



Standard Terminal Arrival (STAR) Charts and SIDS

HERE NOW!

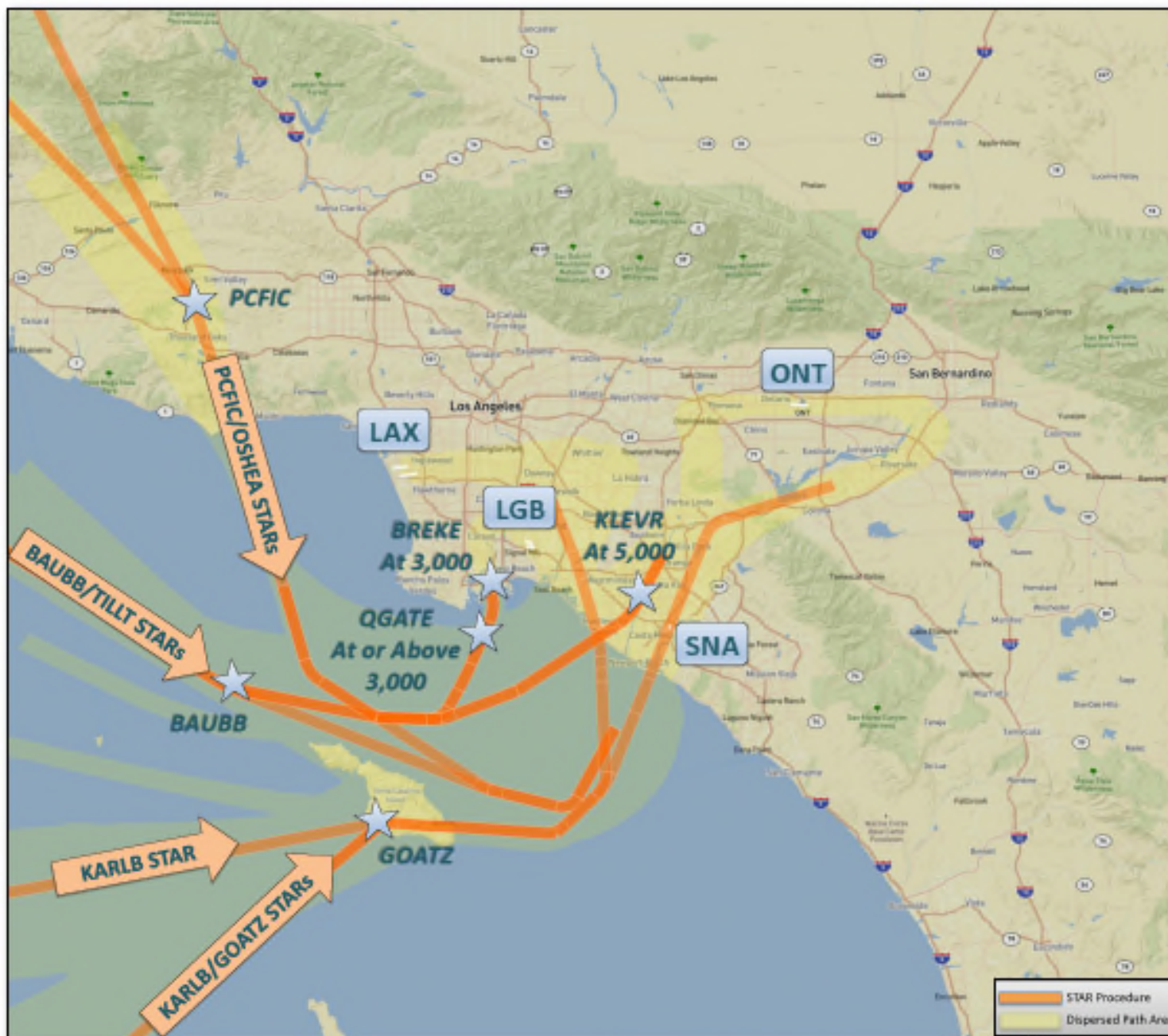
The LOS ANGELES METROPLEX

The Project

The SoCal Project would improve the efficiency of airspace in the Southern California Metroplex by optimizing aircraft arrival and departure procedures at Bob Hope (Burbank) Airport (BUR), Camarillo Airport (CMA), McClellan-Palomar Airport (Carlsbad) (CRQ), Fullerton Municipal Airport (FUL), Los Angeles International Airport (LAX), Long Beach Airport (Daugherty Field) (LGB), Camp Pendleton MCAS (Munn Field) Airport (NFG), Point Mugu Naval Air Station (NTD), North Island Naval Air Station (NZY), Ontario International Airport (ONT), Oxnard Airport (OXR), Palm Springs International Airport (PSP), San Diego International Airport (SAN), Santa Barbara Municipal Airport (SBA), Brown Field Municipal Airport (SDM), Santa Monica Municipal Airport (SMO), John Wayne-Orange County Airport (SNA), Jacqueline Cochran Regional Airport (TRM), Bermuda Dunes (UDD), Miramar Marine Corps Air Station (NKX) and Van Nuys Airport (VNY). The Project may involve changes in aircraft flight paths and altitudes in certain areas, but would not result in any ground disturbance or increase the number of aircraft operations within the Southern California airspace.



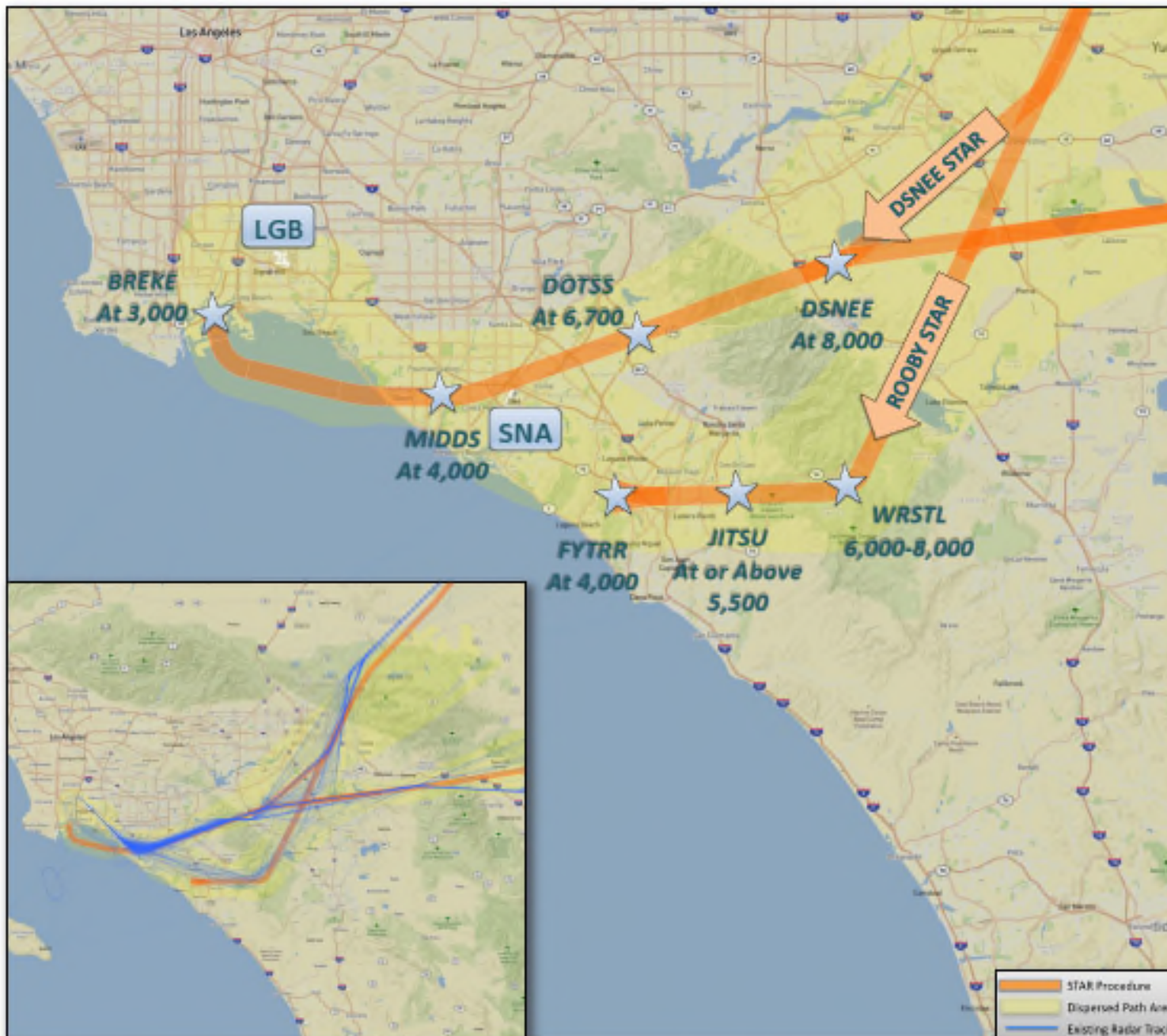
Arrival and Departure
Routes (STARS & SIDS
follow):



- LAX** Los Angeles International Airport
 - LGB** Long Beach Airport (Daugherty Field)
 - ONT** Ontario International Airport
 - SNA** John Wayne-Orange County Airport
- STAR (Arrival)**
- LAX GOATZ ONE RNAV STAR
 - ONT KARLB ONE RNAV STAR
 - LGB BAUBB ONE RNAV STAR
 - LGB PCFIC ONE RNAV STAR
 - SNA OHSEA ONE RNAV STAR
 - SNA TILLT ONE RNAV STAR

- New STAR designs for LAX, LGB, ONT, and SNA arrivals from over the ocean
- Designed to limit interactions with other departure and arrival procedures in the Southern California area
- GOATZ and KARLB allow aircraft to be as much as 7,000 feet higher over Catalina Island
- GOATZ, PCIFC, OHSEA, and TILLT STARS tie into new RNP approaches

— STAR Procedure
 Dispersed Path Area



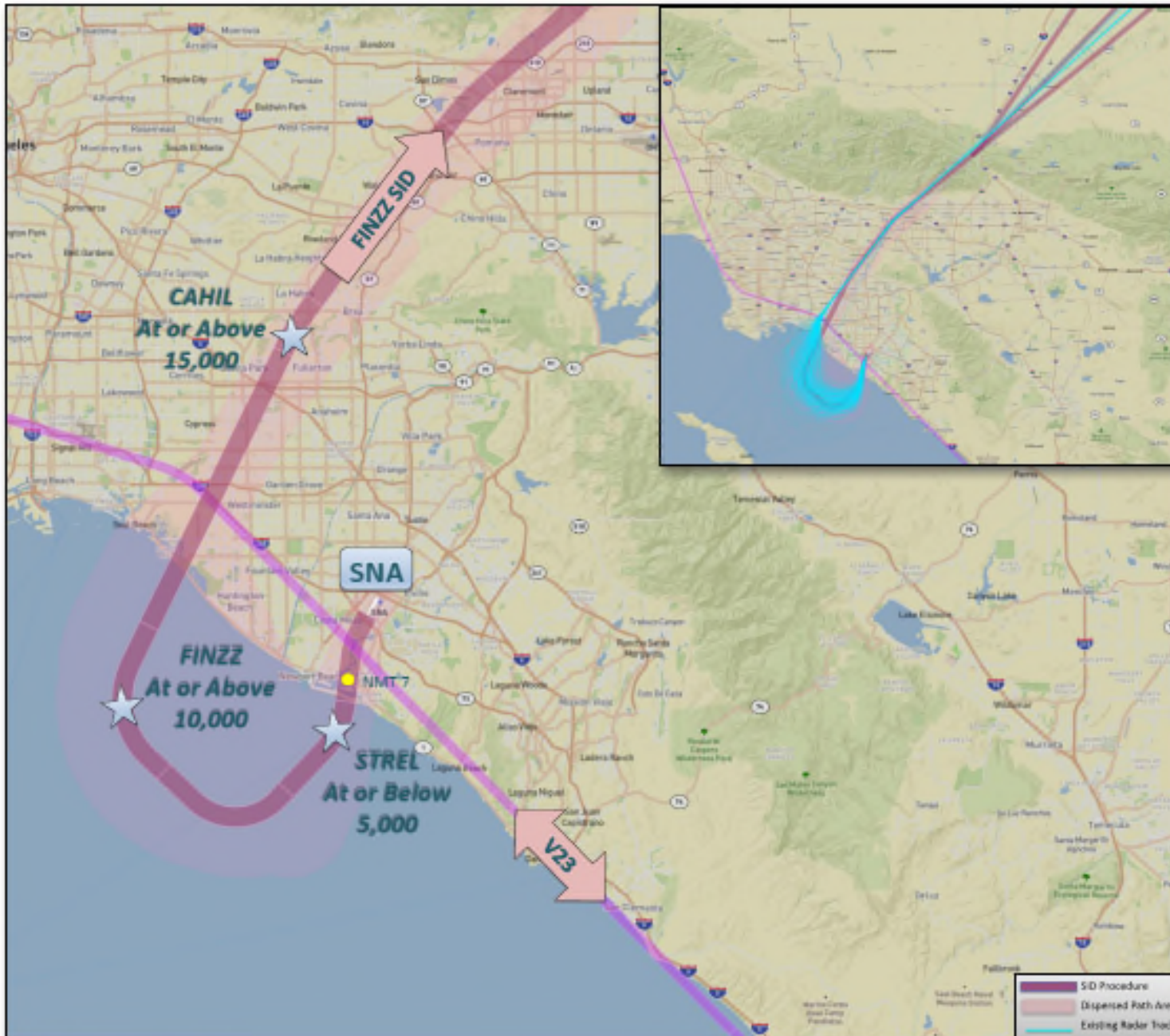
LGB Long Beach Airport
(Daugherty Field)

SNA John Wayne-Orange
County Airport

STAR (Arrival)
LGB/SNA DSNEE ONE RNAV STAR
LGB/SNA ROOBY ONE RNAV STAR

- DSNEE ONE**
- Replaces the LGB/SNA KEFFR STAR with OPD benefits for SNA south flow arrivals landing Runway 20R and LGB arrivals
 - Deconflicted from the BUR/VNY THRNE and the ONT EAGLZ and SCBBY STARs
 - Vertical restrictions were added to deconflict from other STARs and SIDs including the LAX ANJLL STAR

- ROOBY ONE**
- Replaces the LGB/SNA KEFFR STAR with OPD benefits for SNA north flow arrivals landing Runway 02L and LGB arrivals
 - Deconflicted from the BUR/VNY THRNE and the ONT EAGLZ and SCBBY STARs
 - Altitude restrictions were added to deconflict from other STARs and SIDs including the LAX ANJLL STAR



SNA John Wayne-Orange County Airport

SID (Departure)
SNA FINZZ ONE RNAV SID

- FINZZ ONE**
- The current MUSEL SID is a conventional procedure relying on ground based navigation
 - Serves SNA Runway 20R departures to the northeast
 - Deconflicted from overflight traffic on V23

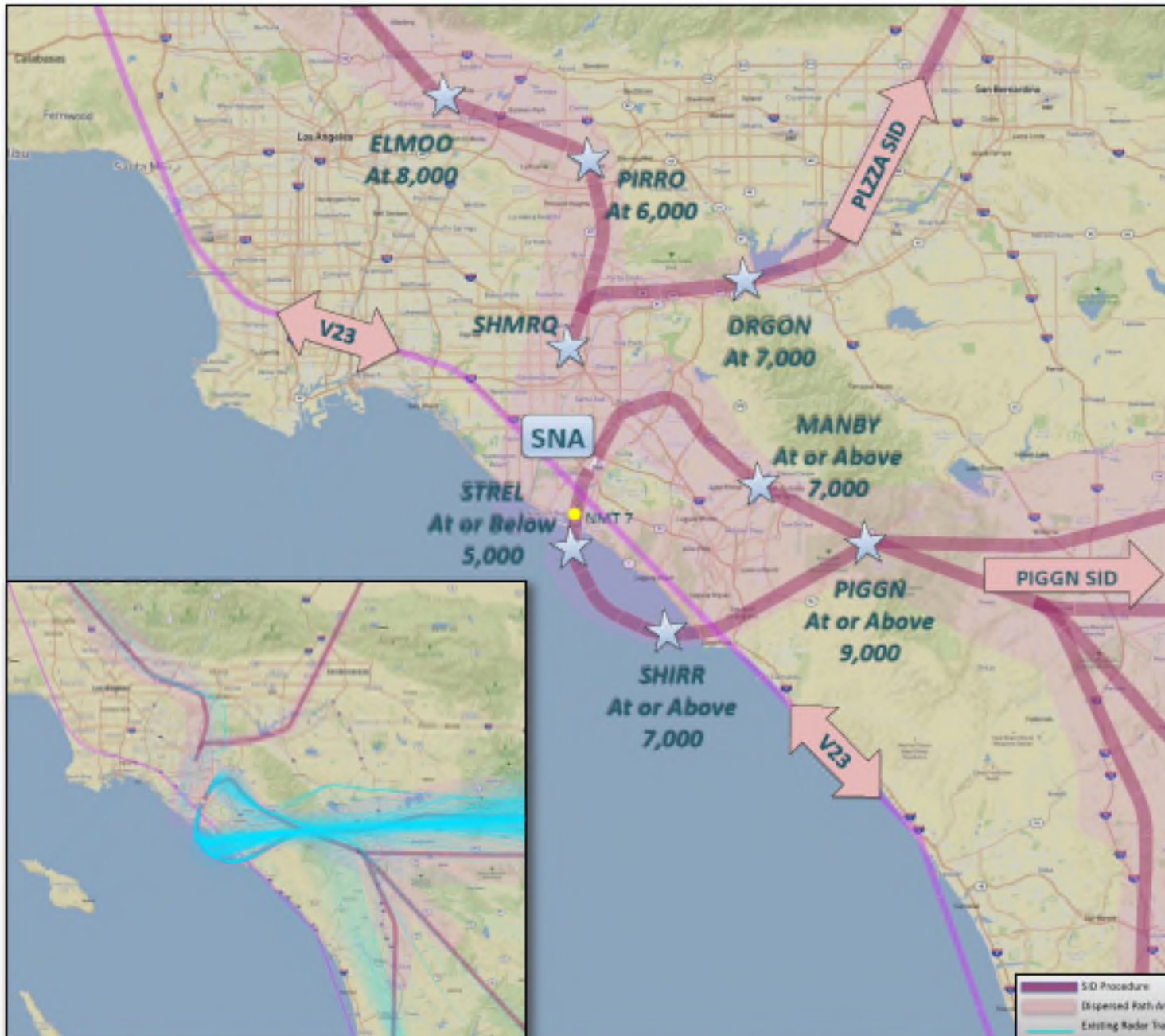


SNA John Wayne-Orange County Airport

SID (Departure)
SNA HHERO ONE RNAV SID

HHERO ONE

- The current CHANL SID is a conventional procedure relying on ground based navigation
- Serves Runway 20R departures to the north
- Deconflicted from the LAX GOATZ, LGB BAUBB, and SNA TILLT STARs
- Deconflicted from overflight traffic on V23



SNA John Wayne-Orange County Airport

SID (Departure)
 SNA PIGGN ONE RNAV SID
 SNA PLZZA ONE (Props) RNAV SID

PIGGN ONE

- Replaces the STREL SID off of Runway 20R for eastbound departures and provides a SID for Runway 02L where there is no current departure procedure for east/southeast bound flights

- Altitude restrictions were added to the procedure to deconflict with V23, the ONT RAJEE SID, and the LAX SNSST STAR

- Lateral tracks were designed in conjunction with the LAX DOTTS, LGB FRITR, and SMO PEVEE SIDs

PLZZA ONE

- The Metroplex Team developed the PLZZA as an RNAV SID for aircraft filed to the northwest and northeast

- Altitude restrictions were added to the procedure to reduce interactions with LAX and SMO arrivals

- Serves prop departures
- Will reduce chart clutter, increase efficiency, and reduce complexity



SNA John Wayne-Orange County Airport

SID (Departure)
SNA Runway 20R RNAV SIDs

- Current Runway 20R RNAV SID is designed to overfly Noise Monitor 7 (NM7/TOING waypoint)
- Currently, aircraft have difficulty navigating directly over NM7/TOING waypoint
- Metroplex Team developed a procedure that joins a course to STREL that flies over NM7 without TOING waypoint
 - SID provides a more repeatable ability to overfly NM7
- NOTE: Some aircraft may be radar vectored for separation purposes
- Procedure will be monitored and examined post-implementation



SNA John Wayne-Orange County Airport

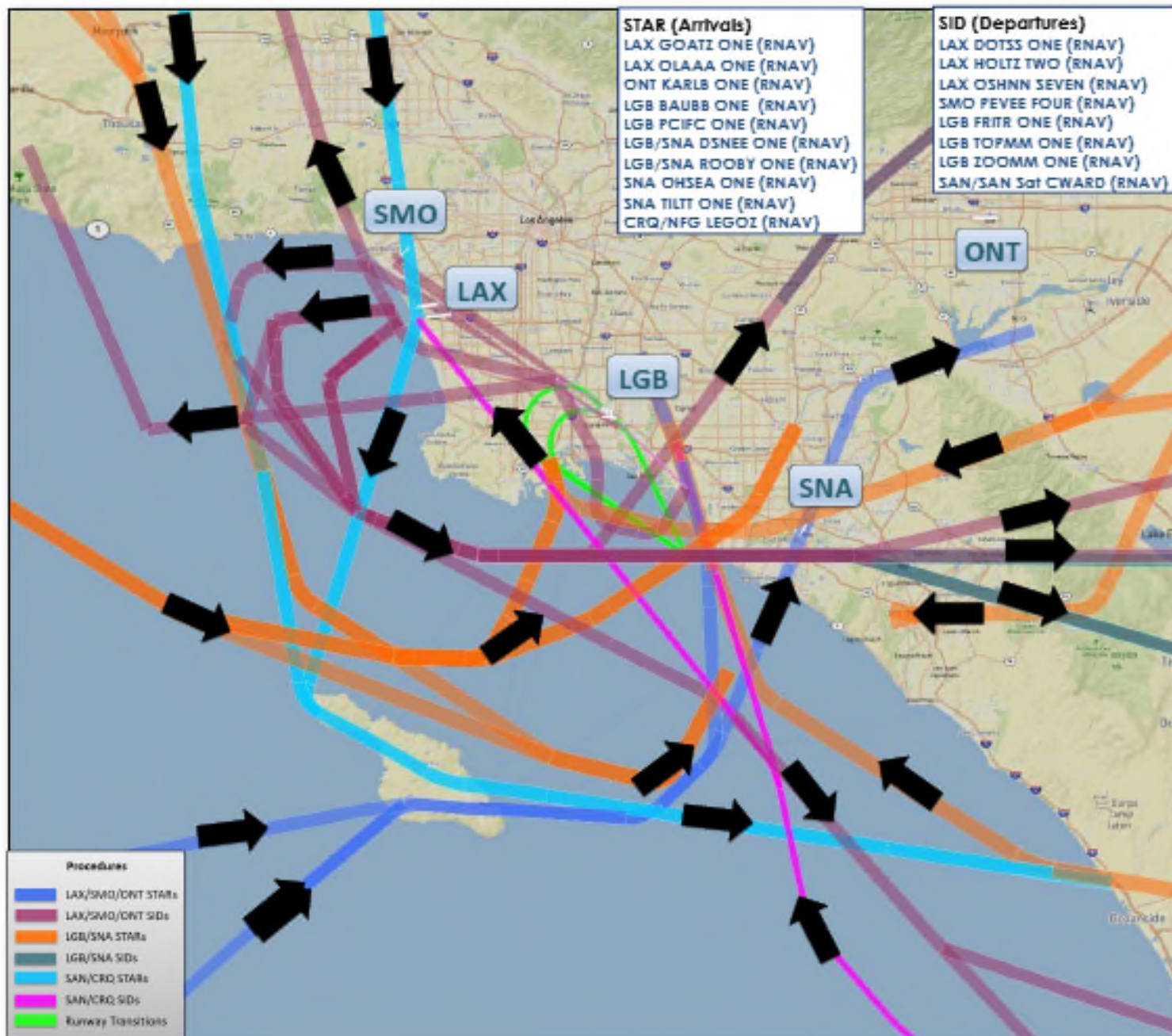
STAR (Arrival)
 SNA DSNEE ONE RNAV STAR
 SNA ROOBY ONE RNAV STAR

- DSNEE ONE**
- Replaces the SNA/LGB KEFFR STAR with OPD benefits for SNA south flow arrivals landing Runway 20R and LGB arrivals
 - Deconflicted from the BUR/VNY THRNE, and the ONT EAGLZ and SCBBY STARs
 - Vertical restrictions were added to deconflict from other STARs and SIDs including the LAX ANJLL STAR
- ROOBY ONE**
- Replaces the SNA/LGB KEFFR STAR with OPD benefits for SNA north flow arrivals landing Runway 02L and LGB arrivals
 - Deconflicted from the BUR/VNY THRNE, and the ONT EAGLZ and SCBBY STARs
 - Altitude restrictions were added to deconflict from other STARs and SIDs including the LAX ANJLL STAR

STAR (Arrivals)
 LAX GOATZ ONE (RNAV)
 LAX OLAAA ONE (RNAV)
 ONT KARLB ONE (RNAV)
 LGB BAUBB ONE (RNAV)
 LGB PCIFC ONE (RNAV)
 LGB/SNA DSNEE ONE (RNAV)
 LGB/SNA ROOBY ONE (RNAV)
 SNA OHSEA ONE (RNAV)
 SNA TILTT ONE (RNAV)
 CRQ/NFG LEGOZ (RNAV)

SID (Departures)
 LAX DOTSS ONE (RNAV)
 LAX HOLTZ TWO (RNAV)
 LAX OSHNN SEVEN (RNAV)
 SMO FEVEE FOUR (RNAV)
 LGB FRITR ONE (RNAV)
 LGB TOPMM ONE (RNAV)
 LGB ZOOMM ONE (RNAV)
 SAN/SAN Sat CWARD (RNAV)

LAX Los Angeles International Airport
ONT Ontario International Airport
SMO Santa Monica Municipal Airport
LGB Long Beach Airport (Daugherty Field)
SNA John Wayne – Orange County Airport
SAN San Diego International Airport
CRQ Mc Clellan-Palomar Airport



The Design of all procedures into and out of Southern California airports was affected by many factors including:

- Traffic flows into and out of other airports
- Military and special use airspace restrictions
- Aircraft performance
- Terrain
- Class B airspace
- Existing noise procedures