Stantec

OCTA
Special Needs Advisory
Committee meeting

ACCESS Fleet Mix
Analysis

January 26, 2021

Respond to **increasing and evolving demand** for demand-response services

Investigate **new vehicle models, layouts and vehicle technology** that can impact service design
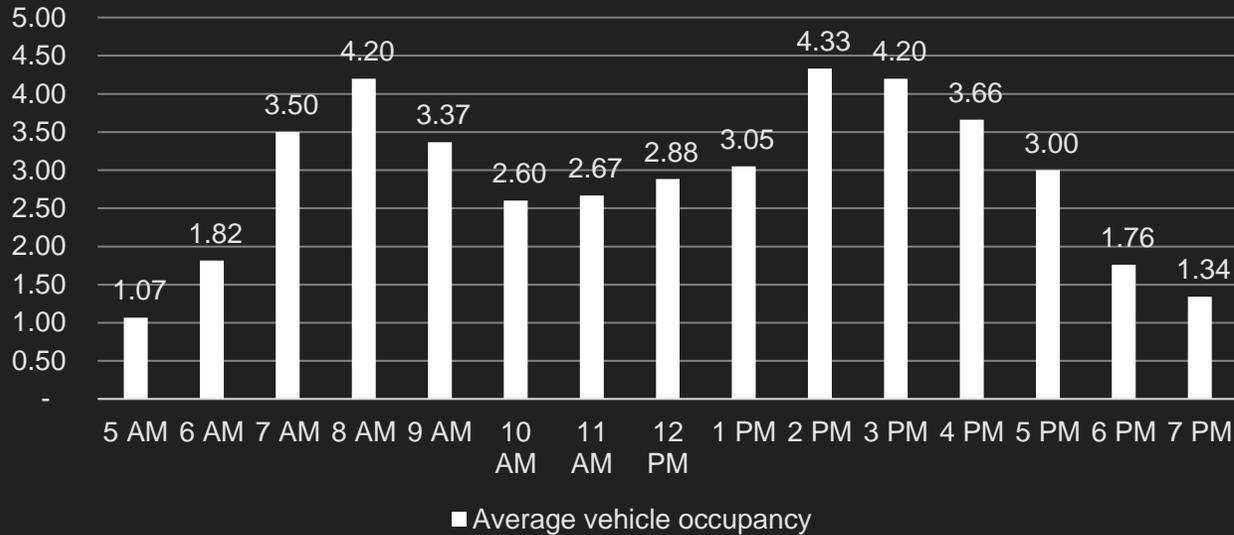
Develop an understanding of **existing trip patterns** to identify strategies for more efficient and effective service

Determine recommendations that will increase **efficiency and cost savings** to OCTA without affecting service quality or customer comfort
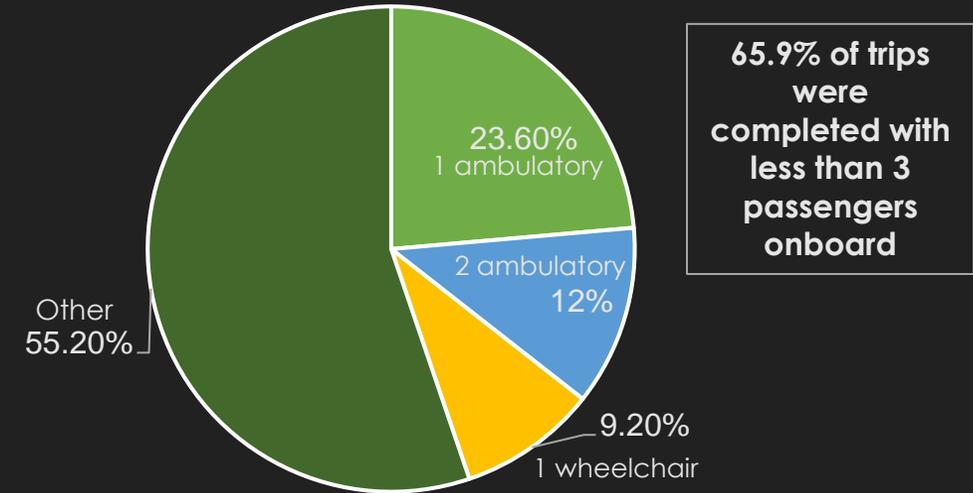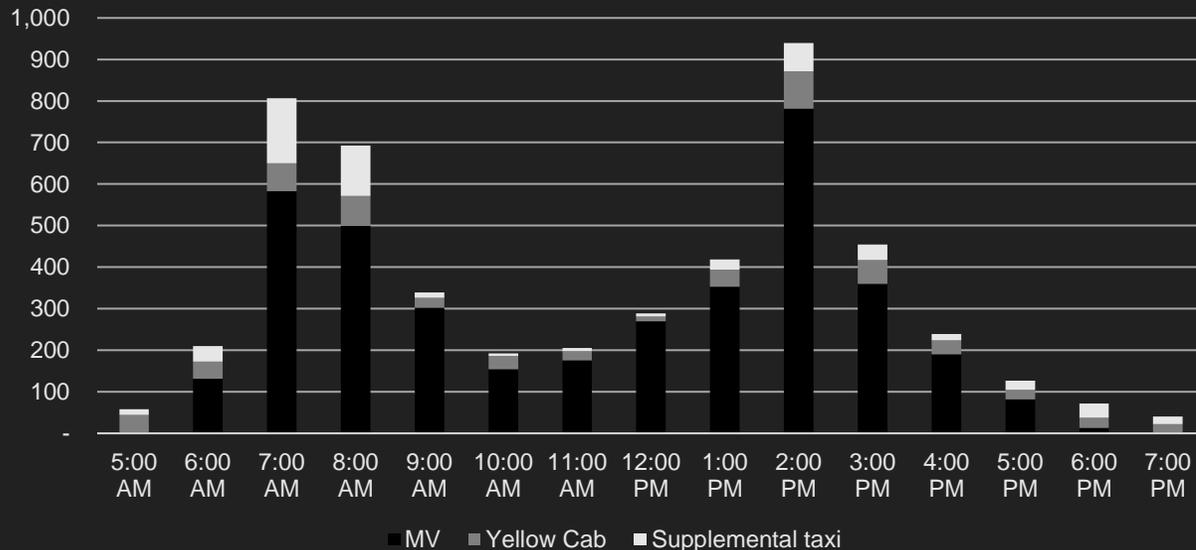
Task 1 – Existing Conditions – Key Findings

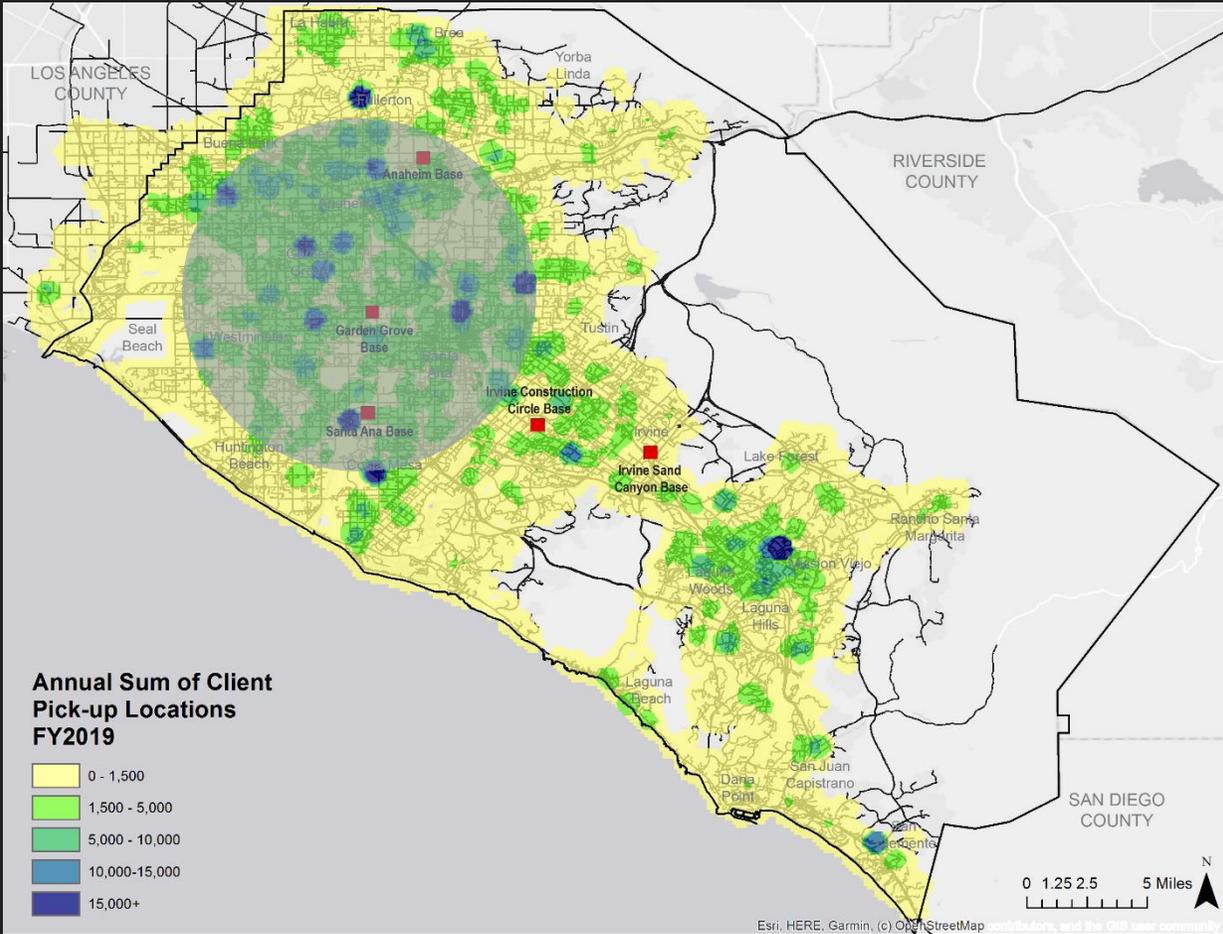## Average vehicle occupancy by hour of day, MV

Hour	Value
5 AM	1.07
6 AM	1.82
7 AM	3.50
8 AM	4.20
9 AM	3.37
10 AM	2.60
11 AM	2.67
12 PM	2.88
1 PM	3.05
2 PM	4.33
3 PM	4.20
4 PM	3.66
5 PM	3.00
6 PM	1.76
7 PM	1.34

■ Average vehicle occupancy

Average passenger boardings per hour of day by provider (weekday)

■ MV ■ Yellow Cab ■ Supplemental taxi

Customer mix (annual trips, MV)

- 23.60% 1 ambulatory
- 2 ambulatory 12%
- 9.20% 1 wheelchair
- Other 55.20%

65.9% of trips were completed with less than 3 passengers onboard
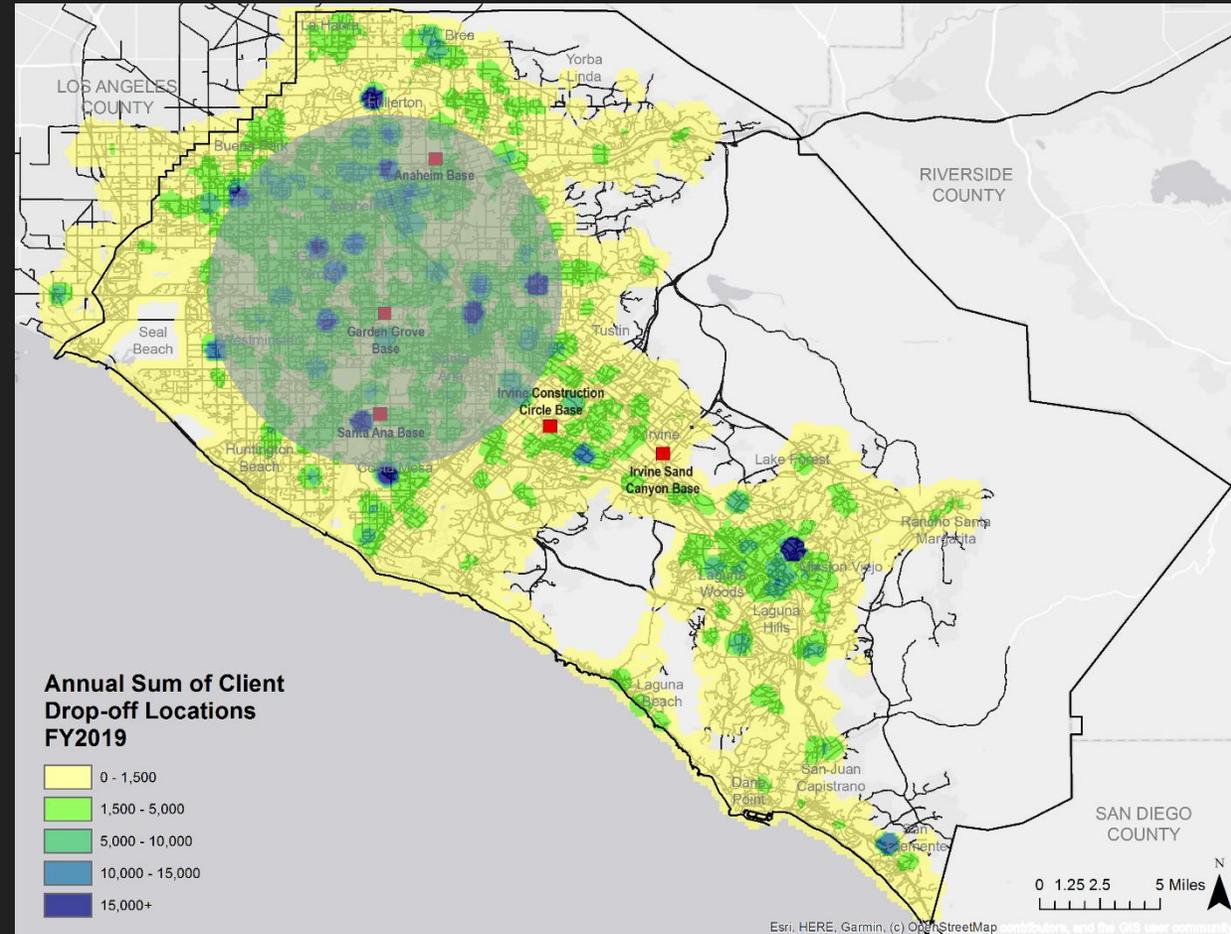
Major takeaways:

- The majority of trips are completed with **fewer than three passengers** onboard

- Peak activity occurs at **7-8AM and 2PM**

- It is likely a portion of service could be completed by a **smaller vehicle** based on vehicle occupancy throughout the day

Annual Sum of Client Pick-up Locations FY2019

- 0 - 1,500
- 1,500 - 5,000
- 5,000 - 10,000
- 10,000-15,000
- 15,000+

Most common pick-up locations

Annual Sum of Client Drop-off Locations FY2019

- 0 - 1,500
- 1,500 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000+

Most common drop-off locations

Task 2 – Peer Practices

Online survey of 21 agencies

Follow-up calls with 6 agencies

Major takeaways:

- Agencies are overwhelmingly moving towards low-floor vehicles (despite higher costs compared to high-floor)

- Agencies are looking at vehicle sizes in between cutaways and vans/minivans to optimize capacity with a smaller, nimbler vehicle

- One size does not fit all—optimal fleet mix dependent on unique agency characteristics

Task 3 – Vehicle Market Scan – Key Findings

- Different vehicle types were analyzed

Type	Length (ft.)	Capacity (minimum)	Design life	Fuel type and Consumption	Considerations	Example
Type B Vehicle	20-23	At least 3 positions for mobility devices	7 years	9-10 mpg	- Easier to operate in constrained spaces - Low floor - Better gas mileage - Could reduce perception of 'empty seats'	
Type C Vehicle	23	5 mobility devices	7 years	9-9.5 mpg	- Low floor - Better gas mileage - Accommodates group trips - Accommodates large wheelchairs	
Current vehicle	23	12 seated passengers, or 5 positions for individuals requiring mobility devices	7 years	6.0-6.5 mpg	- Familiar design - High floor requires lift	

Preliminary Recommendations

Diversify fleet:

- Acquire a smaller vehicle type (in between cutaways and taxi vehicles) for a portion of the service

  - Type B = smaller vehicle

  - Type C = larger vehicle (similar capacity/layout as current)

- A significant portion of trips could be served by smaller vehicles

- Important to maintain current, large vehicles for peak service

Hourly vehicle distribution

Type B vehicles   Type C vehicles
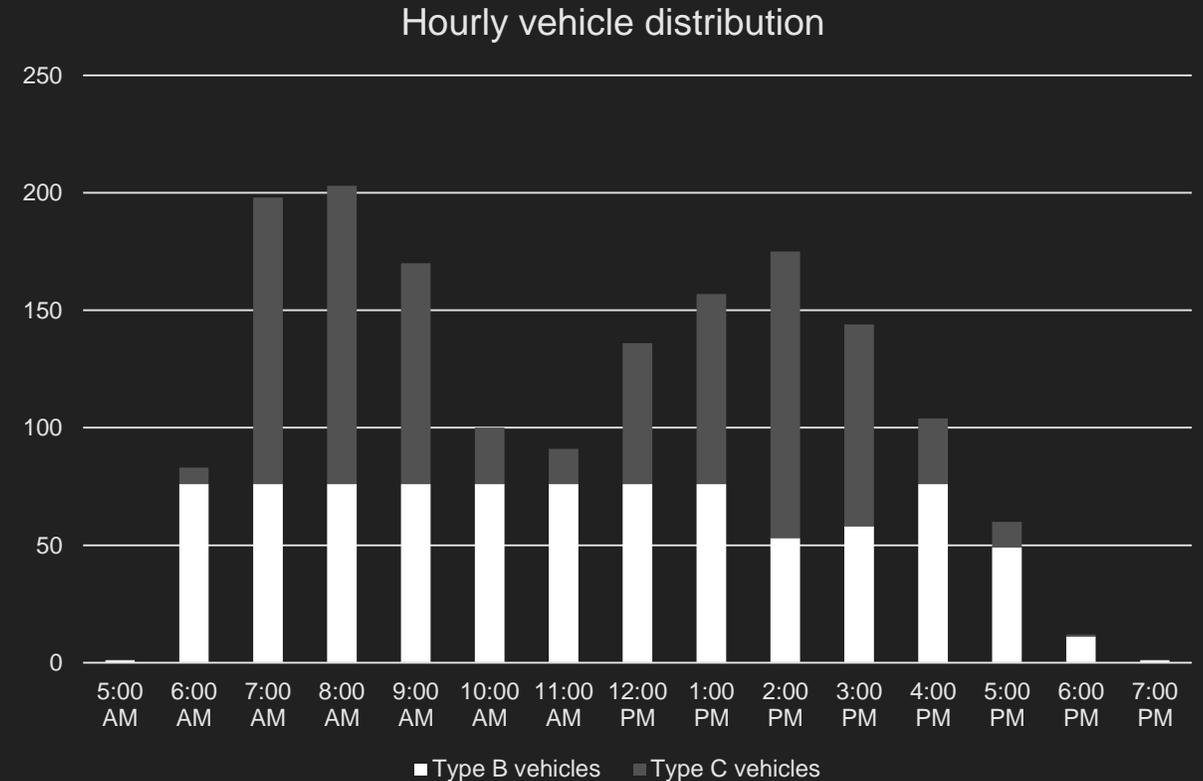
Preliminary Recommendations

Decentralized operations:

- Operation out of another OCTA base in addition to the Construction Circle base

- A substantial portion of trip activity (~77% of annual trips) occurs closer to existing bases beyond the Irvine Construction Circle base

- Operation out of another base could reduce deadheading and increase service efficiency

- Analysis points to Garden Grove base as being most viable option
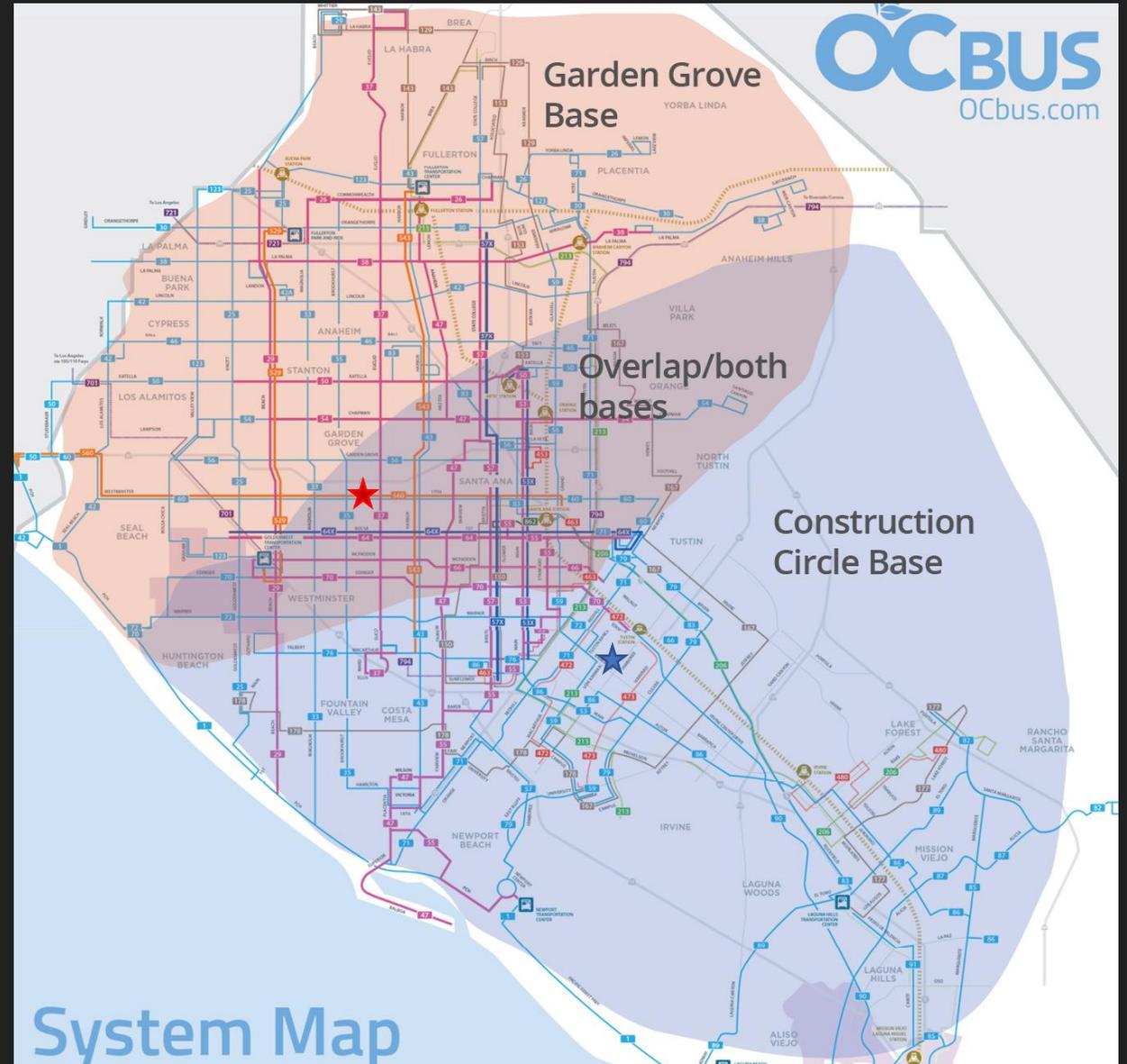
Main Takeaways

1. Adopt low floor vehicles

    - Help address equity and accessibility needs

    - Can reduce dwell times because of easier loading/unloading

    - Can reduce maintenance costs because of the removal of lifts

2. Mixed fleet

    - Many agencies operate multiple vehicle types

    - Helps tailor supply to demand

    - Smaller vehicles are easier on gas and likely less expensive to buy and maintain

    - Improved perception of 'empty vehicles'

3. Some operation out of another base (likely Garden Grove)

    - OCTA to pilot

    - Could result in reduced deadhead and more direct routing

    - By reducing vehicle mileage, we can reduce wear-and-tear

Questions