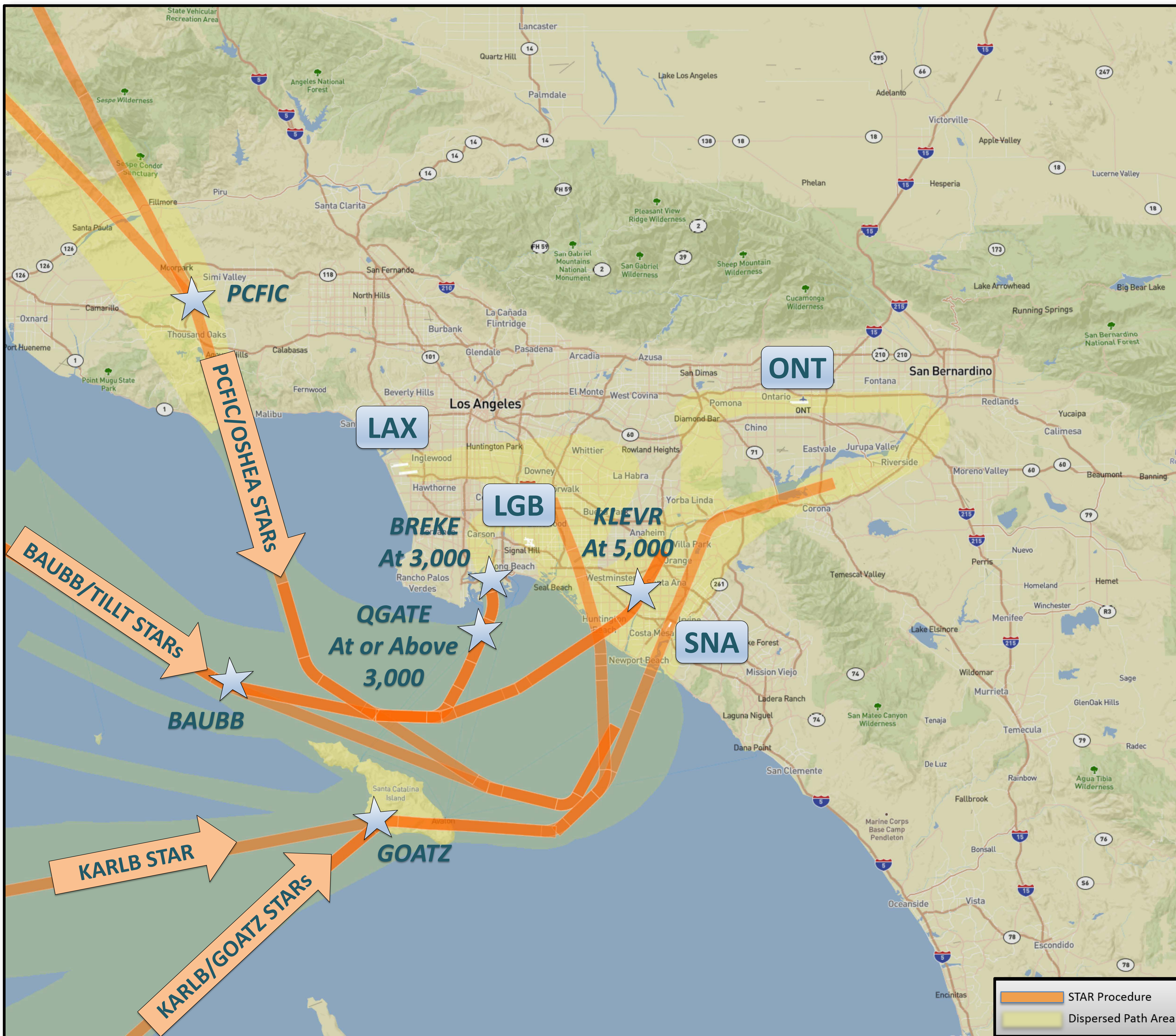
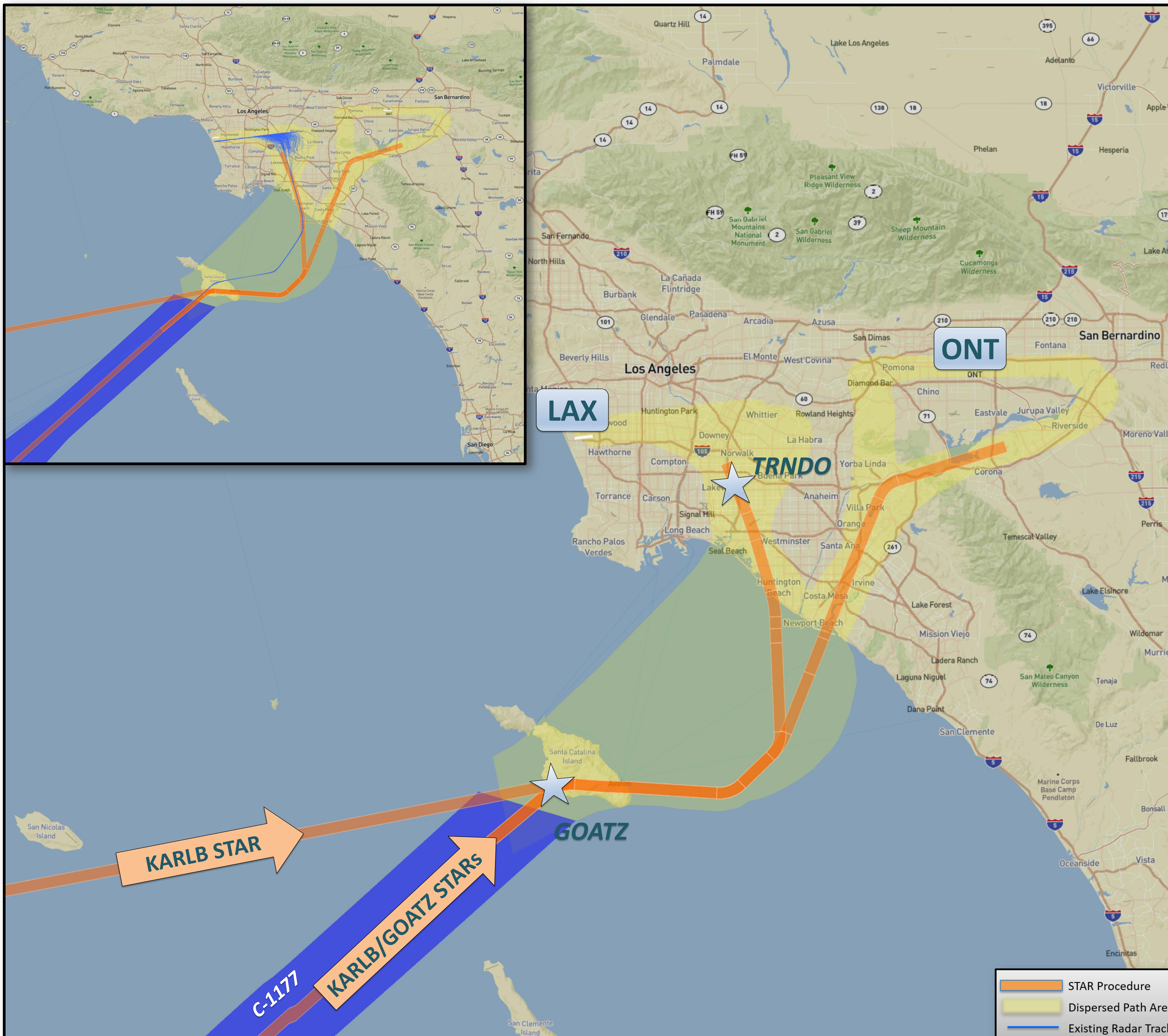


- LAX** Los Angeles International Airport
- LGB** Long Beach Airport (Daugherty Field)
- ONT** Ontario International Airport
- SNA** John Wayne-Orange County Airport

STAR (Arrival)
 LAX GOATZ ONE RNAV STAR
 LGB BAUBB ONE RNAV STAR
 LGB PCIFC 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





LAX Los Angeles International Airport

ONT Ontario International Airport

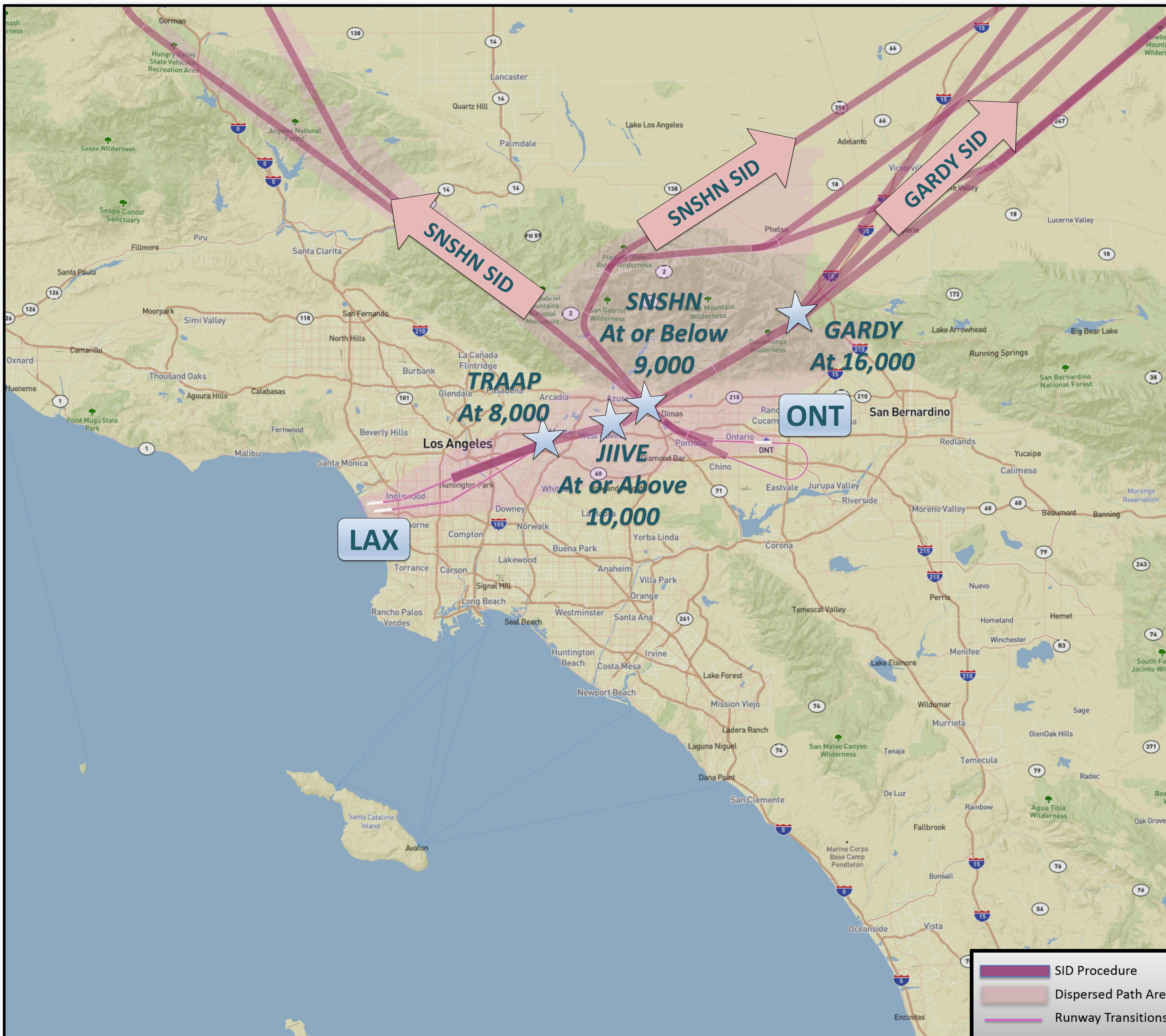
STAR (Arrival)
LAX GOATZ ONE RNAV STAR
ONT KARLB ONE RNAV STAR

GOATZ ONE

- Serves LAX arrivals from the southwest
- Allows aircraft to be as much as 7,000 feet higher over Santa Catalina Island
- Routing will be unavailable when military airspace Control Extension C1177 (C-1177) is active
- Deconflicted from the SNA HHERO SID
- Ties into new LAX RNP approaches at TRNDO

KARLB ONE

- Currently no published arrival procedure to ONT for aircraft from the west
- Allows aircraft to be as much as 7,000 feet higher over Santa Catalina Island
- OPD design impacted by interactions with LAX and SNA departures as well as SAN and CRQ arrivals



LAX Los Angeles International Airport

ONT Ontario International Airport

SID (Departure)
LAX GARDY ONE RNAV SID
ONT SNSHN ONE RNAV SID

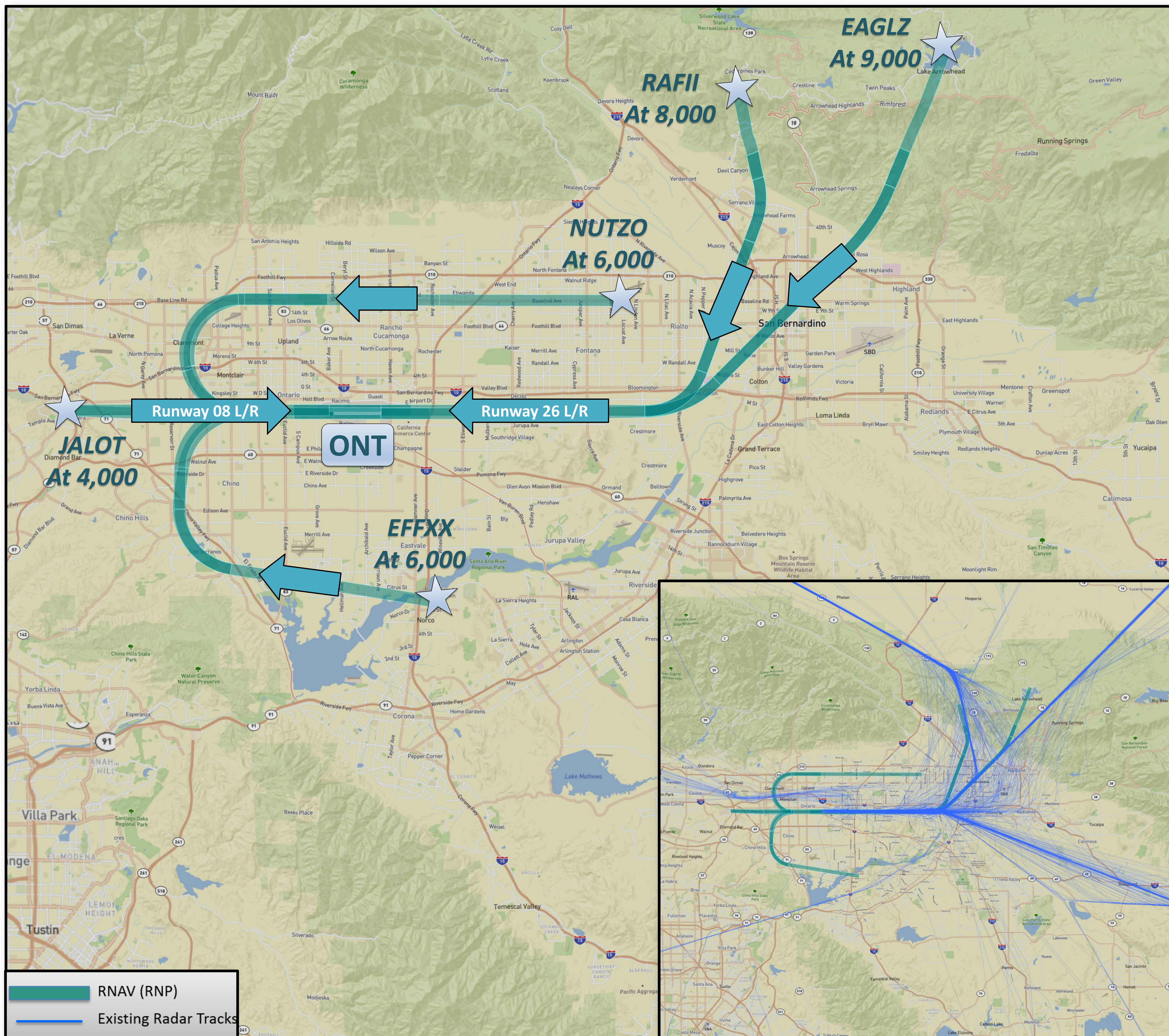
- GARDY ONE**
- Serves LAX departures on east bound runways
 - Requires aggressive climb gradient due to terrain
 - Altitude restrictions added to deconflict from ONT SNSHN SID, ONT GLRNO STAR, and LAX BIGBR/BRUEN STARs
- SNSHN ONE**
- Serves ONT departures to the northwest, north, and northeast from ONT Runways 08 L/R and 26 L/R
 - Current procedure is inefficient conventional SID dependent on ground based navigation
 - Deconflicted from LAX arrivals in SCT TRACON airspace
 - Provides independent and segregated route structure after departure allowing more unrestricted climbs

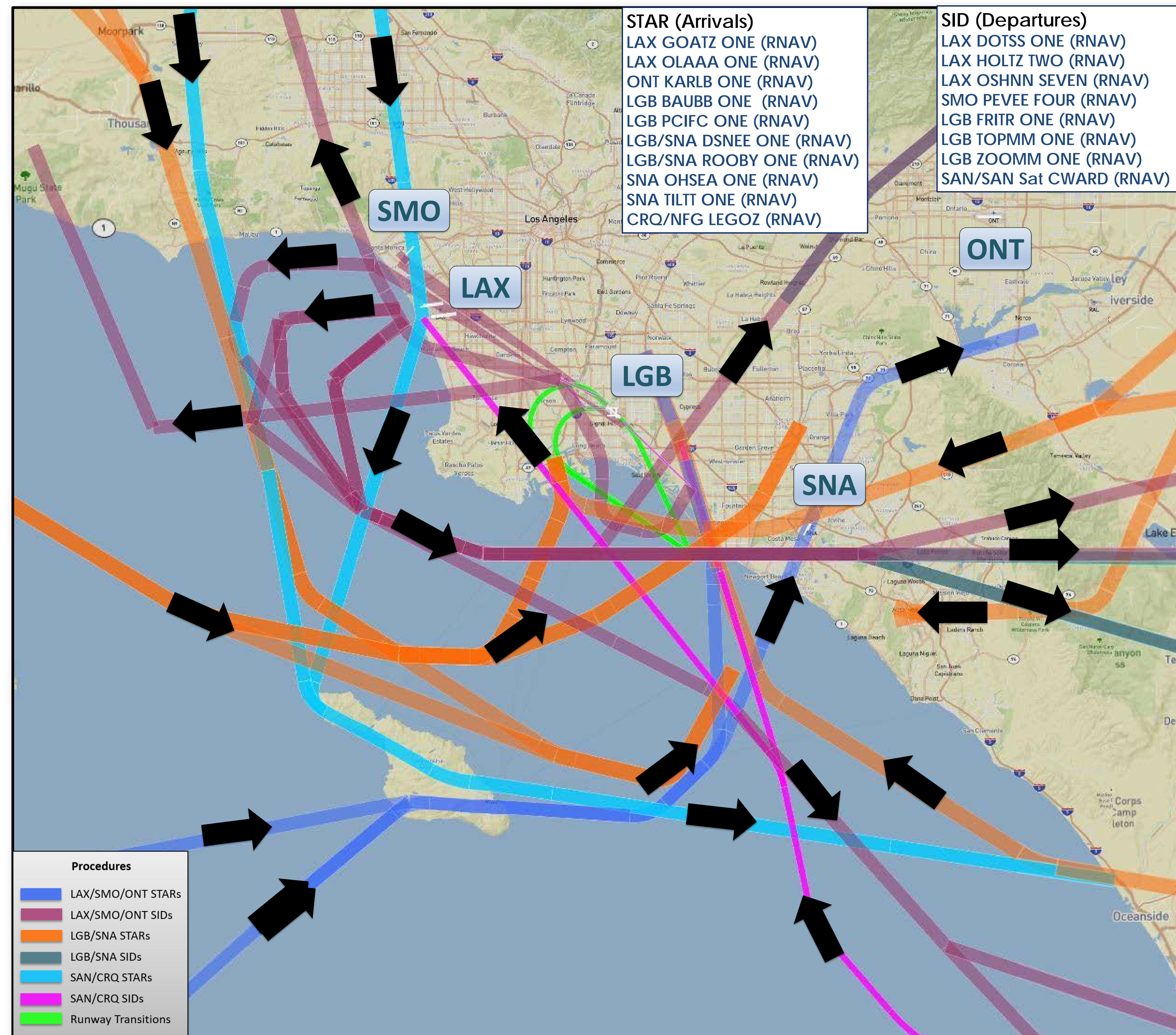
ONT Ontario International Airport

Instrument Approach

ONT RNAV (RNP) RWY 08L
 ONT RNAV (RNP) RWY 08R
 ONT RNAV (RNP) RWY 26L
 ONT RNAV (RNP) RWY 26R

- The ONT RNAV (RNP) approaches will provide a more repeatable and predictable path, reducing complexity and increasing safety and efficiency for ONT arrivals
- New Metroplex STARs will tie into the approaches
- This ATC assigned approach will be flown by properly equipped aircraft with qualified crews





- 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