover?	ITC was intended to serve parking demand from displaced CTA parking facilities as well as an inter-modal interface location. The LAWA concept MTA / Inter-modal location is a hybrid thus the APM section from Century to the ITC was not deemed necessary (the APM is still necessary from the CTA-RAC-Manchester Square).
33	Why doesn't West terminal not cause movement of fuel farm etc?	The proposed location is clear of the existing fuel farm boundaries.
34	What about holding field areas presently east of runways?	More clarification of the comment is needed. Unclear what commenter means by "holding field" areas.
35	What specific land acquisition is required?	Some lands may be required for ground access and other right-of-ways improvements.

Advisory Committee
Comment Matrix - 041807

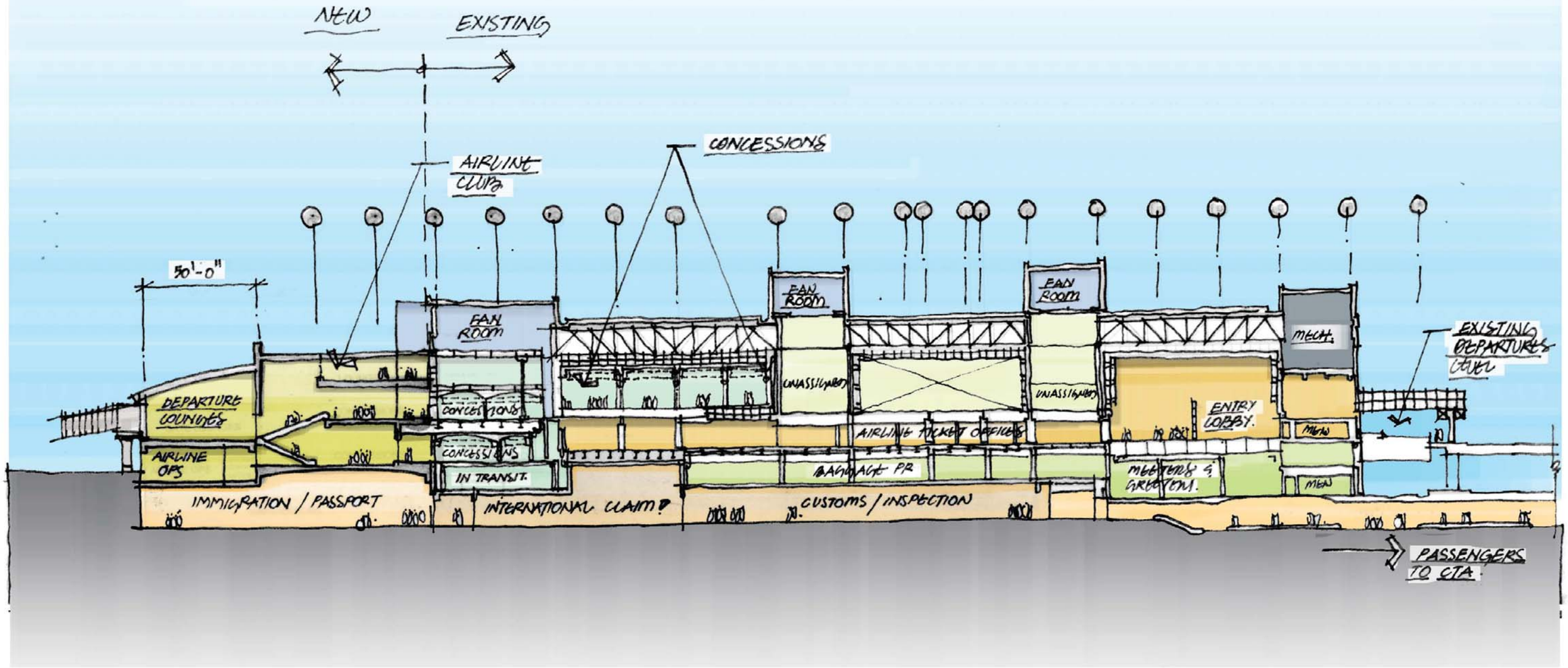
Los Angeles International Airport

RFI	Advisory Committee Comment	Team Response
36	Doesn't address CTA traffic.	By reducing the passenger traffic loads in the CTA to 40-50 MAP it does address CTA capacity issues. The remaining activity would be in the new West Terminal.
37	LAWA's plan adds 44 net gates. Which are being deleted and how?	The gate count would not exceed 153 gates as agreed to in the settlement agreement. All remote gates would be eliminated. The 44 new gates would augment the existing 109 contact gates that currently exist in the CTA.
38	THIS IS THE ONLY PLAN THAT ACTUALLY IMPROVES LAX AND DOESN'T CREATE A NEW, DISCONNECTED AIRPORT ALONG WITH LEAVING LAX PROPER IN THE CONTINUING TO DEGRADE STATE.	Comment noted.
39	Why is all of the relocation of taxiways D & E required along with the "enabling projects"? $1.2 B	Relocating Runway 24L south 100' would require relocating taxiways D & E 100' south as well. When relocated, these taxiways would be brought up to current standards. $1.2B includes the reconstruction of the runway, taxiways D & E, reconstruction of taxiways S & Q (N-S), as well as construction of 2 new N-S taxiways.
40	Back side of TBIT gates could be moved into Midfield terminals at a saving of about $1 B?!	The $1.6B for the backside of TBIT is a result of an additional 9 gates. If these 9 gates are added to the Midfield Satellite (25 gates + 9 additional = 34 gate satellite), the geometry of the building will need to change thus impacting additional existing facilities such as the fuel farm and N-S taxiways. The is likely to be similar for either concept.
41	Some airport access changes and details could remove another $1/2B to $1B by not elevating Century and not doing the Lennox off ramp.	All Roadway improvements for the Community Concepts appear as "Optional" and are located as a line item below the "Total Project Cost" for comparison purposes.
42	There is an assumption of an airside APM which need not be there reducing cost by about $1/2 B.	Without an APM, the walking distance would be ½ mile or 2500 feet of additional walking distance. The industry standard for airports is that the maximum unassisted walking distances is about 1000 feet and this far exceeds it.
43	Why are there charges for a north Cargo complex at $70M?	The North Cargo Area encompasses the facilities along Century Blvd. All concepts call for the same Cargo requirements totaling $68M (North $23M - South $45M).
44	Why is the fuel farm needed to be relocated?	Scope assumption, "Relocate existing fuel farm manifolds" with an associated cost of $15M. The manifolds are impacted by the relocation of Runway 24L 100' south along with the corresponding 100' south relocations of taxiways D & E.
45	What land acquisitions are unique to our plan? Traffic can be diverted to Century and/or whatever way LAWA already costed into the direct connection of the 405 to the RAC ...	Land Acquisition for the Community Concepts is related to Ground Access and Parking – should be a line item at the bottom of the list (Optional).

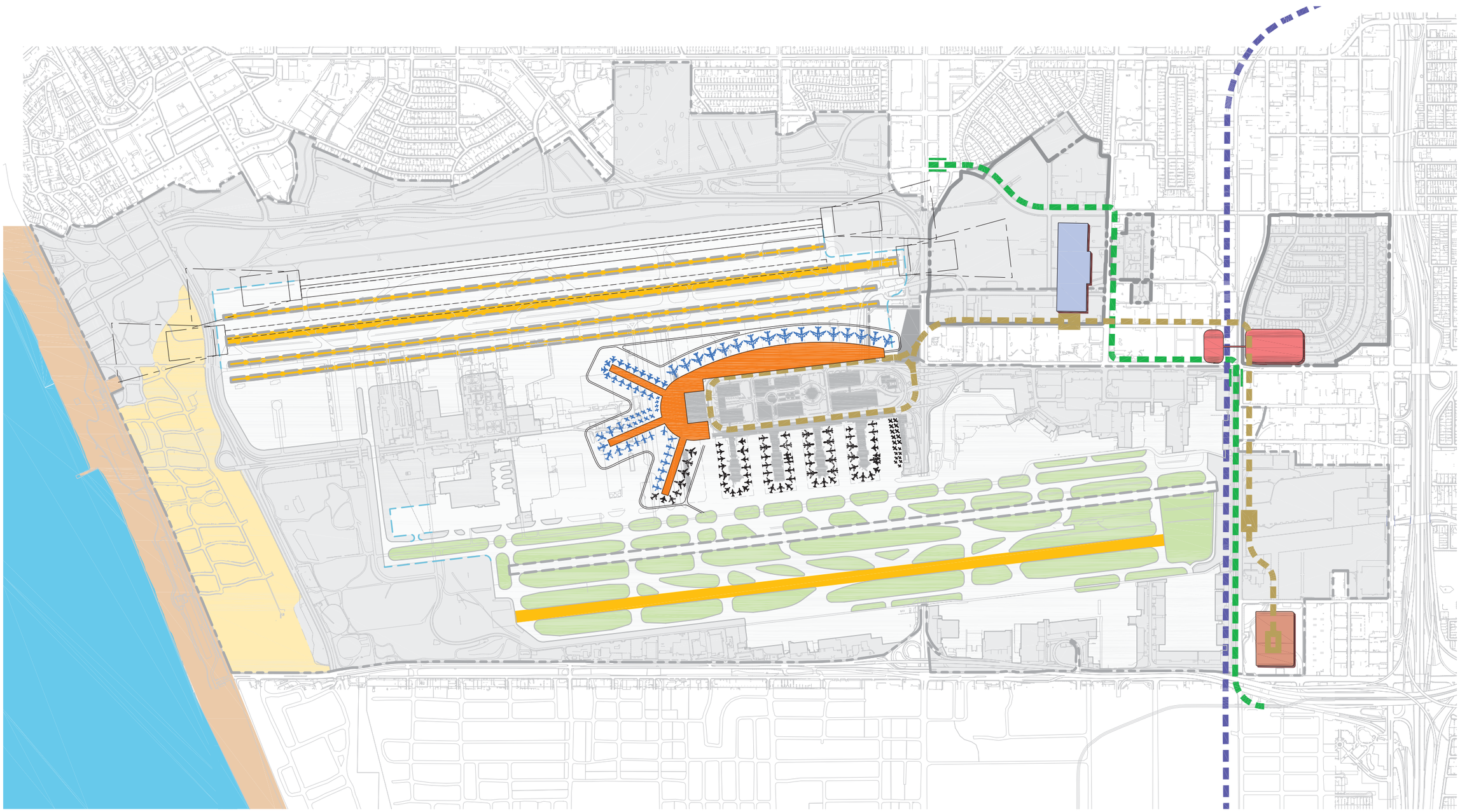
RFI	Advisory Committee Comment	Team Response
46	Still question the $1.7B NIH factor added to all but the LAWA plan.....	Comment noted.
47	1. How would moving 24R north 100' affect Lincoln Blvd (Val Velasco)?	Requires more detailed analysis.
48	2. What effect would the RPZ have on the In-n-Out Burger at Lincoln and Sepulveda, the Parking Spot, and the block across the street from those businesses (Val Velasco)?	In-n-out, and the Parking Spot are already within the RPZ for Runway 24R. Additional RPZ analysis would be required.
49	3. As a follow up to quantifying the need to move the north runways, perhaps we should look into incursion data for airports that have greater distances between runways than LAX to see whether physical distance really solves the problem (Steve Napolitano)?	LAWA retained outside independent safety experts to address this safety issue. We were informed by LAWA staff not to duplicate efforts in this area.
50	4. What buildings would have to be demolished to accommodate at northern runway move of a) 100 feet and b) 340 feet? We are specifically asking what has to be knocked down for the runway safety zone (Phil Tate).	The Runway Safety Area (RSA) location for a 100 foot or 340 foot northward relocation would not encompass any existing structures. The RSA for 24R extends from the centerline out 250' to both side of the runway. The RSA for 24R also extends from the end of the threshold (pavement) out 1000'. A runway RSA is an area that "surrounds" a runway and is to be free of objects other than those required for air navigation. RSA requirements fall under FAA Advisory Circular 150-5300, Airport Design. The Runway Protection Zone (RPZ) is an area which protects an aircraft on approach to a given runway. RPZ requirements fall under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. The RPZ issues are currently being studied by another consultant.
51	5. Can you make some recommendations of how to address the ground access issues in the CTA without adding western access (Phil Tate)?	Exhibits are being created.

ARSAC Concept related comments.
LAWA Concept related comments.
Advisory Committee Concept related comments.
Other non-concept specific comments.

Description	Planned (2008)	Required (2008)		Required TBIT (2015)		Required TBIT & Satellite (2015)	
	Area (SF)	Area (SF)	Variance from 2008 Planned	Area (SF)	Variance from 2008 Planned	Area (SF)	Variance from 2008 Planned
Airline Functions							
Ticket Counter Area	11,727	13,932	(2,205)	15,005	(3,278)	42,013	(30,286)
Ticket Counter Queuing	25,664	40,635	(14,971)	43,764	(18,100)	122,539	(96,875)
Airline Ticket Office	23,723	25,155	(1,432)	27,092	(3,369)	75,858	(52,135)
Domestic Baggage Claim Area	6,203	0	6,203	0	6,203	43,085	(36,882)
Baggage Service Office	0	0	0	0	0	9,574	(9,574)
Outbound Baggage	70,857	77,400	(6,543)	83,360	(12,503)	233,408	(162,551)
Inbound Baggage	29,380	37,633	(8,253)	40,586	(11,206)	113,640	(84,260)
Interline Baggage Re-Check	4,816	5,125	(309)	5,510	(694)	5,510	(694)
Airline Operations	48,313	55,562	(7,249)	68,677	(20,364)	192,295	(143,982)
Departures Lounges (Holdrooms)	39,199	47,400	(8,201)	100,500	(61,301)	178,300	(139,101)
Bus Gate Lounge	17,123	0	17,123	0	17,123	0	17,123
Airline Lounges	41,938	44,450	(2,512)	54,942	(13,004)	153,836	(111,898)
Total Airline Functions	**318,943**	**347,292**	**(28,349)**	**439,435**	**(120,492)**	**1,170,059**	**(851,116)**
Concessions							
Food and Beverage	28,942	55,562	(26,620)	68,677	(39,735)	192,295	(163,353)
News, Gifts, and Specialty Retail	14,223	25,003	(10,780)	30,905	(16,682)	86,533	(72,310)
Duty Free	15,001	19,447	(4,446)	24,037	(9,036)	67,303	(52,302)
Services	3,148	5,556	(2,408)	6,868	(3,720)	19,230	(16,082)
Support and Storage	7,188	11,112	(3,924)	13,735	(6,547)	38,459	(31,271)
Total Concessions	**68,502**	**116,681**	**(48,179)**	**144,222**	**(75,720)**	**403,820**	**(335,318)**
International Arrivals Facilities			0		0		0
Customs and Baggage Claim	147,923	259,065	(111,142)	279,395	(131,472)	335,274	(187,351)
Sterile Circulation	49,833	42,000	7,833	73,500	(23,667)	119,000	(69,167)
International Meeter/Greeter Hall	15,771	20,835	(5,064)	22,440	(6,669)	26,928	(11,157)
In-Transit Lounge	14,565	14,565	0	18,060	(3,495)	16,530	(1,965)
Total International Arrivals Facilities	**228,092**	**336,465**	**(108,373)**	**393,395**	**(165,303)**	**497,732**	**(269,640)**
Secure Public Area			0		0		0
Passenger Screening Area	16,264	23,680	(7,416)	25,488	(9,224)	71,366	(55,102)
Concourse Circulation	45,356	36,000	9,356	63,000	(17,644)	168,000	(122,644)
General Circulation	41,834	63,676	(21,842)	78,370	(36,536)	176,549	(134,715)
Restrooms	10,723	12,078	(1,355)	17,622	(6,899)	49,342	(38,619)
Other	0	5,556	(5,556)	6,868	(6,868)	19,230	(19,230)
Total Secure Public Area	**114,177**	**140,990**	**(26,813)**	**191,347**	**(77,170)**	**484,487**	**(370,310)**
Non-Secure Public Area			0		0		0
Circulation - Ticketing	16,648	19,350	(2,702)	20,840	(4,192)	58,352	(41,704)
Circulation - Dom. Baggage Claim	0	0	0	0	0	23,936	(23,936)
Circulation - General	79,438	158,004	(78,566)	194,465	(115,027)	438,087	(358,649)
Restrooms	7,830	8,052	(222)	11,748	(3,918)	32,894	(25,064)
Other	0	5,556	(5,556)	6,868	(6,868)	19,230	(19,230)
Total Non-Secure Public Area	**103,916**	**190,962**	**(87,046)**	**233,920**	**(130,004)**	**572,498**	**(468,582)**
Non-Public Area			0				
TSA	922	2,013	(1,091)	1,593	(671)	4,460	(3,538)
EDS In-Line Screening Area	29,530	50,310	(20,780)	54,184	(24,654)	151,715	(122,185)
Airline/Tenant Administrative Offices	38,342	58,461	(20,119)	71,952	(33,610)	162,092	(123,750)
Airport Administration	9,083	7,900	1,183	9,723	(640)	21,904	(12,821)
Airport Police	191	316	(125)	389	(198)	876	(685)
Loading Dock	2,370	7,900	(5,530)	9,723	(7,353)	21,904	(19,534)
Miscellaneous (incl. Circulation)	26,934	79,002	(52,068)	97,232	(70,298)	219,043	(192,109)
Employee Restrooms	3,008	4,740	(1,732)	5,834	(2,826)	13,143	(10,135)
Maintenance and Storage	4,728	7,900	(3,172)	9,723	(4,995)	21,904	(17,176)
Mechanical/ Electrical	67,182	158,004	(90,822)	194,465	(127,283)	438,087	(370,905)
Structure/Voids/Other	22,141	71,102	(48,961)	87,509	(65,368)	197,139	(174,998)
Total Non-Public Area	**204,431**	**447,648**	**(243,217)**	**542,328**	**(337,897)**	**1,252,268**	**(1,047,837)**
Total Area	**1,038,061**	**1,580,038**	**(541,977)**	**1,944,647**	**(906,586)**	**4,380,865**	**(3,342,804)**
% Area Increase from Planned (2008)			**52%**		**87%**		**322%**



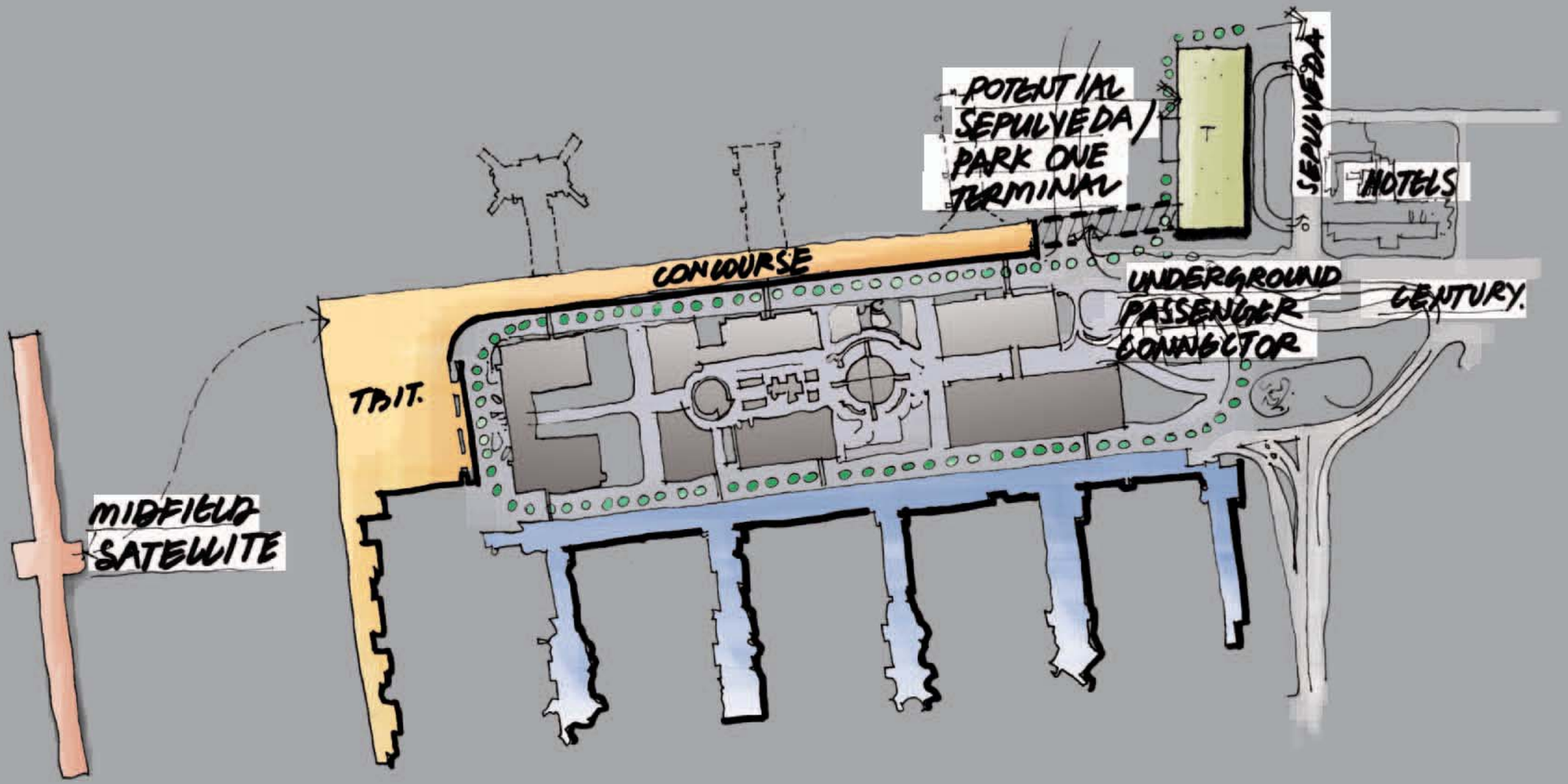
East/West Section Thru TBIT



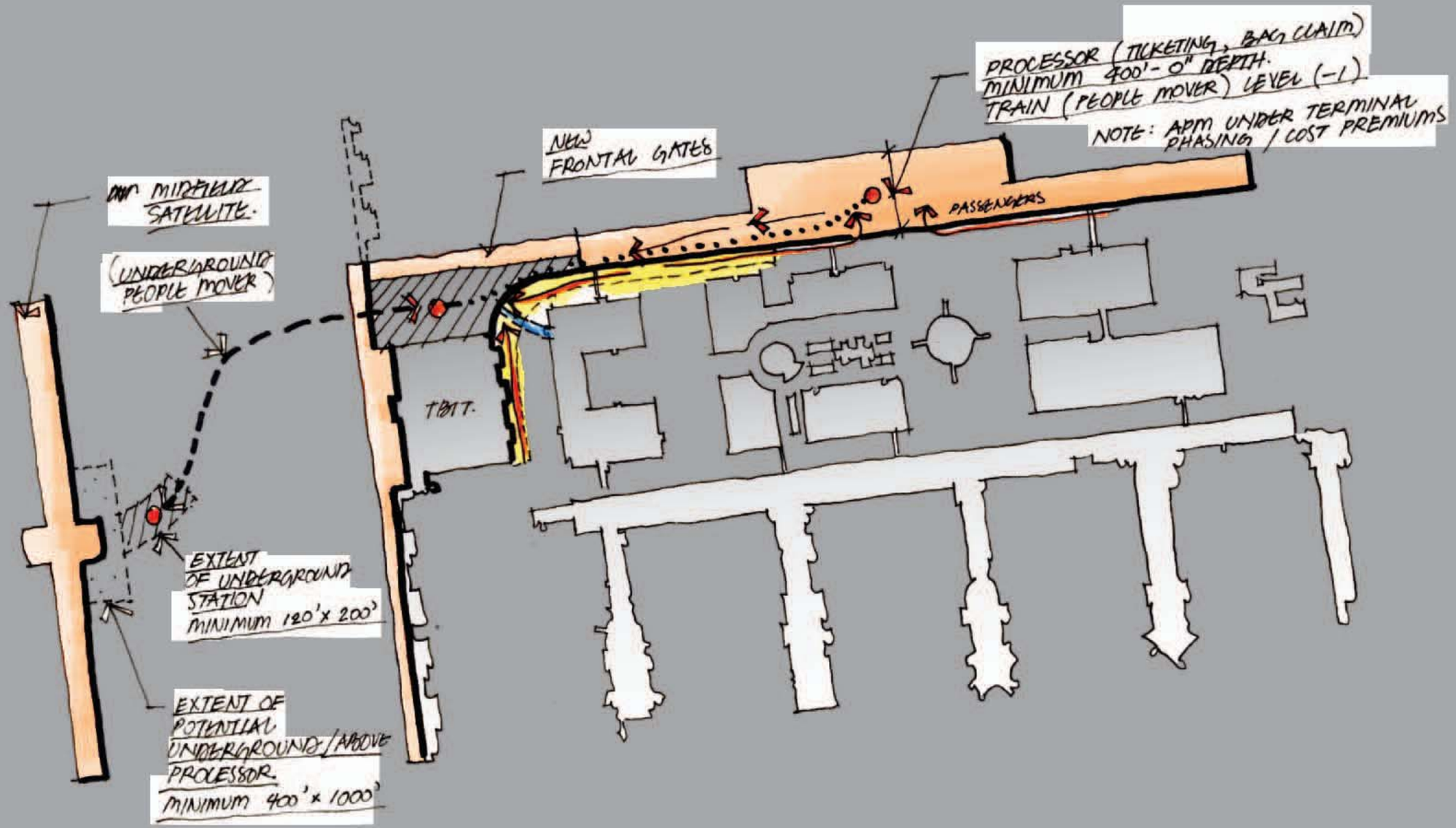
Super TBIT Concept 5

Not To Scale

January 31, 2007

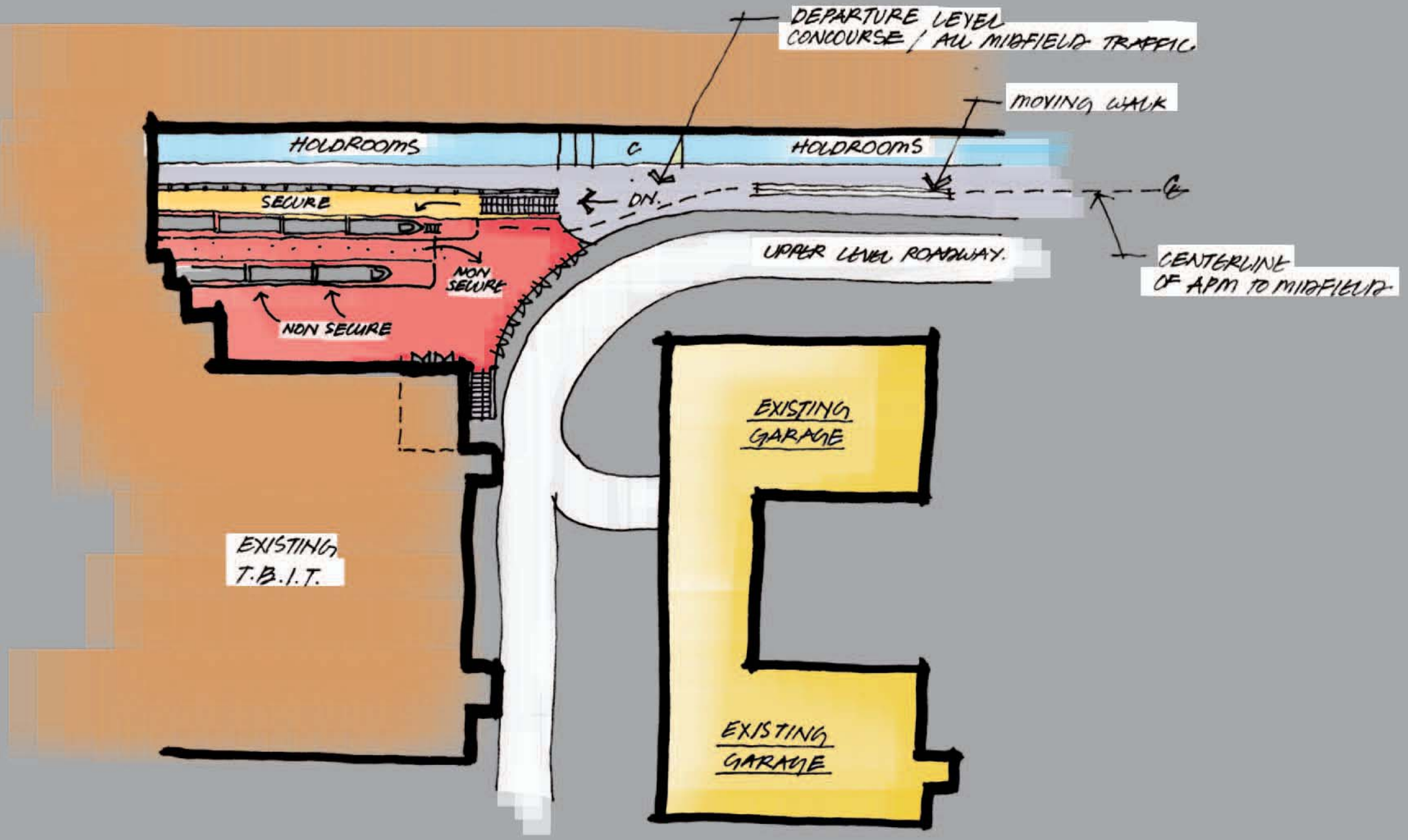


Advisory Committee Concept 1A



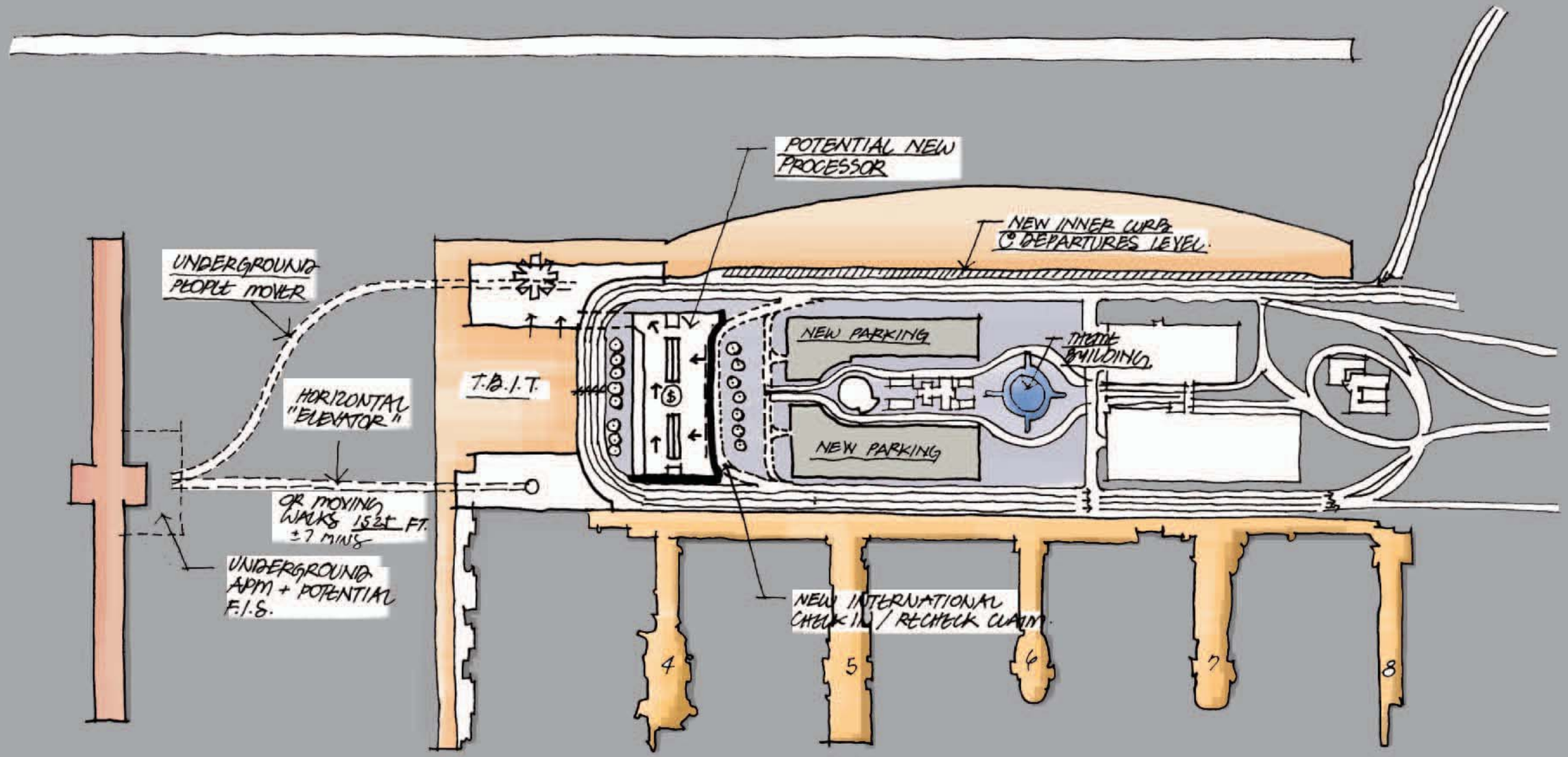
Advisory Committee Concept 1A

APM/Terminal Potential Integration

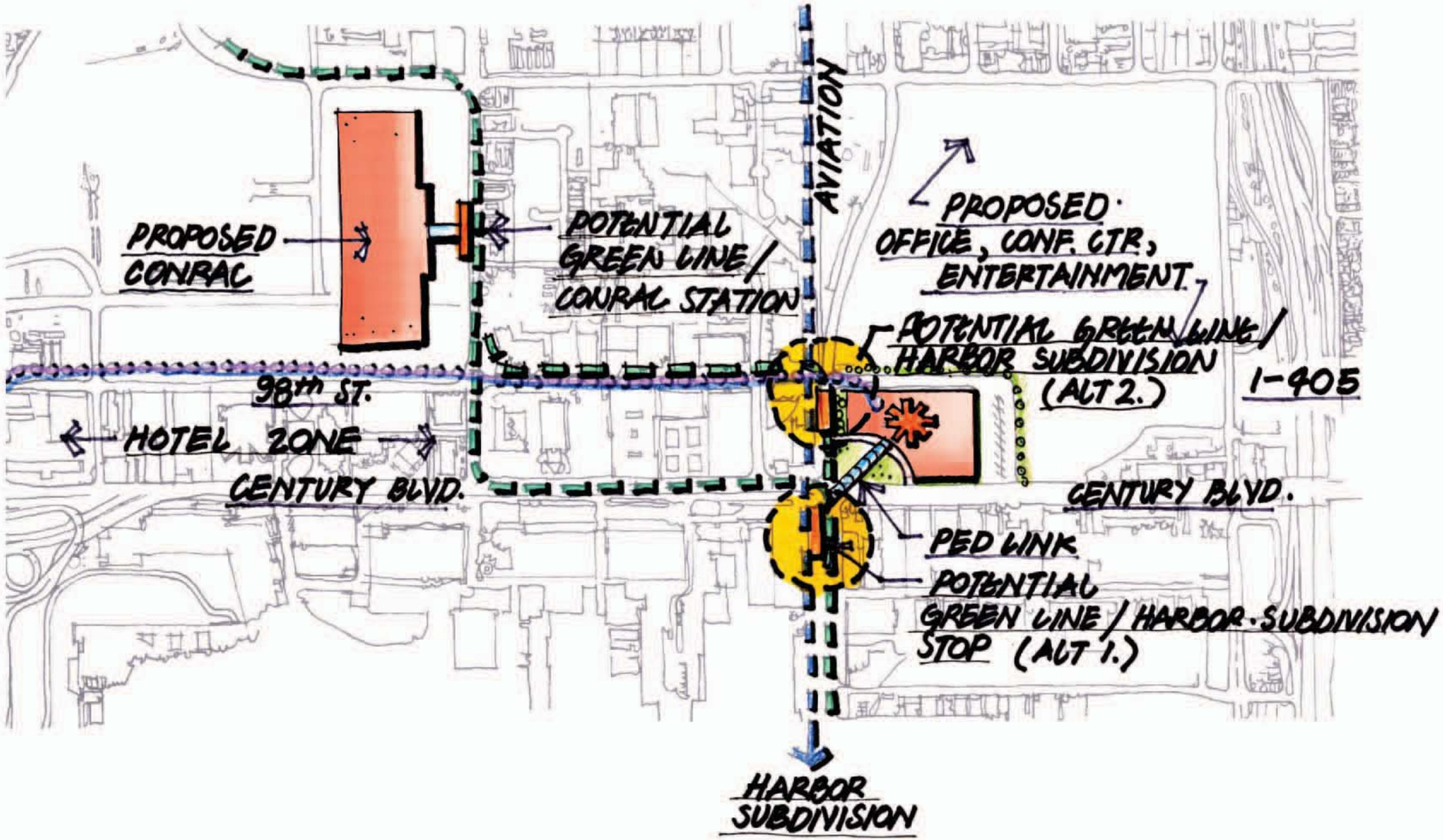


Advisory Committee Concept 1A

APM/Terminal Potential Integration Concept 1



Potential APM Alignment

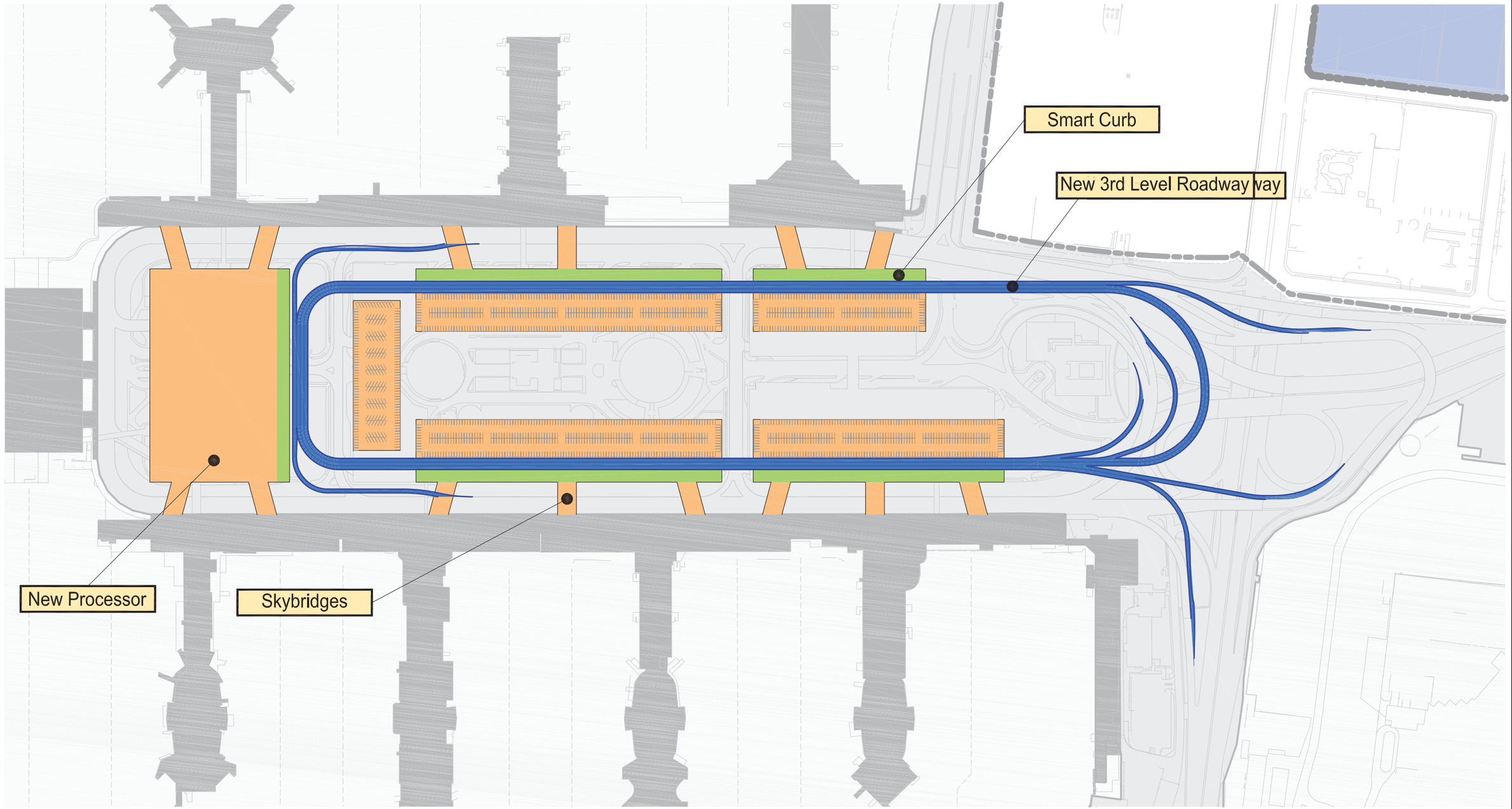


Advisory Committee Concept 1A

CTA Roadway Options

Not To Scale

January 12, 2007



CTA Parking Structure Improvements

Not To Scale

April 18, 2007

CTA Improvements - Section

Figure 2

Not To Scale

April 25, 2007

ADDITIONAL CURBFRONT

PARKING STRUCTURE

ADDITIONAL CURBFRONT

TERMINAL 3

INTL / DOMESTIC TICKETING

DOMESTIC BAG CLAIM

INTL MEETER / GREETER AREA

TERMINAL 4

ADDITIONAL CURBFRONT

ADDITIONAL CURBFRONT

EXPANDED TICKETING

INTL ARRIVALS

IN-LINE BAGGAGE FACILITY

APM STATION

OUTBOUND BAGGAGE

BACKSIDED TBIT

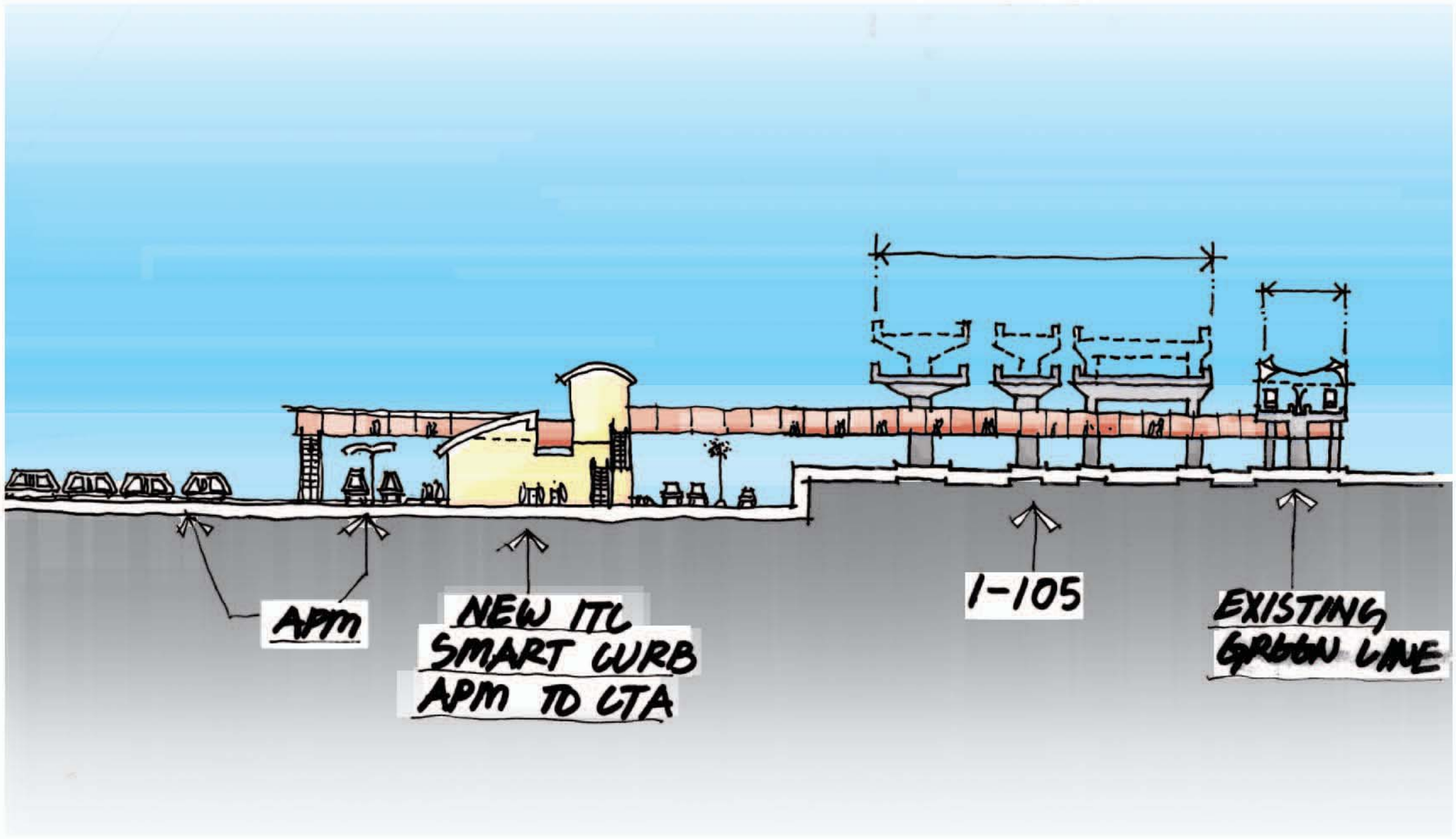
Legend

- Reconfigured Roadway
- Additional Curbfront
- Existing / Additional Terminal Area

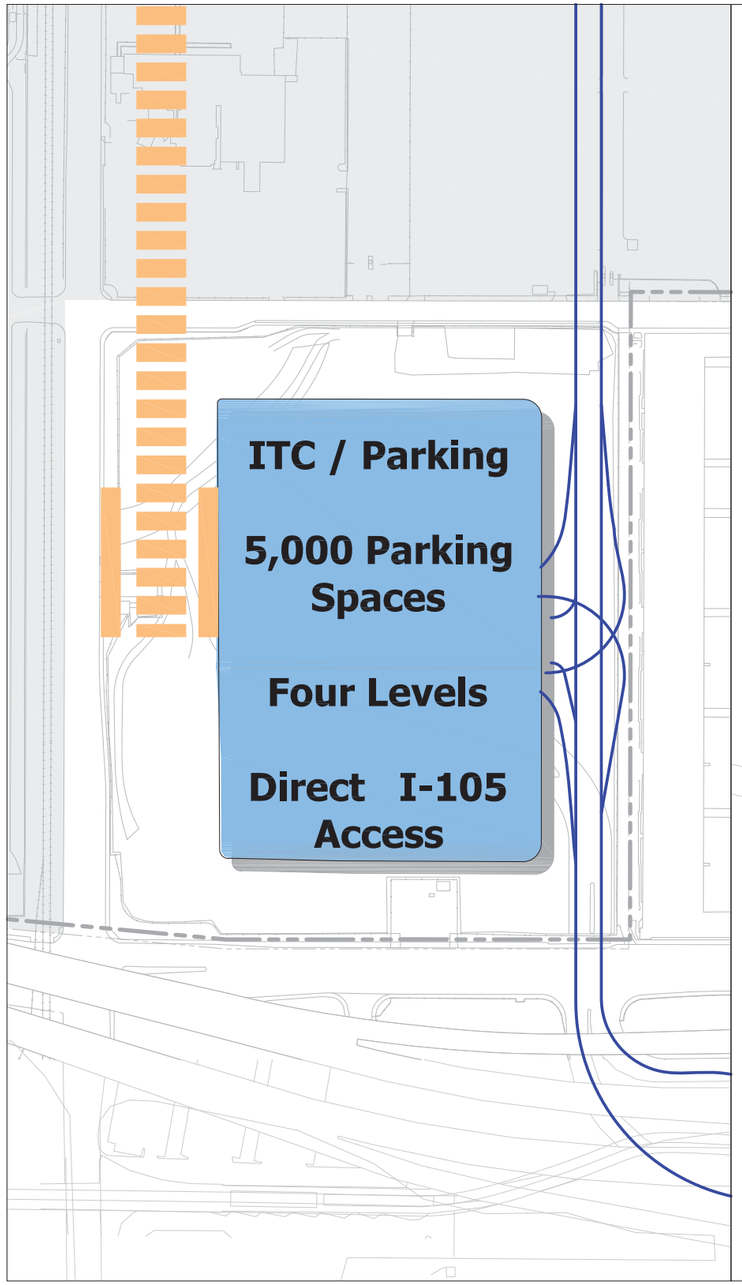
Not To Scale

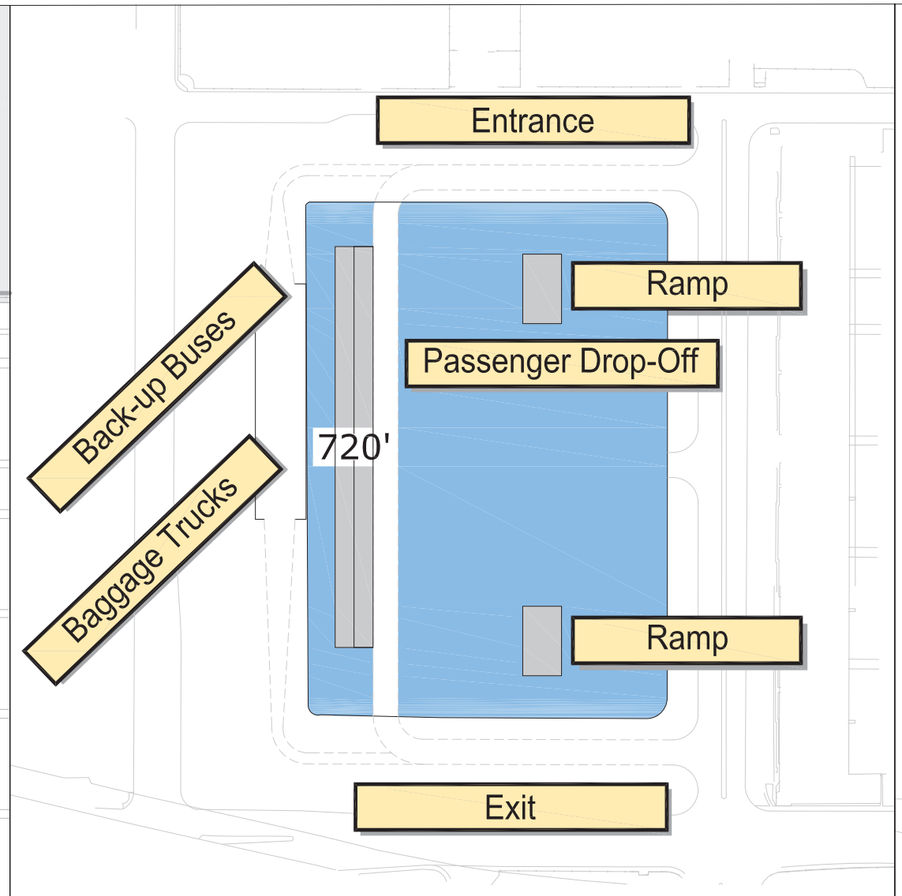
March 22, 2007

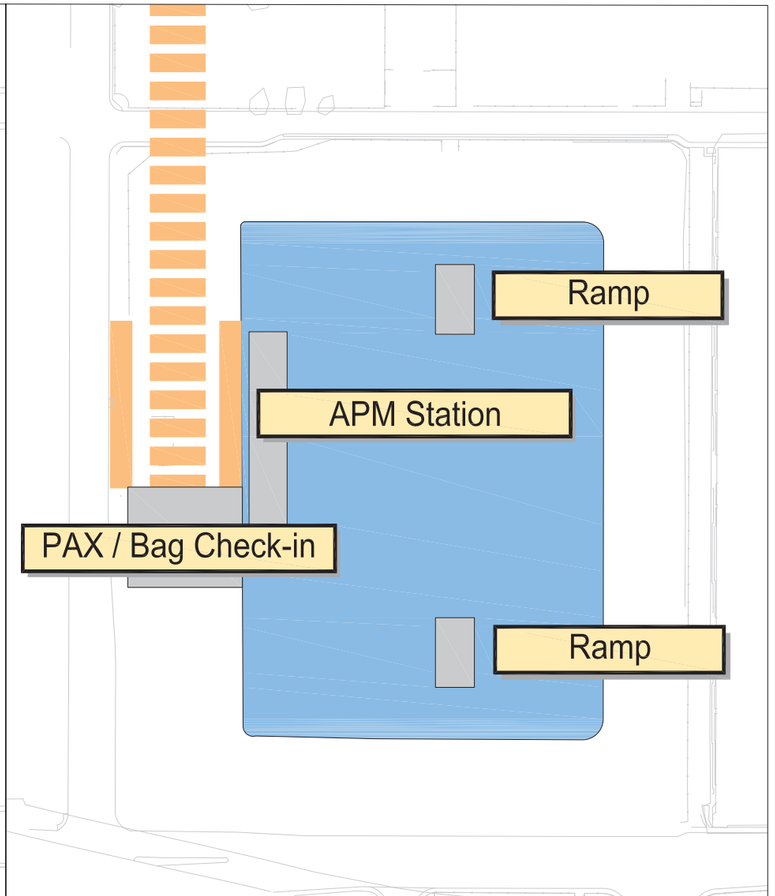
Expanded TBIT / Midfield Satellite Passenger Processing Configuration



Advisory Committee Concept 1A







Ground Level Components

Vehicle Loop Roadway
Back-up Bus Staging Area
Baggage Truck Staging Area
Passenger Curbfront
Vehicle Ramps to APM Level and Parking
Passenger Vertical Circulation to APM Level

Third Level Components

APM Station Level
Short-Term Parking
Passenger Check-in Kiosks
Passenger Bag Check Locations

(APM Mx facility -- ITC Basement)

Operational Assumptions

ITC MODE ALLOCATION %	
Auto Curb Drop/Pickup	15
Hourly Parking	15
Daily Parking	15
Economy Parking	50
Charter Buses	0
Courtesy Vehicles	0
Other Curb Modes	0

PARKING ENTRIES, VPH	
Hourly - Well Wishers	90
Hourly - Greeters	200
Daily	30
Economy	60

PARKING EXISTS, VPH	
Hourly - Well Wishers	90
Hourly - Greeters	200
Daily	30
Economy	70

CURB VOLUMES, VPH	
Private Vehicle Departures	280
Private Vehicle Arrivals	200
Buses	30

CURB LENGTH	
Private Vehicle Curb	125' (825')(15%)
Off-Airport Pkg Buses	35' (South of Imperial)
Charter / Tour Buses	100'
Hotel Shuttles	35' (South of Imperial)
Total Required	295' (720' Available)

*Table 2-2 Assumptions for ITC Mode Allocations and Projected 2015 Requirements
1A - CTA curbs and parking open, ITC and RAC open (elective ITC) -- Page 8

*Table 2-3 Derived 2015 ITC Curb Assumptions and Requirements -- Page 8

ITC Layout and Components

Advisory Committee Concepts

Reference: LAX Advanced Planning
ITC Program and Design Criteria Document

Not To Scale
February 16, 2007


854
WESTCHESTER MEDICAL PLAZA


IN-N-OUT
BURGER


Radisson


Longs Drugs


GOODYEAR
REX
TATTOO


AUTO SERVICE


Westchester Pkwy
AIRPORT PARKI

Lincoln Blvd.

1000'

500'

24R

200'

1000'

24L

Westchester Pkwy.

Sepulveda Blvd.

2500'

1750'

BUSINESS STRUCTURES

RESIDENTIAL STRUCTURES

N

Not To Scale

April 26, 2007

No Action / No Build (Current Configuration)

Runway Protection Zone (RPZ) Impacts

Westchester Pkwy.

1000'

Lincoln Blvd.

500' 24R

200'

*RUNWAY EXTENSION

1000' 24L

1280'

2500'

Sepulveda Blvd.

1750'

1

2

3

4

5

6

BUSINESS STRUCTURES

RESIDENTIAL STRUCTURES

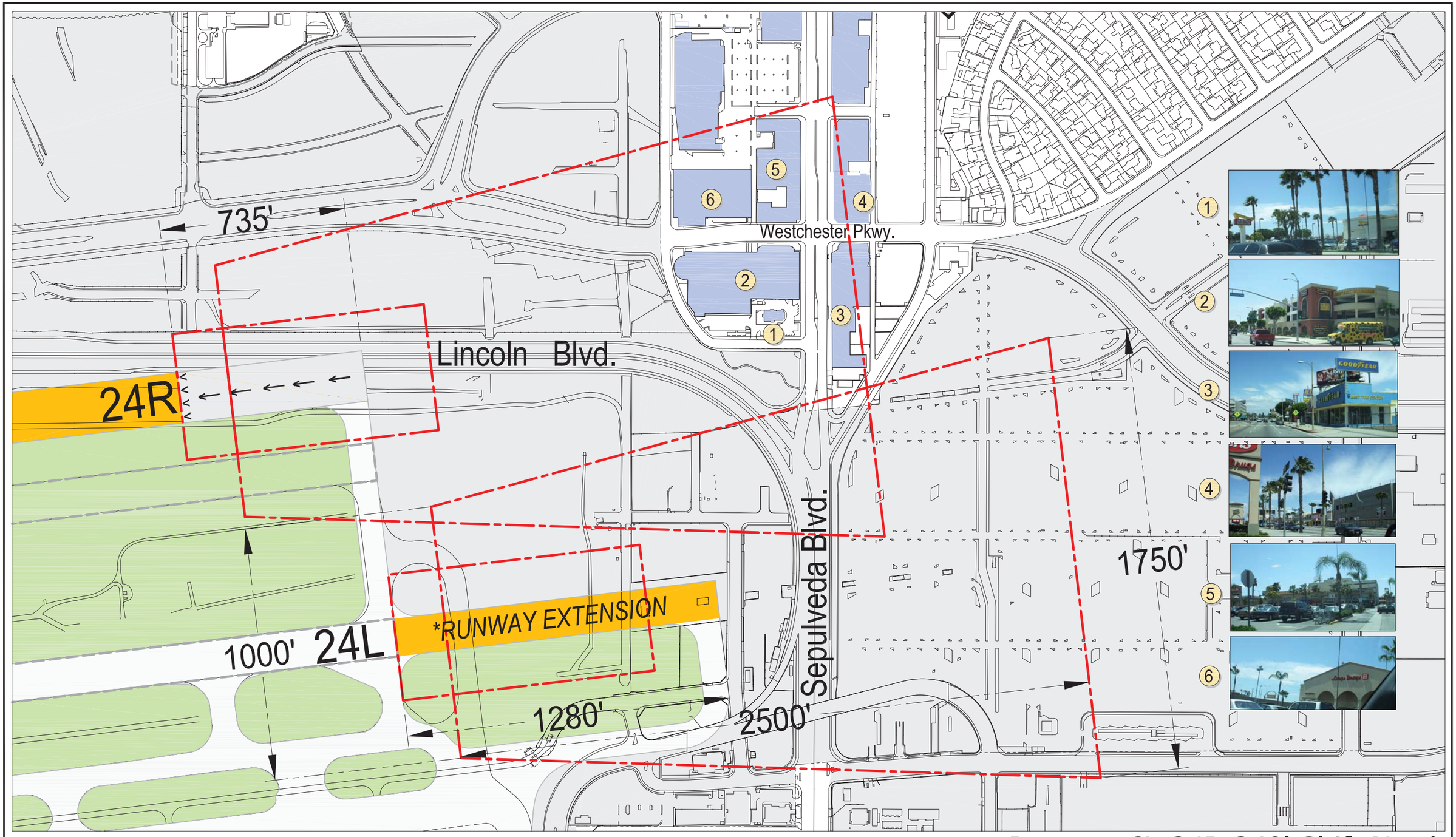
Not To Scale

April 26, 2007

Note: Runway 24L-6R extension for westbound departures only.

Runway 6L-24R 340' Shift North

Runway Protection Zone (RPZ) Impacts



BUSINESS STRUCTURES

RESIDENTIAL STRUCTURES

Not To Scale

April 26, 2007

Note: Runway 24L-6R extension for westbound departures only.

Note: Runway 24R displaced threshold 735' for westbound arrivals.

Runway 6L-24R 340' Shift North

Runway 24R 735' Displaced Threshold

Runway Protection Zone (RPZ) Impacts

LOS ANGELES INTERNATIONAL AIRPORT

SPECIFIC PLAN AMENDMENT STUDY

MEMORANDUM

APRIL 27, 2007

PREPARED FOR

Airport Advisory Committee

PREPARED BY

HNTB Corporation
6151 W. Century Blvd.
Suite 1200
Los Angeles, CA 90045
Phone: (310) 417-8777
Fax: (310) 417-5369
Contact: Josh Wussick

HNTB

LOS ANGELES INTERNATIONAL AIRPORT

SPECIFIC PLAN AMENDMENT STUDY

SECTION 2
CTA ROADWAY IMPROVEMENTS

1.0 EXECUTIVE SUMMARY

The Airport Advisory Committee has requested information and clarification of graphics and terminology that surfaced during the April 19 meeting with LAWA. This memorandum is intended to provide answers to questions that have been directed towards HNTB staff.

One request made by the Committee was for staff to develop a way to reflieve traffic congestion and emissions within the exiting central terminal area envelope. A written description is accompanied by two figures which portays the concept.

A second request made by the Committee was for staff to clarify, as well as illustrate, elements associated with designing a runway. Discriptions, definitions and an attached graphic help to depict and explain such areas as Runway Protection Zones, Runway Safety Areas, and Runway Object Free Areas.

HNTB

LOS ANGELES
INTERNATIONAL
AIRPORT

SPECIFIC PLAN
AMENDMENT STUDY

SECTION 2
CTA ROADWAY
IMPROVEMENTS

2.0 CTA ROADWAY IMPROVEMENTS

The Advisory Committee had made the request for HNTB to look at alternatives which would ease congestion within the existing Central Terminal Area (CTA) roadway. The plan would be to rebuild all of the existing parking sturtures within the CTA, construct the new roadway that would take vehicles through the parking structures, and provide pedestrian bridges to enable passenger access to the terminals.

Figure 1 shows an alternative CTA roadway concept in plan (from above). This view has the parking structure located across from the Tom Bradley International Terminal (TBIT) labeled "New Processor". This layout has been adopted in response to the need for additonal passenger processing space for the Midfield Satellite. The new layout includes an addional roadway loop dedicated to serving the new processor.

All of the remaining parking structures would be rebuilt to provide 9,000 spaces which exist in the CTA today. New structures would be designed and laid out to maximize efficiency. The parking structures would be connected by way of the new 3rd level roadway that would "loop" around inside the confines of the existing CTA roadway.

The new 3rd level roadway would be accessible to private vehicles entering the CTA from either the existing lower or upper level roadways. Commercial vehicles would be separated from private vehicles. Drivers would then be able to drop-off passengers at the 3rd level where a "Sky Bridge" would connect to the terminal. **Figure 2** shows the concept in section (from the side).

A new element to this concept not previously discussed is the addition of a new concept know as the "Smart Curb". When vehicles arrive at the desired terminal drop-off location, passengers can be dropped off at the curb like they do today. Electronic ticketing kiosks and potentially baggage check-in locations would be available to print boarding passes and check bags right at the curb (similar to the function of a Skycap). Passengers would then proceed across the pedestrian "Sky Bridge" to the terminal.

The 3rd level roadway and associated "Smart Curb" could be covered by cannopies or open-air to protect passengers from vehicle emissions. The parking level above could be set-back so that the roadway and people are not in an enclosed environment.

LOS ANGELES
INTERNATIONAL
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SECTION 3
AIRPORT DESIGN
ADVISORY CIRCULAR

3.0 AIRPORT DESIGN ADVISORY CIRCULAR

The layout of an airport is a complicated process. A lot of confusion and misunderstanding has taken place when discussing the various planning, safety, and design elements associated with a runway or taxiway. Aviation, like any industry, has its own language filled with various acronyms. To the untrained ear, this language can sound as foreign as any other can.

The best resources that Aviation Planners have for understanding the language of aviation and applying the proper regulations are FAA issued Advisory Circulars (AC), industry standards, and experience. One of the most important documents in the industry is Advisory Circular 150/5300-13; Airport Design.

This document is revised periodically (Change 11 is the most current iteration dated 3/28/2007) and contains over 300 pages of terminology, standards, and recommendations. Advisory Circulars are just that, they are *Advisory* in nature. This means some elements are recommended and some are mandated.

This memorandum has attempted to summarize major points in the AC. For a complete understanding of the AC, the entire document with all corresponding changes and updates should be read in its entirety. The internet address to locate the entire document is:

FAA - AC 150/5300-13 Airport Design

http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/index.cfm?template=Document_Listing

Note: Another important airport planning resource that is used in conjunction with the Airport Design Advisory Circular is the United States Standard for Terminal Instrument Procedures or more commonly referred to as "TERPS". This document contains criteria used to formulate, review, approve, and publish procedures for instrument approach and departure of aircraft to and from civil and military airports. The document provides standards to establish important instrument flight rules safety margins such as visibility minimums (distance the pilot can see in order to takeoff or land) and obstruction and terrain clearance distances (aircraft separation from buildings, towers, mountains, etc.).

This document can be obtained through:

United States Standard for Terminal Instrument Procedures (TERPS)

Department of Transportation. Federal Aviation Administration. Washington, DC: For sale by the Superintendent of Documents, U.S. Government Printing Office. FAA Order 8260.3B.

Note: The following information has been obtained from the Federal Aviation Administration (FAA) issued Advisory Circular 150/5300-13 Airport Design. This information does not reflect original ideas or opinions of HNTB Corporation and its employees.

Some of the terminology and areas that need clarification from the Airport Design AC are:

RUNWAY PROTECTION ZONE (RPZ) – The RPZ's function is to enhance the protection of people and property on the ground. This is achieved through airport owner control over RPZ's. Such control includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ. *[Chapter 2 - Airport Geometry pg. 13]*

RPZ Configuration/Location – The RPZ is trapezoidal in shape and centered about the extended runway centerline. The central portion and controlled activity area are the two components of the RPZ. The RPZ dimension for a particular runway end is a function of the type of aircraft and approach visibility minimum associated with that runway end. Other than with a special application of declared distances, the RPZ begins 200 feet beyond the end of the area usable for takeoff or landing. *[Chapter 2 - Airport Geometry pg. 13]*

RPZ Land Use – While it is desirable to clear all objects from the RPZ, some uses are permitted, provided they do not attract wildlife, are outside of the Runway Object Free Area (ROFA), and do not interfere with navigational aids. Automobile parking facilities, although discouraged, may be permitted, provided the parking facilities and any associated appurtenances, in addition to meeting all of the preceding conditions, are located outside of the central portion of the RPZ. Fuel storage facilities may not be located in the RPZ.

Land uses prohibited from the RPZ are residences and places of public assembly. (Churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons typify places of public assembly.) Fuel storage facilities may not be located in the RPZ. *[Chapter 2 - Airport Geometry pg. 13]*

RPZ Recommendations – Where it is determined to be impracticable for the airport owner to acquire and plan the land uses within the entire RPZ, the RPZ land use standards have recommendation status for that portion of the RPZ not controlled by the airport owner. *[Chapter 2 - Airport Geometry pg. 13]*

FAA Studies of Objects and Activities in the Vicinity of Airports – The FAA policy is to protect the public investment in the national airport system. To implement this policy, the FAA studies existing and proposed objects and activities, both off and on public-use airports, with respect to their effect upon the safe and efficient use of the airports and safety of persons and property on the ground. These objects need not be obstructions to air navigation, as defined in 14 CFR Part 77. As the result of a study, the FAA may issue an advisory recommendation in opposition to the presence of any off-airport object or activity in the vicinity of a public use airport that conflicts with an airport planning or design standard or recommendation. *[Chapter 2 - Airport Geometry pg. 13]*

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SECTION 3
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RUNWAY PROTECTION ZONE (RPZ) – Approach protection zones were originally established to define land areas underneath aircraft approach paths in which control by the airport operator was highly desirable to prevent the creation of airport hazards. Subsequently, a 1952 report by the President's Airport Commission (chaired by James Doolittle), entitled "The Airport and Its Neighbors," recommended the establishment of clear areas beyond runway ends. Provision of these clear areas was not only to preclude obstructions potentially hazardous to aircraft, but also to control building construction as a protection from nuisance and hazard to people on the ground. The Department of Commerce concurred with the recommendation on the basis that this area was "primarily for the purpose of safety and convenience to people on the ground." The FAA adopted "Clear Zones" with dimensional standards to implement the Doolittle Commission's recommendation. Guidelines were developed recommending that clear zones be kept free of structures and any development which would create a place of public assembly.

In conjunction with the introduction of the RPZ as a replacement tern for clear zone, the RPZ was divided into "object free" and "controlled activity" areas. The RPZ function is to enhance the protection of people and property on the ground. Where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all aboveground objects. Where this is impractical, airport owners, as a minimum shall maintain the RPZ clear of all facilities supporting incompatible activities. Incompatible activities include, but are not limited to, those which lead to an assembly of people. *[Appendix 8 - Runway Design Rationale pg. 140]*

OBJECT FREE AREA (OFA) – The Runway Object Free Area (ROFA) is centered on the runway centerline. The ROFA clearing standard requires clearing the ROFA of above ground objects protruding above the runway safety area (RSA) edge elevation. Except where precluded by other clearing standards it is acceptable to place objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes and to taxi and hold aircraft in the ROFA. Objects non-essential for air navigation or aircraft ground maneuvering purposes are not to be placed in the ROFA. This includes parked airplanes and agricultural operations. Extension of the ROFA beyond the standard length to the maximum extent feasible is encouraged. *[Chapter 3 - Runway Design pg. 23]*

RUNWAY SAFETY AREA (RSA) – The runway safety area is centered on the runway centerline. *[Chapter 3 - Runway Design pg. 21]*
The RSA shall be:

- cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;
- drained by grading or storm sewers to prevent water accumulation;
- capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the

occasional passage of aircraft without causing structural damage to the aircraft; and

- free of objects except for objects that need to be located in the runway safety area because of their function. Objects higher than 3 inches above grade should be constructed, to the extent practicable, on low impact resistant supports (frangible mounted structures) of the lowest practical height with the frangible point no higher than 3 inches above grade. Other objects, such as manholes should be constructed at grade. In no case should their height exceed 3 inches above grade.

RSA - Historical Development – In the early years of aviation, all airplanes operated from relatively unimproved airfields. As aviation developed, the alignment of takeoff and landing paths centered on a well defined area known as a landing ship. Thereafter, the requirements of more advanced airplanes necessitated improving or paving the center portion of the landing strip. The tern "landing strip" was retained to describe the graded area surrounding and upon which the runway or improved surface was constructed. The primary role of the landing strip changed to that of a safety area surrounding the runway. This area had to be capable under normal (dry) conditions, of supporting airplanes without causing structural damage to the airplanes or injury to their occupants. Later, the designation of the area was changed to "runway safety area," to reflect its functional role. The runway safety area enhances the safety of airplanes which undershoot, overrun, or veer off the runway, and it provides greater accessibility for firefighting and rescue equipment during such incidents. *[Appendix 8 Runway Design Rationale pg. 139]*

RSA - Recent Changes – FAA recognizes that incremental improvements inside standard RSA dimensions can enhance the margin of safety for aircraft. This is a significant change from the earlier concept where the RSA was deemed to end at the point it was no longer graded and constructed to standards. Previously, a modification to standards could be issued if the actual, graded and constructed RSA did not meet dimensional standards as long as an acceptable level of safety was provided. Today, modifications to standards no longer apply to runway safety areas. Instead, FAA airport regional division offices are required to maintain a written determination of the best practicable alternative for improving non-standard RSA's. They must continually analyze the non-standard RSA with respect to operational, environmental, and technological changes and revise the determination as appropriate. Incremental improvements are included in the determination if they are practicable and they will enhance the margin of safety. *[Appendix 8 Runway Design Rationale pg. 139]*

OBSTACLE FREE ZONE (OFZ) – The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations; except for frangible visual Navigational Aids (NAVAID's) that need to be located in the OFZ because of their function. The Runway Obstacle Free Zone (ROFZ) is a defined volume of airspace centered above the runway centerline. The ROFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the

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runway centerline. The ROFZ extends 200 feet beyond each end of the runway. Its width for runways serving large airplanes is 400 feet. *[Chapter 3 – Runway Design pg. 22]*

AIRCRAFT APPROACH CATEGORY – A grouping of aircraft based on 1.3 times their stall speed in their landing configuration at their maximum certificated landing weight. *[Chapter 1 – Regulatory Requirements and Definition of Terms pg. 1]*

The categories are as follows:

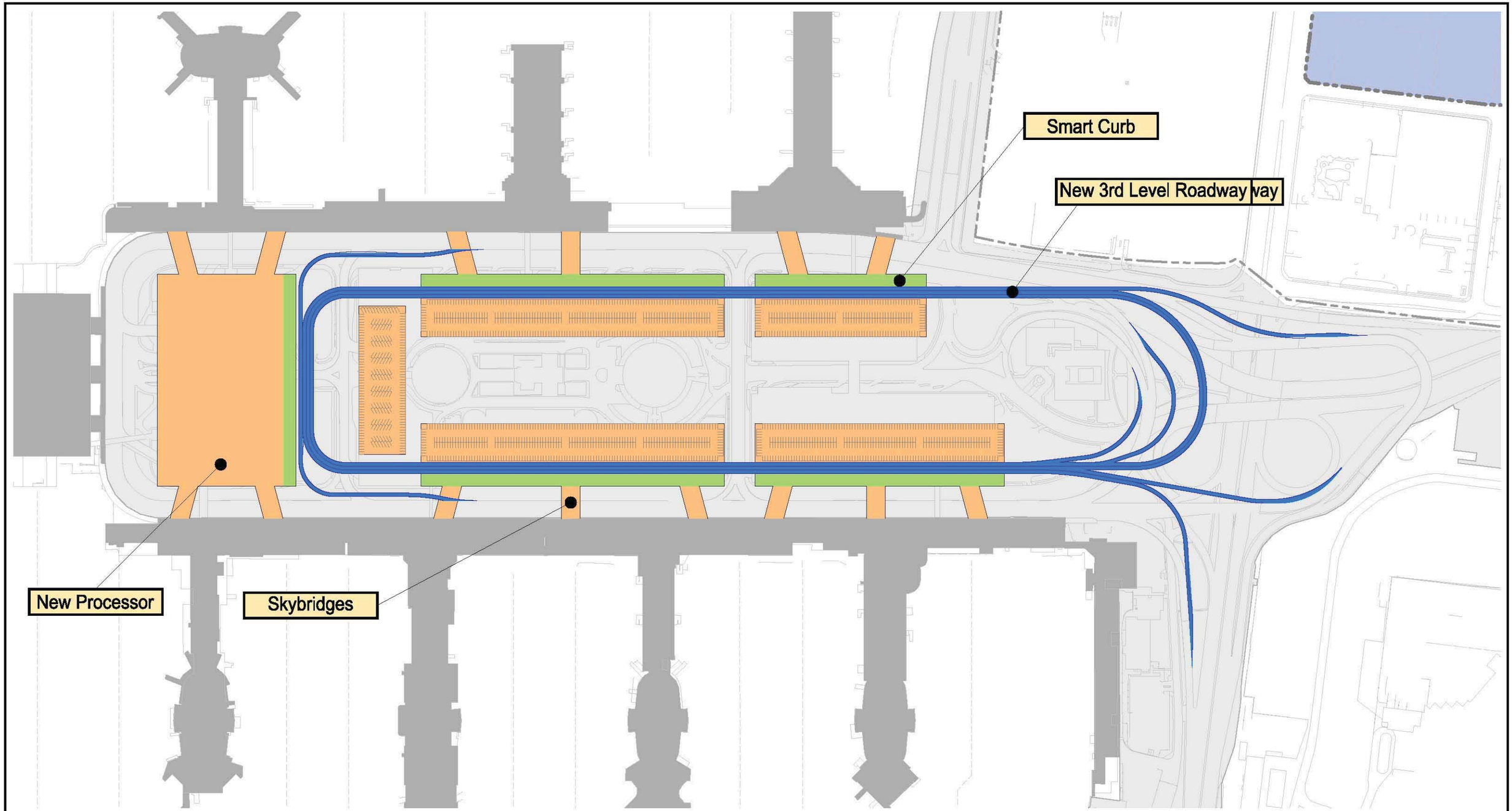
- Category A: Speed less than 91 knots.
  Example small general aviation; Cessna 152
- Category B: Speed 91 knots or more but less than 121 knots.
  Example large general aviation; Beech King Air
- Category C: Speed 121 knots or more but less than 141 knots.
  Example small air transport; Boeing 737
- Category D: Speed 141 knots or more but less than 166 knots.
  Example large air transport; Boeing 747
- Category E: Speed 166 knots or more.

AIRPLANE DESIGN GROUP (ADG) – A grouping of airplanes based on wingspan or tail height. Where an airplane is in two categories, the most demanding category should be used. *[Chapter 1 – Regulatory Requirements and Definition of Terms pg. 1]*

The groups are as follows:

- Group I – Up to but not including 49 feet
- Group II – 49 feet up to but not including 79 feet
  Examples: CRJ 200; ERJ 145
- Group III – 79 feet up to but not including 118 feet
  Examples: Airbus A320; Boeing 737
- Group IV – 118 feet up to but not including 171 feet
  Examples: Boeing 757, Boeing 767, 787-300
- Group V – 171 feet up to but not including 214 feet
  Examples: Airbus A330, A340; Boeing 777, 787-8/900, 747-1/2/3/400
- Group VI – 214 feet up to but not including 262 feet
  Examples: Airbus A380; Boeing 747-8

Note: **Figure 3** shows the Runway Protection Zone (RPZ), Runway Safety Area (RSA), and Runway Object Free Area (ROFA) for Runway 6L-24R at LAX in its current location.



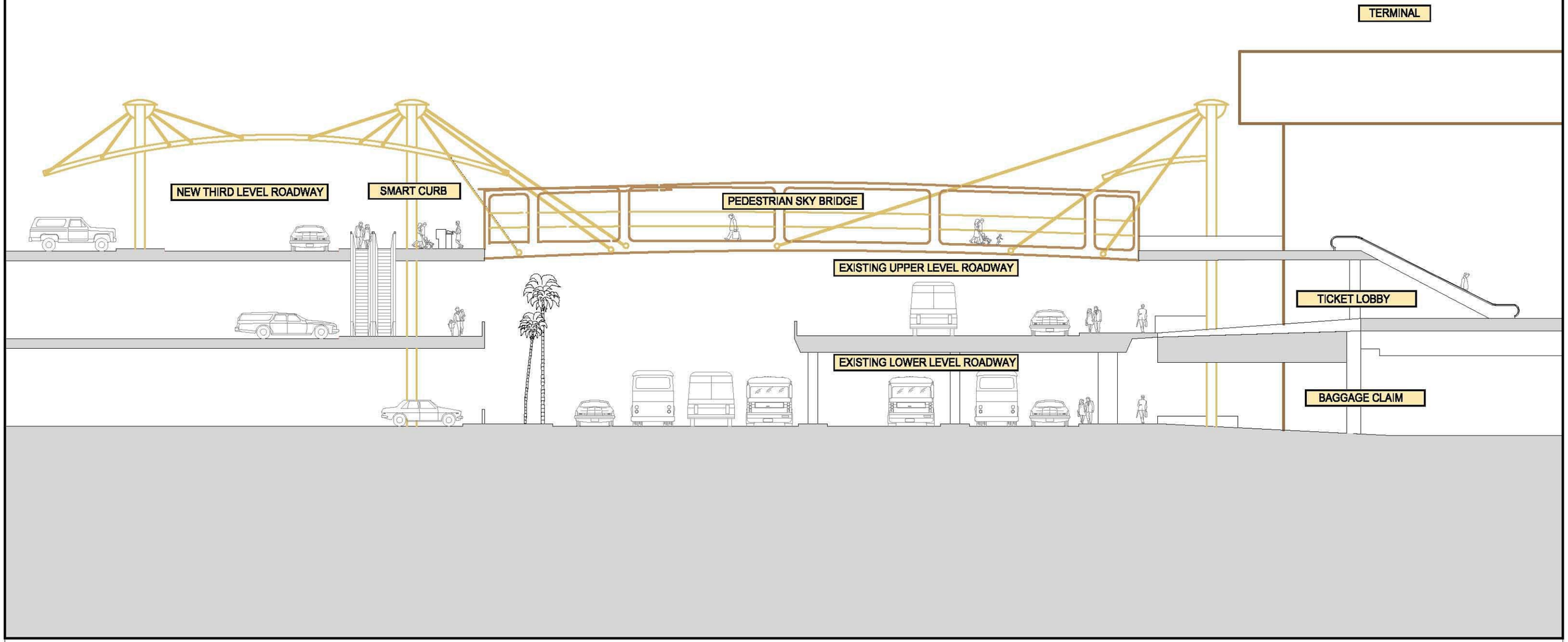
CTA Parking Structure Improvements

Figure 1

N

Not To Scale

April 25, 2007

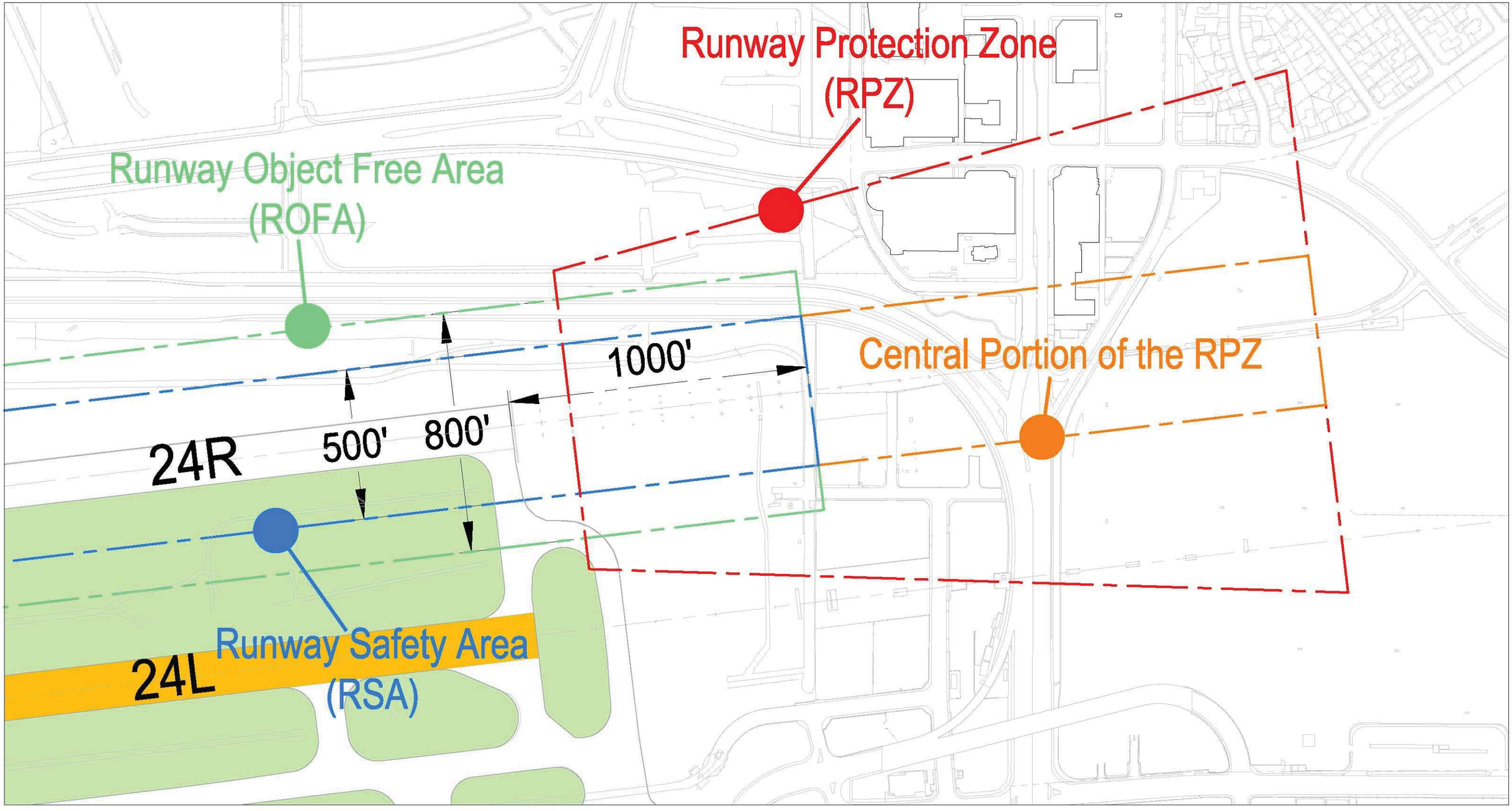


CTA Improvements - Section

Figure 2

Not To Scale

April 27, 2007



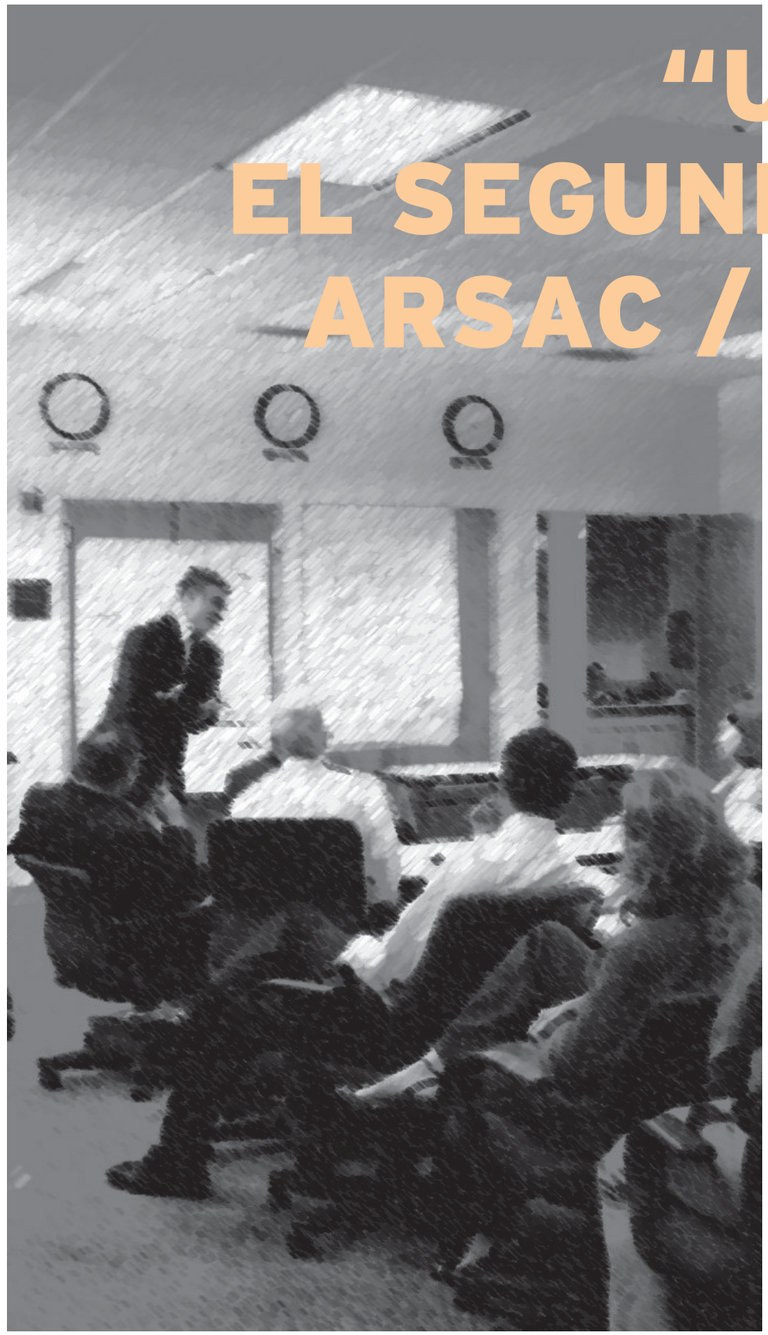
Existing North Airfield

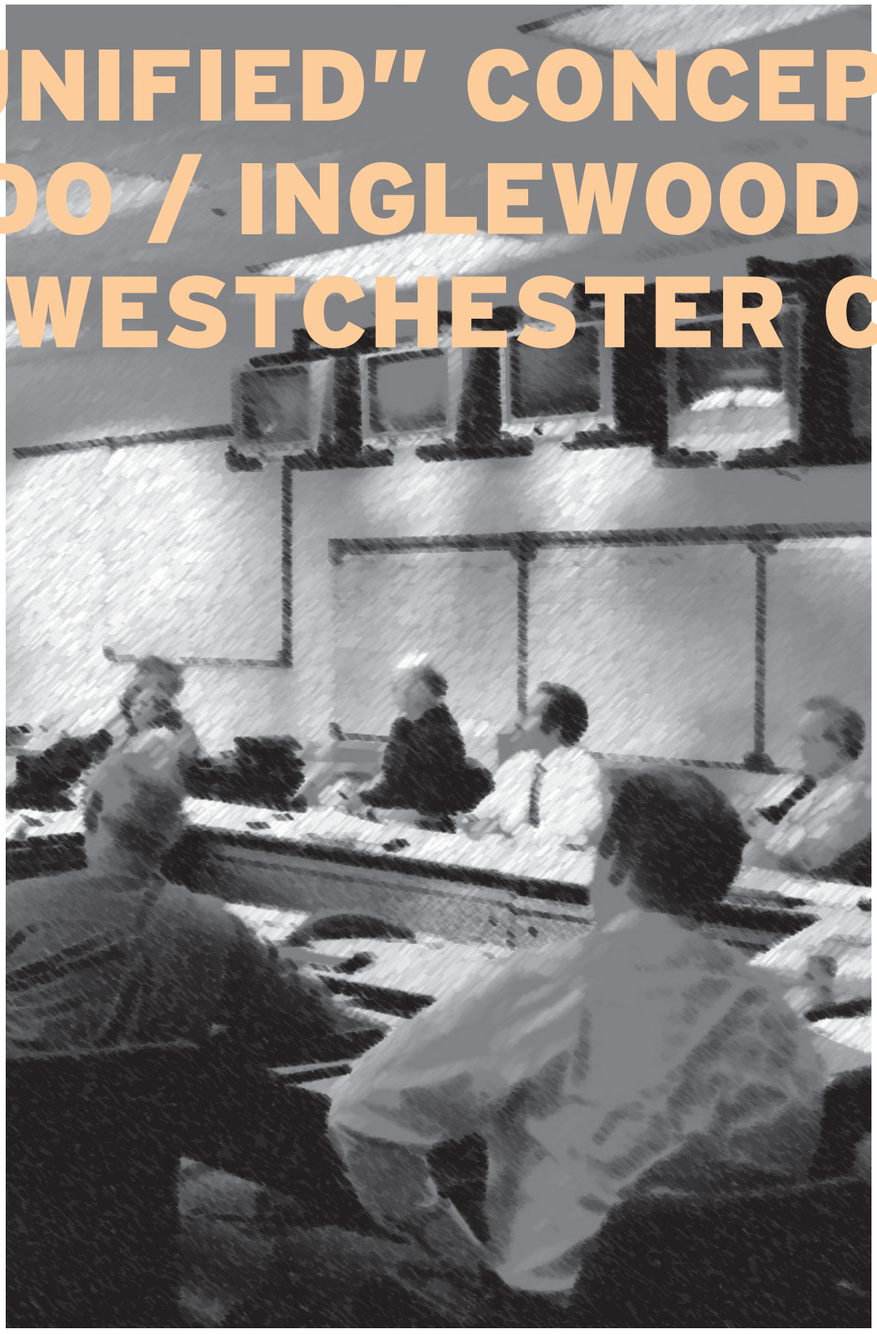
Figure 3

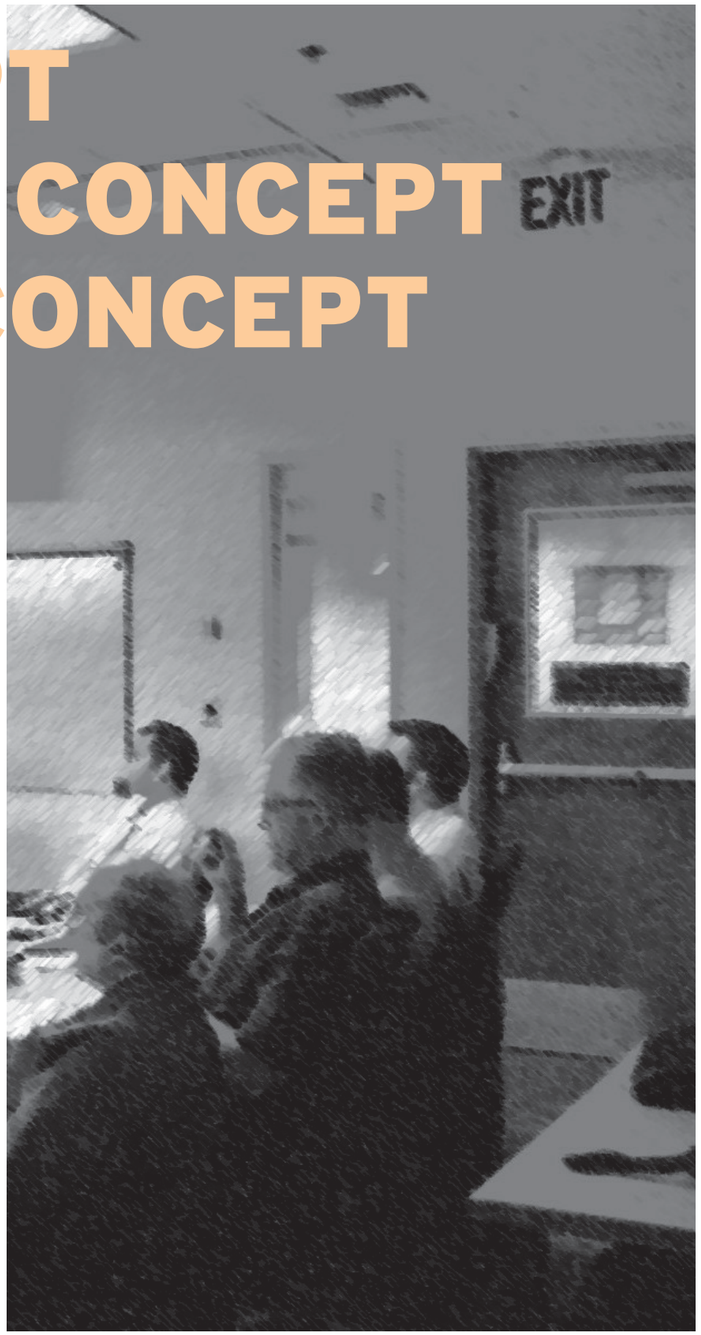
Not To Scale

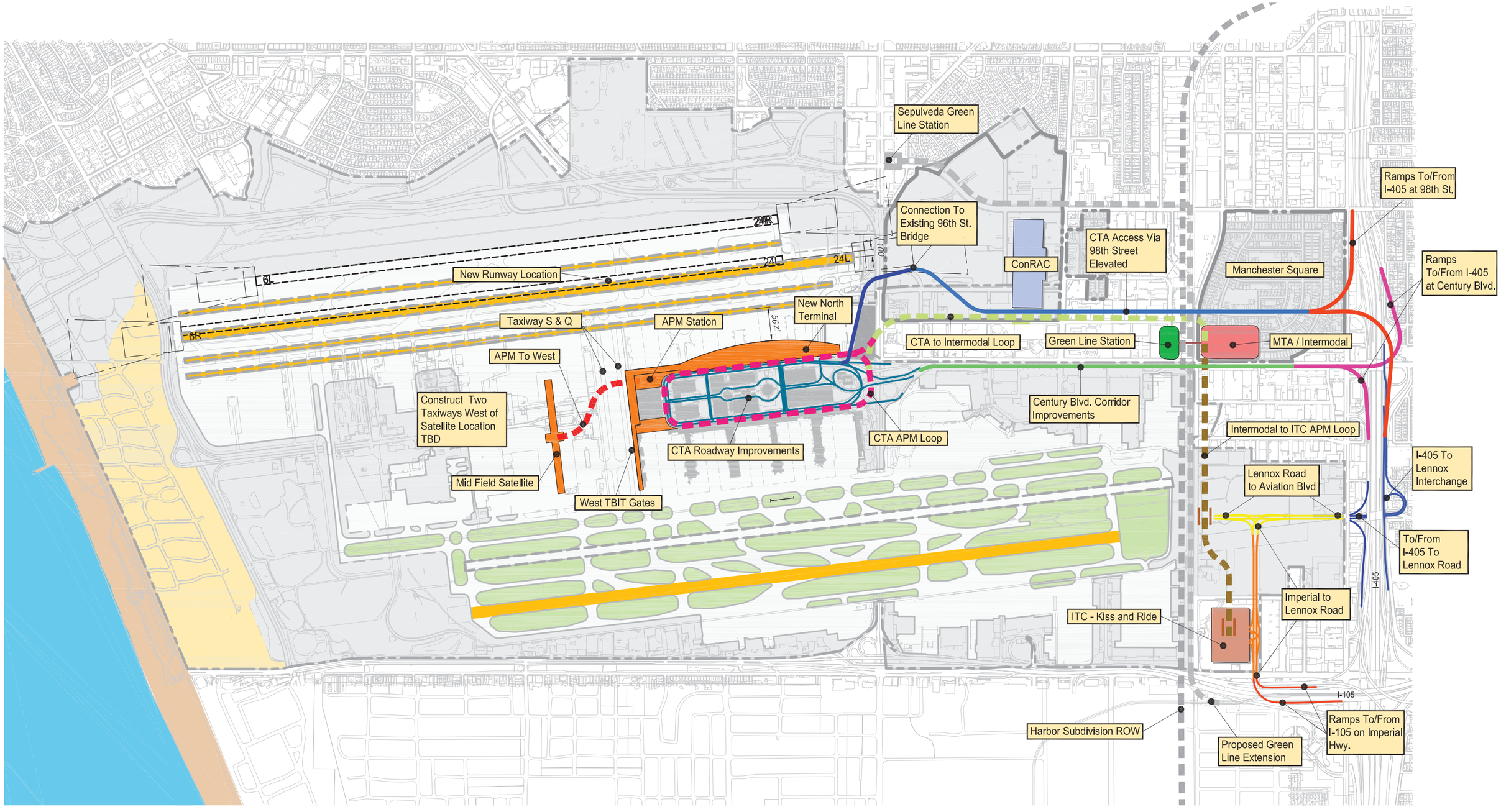
April 25, 2007

“UNIFIED” CONCEPT
EL SEGUNDO / INGLEWOOD CONCEPT
ARSAC / WESTCHESTER CONCEPT







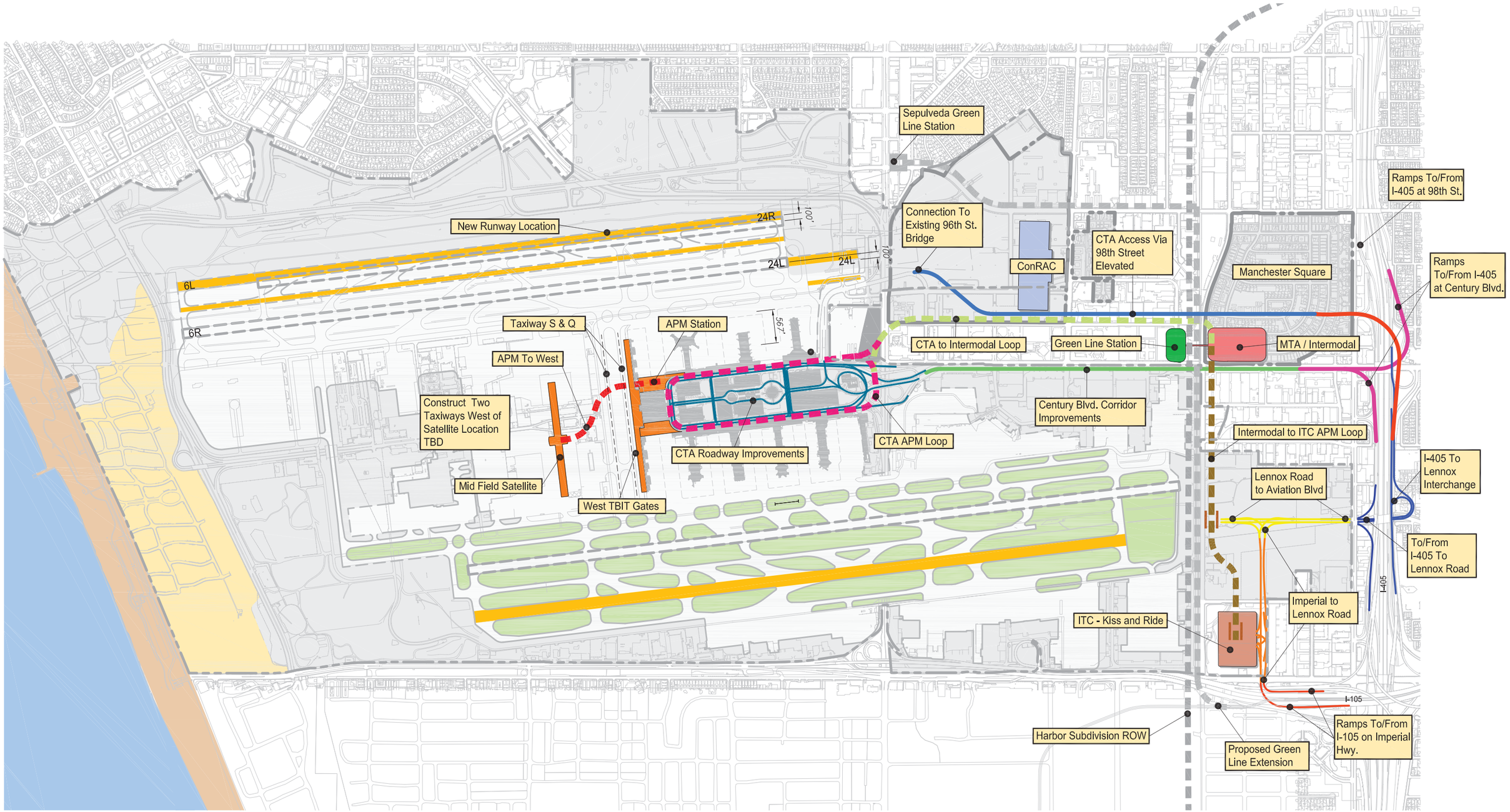


Advisory Committee Unified Concept

Runway 24L 100' South

Not To Scale

March 27, 2007

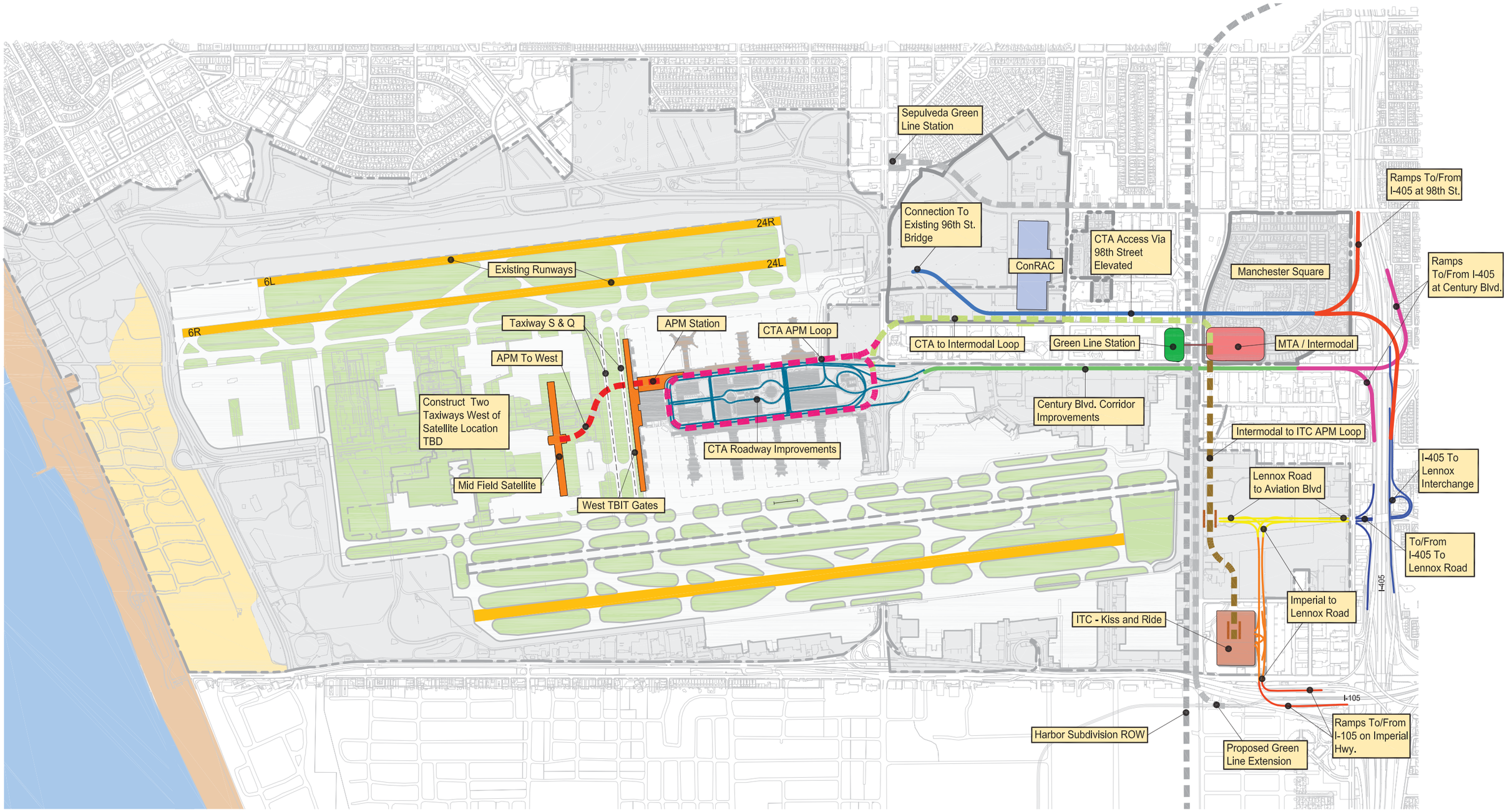


El Segundo / Inglewood Concept

Runway 6L-24R 100' North

Not To Scale

March 27, 2007



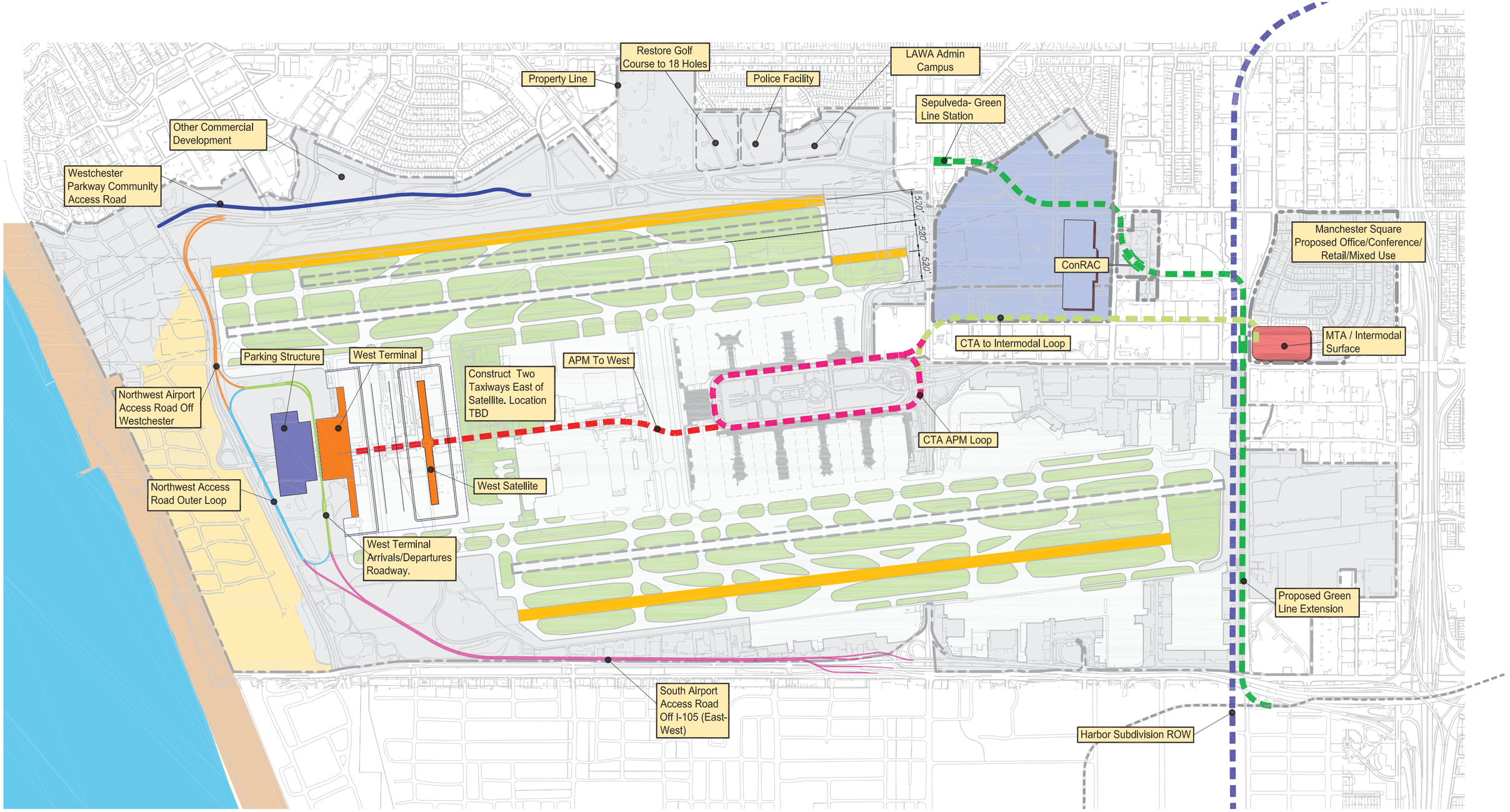
ARSAC / Westchester Concept

No Change to the North Airfield

Not To Scale

March 22, 2007

THE WEST TERMINAL

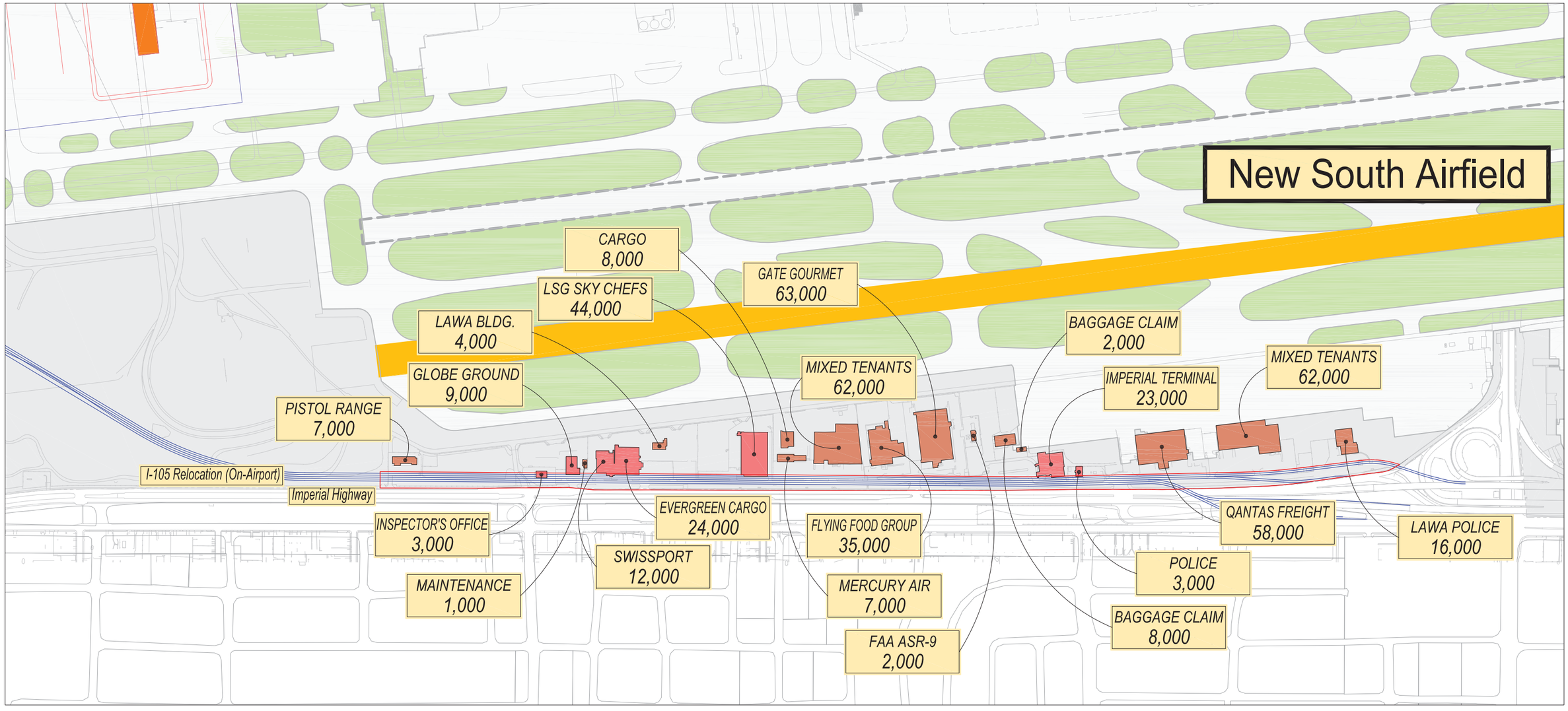


West Terminal Concept

Runway 6L-24R 340' Shift North

Not To Scale

March 27, 2007



On-Airport Roadway Impacts

Existing Buildings Impacted by Roadway

Inspector's Office	3,000
Globe Ground	9,000
Swissport	12,000
Evergreen Cargo	24,000
LSG Sky Chefs	44,000
Imperial Terminal	23,000
Police	3,000
Total	118,000 SF

Existing Buildings unaffected by Roadway

573,000 SF

Total Area Impacted by Roadway
-- 10' Buffer Offset from Road
-- Total Impacted Building Areas not included

West Terminal Concept

Imperial Cargo Relocation Exhibit

Not To Scale

February 12, 2007


6555

West Terminal Impacts

1. West Remote Gates (7 Gates Total)
2. LAWA Administration Offices
3. LAWA Maintenance Yard
4. FEDEX Maintenance Hangar
5. Continental Airlines Hangar

West Terminal Concept

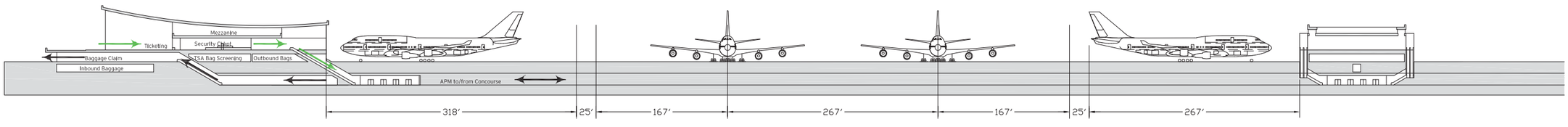
Existing Facility Impacts

N

Not To Scale

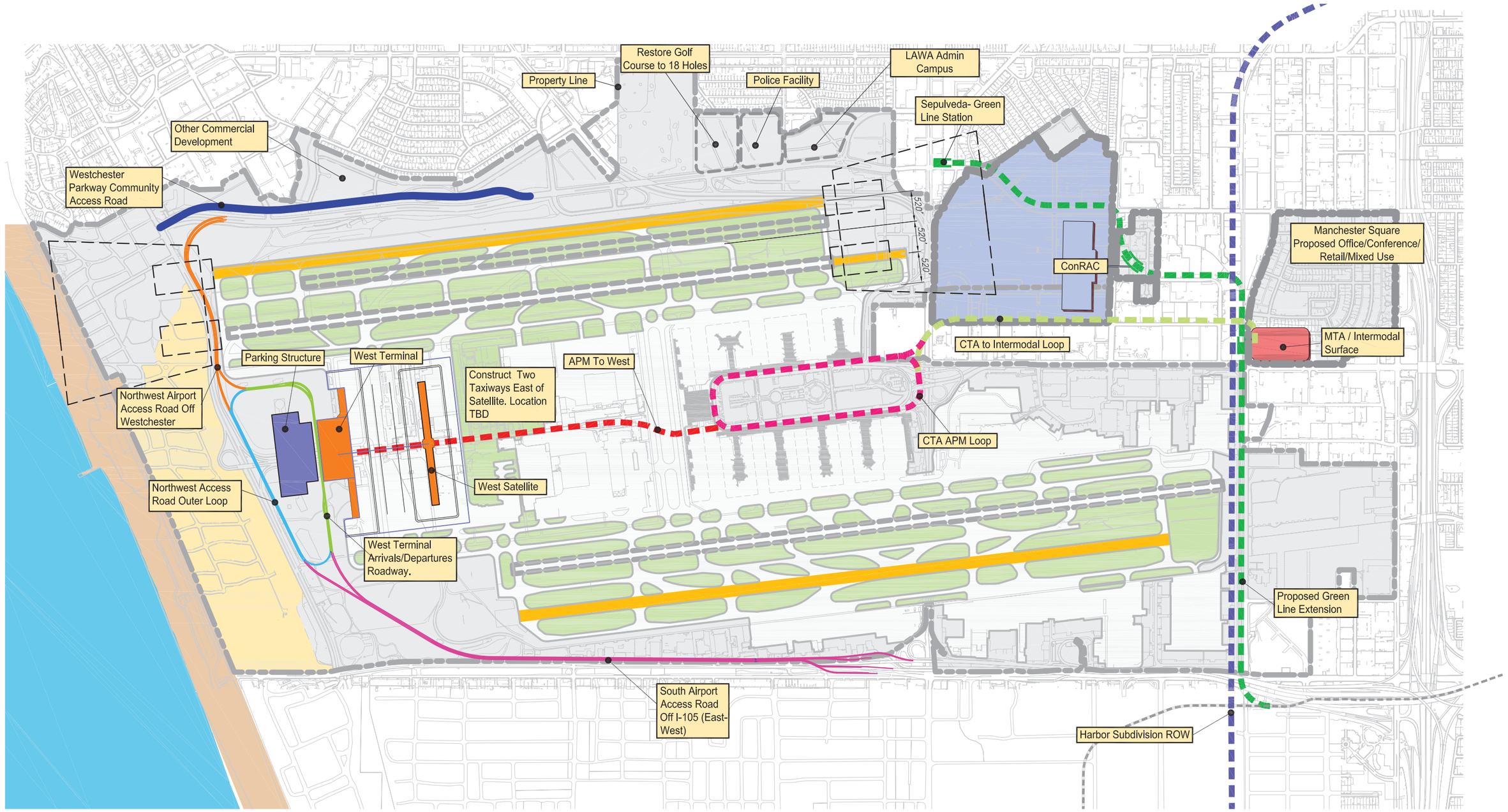
January 31, 2007

1" = 200'


Ticketing
Mezzanine
Security Check
Baggage Claim
TSA Bag Screening
Outbound Bags
Inbound Baggage
APM to/from Concourse
318'
25'
167'
267'
167'
25'
267'

1" = 50'

MAY 2007 CONCEPTS



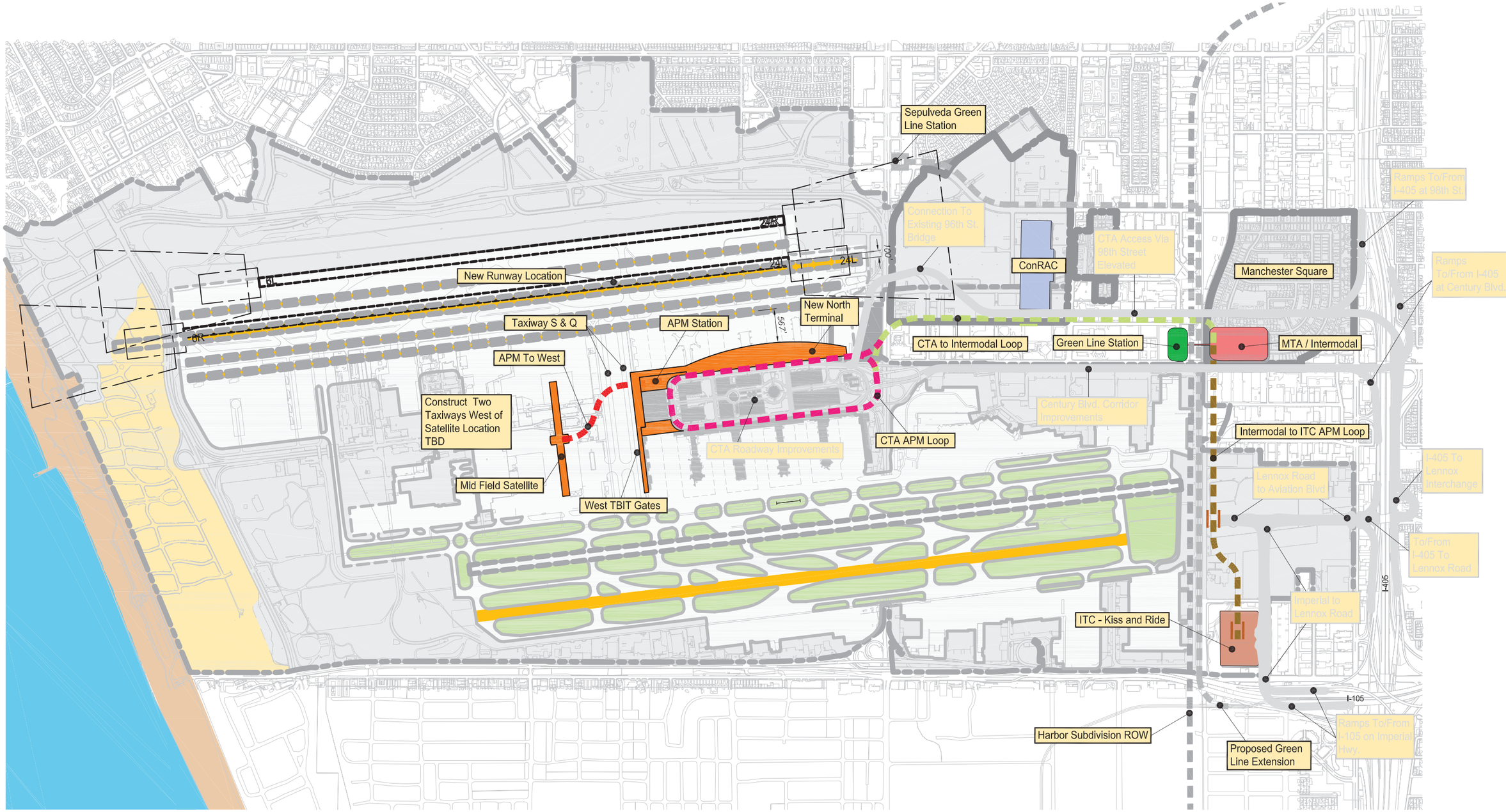
West Terminal Concept

Runway 6L-24R 340' Shift North

N

Not To Scale

May 1, 2007

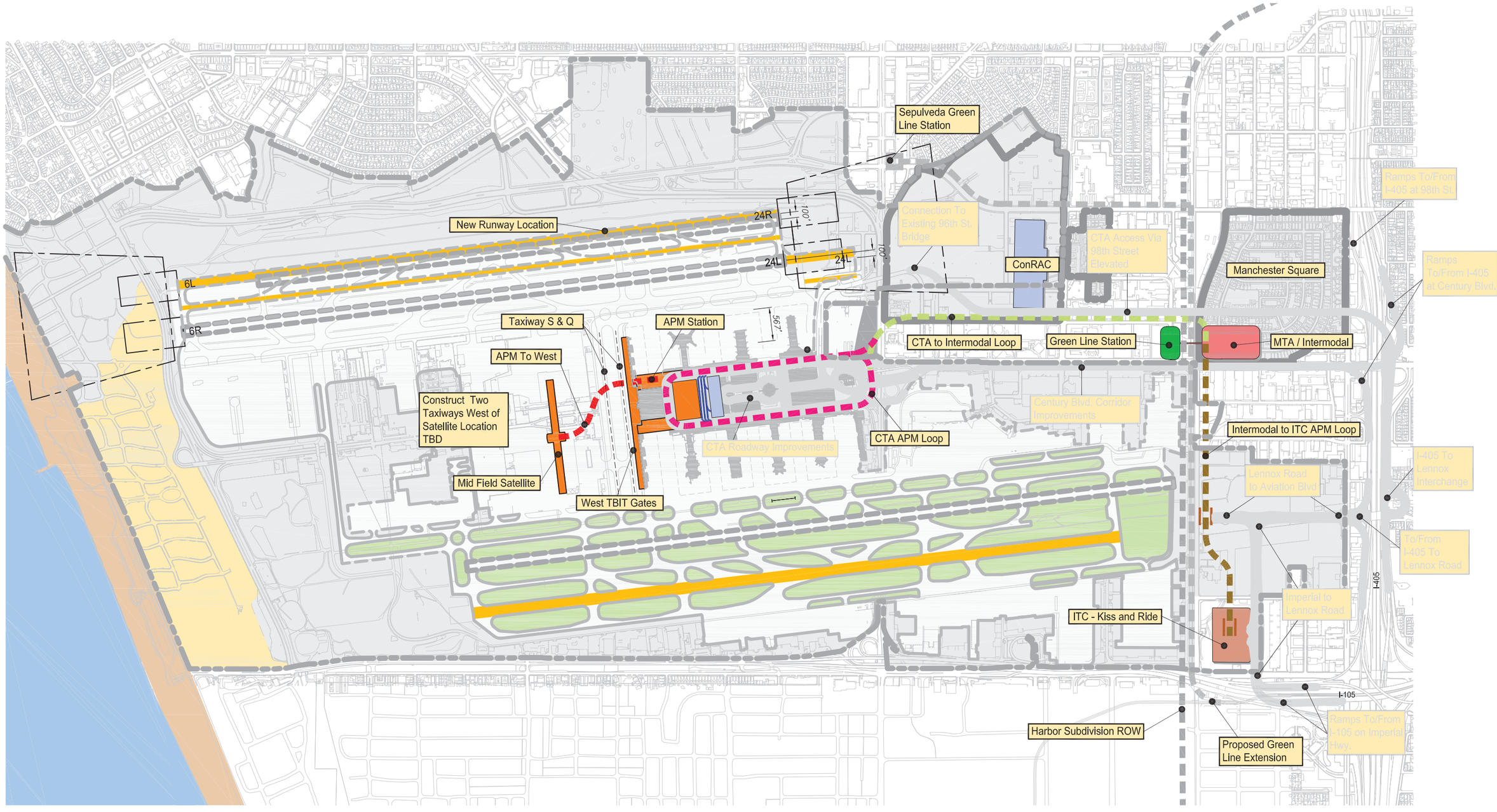


Advisory Committee Unified Concept

Runway 24L 100' South

Not To Scale

May 1, 2007

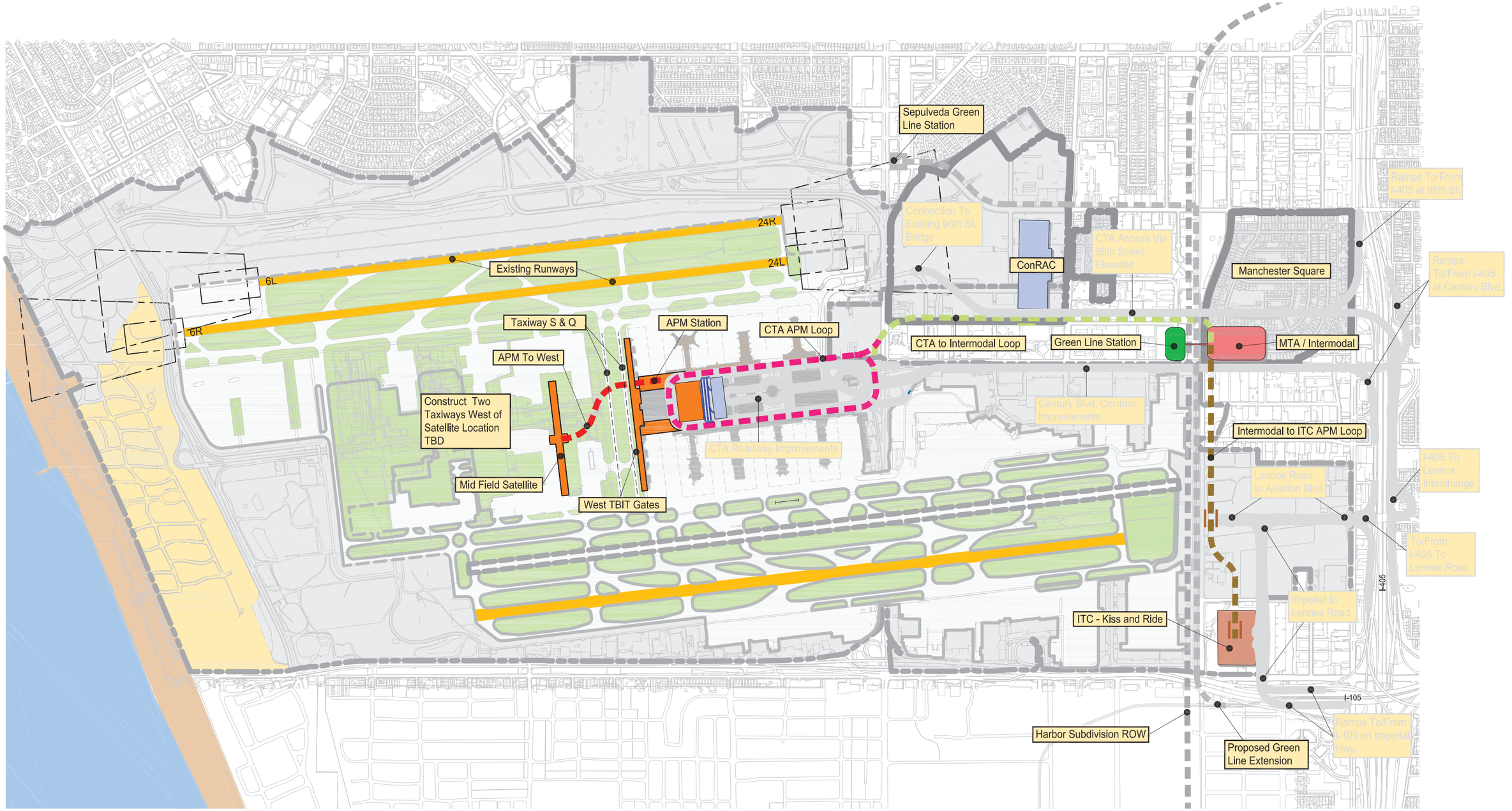


El Segundo / Inglewood Concept

Runway 6L-24R 100' North

Not To Scale

May 1, 2007

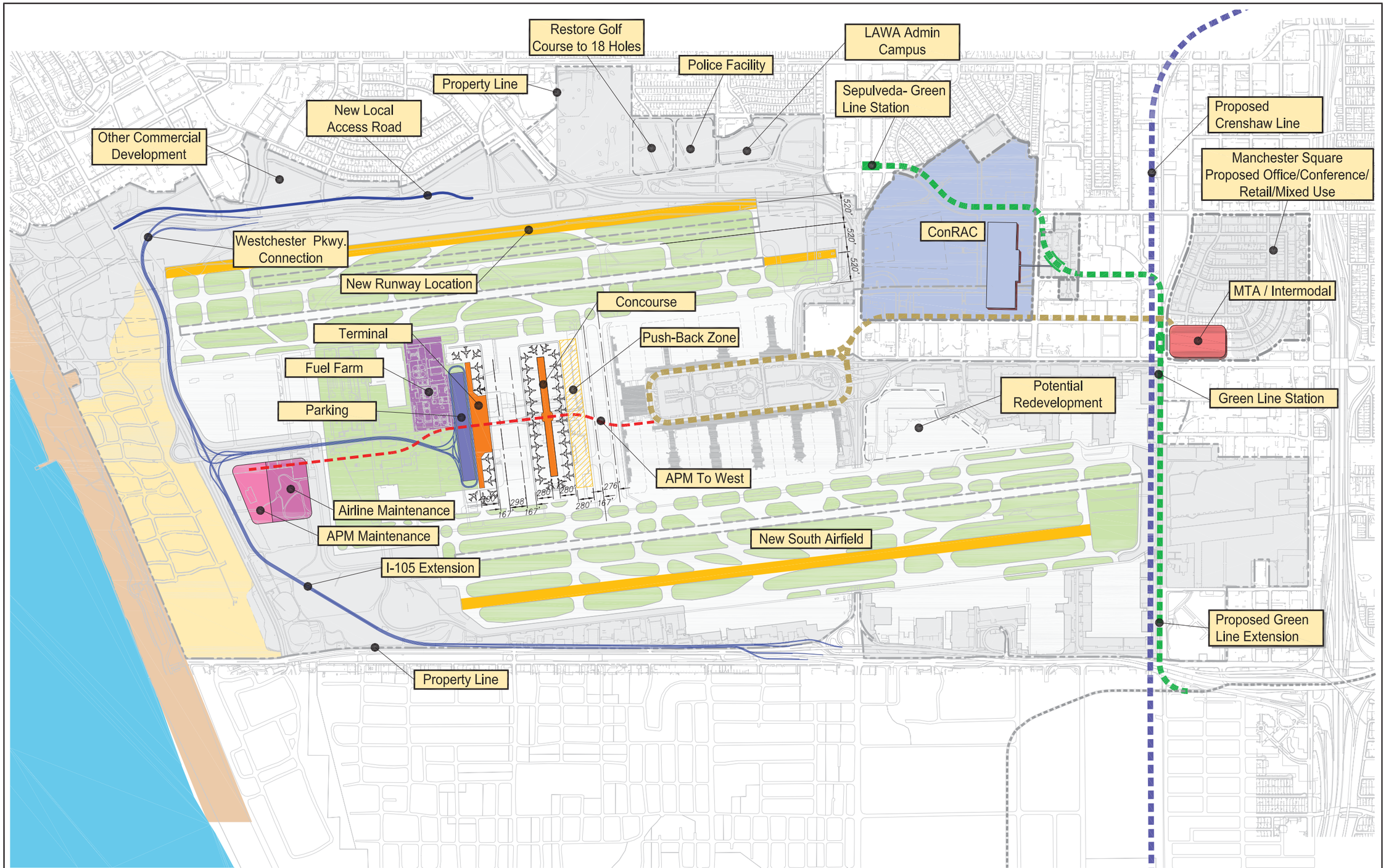


ARSAC / Westchester Concept

No Change to the North Airfield

Not To Scale

May 1, 2007



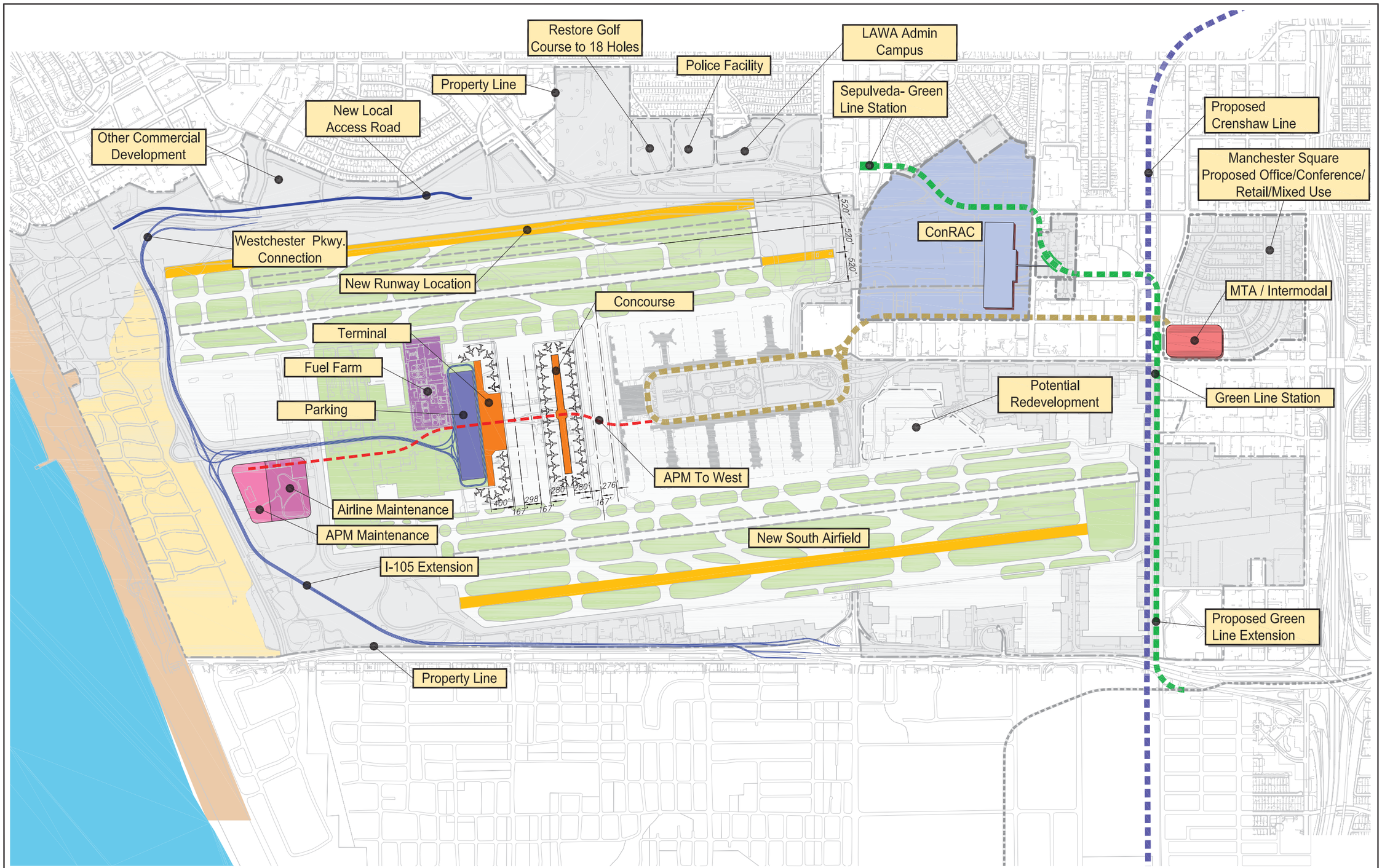
West/Midfield Terminal Concept - 1

Runway 6L-24R 340' Shift North

N

1" = 600'

January 31, 2007



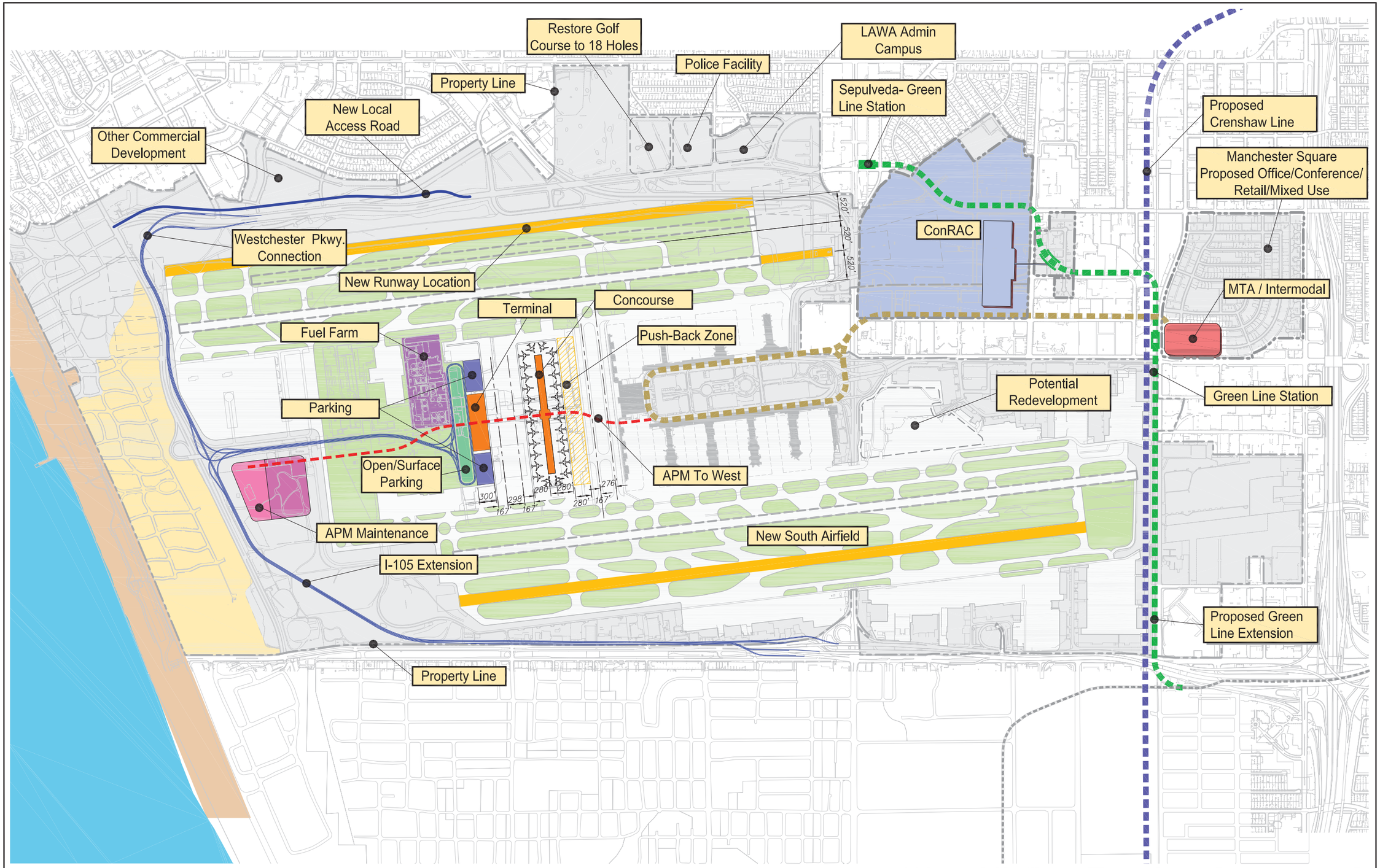
West/Midfield Terminal Concept - 1a

Runway 6L-24R 340' Shift North

N

1" = 600'

January 31, 2007



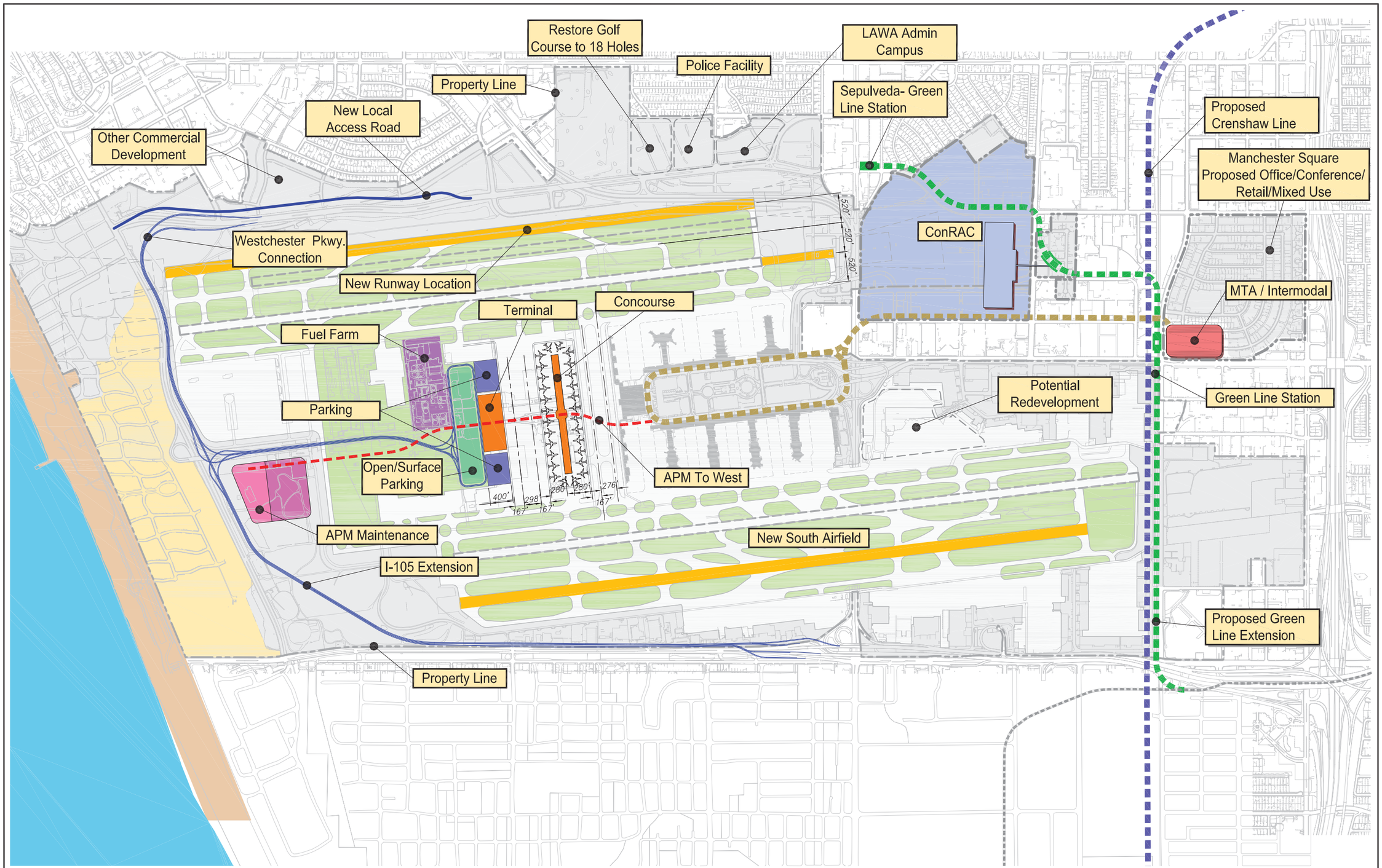
West/Midfield Terminal Concept - 2

Runway 6L-24R 340' Shift North

N

1" = 600'

January 31, 2007



West/Midfield Terminal Concept - 2a

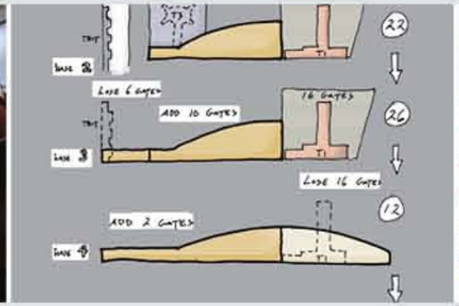
Runway 6L-24R 340' Shift North

N

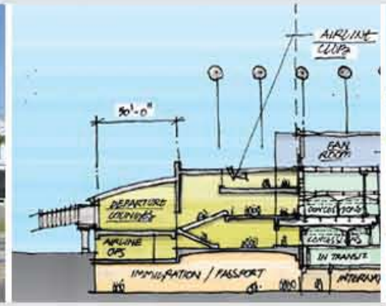
1" = 600'

January 31, 2007


WESTCHESTER MEDICAL PLAZA


22
26
12
ADD 10 GATES
ADD 2 GATES


QANTAS FREIGHT


DEPARTURE LOUNGES
AIRLINE OPS
IMMIGRATION / PASSPORT
IN TRANSIT


AIRPORT PARKING