

Texas Near-Road Monitoring



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Texas Commission on Environmental Quality

Near-Road NO₂ Locations



Phase One – January 2014

- Dallas
- Houston
- Austin
- San Antonio



Phase Two – January 2015

- Dallas
- Houston



Phase Three – January 2017

- El Paso
- Edinburg-Mission-McAllen



Additional Near-Road Pollutants



CO and PM_{2.5} – one monitoring site in each MSA

- **January 1, 2015**

- Dallas
- Houston

- **January 1, 2017**

- Austin
- San Antonio

➤ No multi-pollutant monitors have been deployed at this time.



Near-Road Siting



Near-Road Siting



- TCEQ's near-road site selection process:
 - Rank road segments by AADT and FE-AADT counts provided by Texas Department of Transportation.
 - Identify potential locations next to highest ranked road segments where maximum concentrations would be expected.
 - Evaluate fleet mix, congestion patterns, roadway design, terrain, proximity to industrial sources, and meteorology for each potential location.
 - Review potential locations for compliance with horizontal and vertical siting criteria (distance from roadway, inlet/probe height, obstructions)
 - Account for safety, available utilities, and space (40 foot by 40 foot site pad).

Siting Challenges

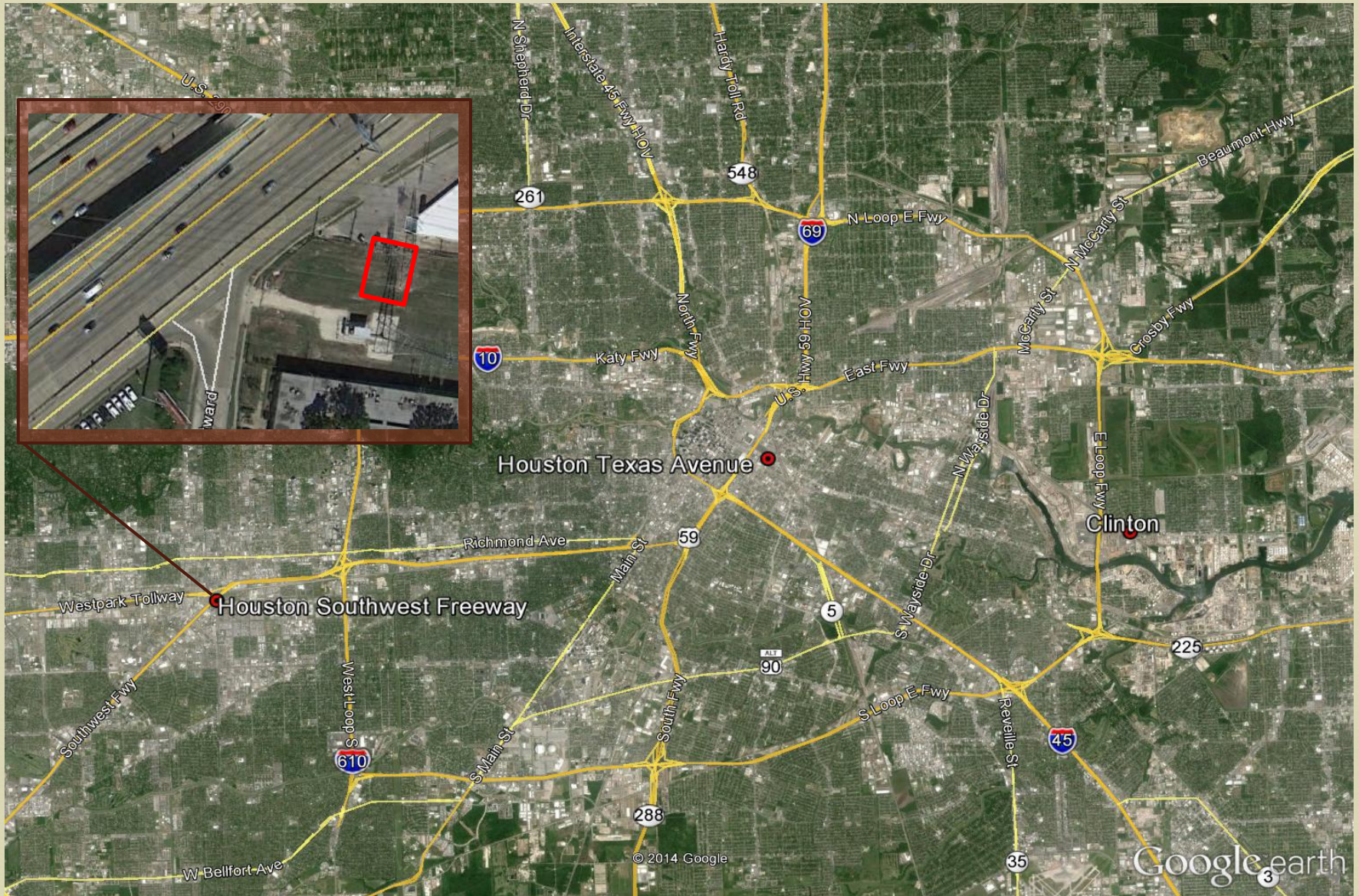
- Major highway construction projects
- Unique roadway design features
 - Elevated or below grade roadways, barriers, major interchanges, access roads
- Commercial property
- Available space/ power
- Vegetation/ obstructions

Near-Road NO₂ Phase I Sites

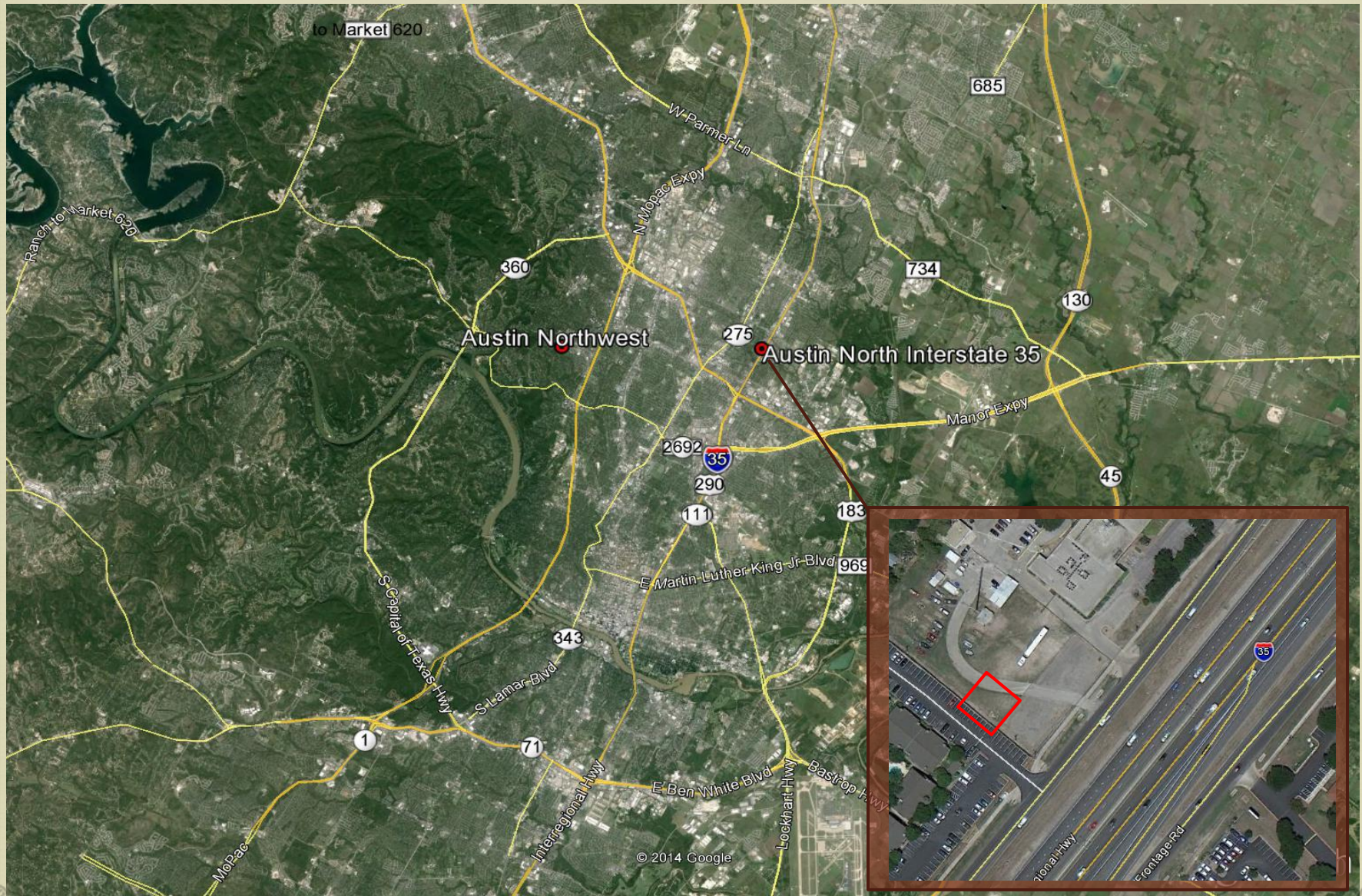




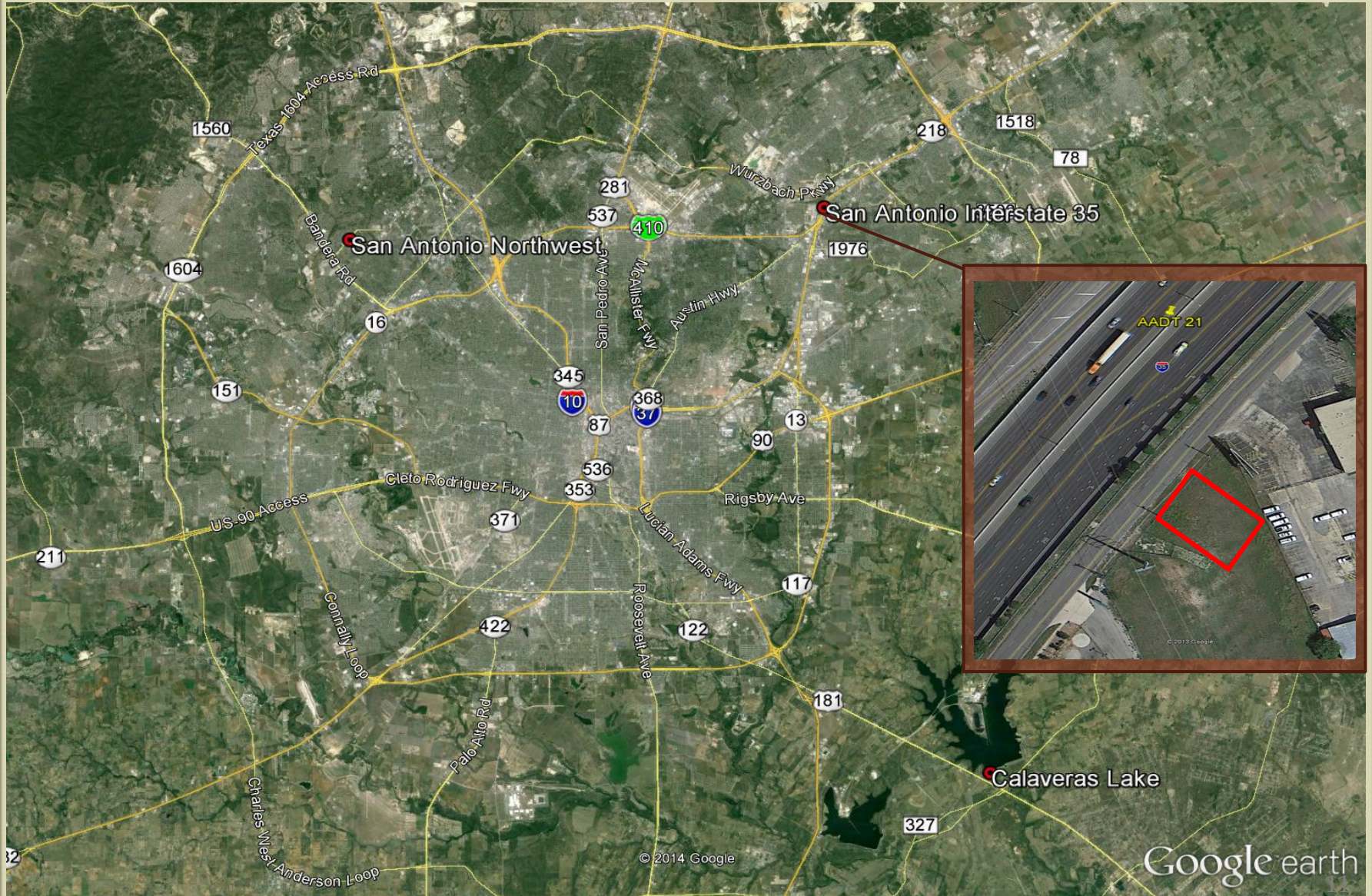
Houston: AADT 1



Austin: AADT 7



San Antonio: AADT 21

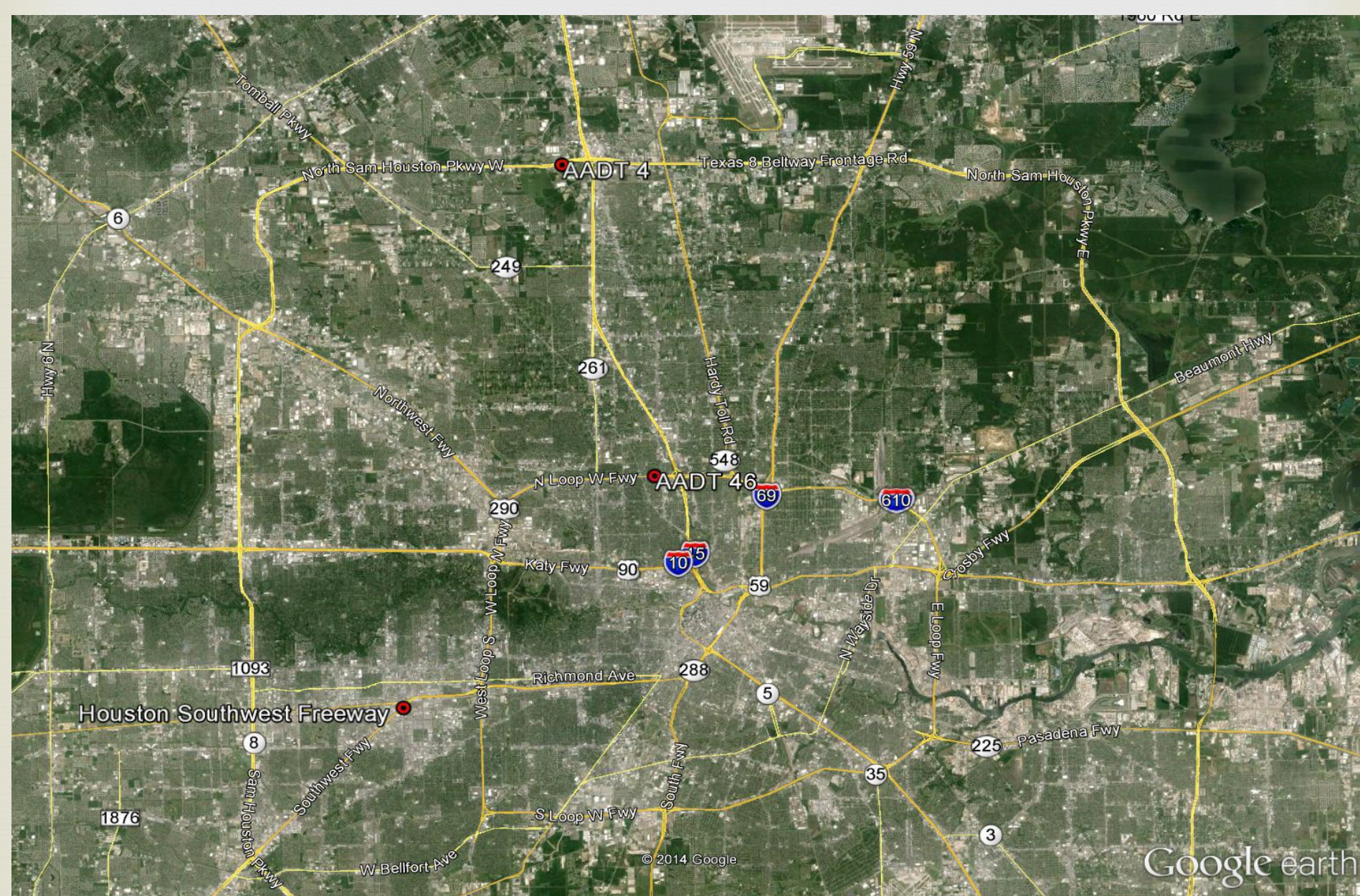


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Potential Houston Phase II Sites

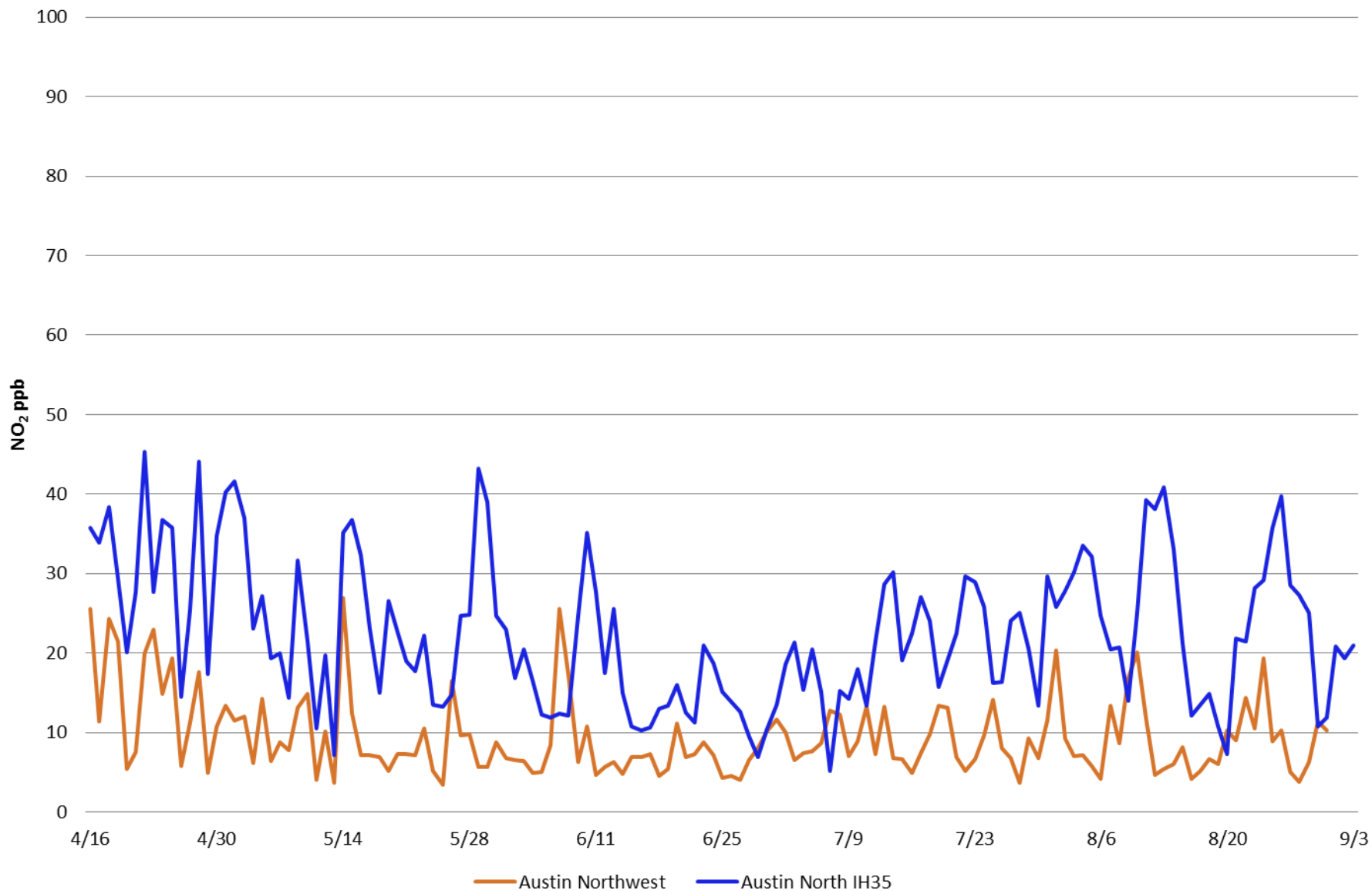


Near-Road NO₂ Trends Comparison



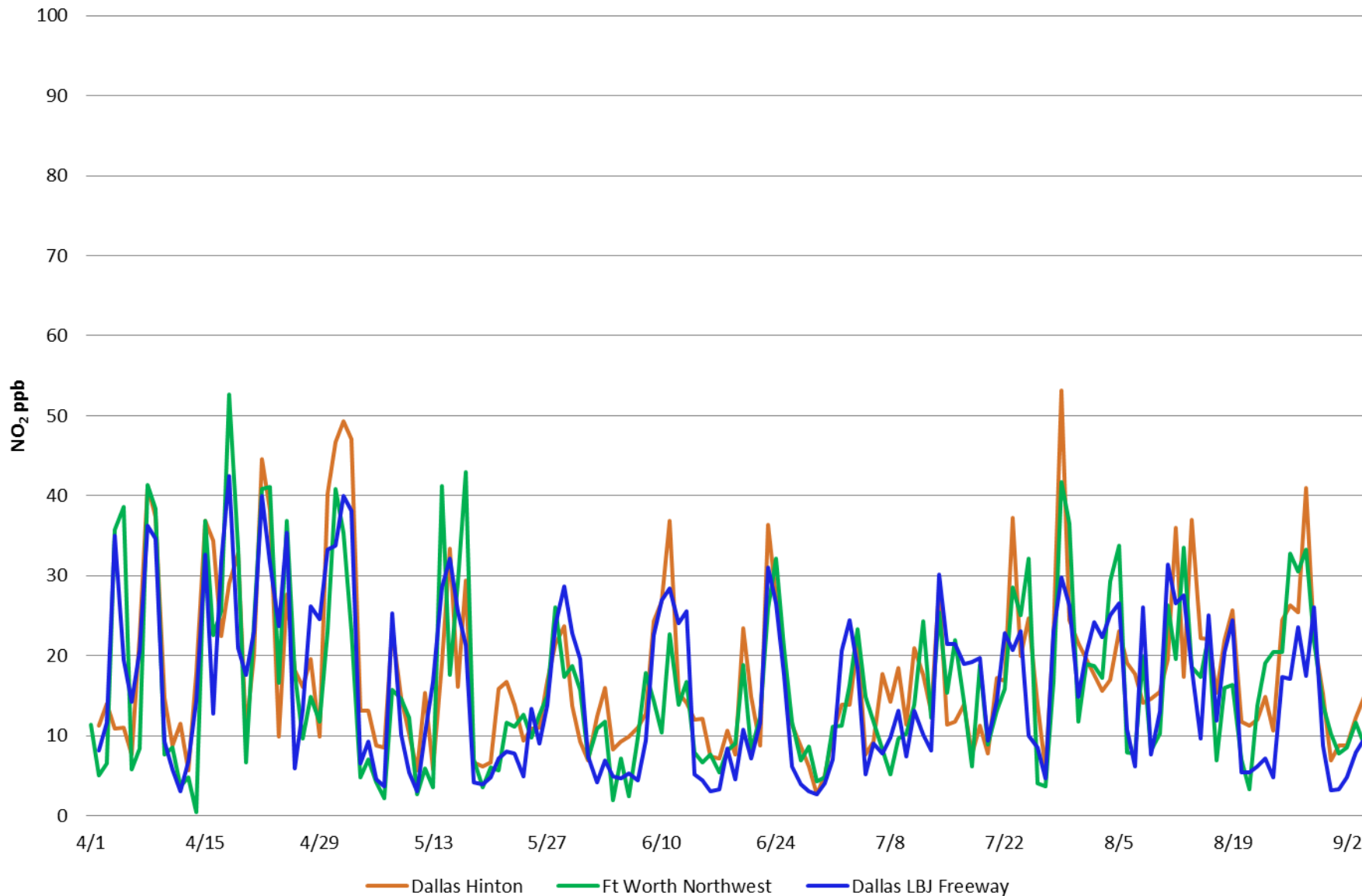
Austin NO₂ 1-Hour Daily Max Comparison

April 2014 - September 2014



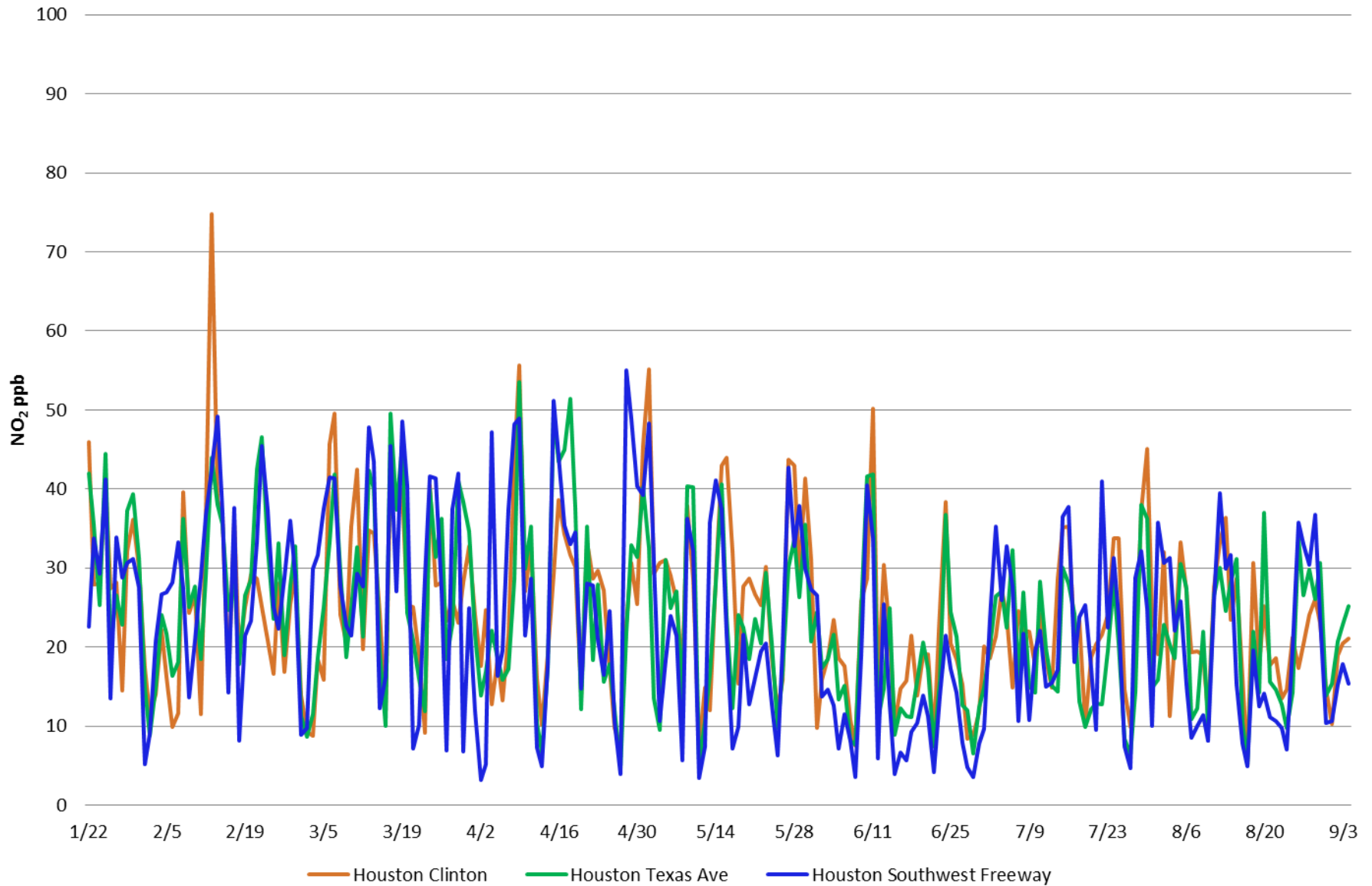
Dallas NO₂ 1-Hour Daily Max Comparison

April 2014 - September 2014



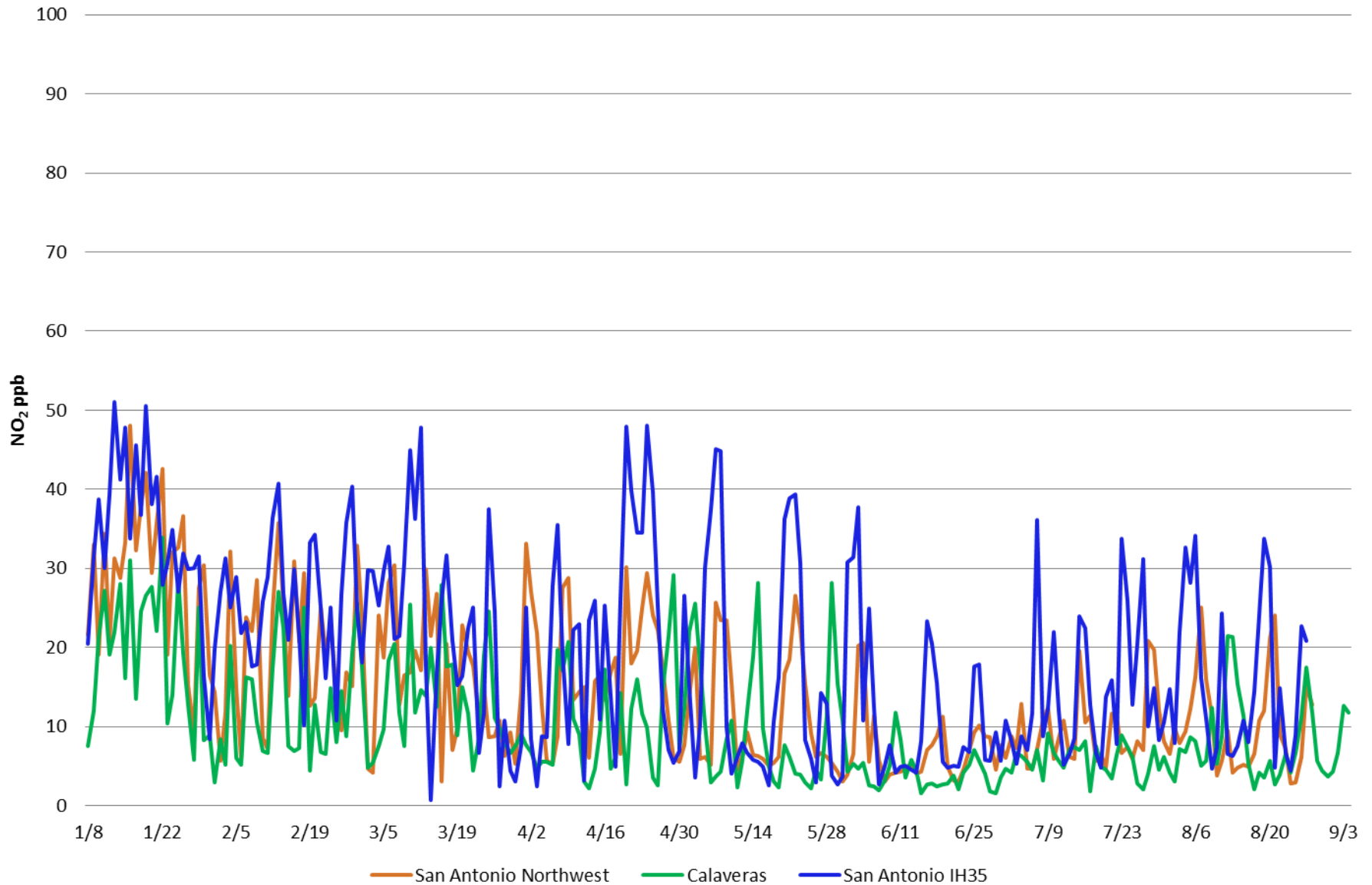
Houston NO₂ 1-Hour Daily Max Comparison

January 2014 - September 2014



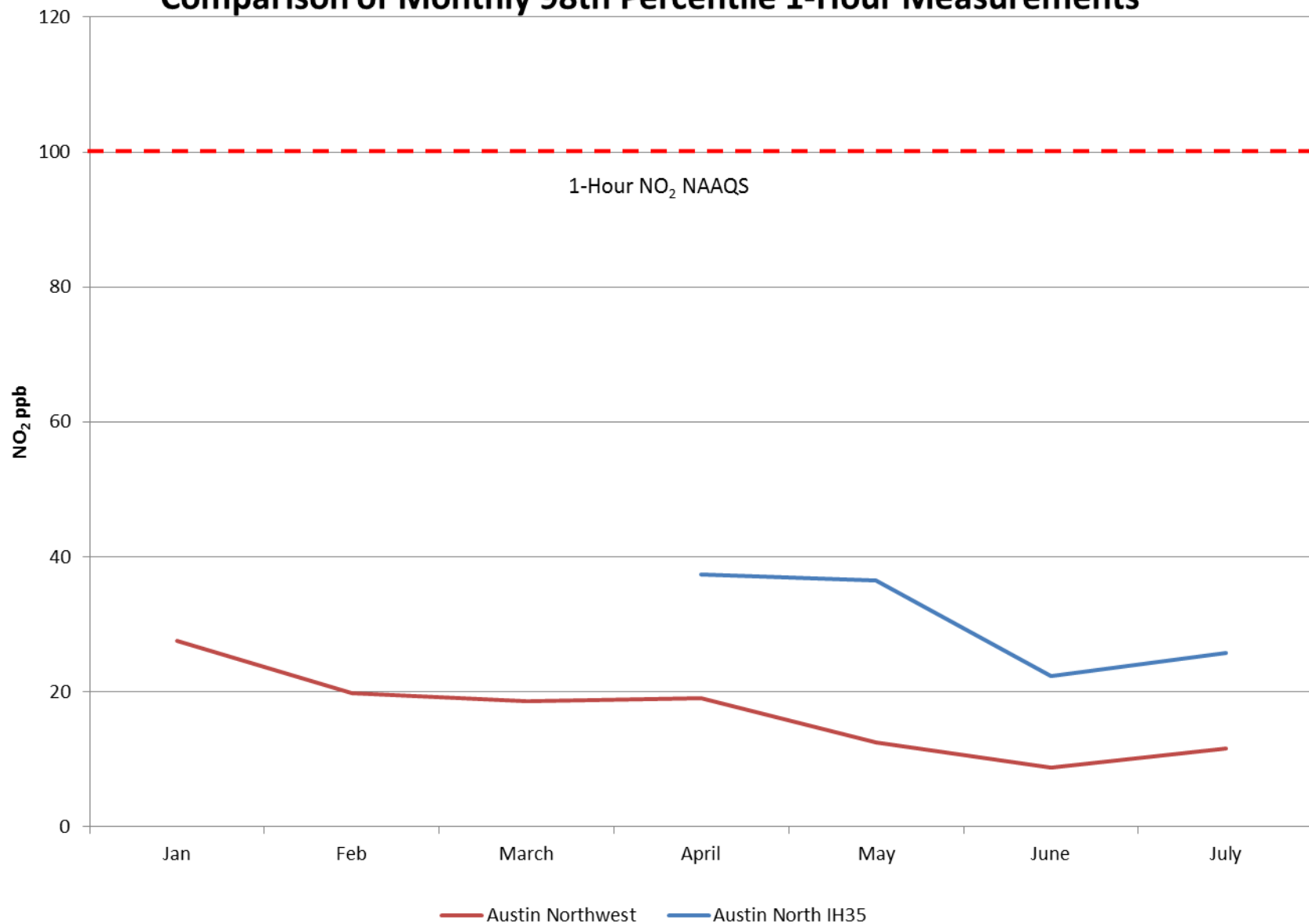
San Antonio NO₂ 1-Hour Daily Max Comparison

January 2014 - September 2014



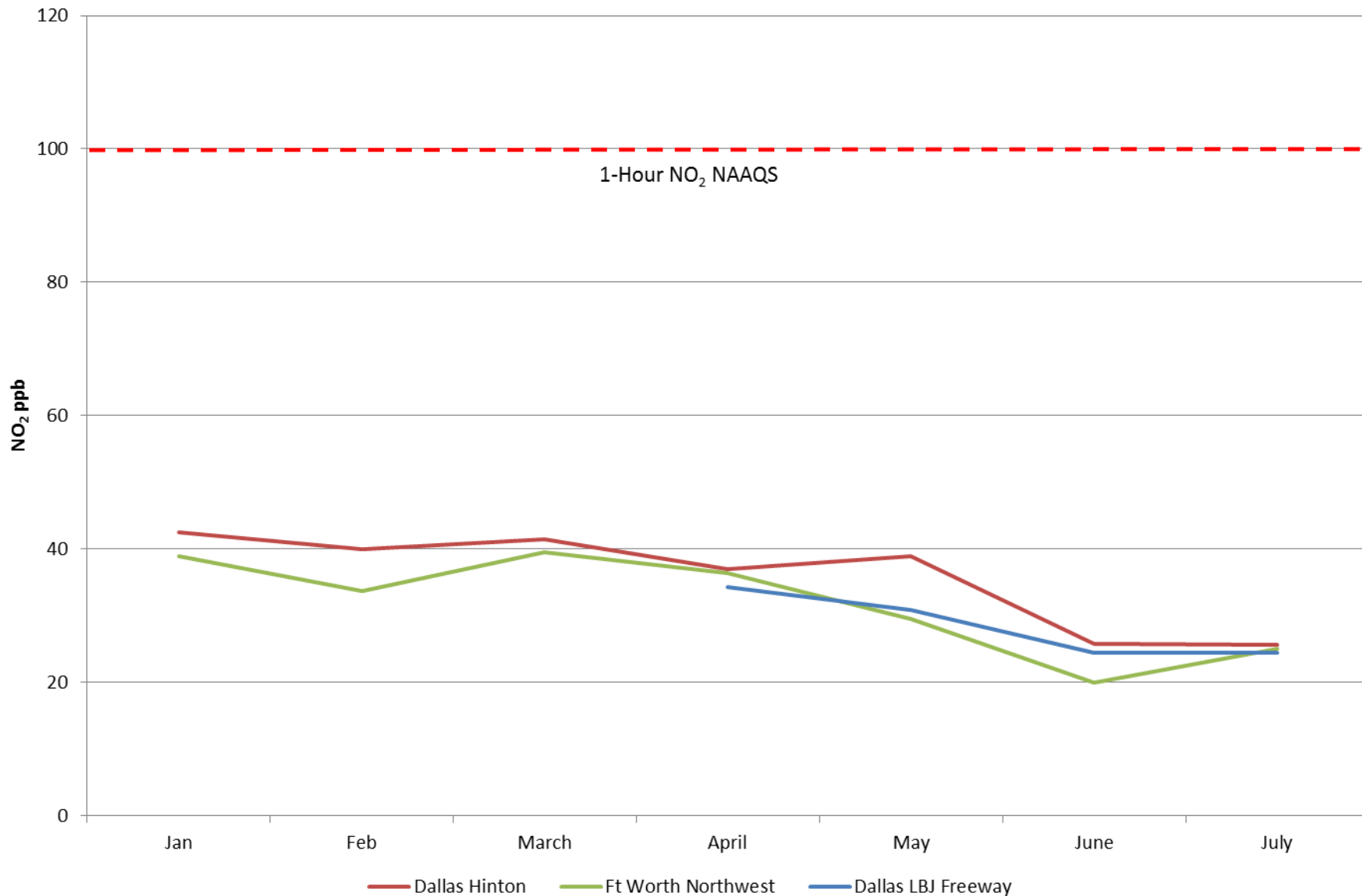
Austin NO₂ Trends

Comparison of Monthly 98th Percentile 1-Hour Measurements



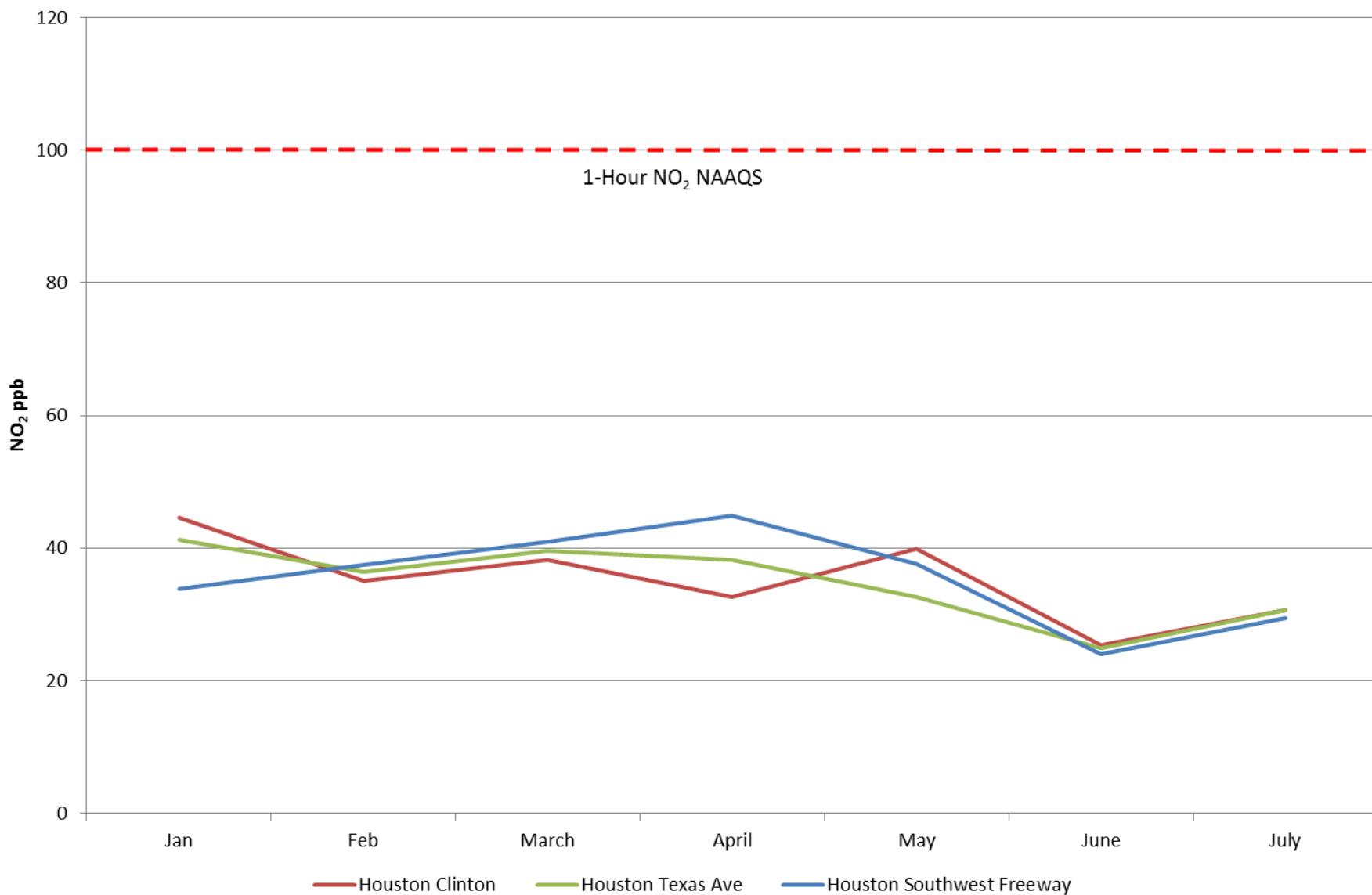
Dallas NO₂ Trends

Comparison of Monthly 98th Percentile 1-Hour Measurements



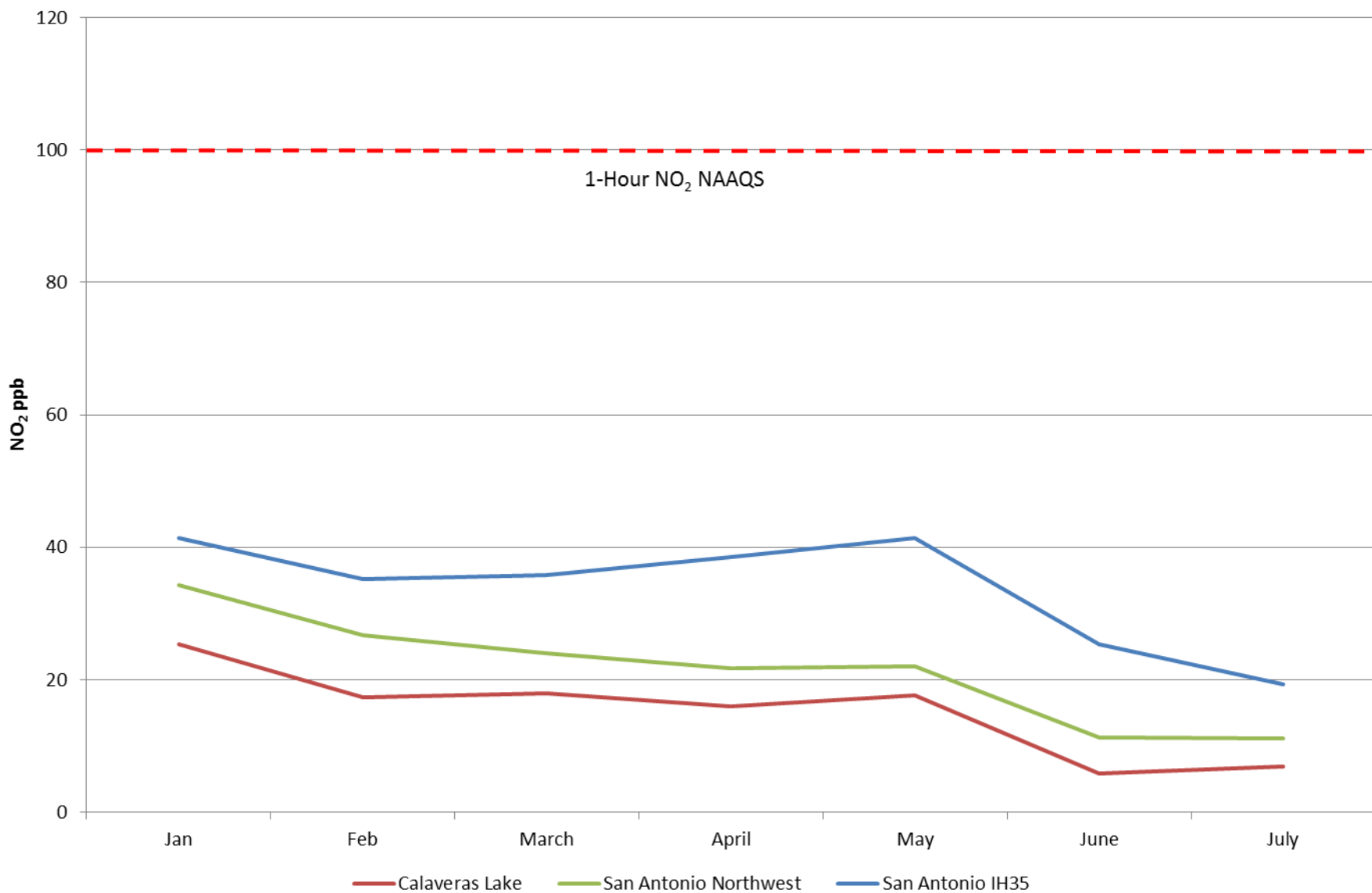
Houston NO₂ Trends

Comparison of Monthly 98th Percentile 1-Hour Measurements

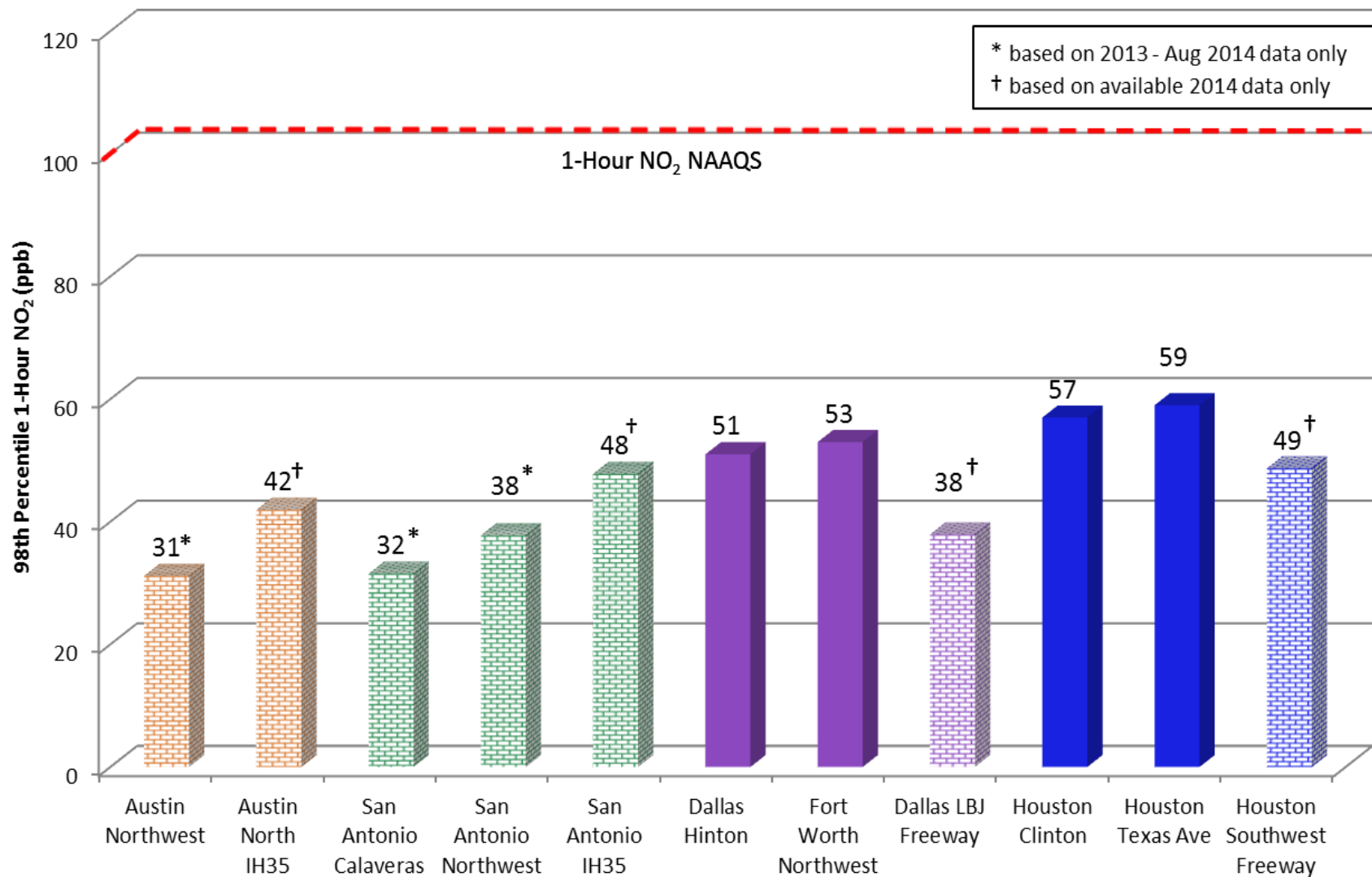


San Antonio NO₂ Trends

Comparison of Monthly 98th Percentile 1-Hour Measurements



Estimated Texas Design Values Near-Road vs Area-Wide NO₂ Sites



Conclusions



- Measurements from near-road monitors in Texas have tracked fairly consistently with other area NO₂ sites.
- Highest 98th percentile 1-hour measurements from Texas near-road sites have been less than half the NAAQS.
- To date, observed near-road NO₂ measurements nationally have been less than 60 to 70 percent of the NAAQS.

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