

# Warehouse Truck Trip Study Data Results and Usage

Mobile Source Committee  
July 25, 2014



*Cleaning the Air That We Breathe...*

# Background

- Purpose: To provide guidance on how to quantify warehouse truck emissions for CEQA air quality analyses
  - Technical guidance
  - Establish “substantial evidence” for assumptions
  - Consistency for SCAQMD staff comments
- Truck emissions >90% of air impact
- Tenant often unknown when CEQA document certified

# Existing Trip Rates

Grouping	Overall Rate (trips/tsf)		Truck Rate (trips/tsf)	
	Average Rate	Rate with Peaking Factor*	Average Rate	Rate with Peaking Factor*
<i>Current ITE</i>	1.68		0.64	
<i>Majority of CEQA docs*</i>	1.68		0.34	
<i>CalEEMod Guidance</i>		2.59		1.04

Calculated truck trip rate based on Fontana Truck Trip Study (4 warehouses)

\* 11 out of 18 CEQA docs in past year use 0.34 truck rate

# Truck Trip Study Process Overview

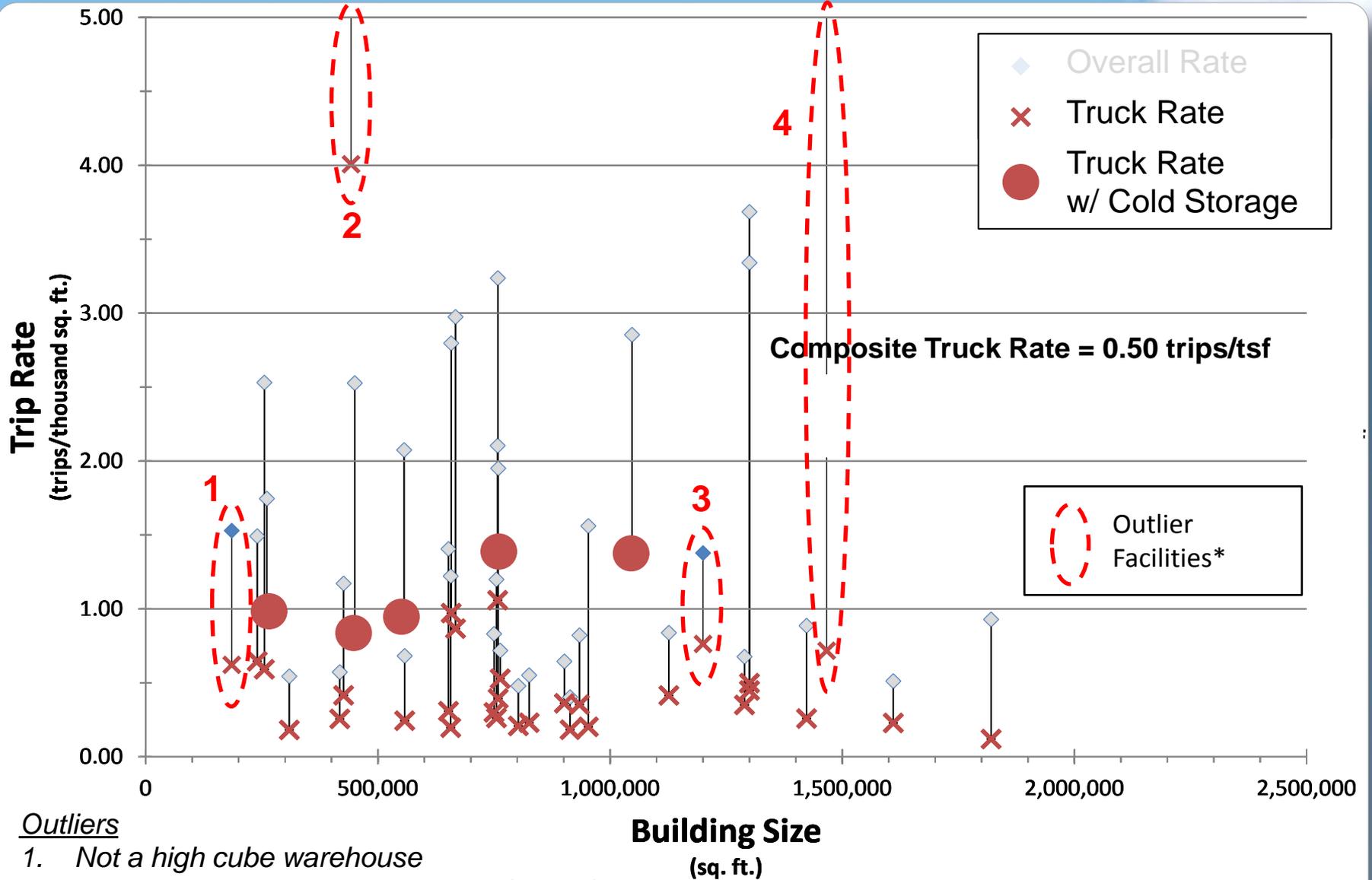
- Study began in January 2012
- 12 Stakeholder Working Group meetings
- 2 Technical Working Group meetings
- 34 responses to Business Survey\*
- Video truck counts using traffic engineer at 33 warehouses\*\*
- UCR traffic engineer and statistician analyzed results

\* 400 Business Surveys sent out. 63 warehouses responded. 34 of the 63 warehouses met definition of “high cube warehouse”

\*\* 37 total video counts. 4 excluded because either an outlier or did not meet definition of “high cube warehouse”

# Analysis of Data

- Removed outlier data
  - E-commerce and parcel warehouses substantially higher overall trip rate
- Verified only “high cube warehouses” > 200,000 square feet
- Averaged data
  - Overall trip rate per 1,000 sq feet
  - Truck trip rate per 1,000 sq feet
- Three categories:
  - Non-cold storage warehouses
  - Cold storage warehouses
  - Composite for warehouses



Outliers

1. Not a high cube warehouse
2. Uncharacteristic of other facilities (parcel)
3. Trucks use local street for internal circulation
4. Uncharacteristic of other facilities (e-commerce)

# SCAQMD Warehouse Truck Trip Study Findings<sup>1,2</sup>

Grouping	Overall Rate (trips/tsf)		Truck Rate (trips/tsf)	
	Average Rate	Rate with Peaking Factor <sup>3</sup>	Average Rate	Rate with Peaking Factor <sup>3</sup>
<i>With Cold Storage</i>	2.49	2.99	1.10	1.32
<i>Non-Cold Storage</i>	1.34	1.78	0.40	0.53
<i>Composite</i>	1.51	1.98	0.50	0.66

<sup>1</sup> Peaking Factor applied only to averaging periods  $\leq$  one day

<sup>2</sup> Outlier data removed

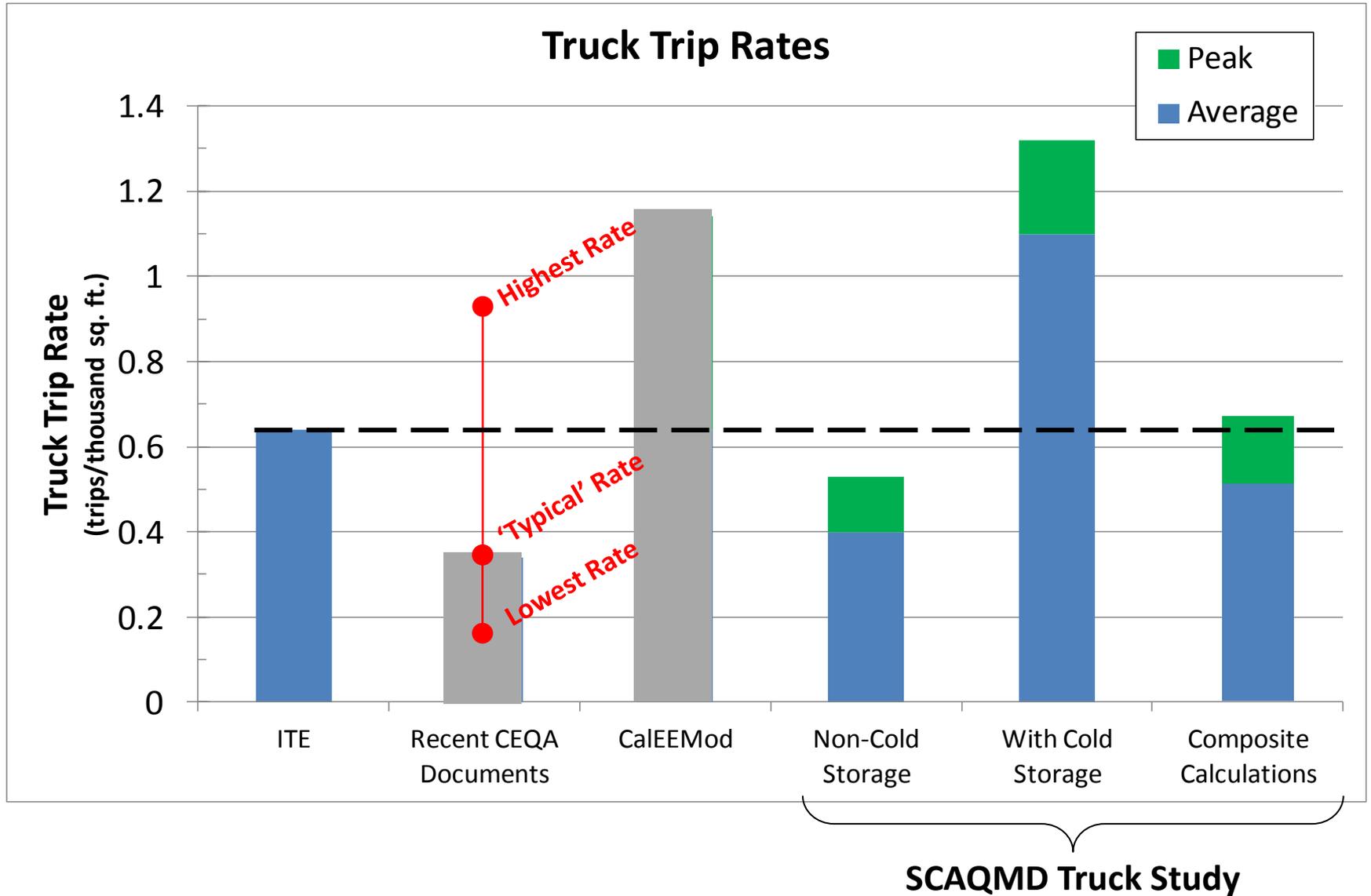
<sup>3</sup> Peaking Factor from Business Survey

Cold Storage (14)	Non-Cold Storage (16)
20%	33%

# Business Position/ Recommendation

- Use current edition ITE truck trip rate as default
  - ITE higher than SCAQMD non-cold storage truck rate w/peak: 0.64 vs 0.53 trips/tsf
  - ITE similar to SCAQMD composite truck rate w/peak: 0.64 vs 0.66 trips/tsf
  - ITE captures “peak” daily
  - ITE has established procedures to update trip rates
  - Lead agencies can use site specific data

# Truck Trip Rate Comparison



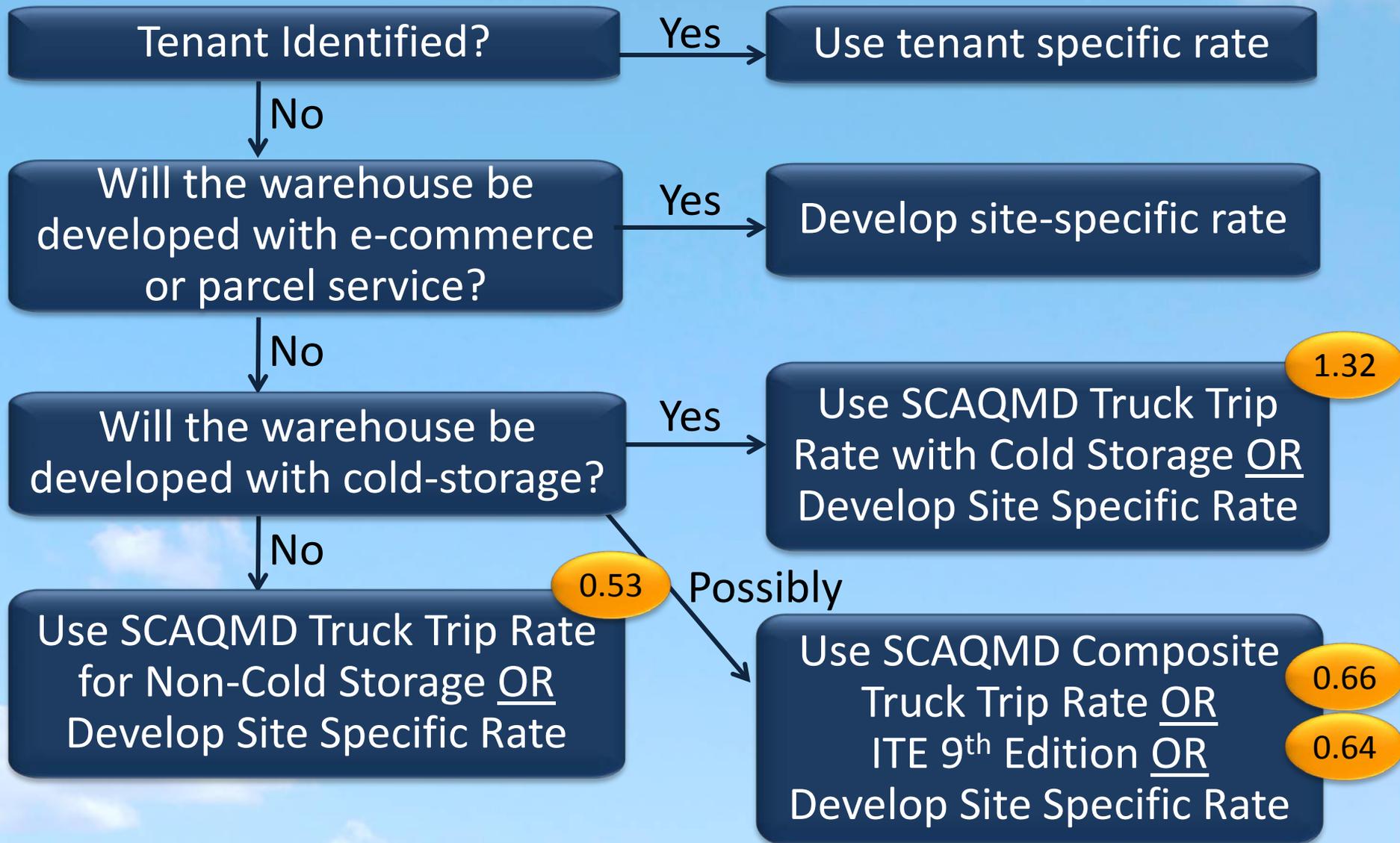
# Staff Response

- Can support use of ITE truck trip rate as current default
- SCAQMD Study results with peaking factor are not inconsistent with ITE
- Fontana Truck Trip Study limited applicability
  - Overall trip rate based on 4 warehouses – includes 2 warehouses with zeros
  - No 24-hour truck trip rates reported
  - Truck trip rates using Fontana study are calculated based on 20% truck fleet mix
  - Fontana Study, by itself, is not characteristic of high cube warehouses

# Staff Recommendations

- Implement staff interim recommendation
  - Use ITE default values until Governing Board action
  - Reflected in monthly IGR Board letter, NOP comment letter, and CalEEMod users noticed
- Option 1:
  - Continue staff interim recommendation
  - Supplement study by collecting more information on cold storage and peaking rates
- Option 2: See flow chart

# Staff Recommendation - Option 2





# Staff Recommendations (Continued)

- Submit SCAQMD Truck Trip Study results to ITE
- Recommend ITE separate “Cold Storage High Cube Warehouse”
- Recommend ITE evaluate e-commerce type warehouses
- Biannually collect additional trip count data from warehouses
- Develop updated emission mitigation menu e.g., WRCOG “Good Neighbor” Guidelines