

# JWA and NextGen

Newport Beach City Council – Study Session  
Tuesday, September 26, 2017

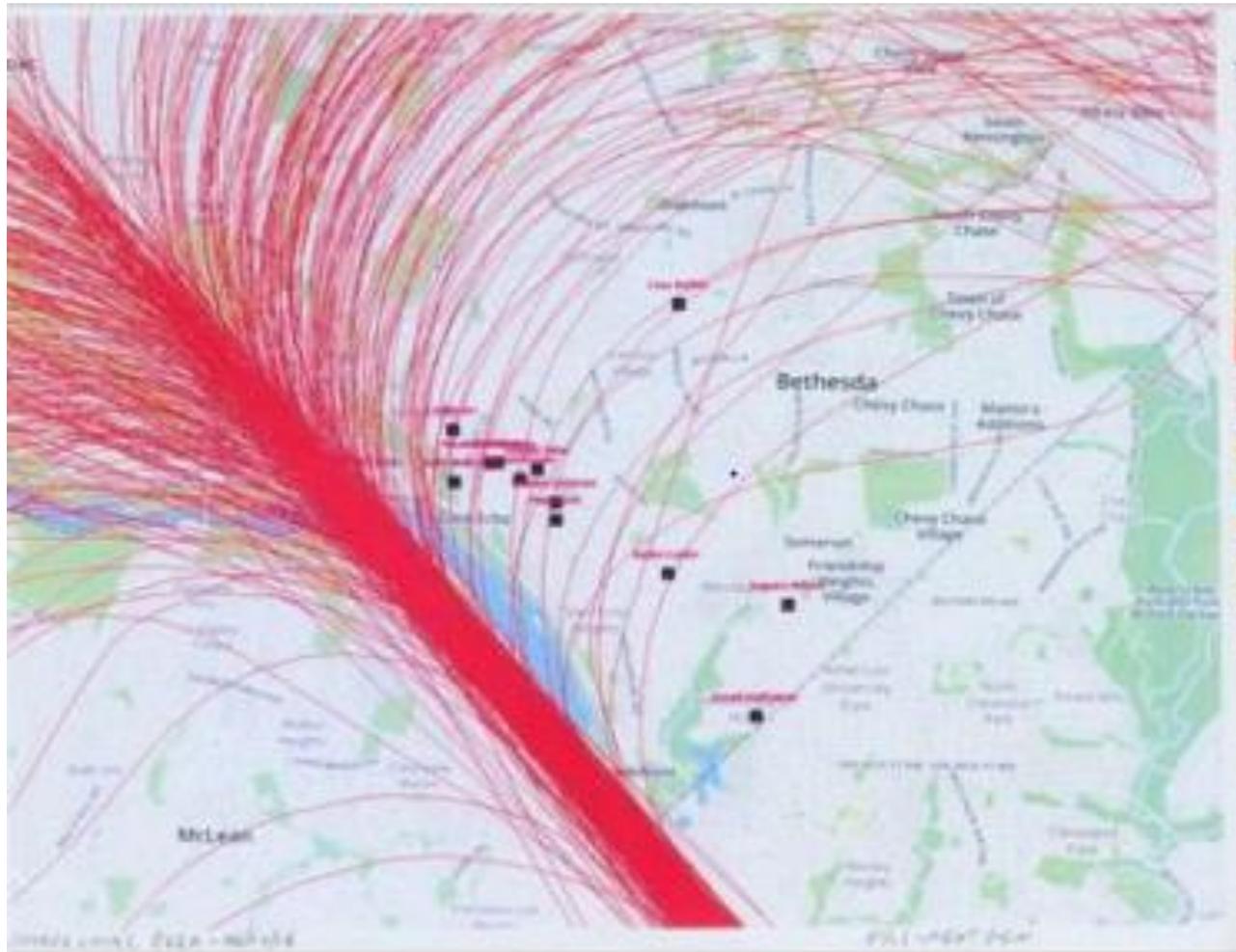
# City's GOALS

- **Protect our quality of life**
- Protect the Settlement Agreement
- Get flights down the middle of the Upper Bay.
- Continue to pursue via FAA litigation
- Take a new look at noise, altitudes
- Involve the community more
- Get complaints to the FAA
- Follow our Airport Policy (A-17)

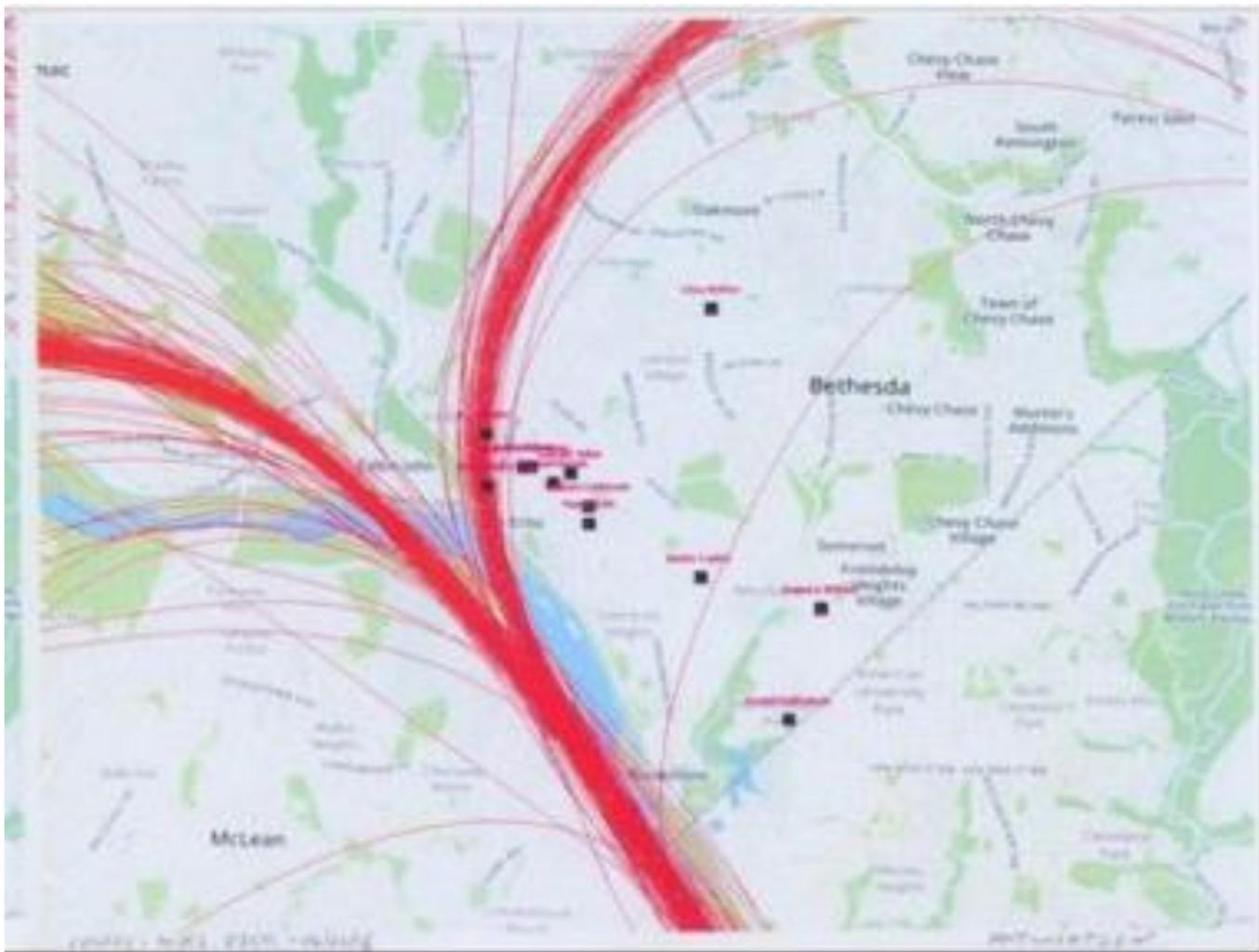
# What is NextGen?

- An FAA Modernization Program (to which we objected!)
- Happening Nationwide
- “Area Navigation” or RNAV
  - Less fanning, more narrowing
  - Per FAA: More safety, predictability, repeatability, efficiency
- JWA one of 21 Airports w/changes just in Southern CA

# What is NextGen?



# What is NextGen?



# Some Common NextGen/JWA Questions

- **Current NextGen Routes**

- When did they change, and why?
- Can the problems with PIGGN, HHERO, and FINNZ be fixed? If so, how and how fast?
- What's with the mysterious STAYY procedure?

- **Noise and the Noise Abatement Departure Procedures**

- Are they used anymore? If not, why not?
- Are the new routes hitting the noise monitoring stations?
- How do we know that the NMSs are accurate?

- **Why did the City file suit against the FAA in October 2016?**

- **How can things be sped up?**

# JWA Settlement Agreement

- Four parties – County, City, AWG, SPON
- Started in 1985. ANCA enacted 1990.
- **Curfew.** No changes to curfew through 2035
  - Commercial carrier departures only 7:00 a.m. to 10:00 p.m. (8 on Sun)
  - No arrivals after 11:00 p.m.
- **Cap on passengers**
  - Right now, 10.8 MAP through 2020;
  - Goes to 11.8 MAP in 2021-2025, then 12.2/12.5 MAP in 2026-2030
- **Cap on Loudest Commercial Flights/Day (Class A)**
  - Right now, 85 “average daily departures” per day.
  - Goes to 95 per day in 2021
- **Noise limits** – first set in 1985 – are set in dB at each of 10 Stations.
  - Class A limits higher than Class E limits

# The Old Way (2012 – not RNAV)

Jan 13, 2012

MUSEL Departures

26 Flights

.81 mile wide

The .81 mile wide divergence equals 4277 feet width at the shoreline, using statute miles. If using nautical miles, it represents 4922 feet. The FAA doesn't say which.

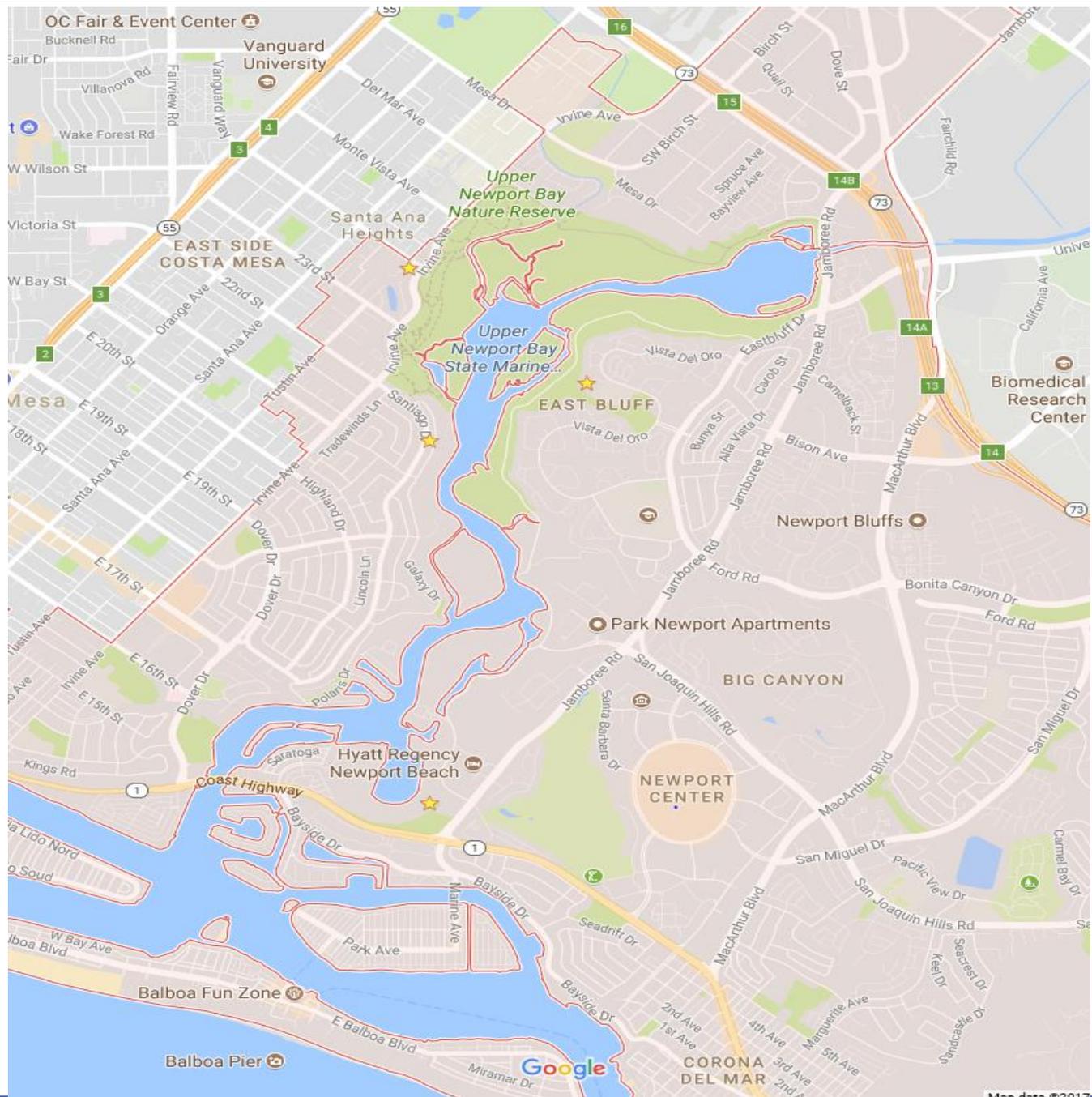
# Today (PIGGN, HHERO, FINNZ)



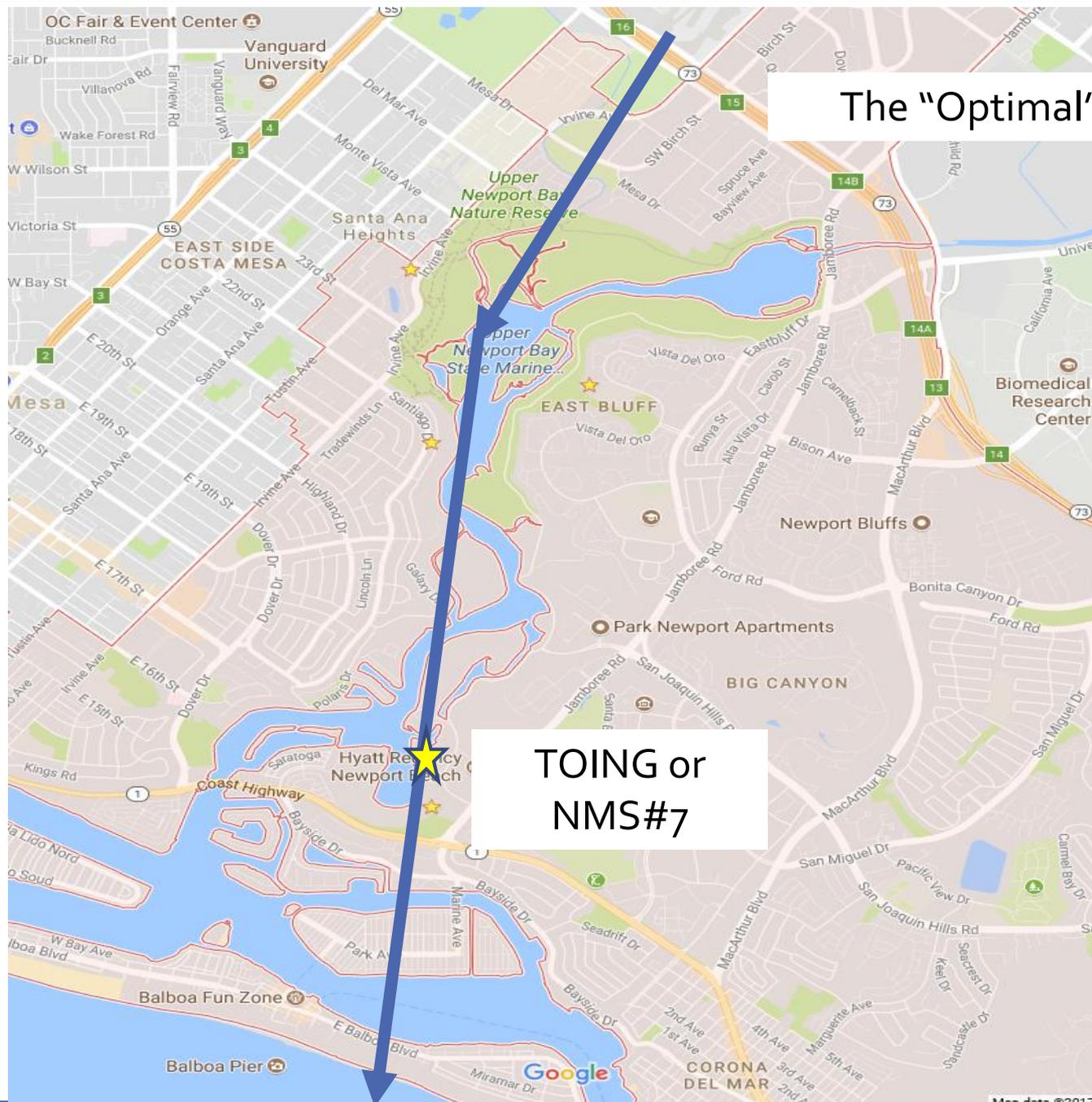
# WHAT HAPPENED?

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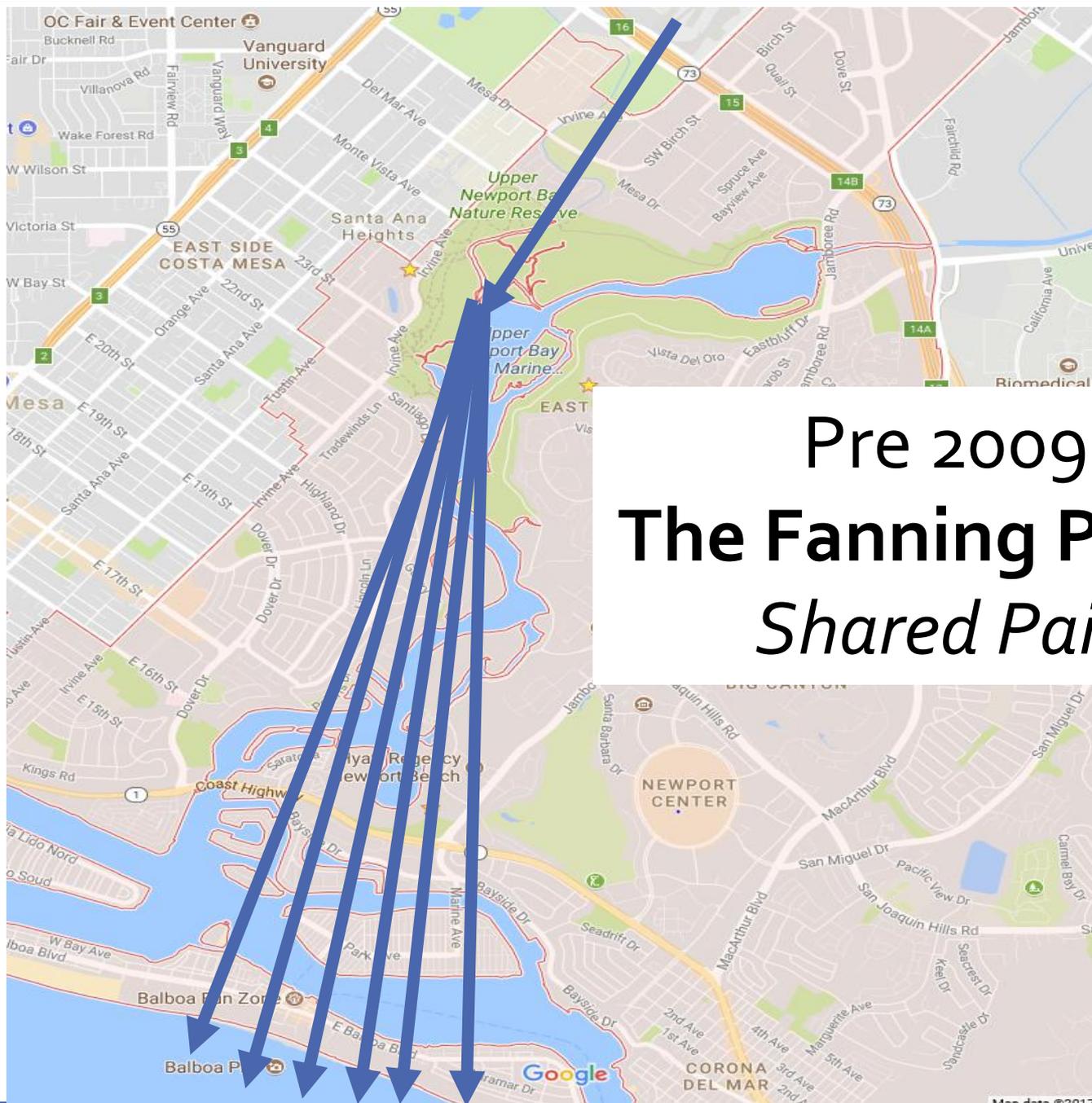
Short history of NextGen at JWA



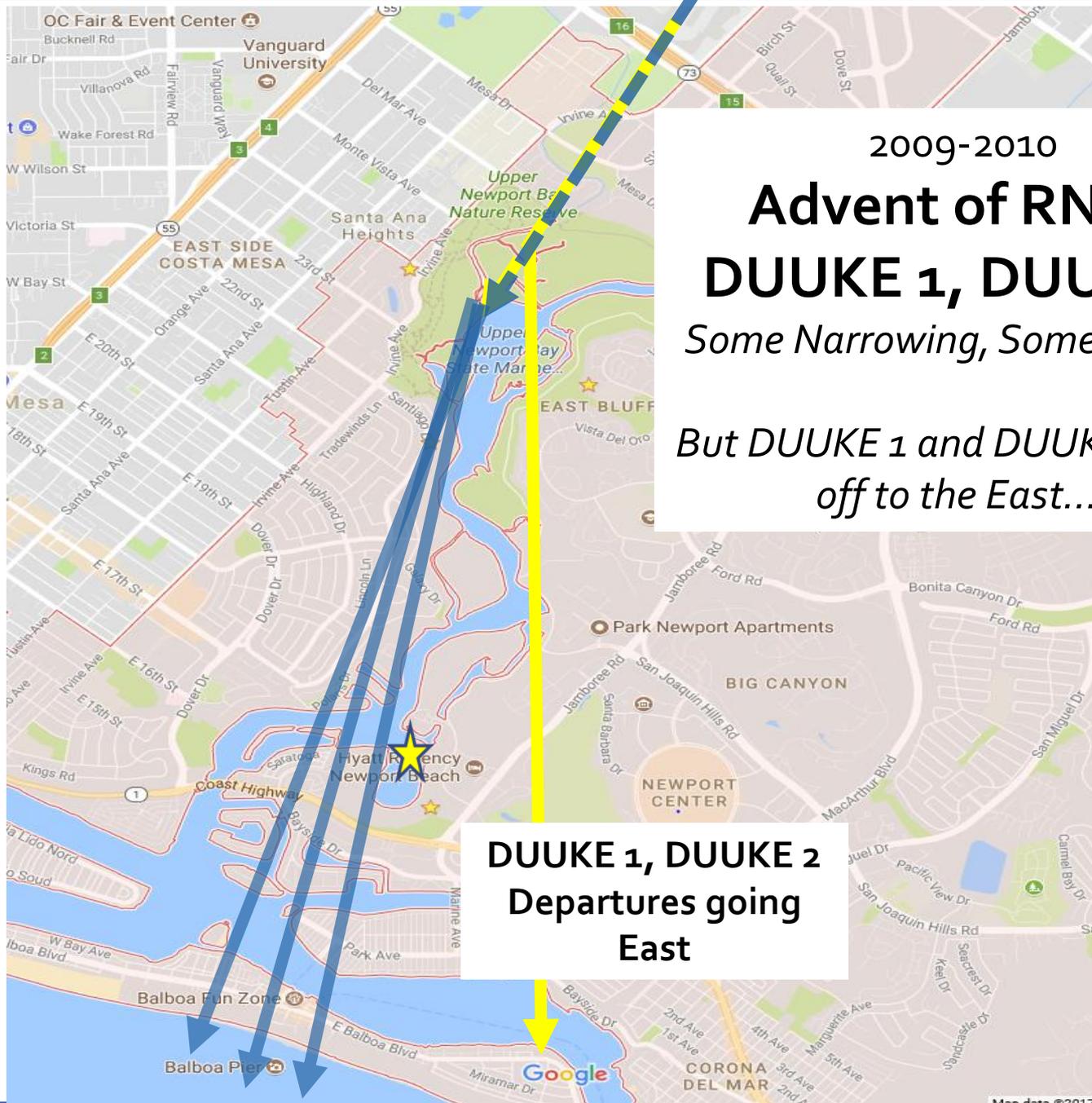
# The "Optimal" Path



TOING or  
NMS#7



Pre 2009  
The Fanning Period  
*Shared Pain*

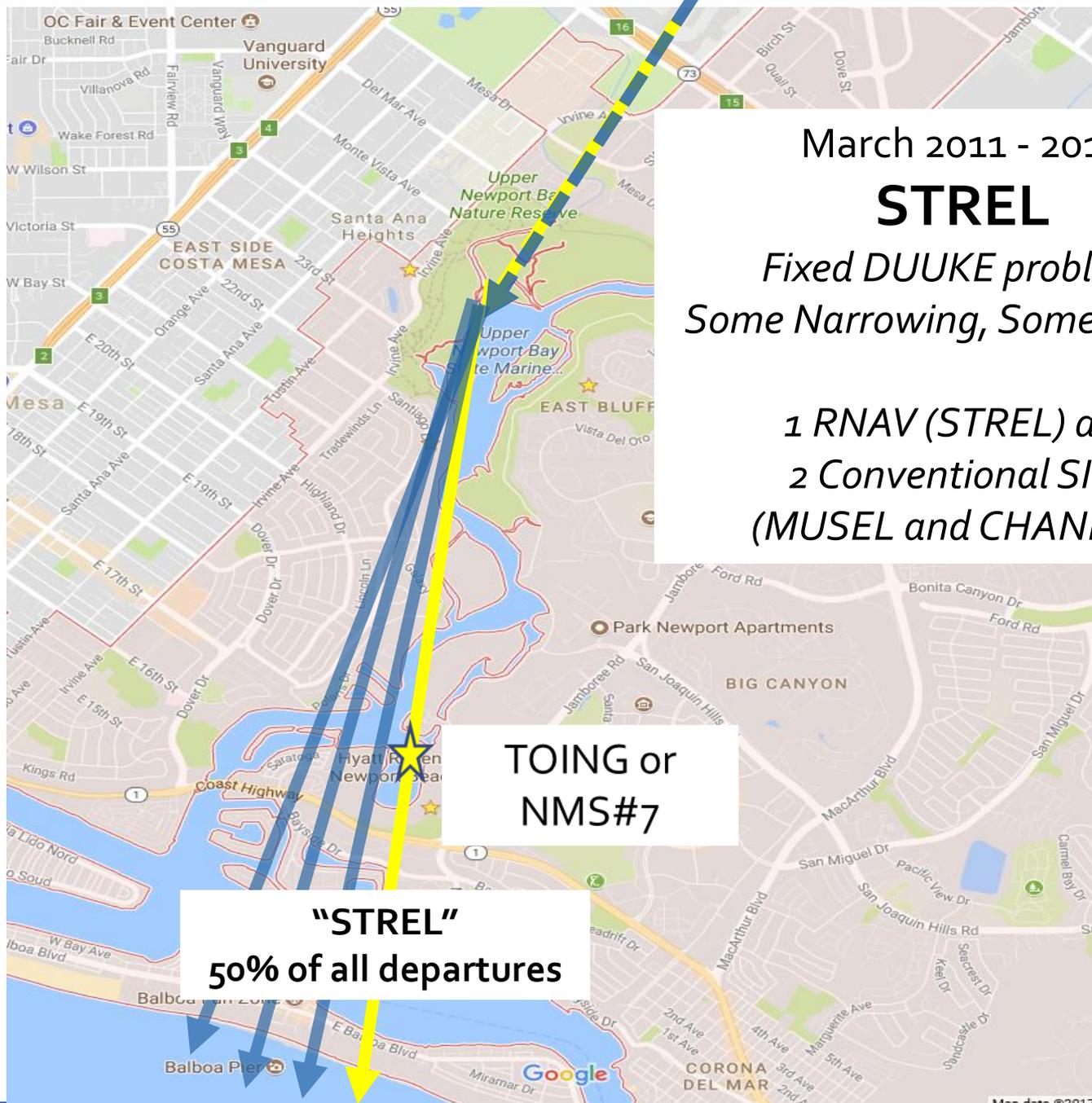


2009-2010

**Advent of RNAV**  
**DUUKE 1, DUUKE 2**  
*Some Narrowing, Some Sharing*

*But DUUKE 1 and DUUKE 2 were off to the East....*

**DUUKE 1, DUUKE 2**  
**Departures going East**



March 2011 - 2014

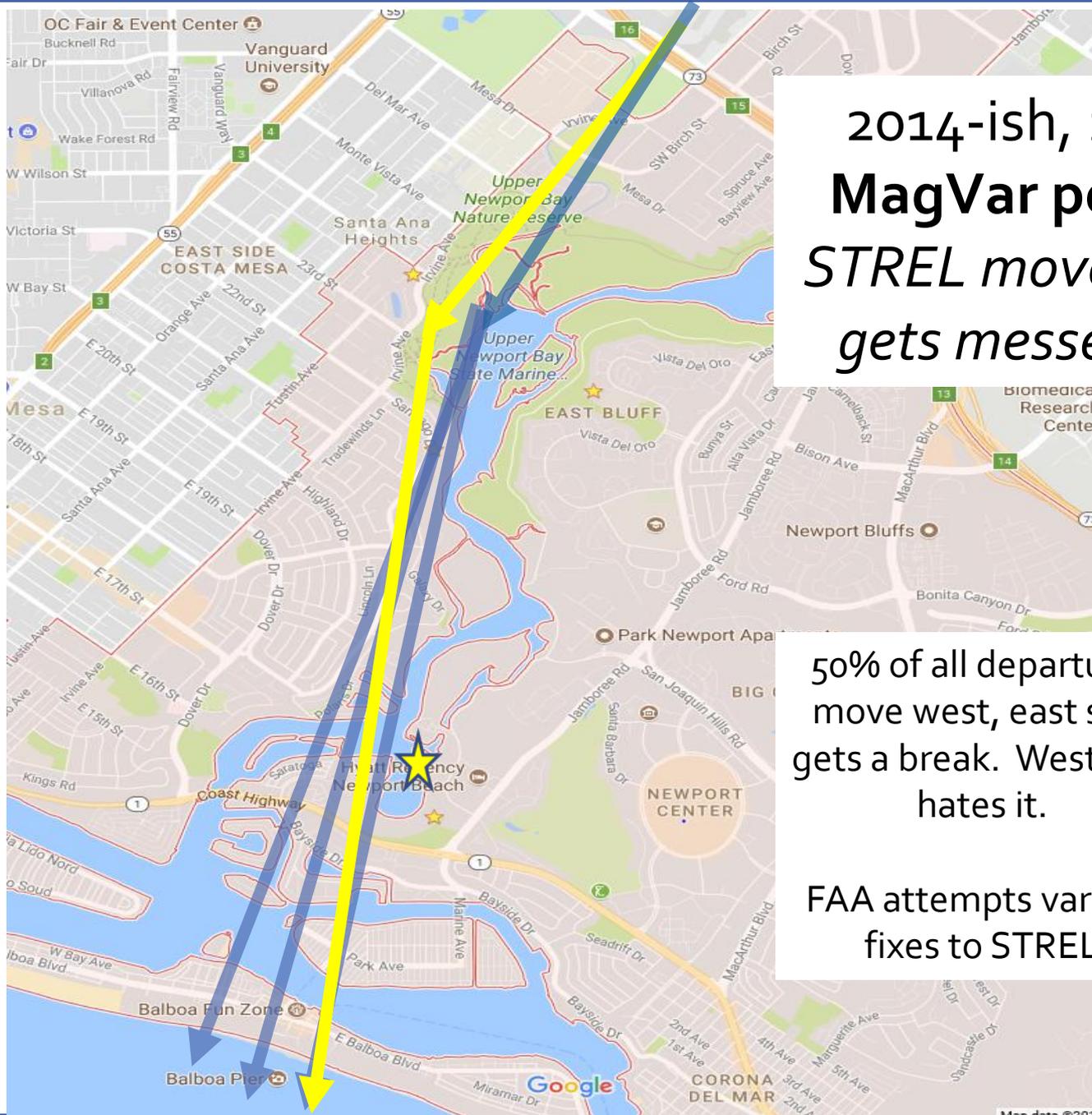
# STREL

*Fixed DUUKE problems  
Some Narrowing, Some Sharing*

*1 RNAV (STREL) and  
2 Conventional SIDs  
(MUSEL and CHANNEL)*

TOING or  
NMS#7

"STREL"  
50% of all departures



2014-ish, 2015  
**MagVar period**  
*STREL moves and  
gets messed up*

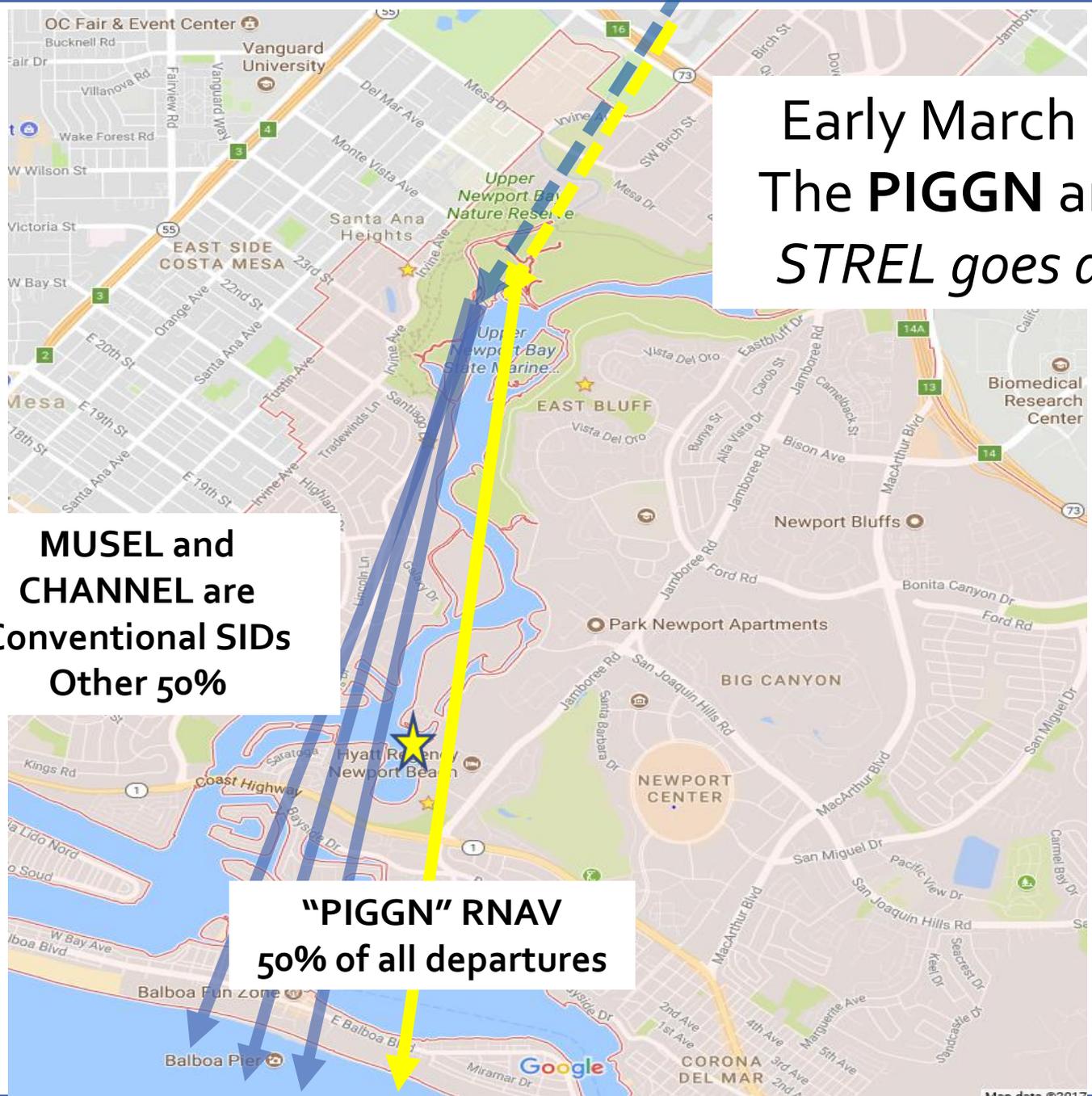
50% of all departures  
move west, east side  
gets a break. West side  
hates it.

FAA attempts various  
fixes to STREL

Early March 2017  
The **PIGGN** arrives  
*STREL* goes away

**MUSEL and  
CHANNEL** are  
Conventional SIDs  
Other 50%

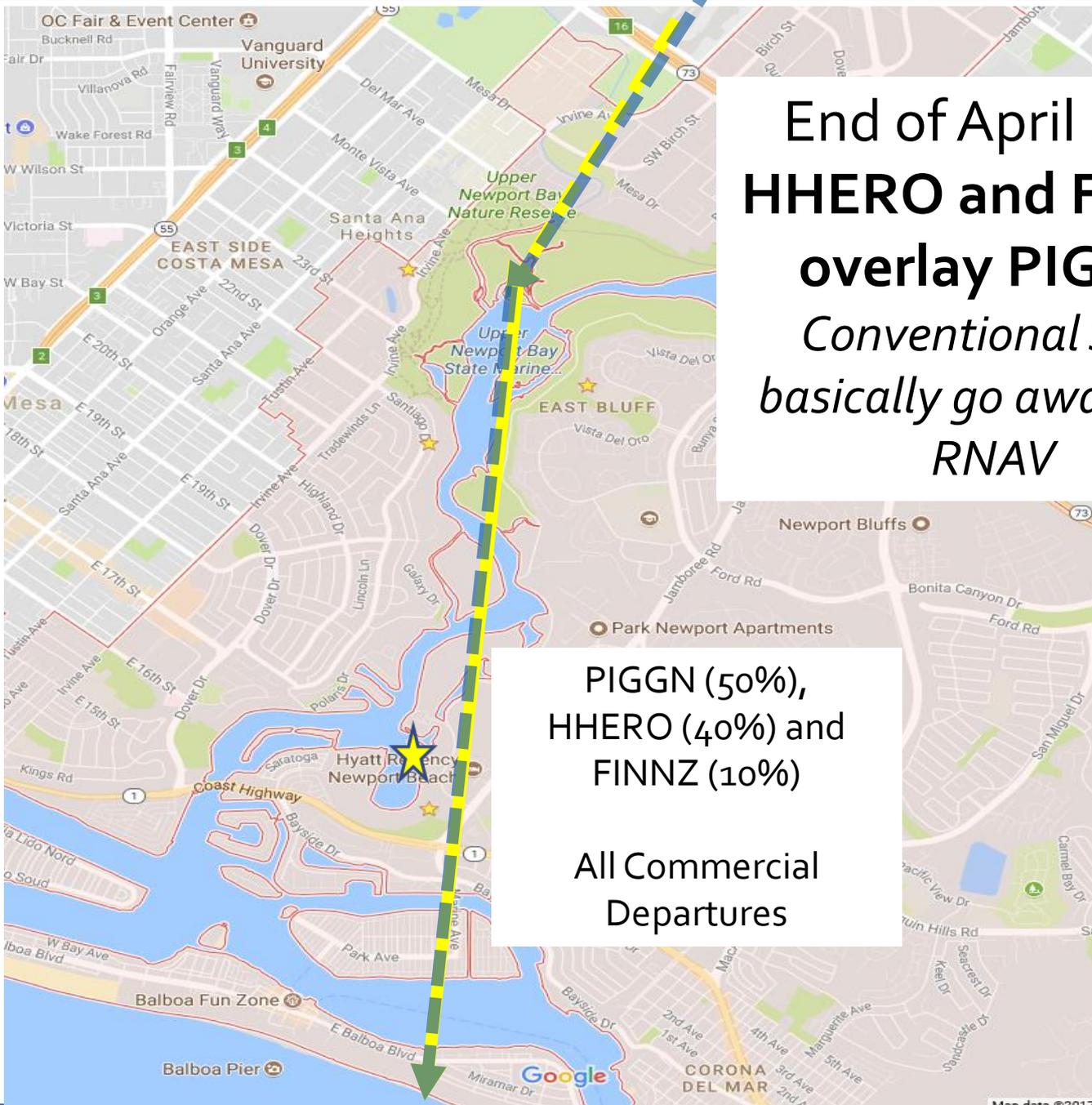
**"PIGGN" RNAV**  
50% of all departures

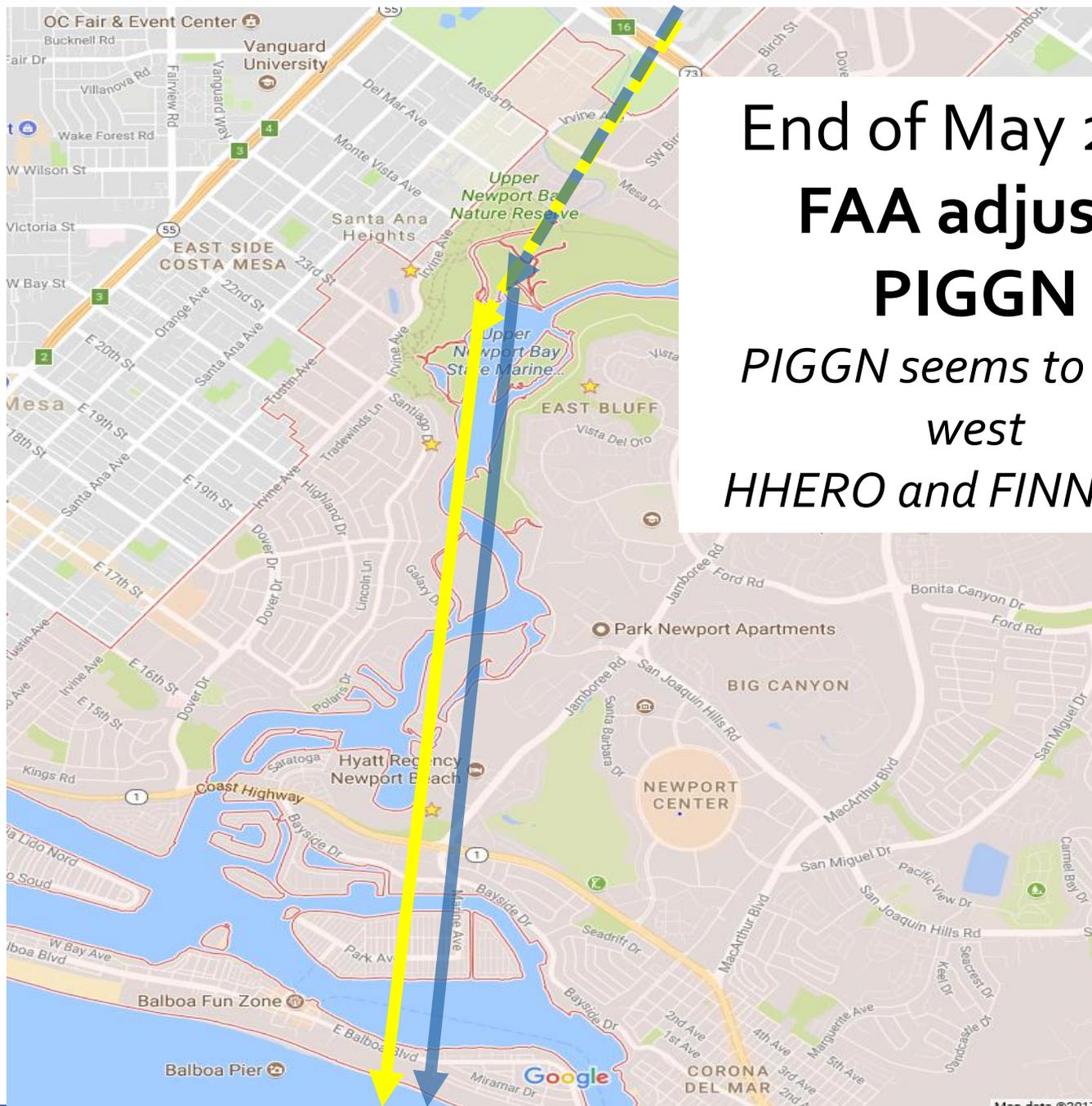


End of April 2017  
**HHERO and FINNZ**  
overlay **PIGGN**  
*Conventional SIDs*  
*basically go away – all*  
**RNAV**

PIGGN (50%),  
HHERO (40%) and  
FINNZ (10%)

All Commercial  
Departures





End of May 2017  
**FAA adjusts  
PIGGN**  
*PIGGN seems to move  
west  
HHERO and FINNZ stay*

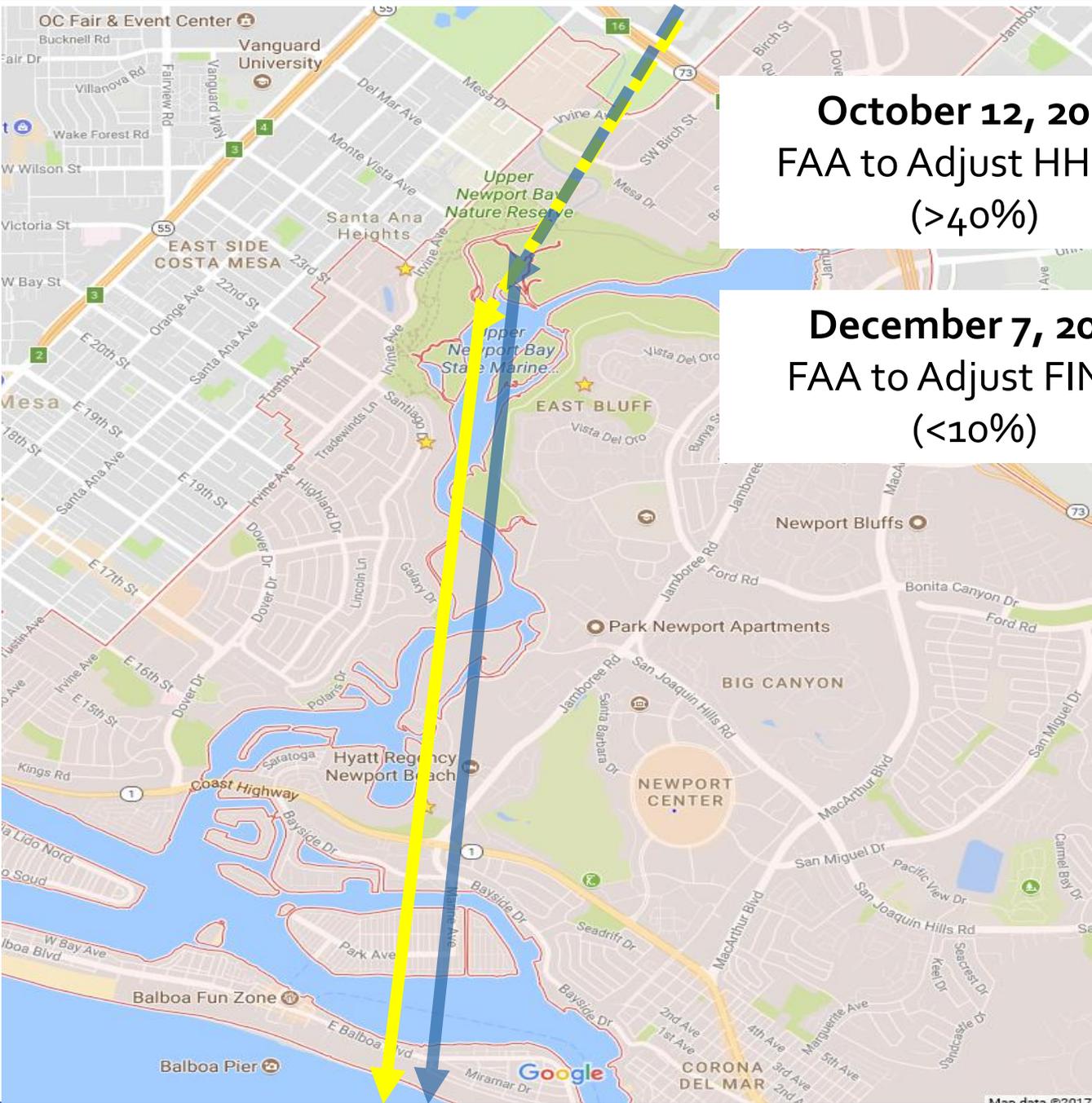
**- Today -  
FINNZ and HHERO  
aren't right**

- PIGGN – Often OK. Could it be better? Hard to find that path
- HHERO – Too far east
- FINNZ – Too far east



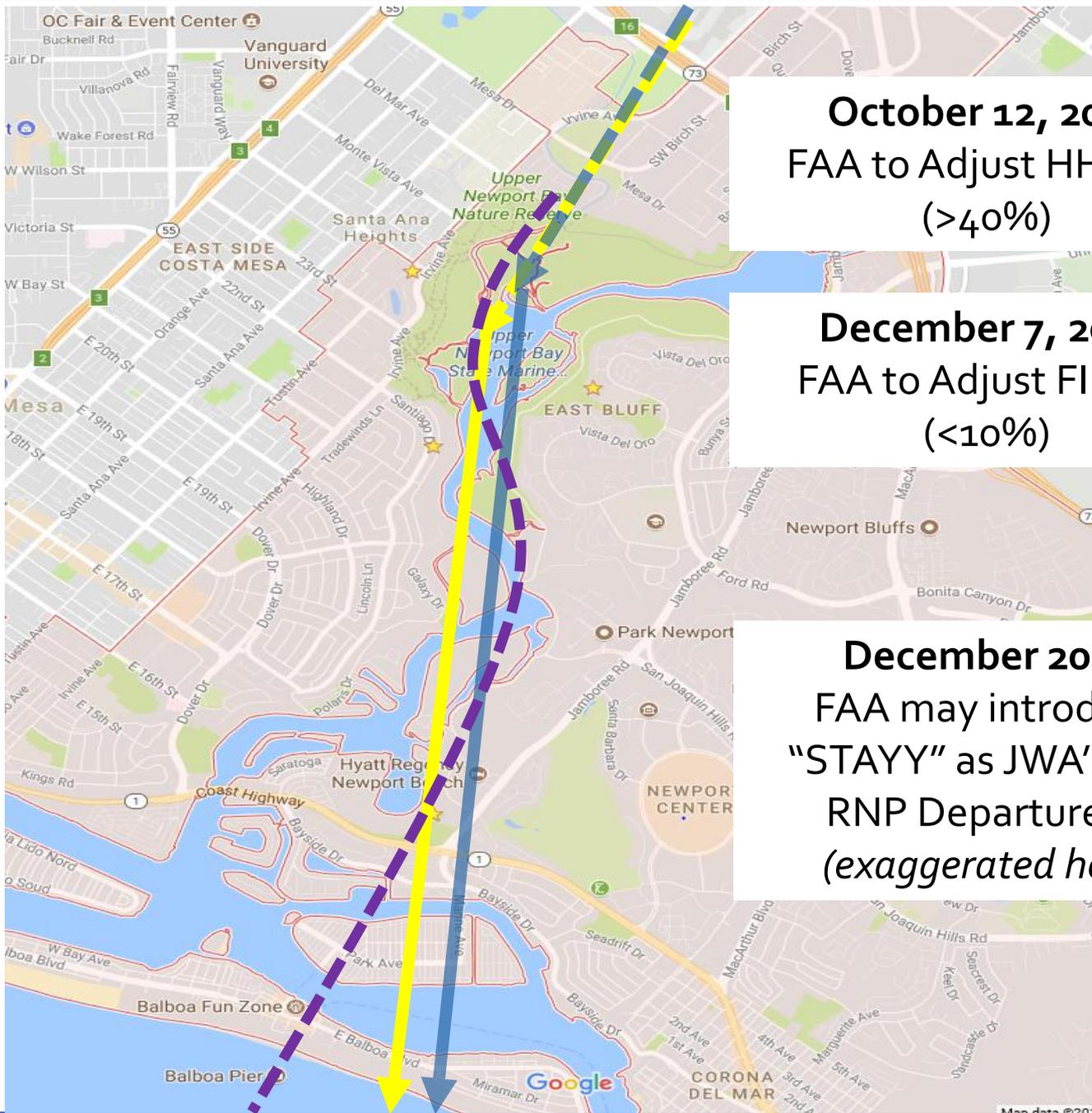
WHAT'S COMING

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**October 12, 2017**  
FAA to Adjust HHERO  
( $>40\%$ )

**December 7, 2017**  
FAA to Adjust FINNZ  
( $<10\%$ )



**October 12, 2017**  
FAA to Adjust HHERO  
( $>40\%$ )

**December 7, 2017**  
FAA to Adjust FINNZ  
( $<10\%$ )

**December 2017**  
FAA may introduce  
"STAYY" as JWA's first  
RNP Departure (!)  
*(exaggerated here)*



(LAT) 33.646514  
(LONG) -117.887305

BIKKL

HEFAY

TOING

PAPAU

# Our Takeaways

- **October 12, 2017**

- FAA adjusts HHERO - could still be delayed. Need to watch it.

- **December 7, 2017**

- FAA adjusts FINNZ.

- **Also December 2017**

- Possible implementation of the STAYY
- Will it work? Will turns be noisy?
- Will pilots use it?

- **City's Goals: get FAA to fix FINNZ and HHERO. Watch STAYY carefully.**

# ABOUT NOISE AND THE NADPS

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# 7 Noise monitoring stations

(on the departure corridor)

NMS-1S: Golf Course, 3100 Irvine Ave., Newport Beach

NMS-2S: 20162 S.W. Birch St., Newport Beach

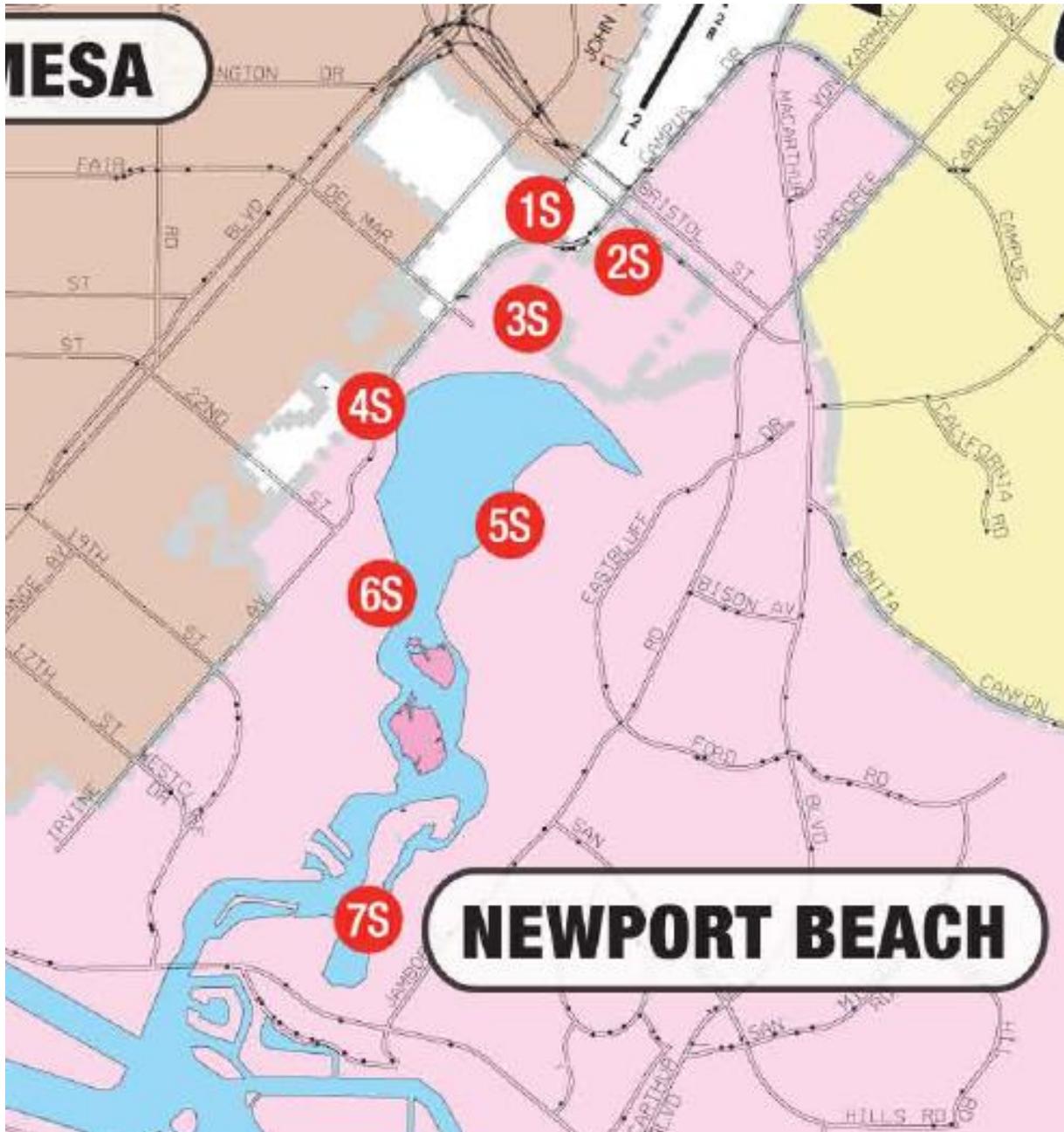
NMS-3S: 2139 Anniversary Lane, Newport Beach

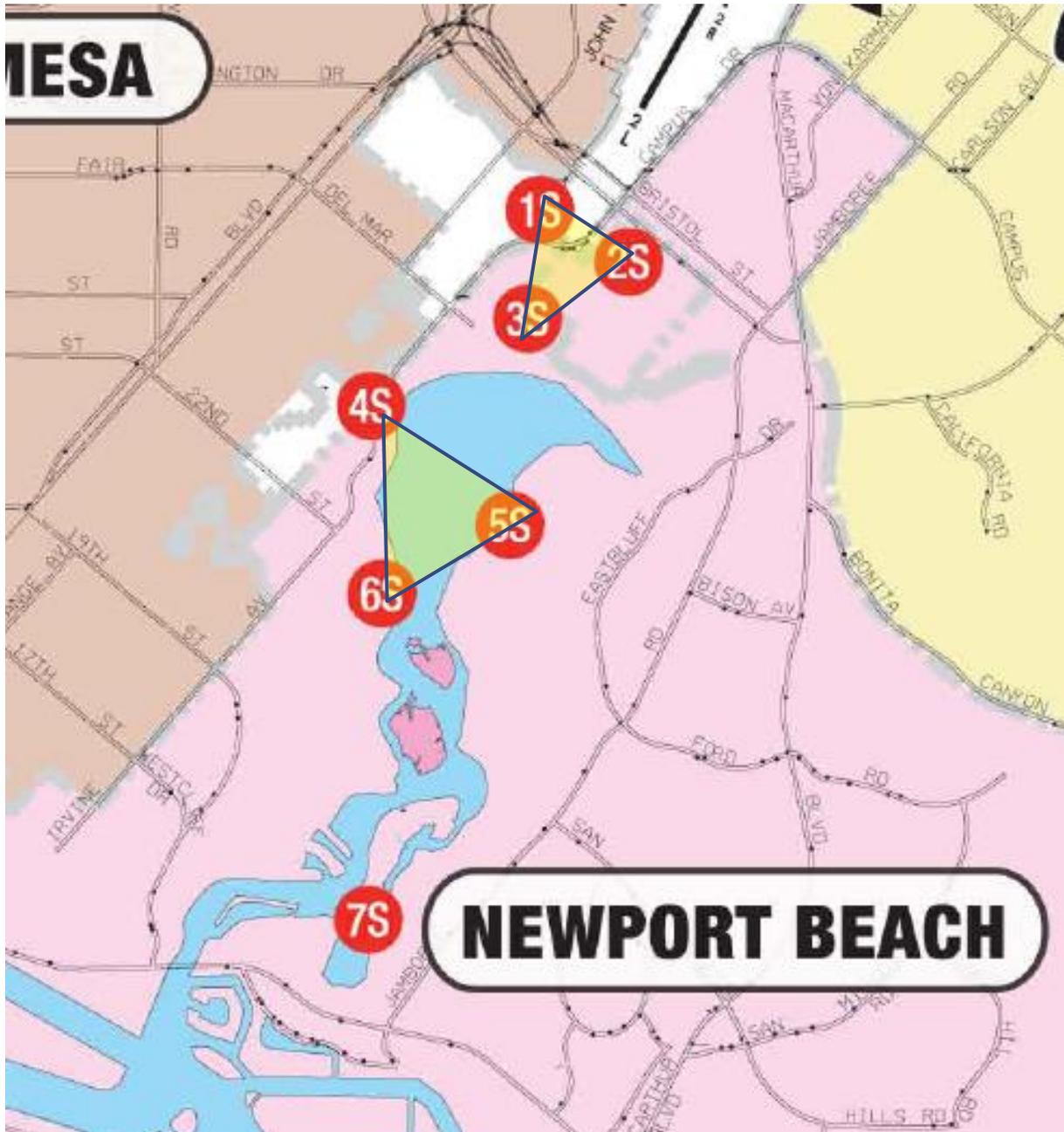
NMS-4S: 2338 Tustin Ave., Newport Beach

NMS-5S: 324 ½ Vista Madera, Newport Beach

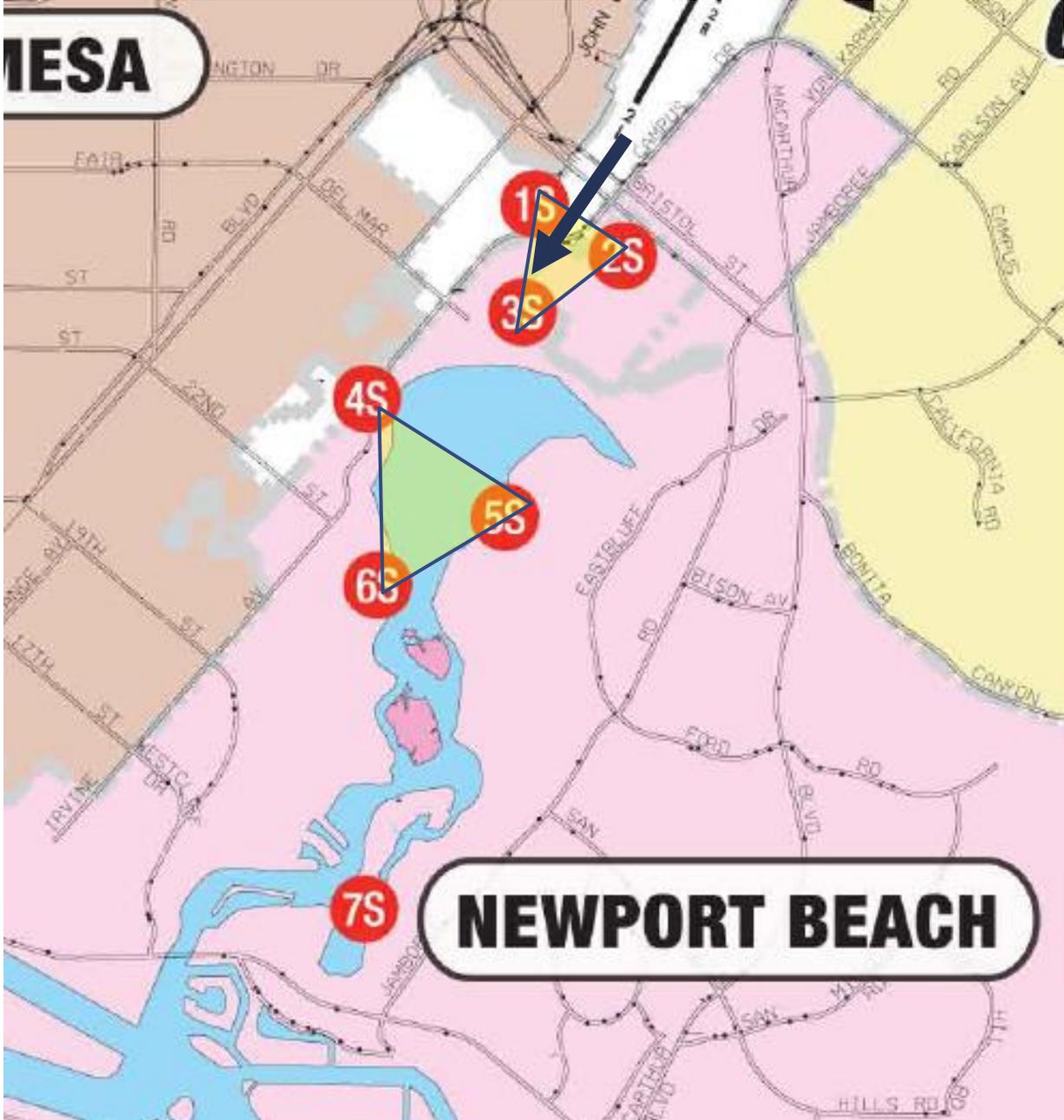
NMS-6S: 1912 Santiago, Newport Beach

NMS-7S: 1131 Back Bay Drive, Newport Beach

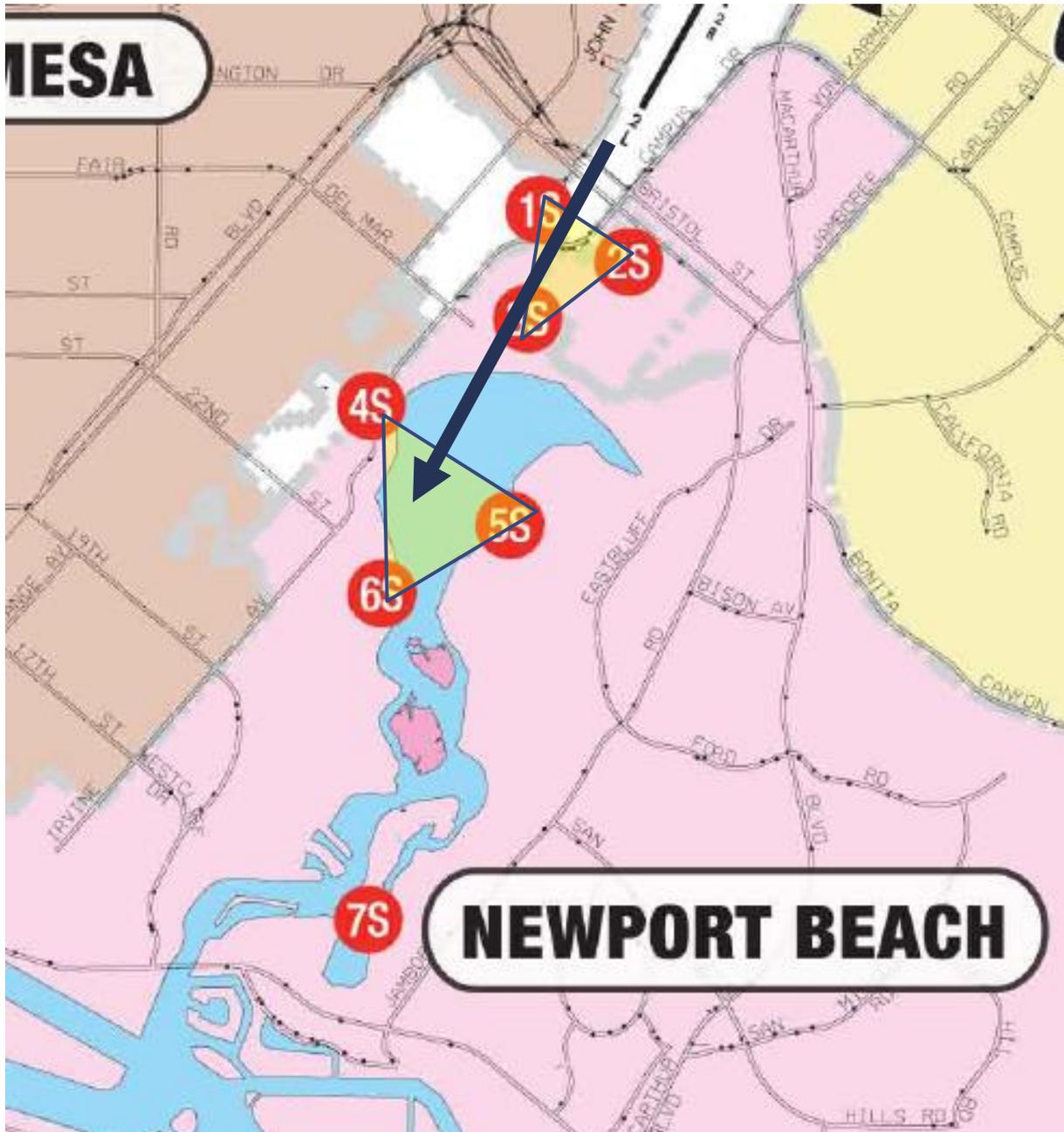




**MESA**



**NEWPORT BEACH**



**MESA**

**NEWPORT BEACH**



**MESA**

**NEWPORT BEACH**



UAL #1989  
March 4, 2017

NMS#4

NMS#5

NMS#6

NMS#7

Big Canyon  
Country Club

Newport Beach  
Country Club

Newport  
Center

SANTA ANA  
BL

CAT

CAT

CAT

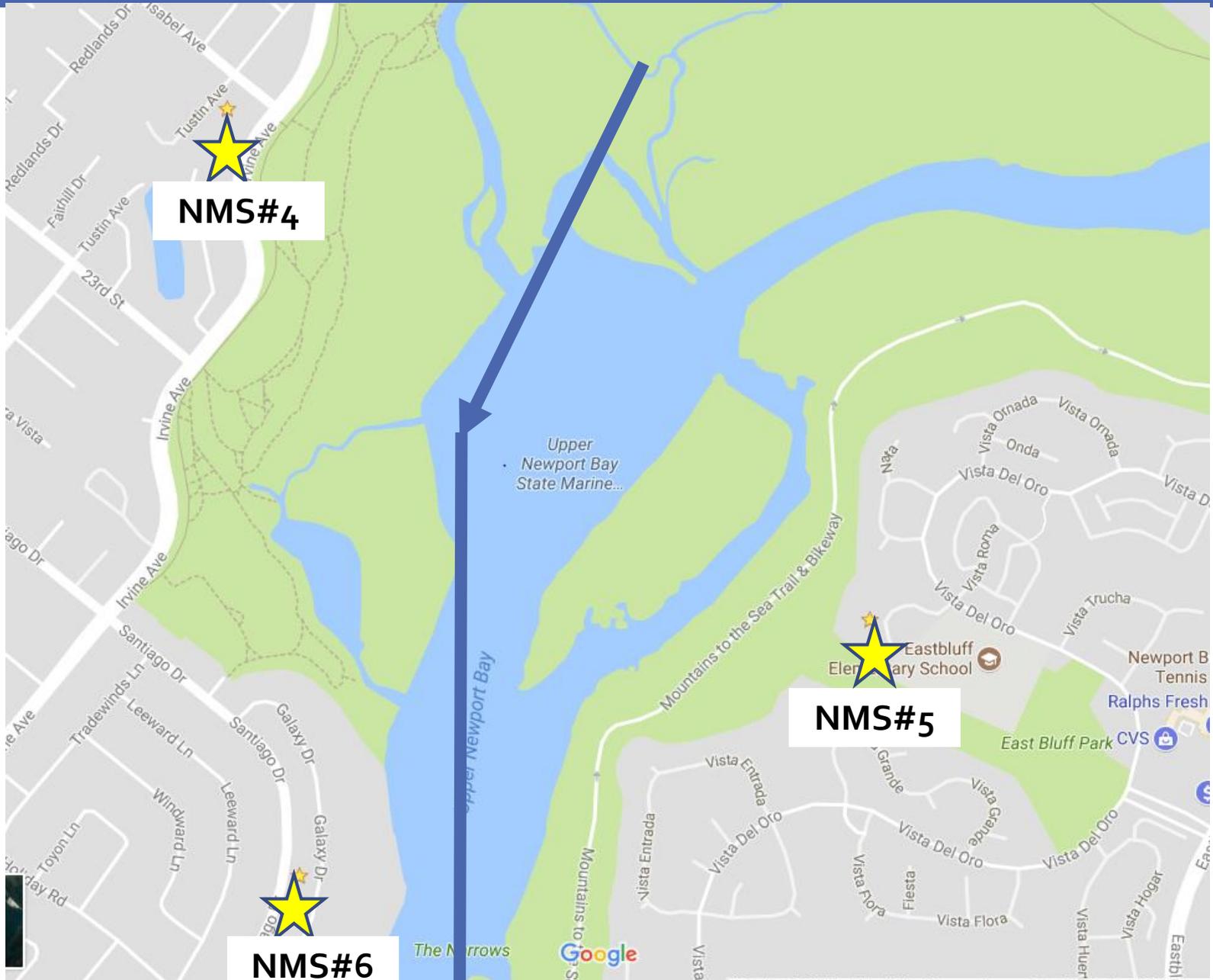
CAT

Shoreline

21:55

21:55

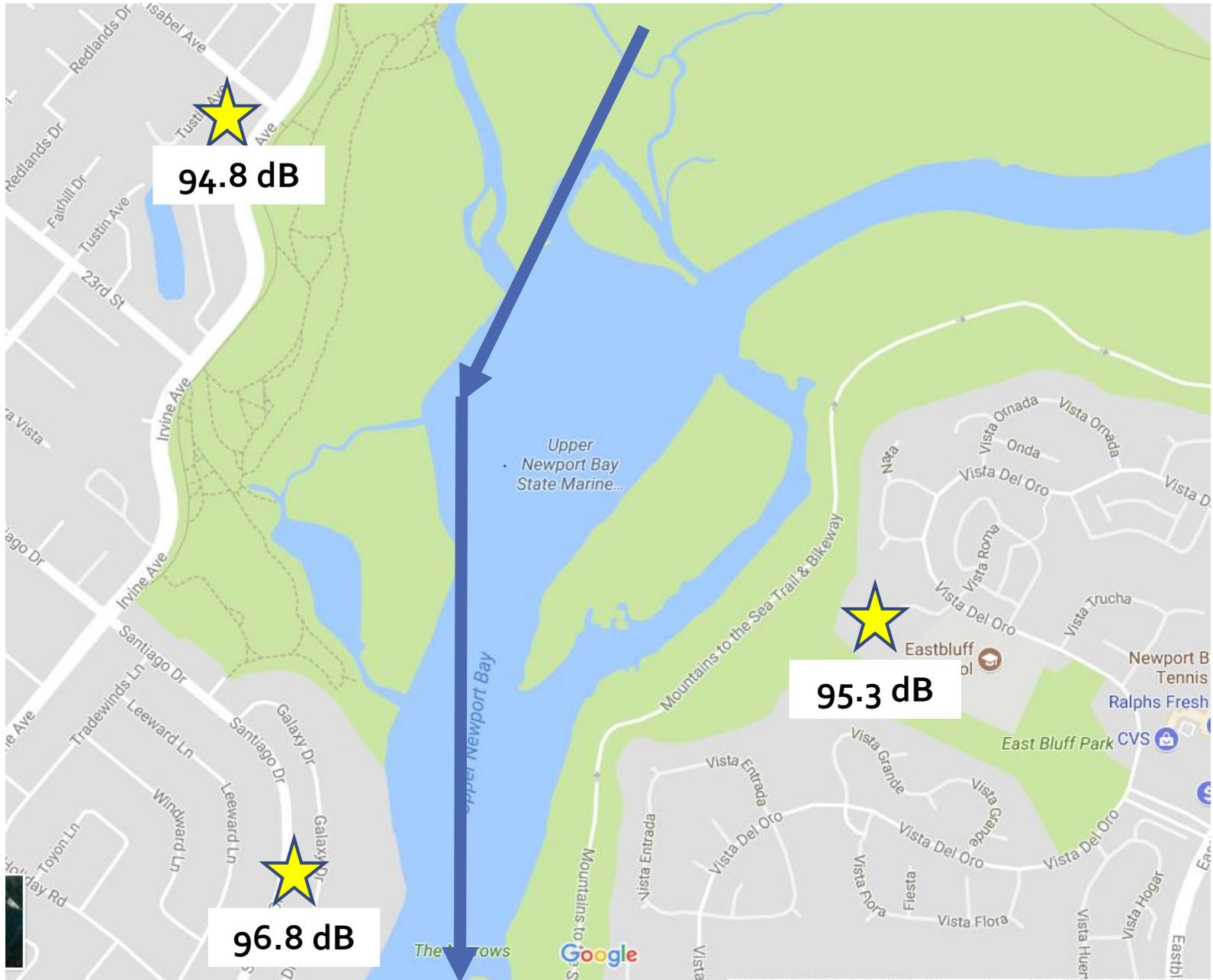
6:75



**NMS#4**

**NMS#5**

**NMS#6**



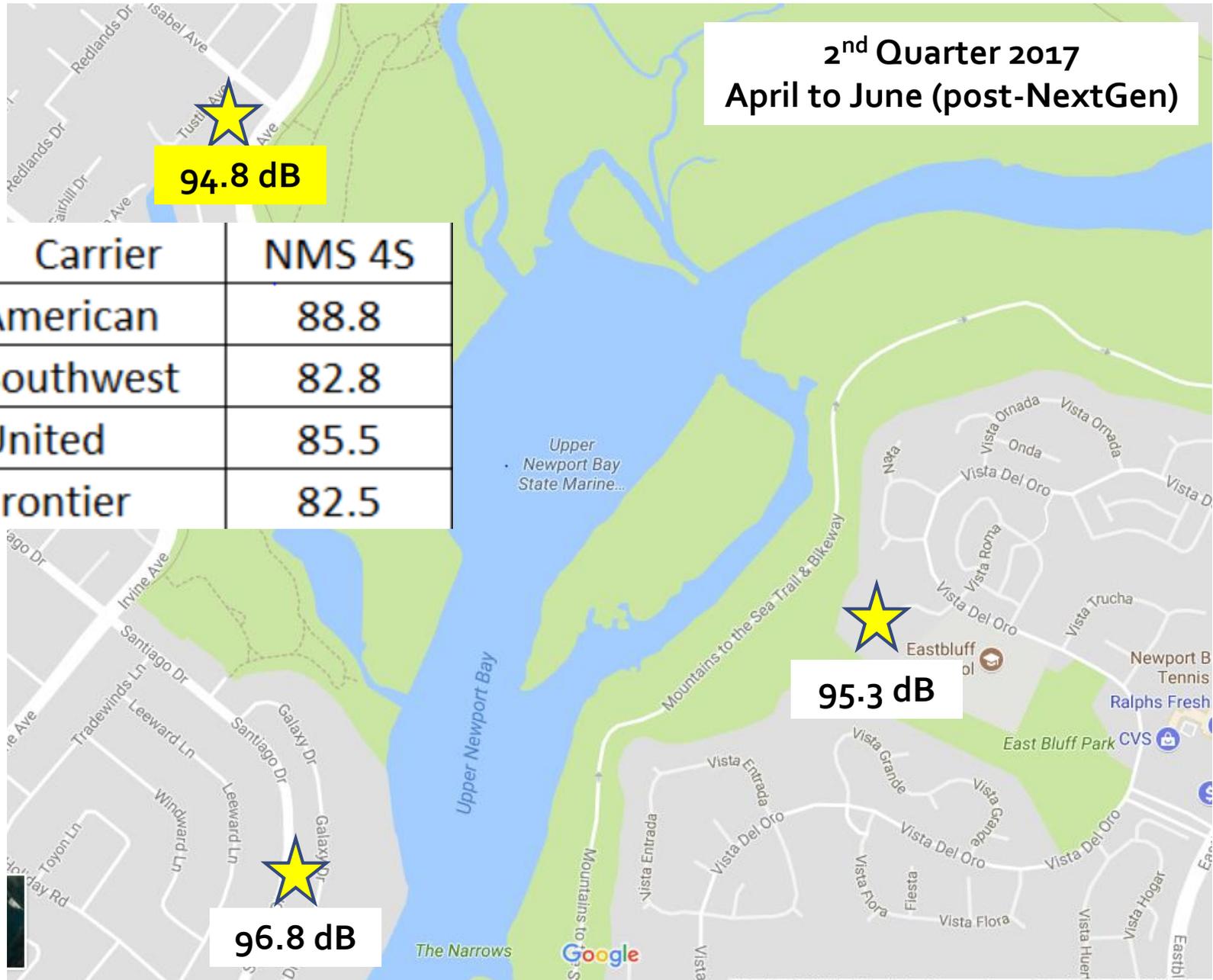
2<sup>nd</sup> Quarter 2017  
April to June (post-NextGen)

94.8 dB

| Carrier   | NMS 4S |
|-----------|--------|
| American  | 88.8   |
| Southwest | 82.8   |
| United    | 85.5   |
| Frontier  | 82.5   |

95.3 dB

96.8 dB



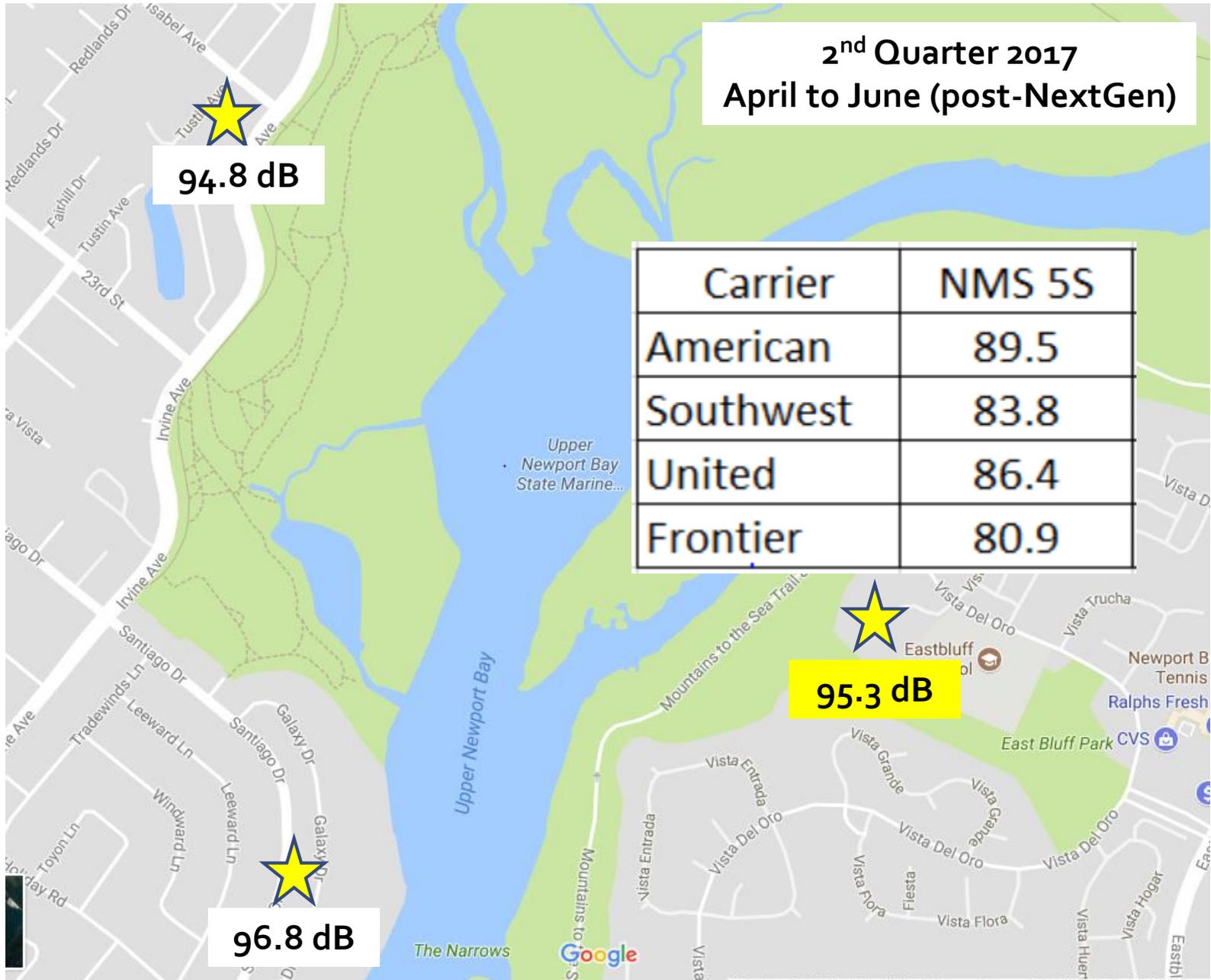
2<sup>nd</sup> Quarter 2017  
April to June (post-NextGen)

94.8 dB

| Carrier   | NMS 5S |
|-----------|--------|
| American  | 89.5   |
| Southwest | 83.8   |
| United    | 86.4   |
| Frontier  | 80.9   |

95.3 dB

96.8 dB



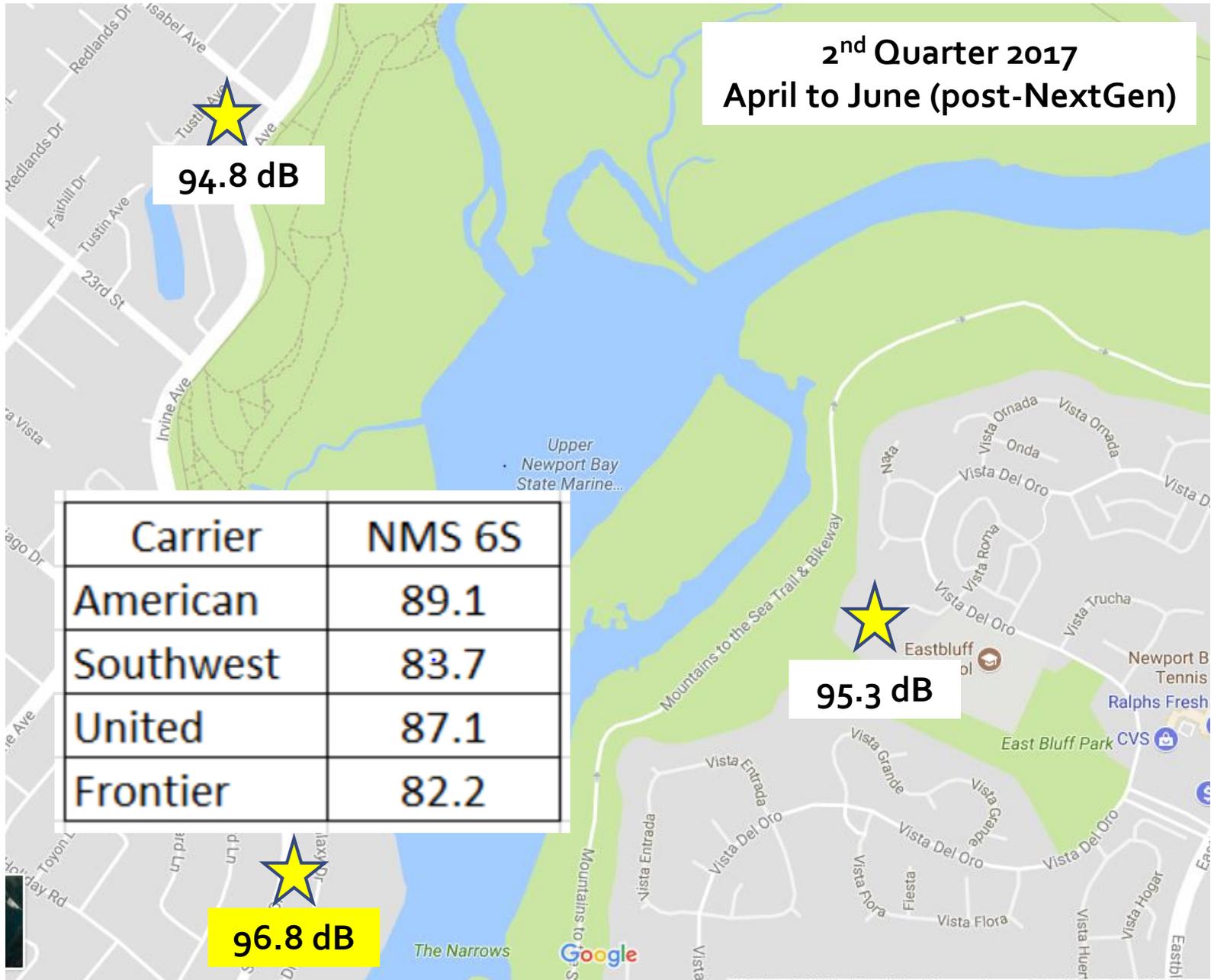
**2<sup>nd</sup> Quarter 2017**  
**April to June (post-NextGen)**

**94.8 dB**

| Carrier   | NMS 6S |
|-----------|--------|
| American  | 89.1   |
| Southwest | 83.7   |
| United    | 87.1   |
| Frontier  | 82.2   |

**95.3 dB**

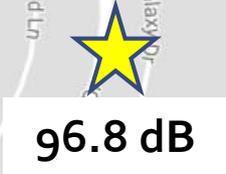
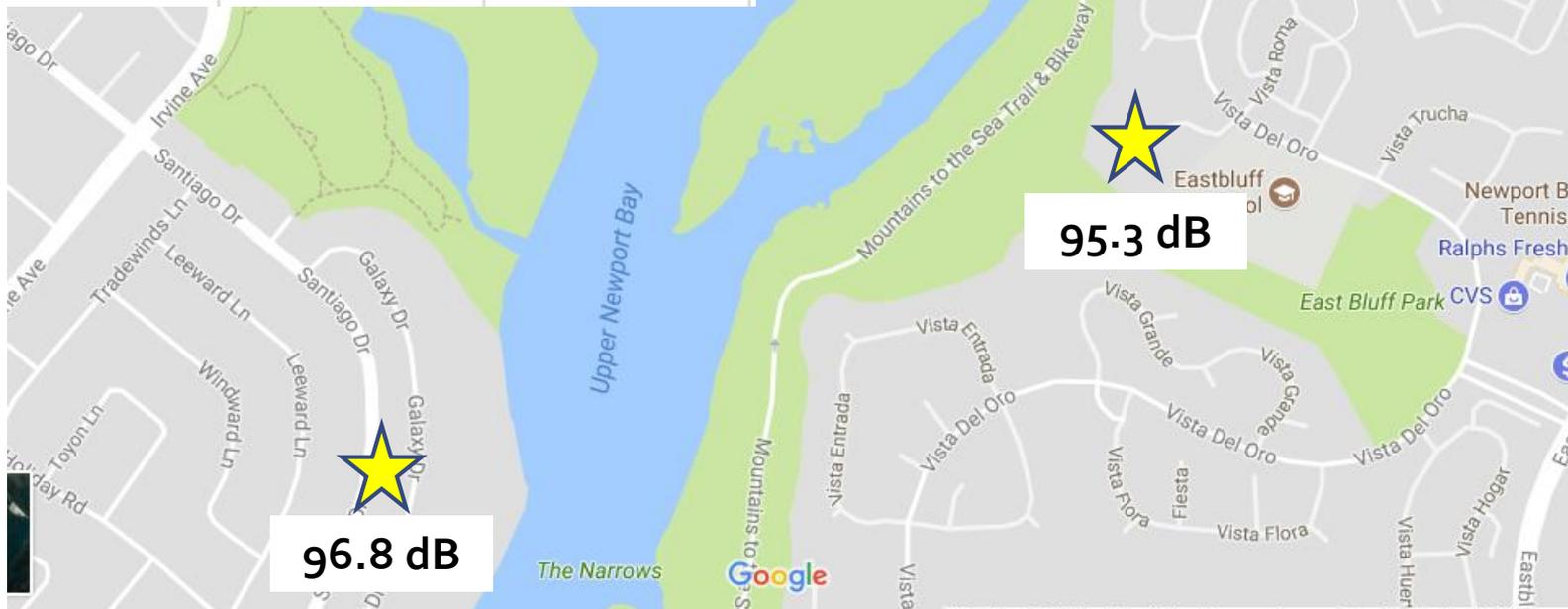
**96.8 dB**





2<sup>nd</sup> Quarter 2017  
 April to June (post-NextGen)  
 with  
 2<sup>nd</sup> Quarter 2014  
 April to June (pre full Next Gen)

| Carrier   | 2017 | 2014 |
|-----------|------|------|
| American  | 88.8 | 88.8 |
| Southwest | 82.8 | 84.4 |
| United    | 85.5 | 85.6 |
| Frontier  | 82.5 | 86.4 |



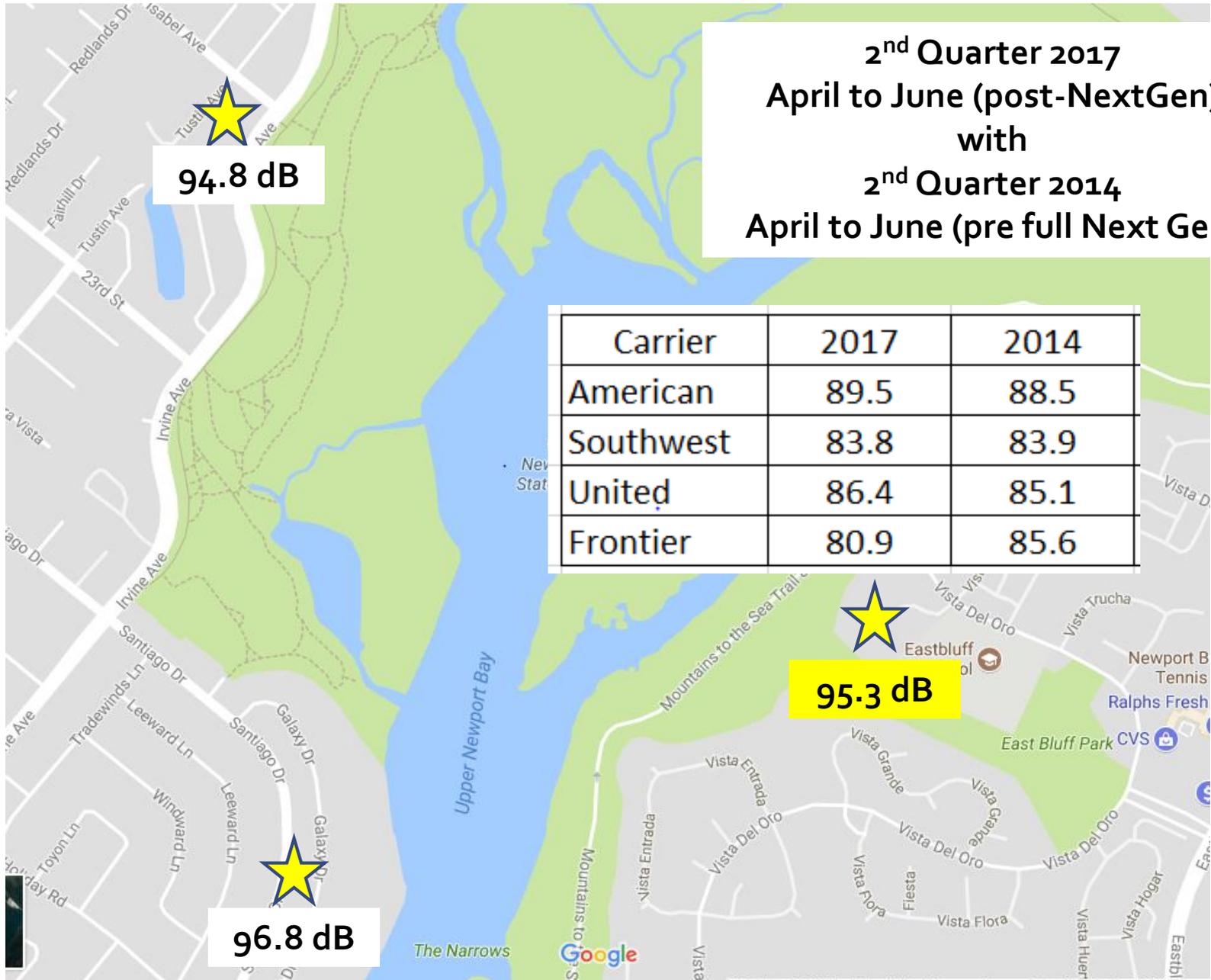
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 with  
**2<sup>nd</sup> Quarter 2014**  
**April to June (pre full Next Gen)**

| Carrier   | 2017 | 2014 |
|-----------|------|------|
| American  | 89.5 | 88.5 |
| Southwest | 83.8 | 83.9 |
| United    | 86.4 | 85.1 |
| Frontier  | 80.9 | 85.6 |

94.8 dB

95.3 dB

96.8 dB

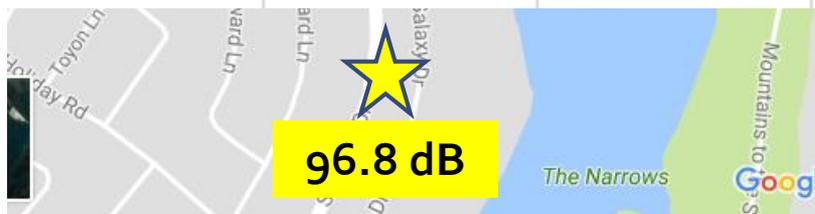


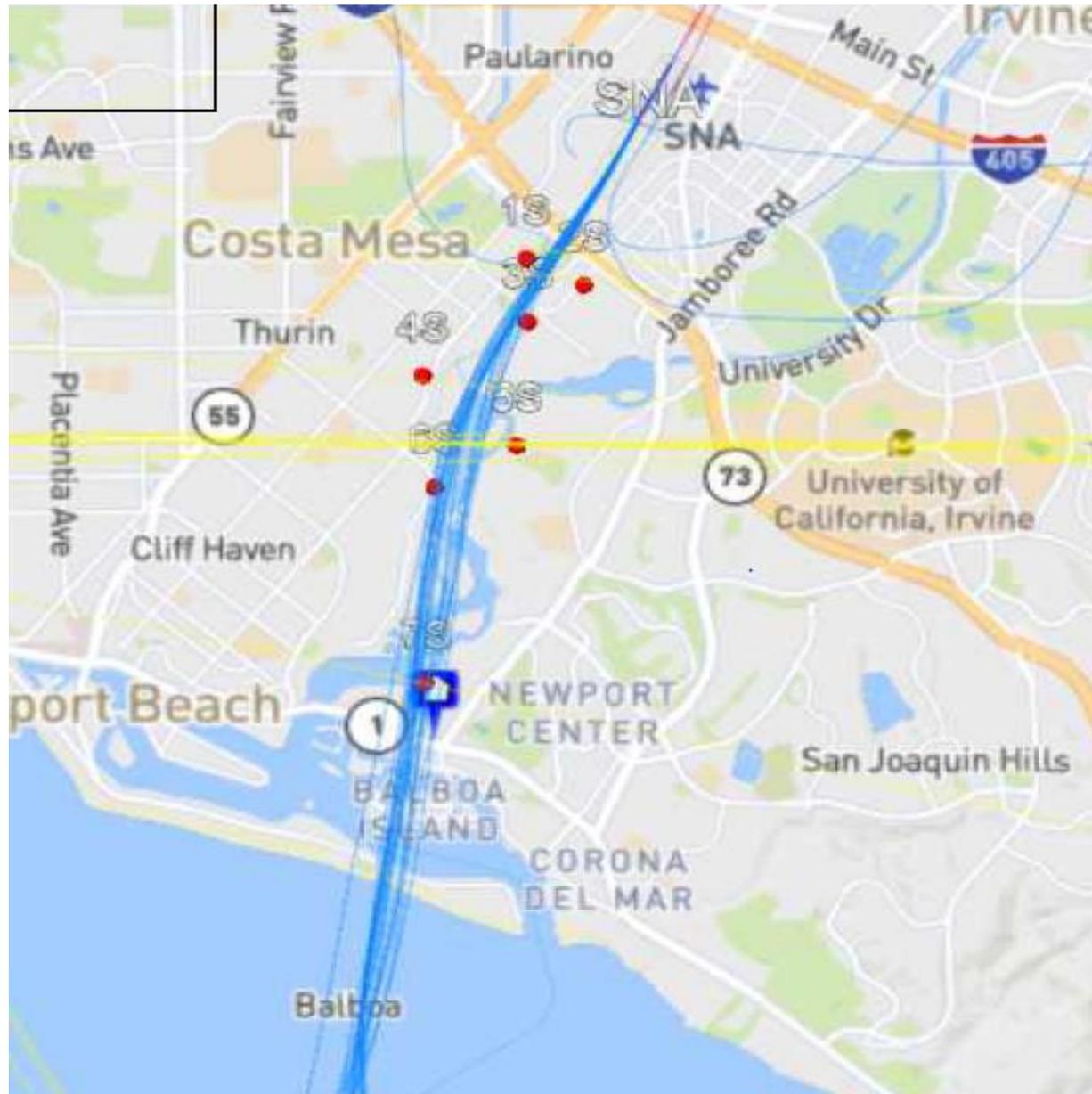


**2<sup>nd</sup> Quarter 2017**  
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 with  
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| Carrier   | 2017 | 2014 |
|-----------|------|------|
| American  | 89.1 | 89.4 |
| Southwest | 83.7 | 85.1 |
| United    | 87.1 | 86.3 |
| Frontier  | 82.2 | 86.4 |



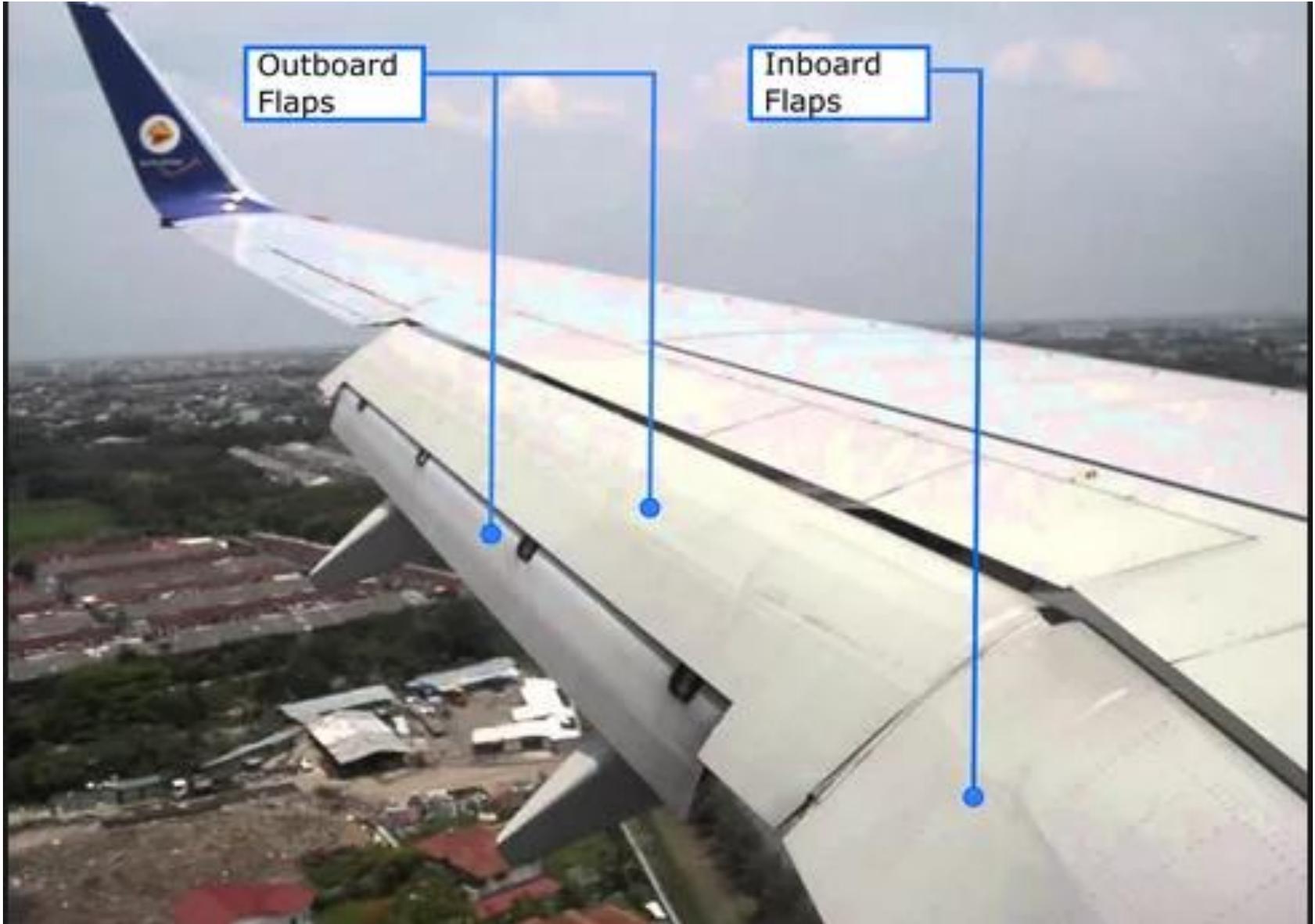


# NADPS

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About the Noise Abatement Departure Procedures (NADPs)

**They are FAA guidance, and not required**



Outboard  
Flaps

Inboard  
Flaps

# There are **two** NADPs (!)

## Close-In

1. Cut back the Power
2. Retract (pull in) Flaps

Faster Climb near runway area

## Distant

1. Pull in Flaps
2. Cut back the Power

Less steep climb near Runway, can be higher later

## Typical takeoff procedure for airliners

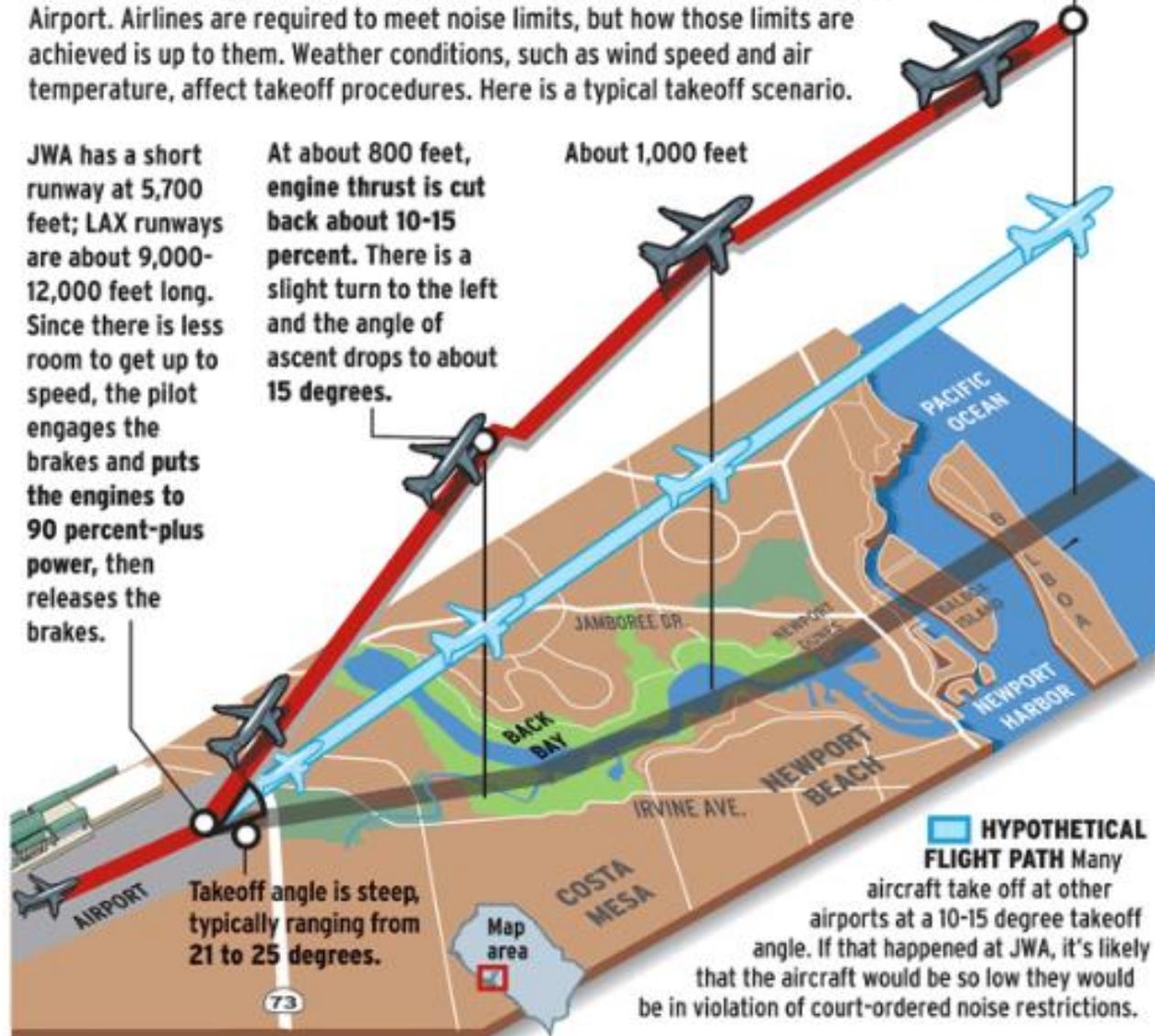
Each airline and type of aircraft has a different takeoff protocol at John Wayne Airport. Airlines are required to meet noise limits, but how those limits are achieved is up to them. Weather conditions, such as wind speed and air temperature, affect takeoff procedures. Here is a typical takeoff scenario.

JWA has a short runway at 5,700 feet; LAX runways are about 9,000-12,000 feet long. Since there is less room to get up to speed, the pilot engages the brakes and puts the engines to 90 percent-plus power, then releases the brakes.

At about 800 feet, engine thrust is cut back about 10-15 percent. There is a slight turn to the left and the angle of ascent drops to about 15 degrees.

About 1,000 feet

Jets not allowed to turn until past the coast.



From the *OC Register*, 2012

# Why Use One v. the Other?

## Close-In

- Flying out as Class E
- Older plane
- Heavier plane

## Distant

- More modern engine, modern plane body
- Lighter plane

*Both are acceptable and approved by the FAA (in 1991). Airlines develop own procedures based on aircraft performance. In 2008 (ARTS study), all major carriers reported using Close-In NADP, as tailored to their aircraft type at the time.*

# Who's Using what NADP now?

| Carrier   | Type         | Close In                            | Distant                             |
|-----------|--------------|-------------------------------------|-------------------------------------|
| American  | 737-800      |                                     | <input checked="" type="checkbox"/> |
| Southwest | 737-700, 800 | <input checked="" type="checkbox"/> |                                     |
| United    | A320         |                                     | <input checked="" type="checkbox"/> |
| Frontier  | A320n        | <input checked="" type="checkbox"/> |                                     |

# Our Takeaways on Noise and NADPs

## Facts:

- Stations' dB limits – set in 1985 - cannot be adjusted downward (ANCA)
- Stations cannot be moved (also ANCA – can be perceived as a further restriction based on noise)
- Carriers can choose Close-in or Distant NADP.
- Distant NADP is being used more often than in 2008.
- Future hope – the **Airbus A320 neo** is a significantly quieter plane. We expect the Boeing 737-800 MAX to perform similarly.

# Our Takeaways (noise/nadps)

## City's Goals:

- Planes should be higher, when still safe.
- To that end, update the 2008 ARTS Study to see what options we have, if any.
- Fix FINNZ and HHERO.
- Monitor the monitors – 3<sup>rd</sup> party review of County's September 2017 annual calibration of NMSs.

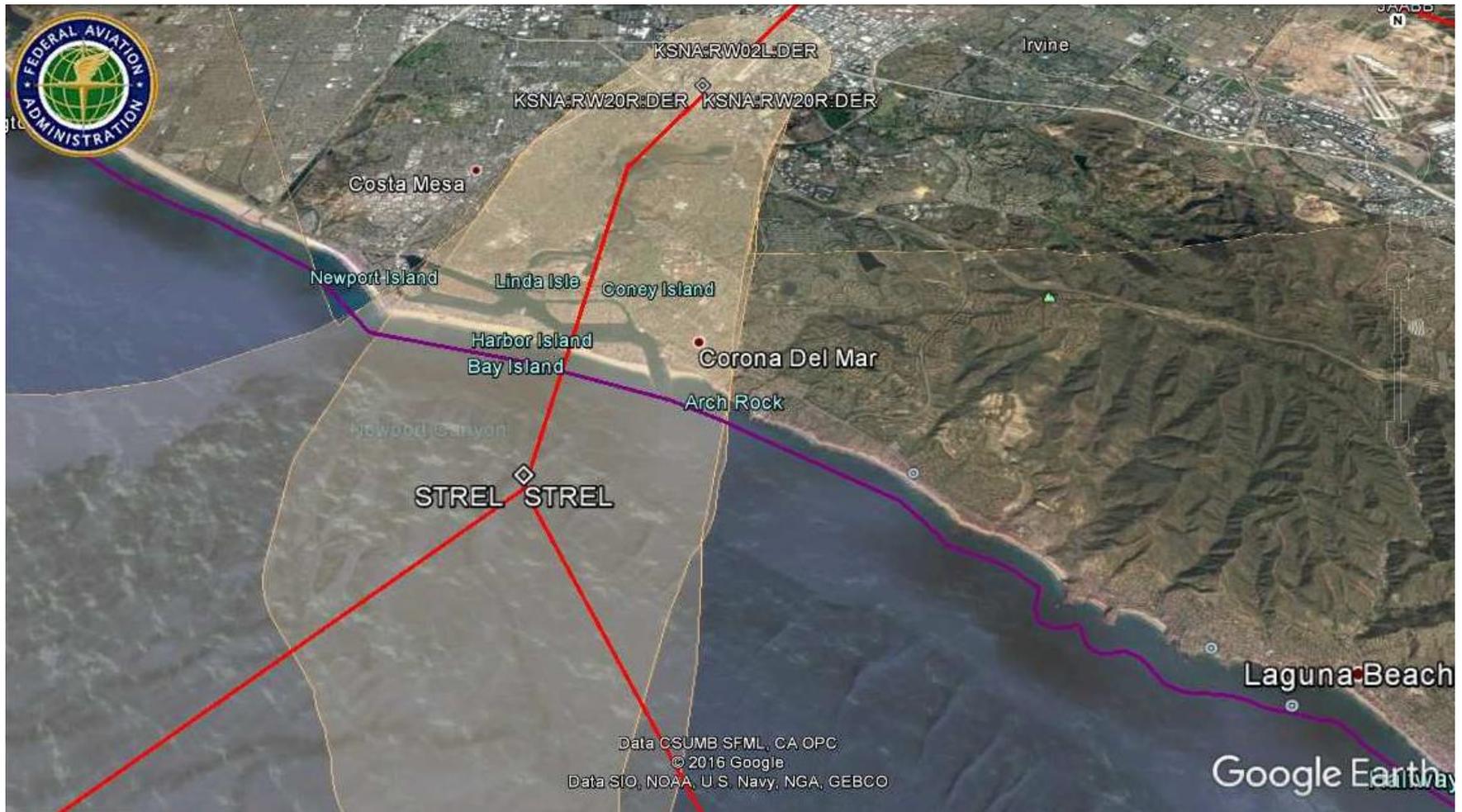
# LITIGATION

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# Why we sued the FAA – Oct '16

- Inadequate environmental review
- Didn't look at Air Quality, Noise and GHG in detail.
- Way too vague descriptions of impact areas
- Didn't involve the community in departure corridors
- Wasn't clear about the role of the Settlement Agreement, especially in relation to noise.

# From the FAA's MetroPlex EA



# WRAP-UP (AND SPEED UP)

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What can we do to speed up the changes?

# City's GOALS

- **Protect our quality of life**
- Protect the Settlement Agreement
- Get flights down the middle of the Upper Bay.
- Continue to pursue via FAA litigation
- Take a new look at noise, altitudes
- Involve the community more
- Get complaints to the FAA
- Follow our Airport Policy (A-17)

# Implementing the Goals

- Tonight's resolution – sent to FAA
- Continue to let your concerns be known (we'll help):
  - City website – then TRENDING – then “NexGen Departures...”
- October 12, 2017 – changes to HHERO
- Watch those changes, along with December '17 changes to FINNZ
- Implementation of the STAYY – who'll use it? Will it work?
- Update the 2008 ARTS study – more noise knowledge
- Update County's JWA Altitude Study (Fall 2017)
- Aviation Committee
- Council will be updated on the FAA litigation regularly.

# Our Staff & Consultants

- **Legal**

- Aaron Harp, City Attorney
- Andrea Leisy, Remy Moose & Manley Environmental Law

- **Noise**

- Harris, Miller, Miller & Hansen (HMMH)
- ASRC Research and Technology Solutions (ARTS, 2008)

- **Departure Profiles**

- HMMH
- GE/Naverus
- Wayne MacKenzie, ATMCI

- **Ombudsperson**

- Thomas C. Edwards

- **Air Quality & Environmental Effects**

- Dr. Karleen A. Boyle (2009)
- RAMBOL Environ (2016)

- **Overall Policy**

- Newport Beach City Council
- Dave Kiff, City Manager

# Contact Information

- Learning more:
  - [www.newportbeachca.gov/jwa](http://www.newportbeachca.gov/jwa)
  - FAA So Cal MetroPlex site: (use Google)
- Expressing your concerns to the FAA:
  - Website then “TRENDING” then Next Gen Departure Concerns
  - <http://www.newportbeachca.gov/trending/nextgen-departure-concerns>
- JWA Noise and Access Office
  - [NoiseInfo@ocair.com](mailto:NoiseInfo@ocair.com) or 949-252-5185
- Call or e-mail the City Manager
  - [Dkiff@newportbeachca.gov](mailto:Dkiff@newportbeachca.gov)
  - 949-644-3001
- Contact the City Council
  - [CityCouncil@newportbeachca.gov](mailto:CityCouncil@newportbeachca.gov)