

Near-Road NO₂ Monitoring

Air Board May 11, 2011

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NO₂ Standard was Re-evaluated

- New Final Rule for 1-hour NO₂ National Ambient Air Quality Standard (NAAQS) published in Federal Register (FR) on February 9, 2010.
- E-copy of document online at:
- <http://www.epa.gov/ttn/naaqs/standards/nox/fr/20100209.pdf>



Standard is Essentially Unchanged

- 100 ppb, 1-hour average concentration.
- The annual standard (53 ppb annual mean) will also continue.
- Attainment: Three-year average of the annual 98th percentile of the daily maximum 1-hour averages.
- Based on 2008-2010 data, Albuquerque is compliant with the proposed new 1-hour NO₂ NAAQS.



However...

- New NO₂ Monitoring Rule Requires Monitoring site
 - In a high traffic area
 - Within 50 meters of the nearest traffic lane

- NO₂ dissipates quickly as it moves away from the source, so near-road monitoring will show higher values.

- No such site currently exists. Will have to be built from ground-up.
 - EPA funding is questionable

- The AQD is currently participating in a “passive sampling” study to determine probable Roadside levels, and acceptable location.



Study Details

- 8 sampling locations set up in March, 2011.
- 1 sampling location contains transect at 25/35/45 meters away from nearest traffic lane of I-25. The 25 meter site also contains two heights (2 meters and 4 meters agl).
- 1-week integrated samples will be taken Monday AM to Monday AM for 5 weeks (weeks of April 4, 11, 18, 25 and May 2).
- Duplicate field samples taken at all sites and one set of duplicate field blanks for each weekly sampling period.



Part of National Pilot Project

- Albuquerque one of five cities across the nation participating in 5-week passive NO₂ monitoring study which is a part of the National NO₂ monitoring pilot project.
- Data should be helpful in assessment of potential permanent near-road NO₂ site for Albuquerque.
- Data results will also be a part of the national technical assistance document which is planned to be available to all States and Locals in fall, 2011.
- Analysis being done by EPA Region 6 Lab in Houston. No Data available to-date.



Candidate Site Process

■ Criteria

- Public property Access Agreement
- Safe Access On Grade, No Obstructions
- 50 m distance High Traffic Volume
- Realistic Possibility for Permanent Site
 - Power, Data, Security, No Trees, Etc.

■ Google Earth

■ Ground Verification

■ Negotiate With Property Owner

Site Characteristics

| | Site #1 Transit at 25, 35, and 45m | Site #2 | Site #3 | Site #4 | Site #5 NCore, Reference |
|-----------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------|---------------------------------|---------------------------------|----------------------------------|
| Latitude | 35.136306° | 35.086684° | 35.087242° | 35.102652° | 35.134300° |
| Longitude | -106.604806° | -106.542765° | -106.541328° | -106.577438° | -106.585200° |
| Elevation (mean ft above sea level) | 5010 | 5384 | 5392 | 5233 | 5213 |
| Sampler distance from Roadway (m): | 25, 35, 45 | 25 | 25 | 5 | 25 |
| Sampler height (m): | 2/4, 2, 2 | 2 | 2 | 4 | 2 |
| What kind of road is it? | Interstate 25 & access Rd. | Interstate 40 & Lomas | Interstate 40 & Lomas | Interstate 40 & San Pedro | San Mateo (NCore reference site) |
| Traffic, vehicles per day | 164500 | 98,600 + 20,200 = 118,800 | 98,600 + 20,200 = 118,800 | 145,300 + 9,600 = 154,900 | 29300 |
| Is there an interchange? | No | Overpass | Overpass | No | No |
| Does the road have noise barriers? | No | No | No | No | No |
| What type of vegetation? | None | None | None | None | Grassy playing field |
| Would vegetation inhibit siting? | NA | NA | NA | NA | No |
| Is the target road segment at, below or above grade? | On grade | On grade | On grade | On grade | On grade |
| Does site terrain have a variety of relative elevations? | Flat | Flat | Flat | Flat | Flat, small berm to East |
| What type of roadway safety features are along side the target road? | Guardrail | Guardrail | Guardrail | Guardrail | not next to street |
| How close are surrounding buildings/other non-road features from the edge of the target road? | nearest 106 m, single story | nearest 128 m, single story. Overpass 86m | None. Overpass 120 m | nearest 40 m, single story | nearest 57.5 m, single story |
| Characterize the surrounding land use. | Right of way | Right of way | Right of way | Right of way | High School athletics |
| Characterize the local meteorology | See attached doc | See attached doc | See attached doc | See attached doc | See attached doc |
| Intangibles – notes on candidacy to house a permanent monitoring station. | Good | Good | Good | Good | NA |

Site Pictures: South I-40/Lomas



Site Pictures: East I-40/Lomas



Site Pictures: I-25 Sites

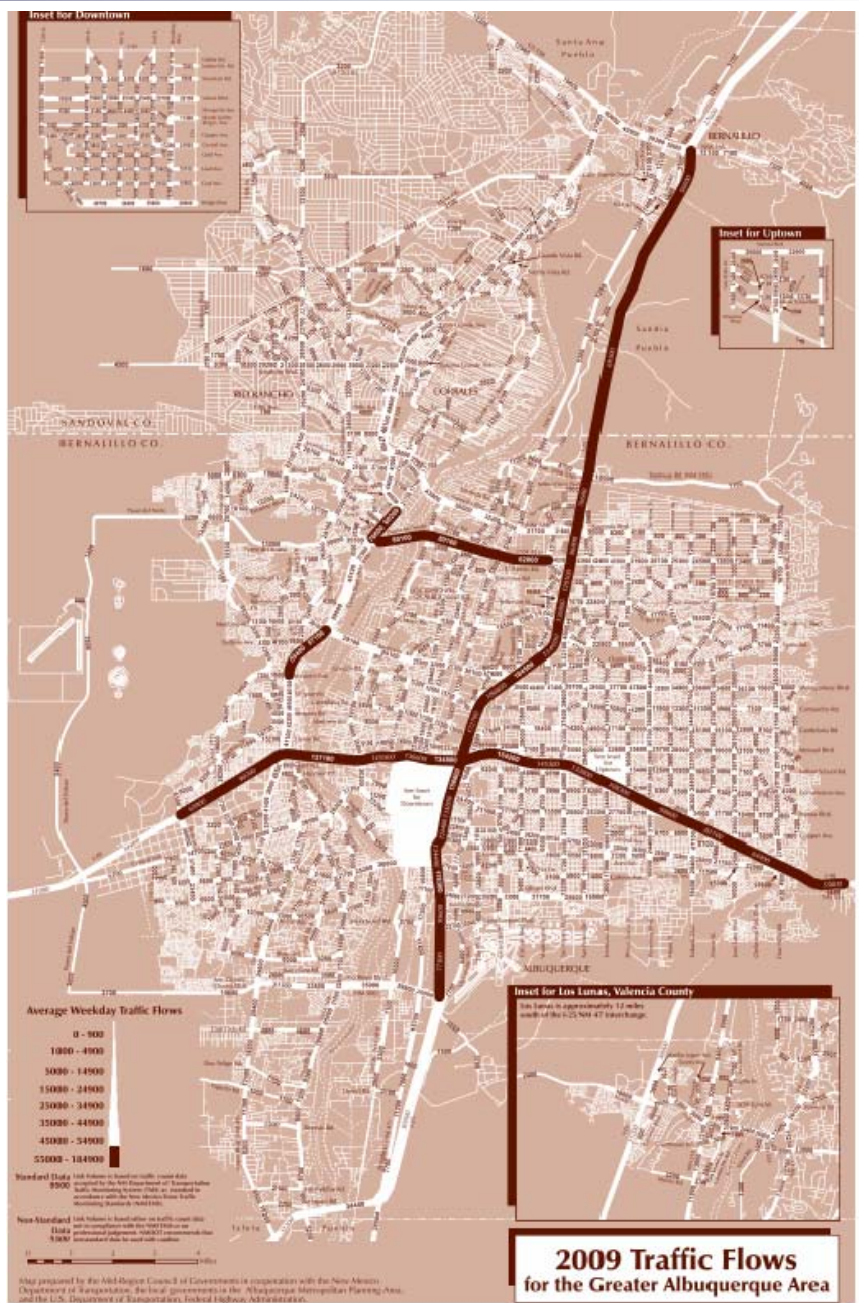


Filters Inside of “Shelters”

- Filter in clip



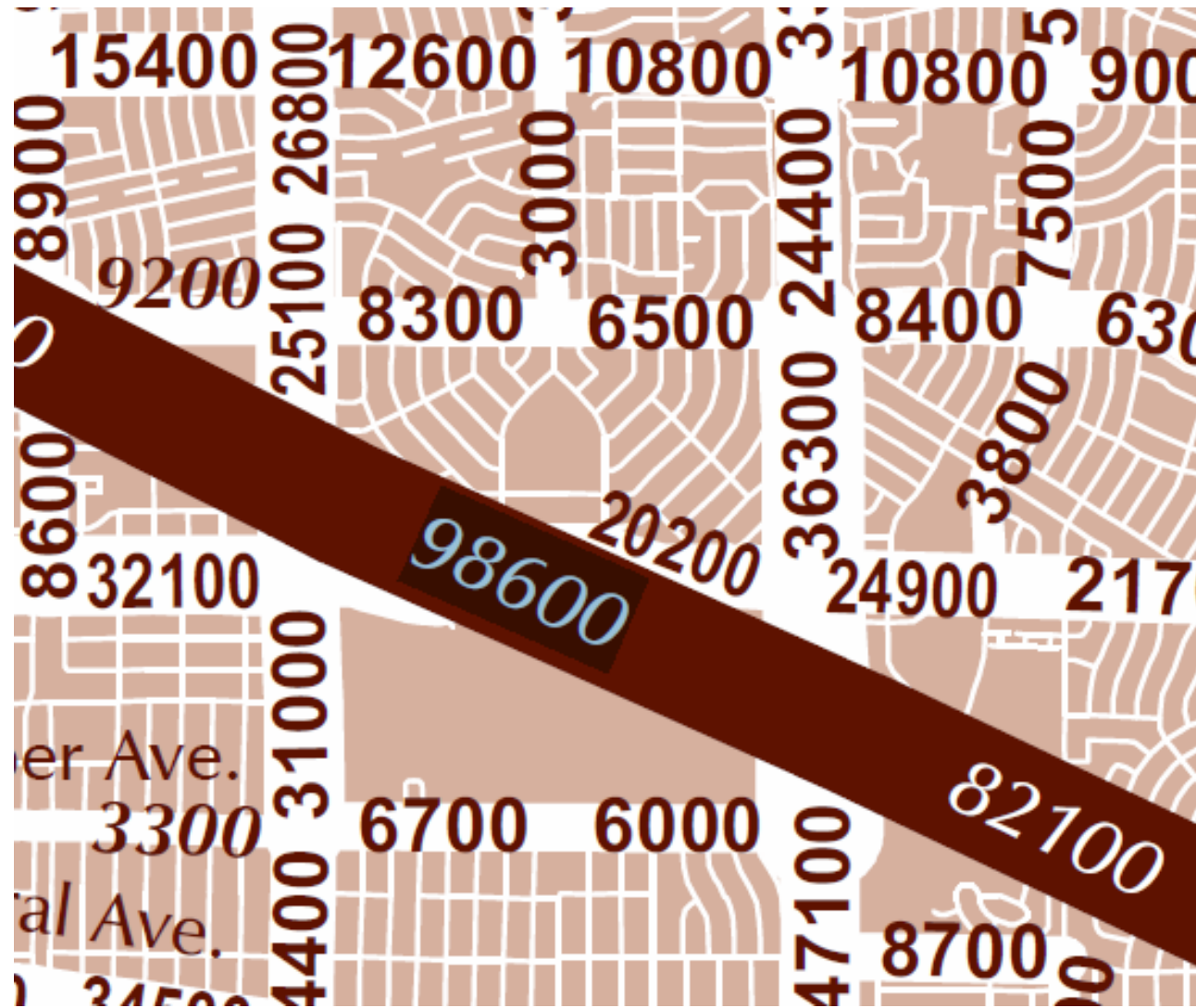
Traffic Data



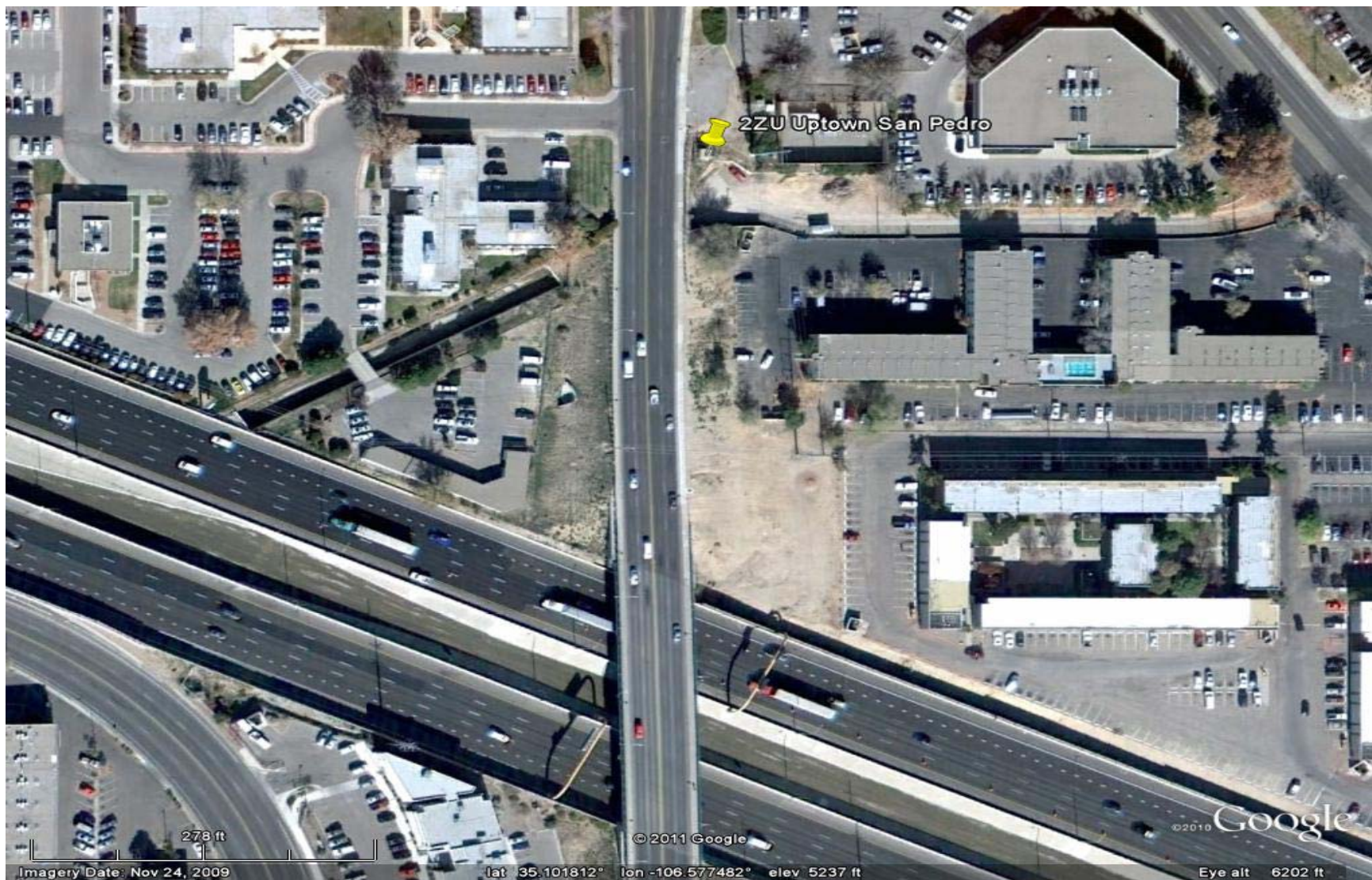
Sites #2 and #3



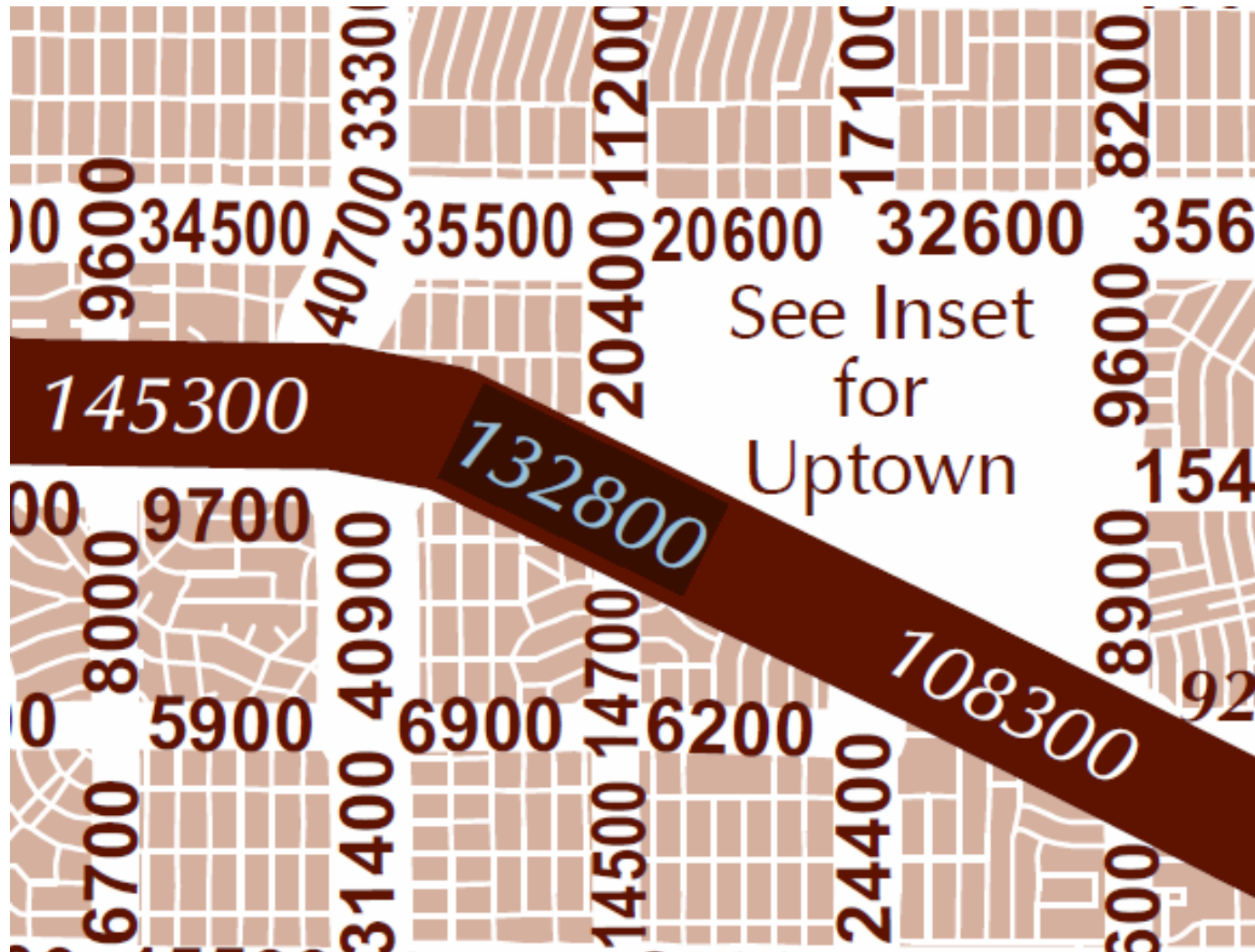
Site2 #2 & 3 Traffic



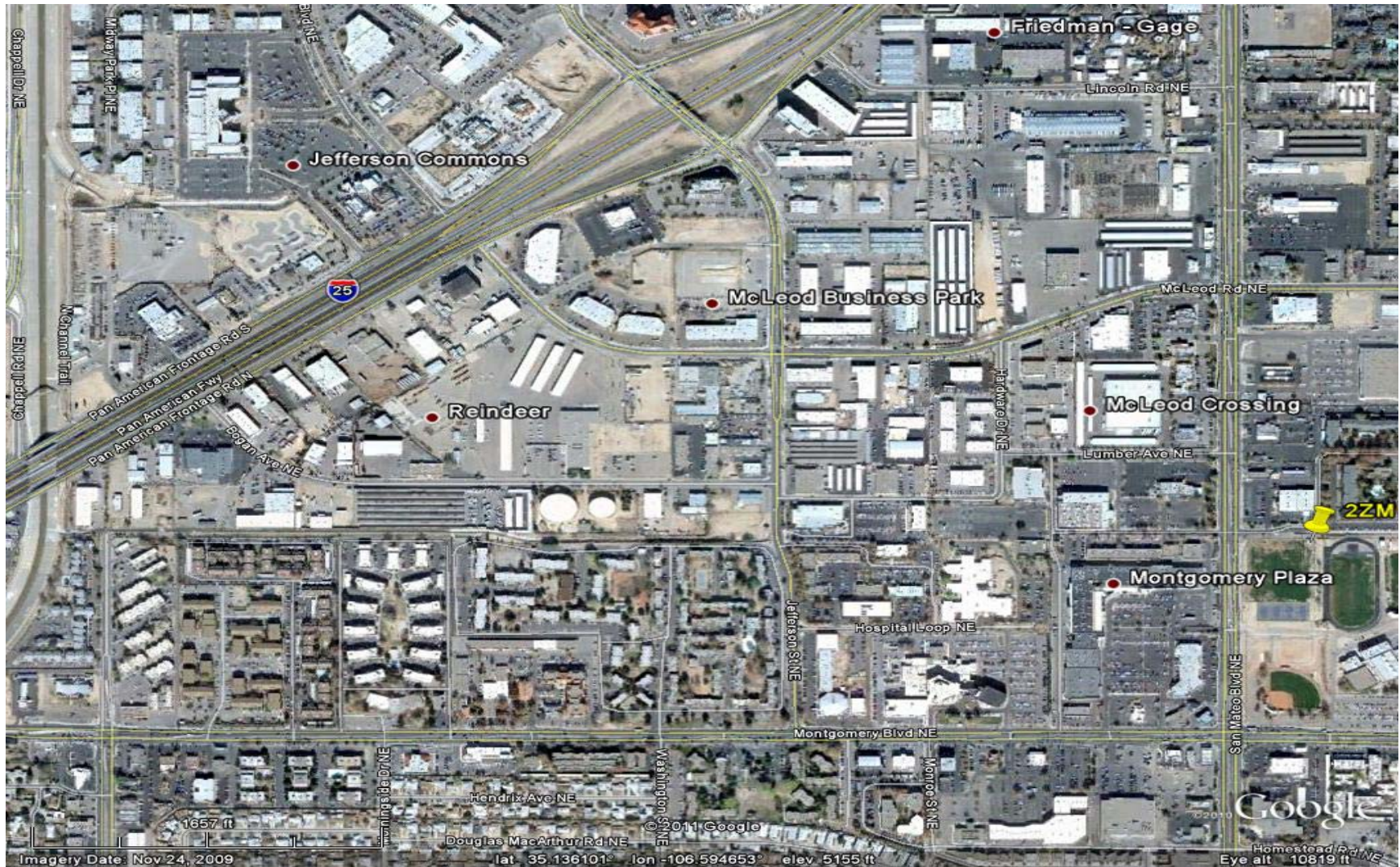
Site #4



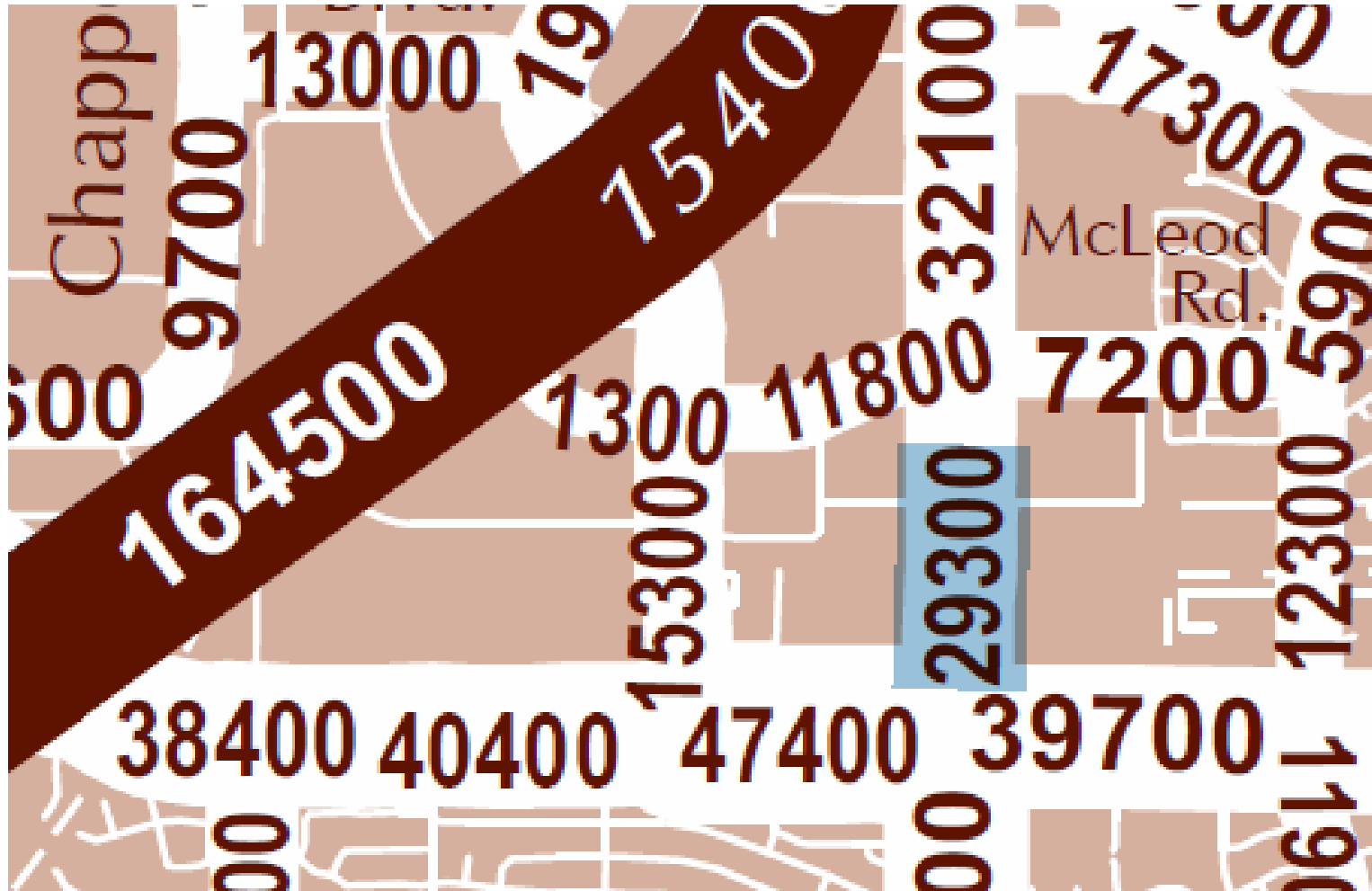
Site #4 Traffic



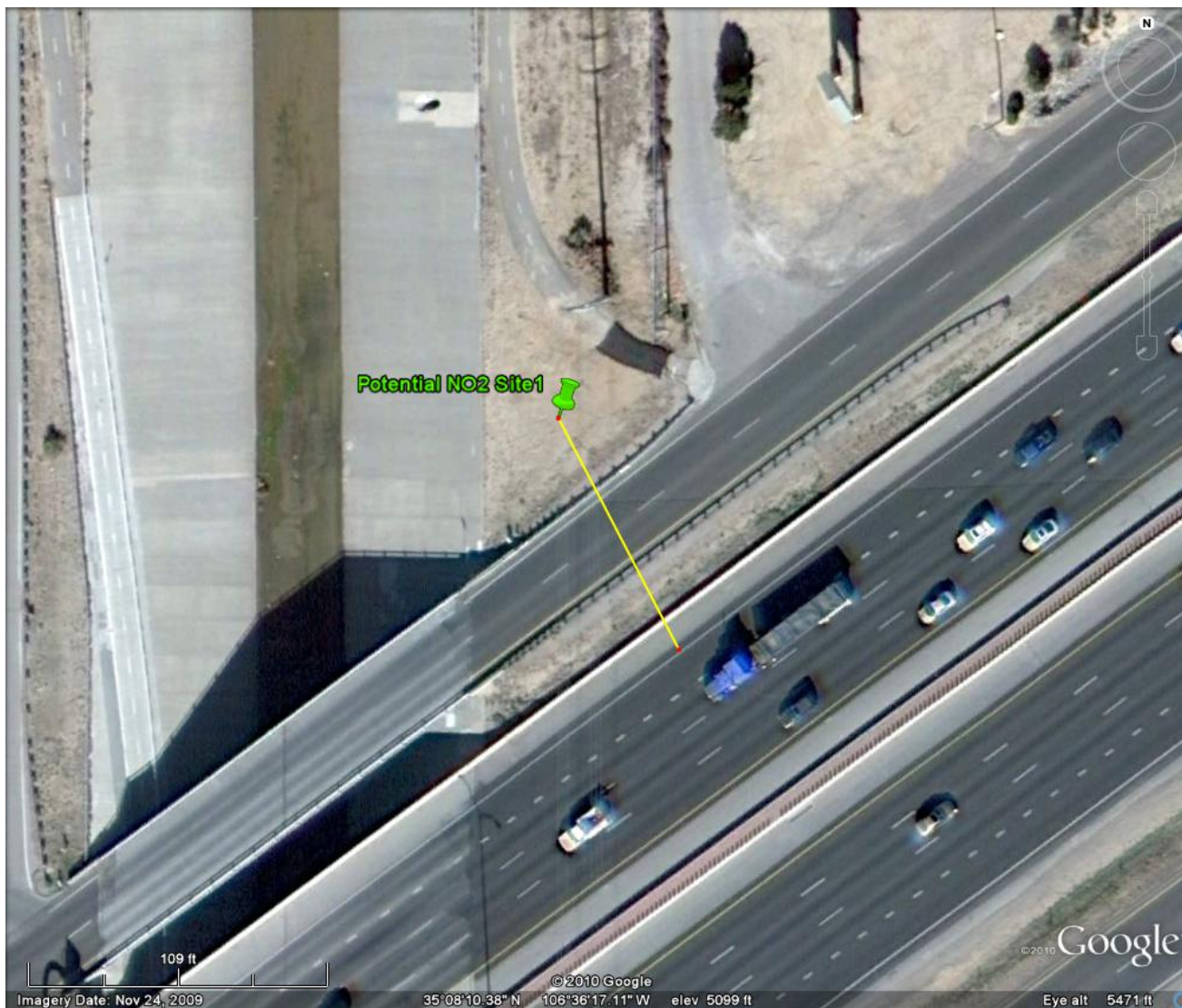
Site #5 (NCore, NO2 Reference)



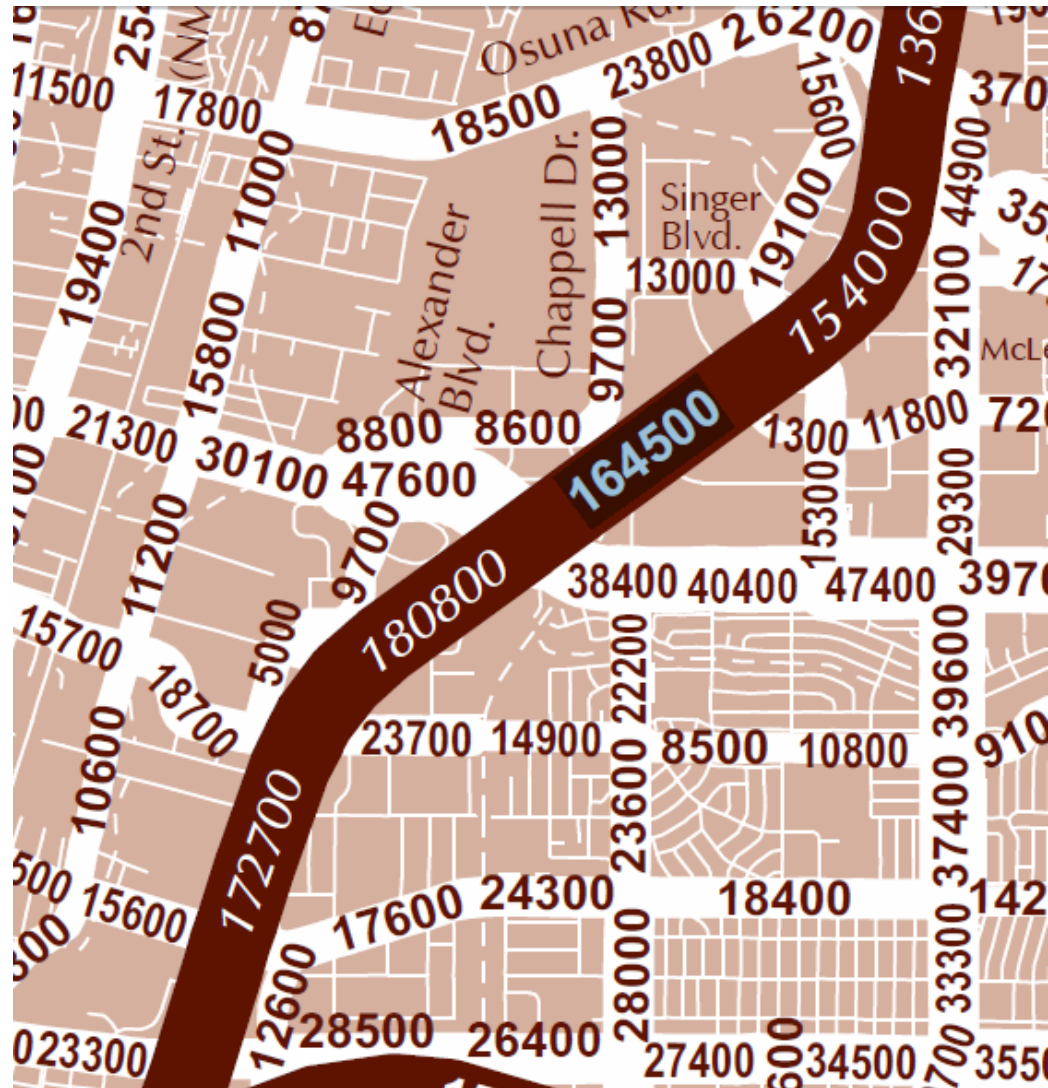
Site #5 NCore, (NO2 Reference)



Site #1 (Transept Site)



Site #1 Traffic





Questions?