



LSA ASSOCIATES, INC.
132 MOUNTAIN AVENUE
FORT COLLINS, COLORADO 80524

970.494.1568 TEL
970.494.1579 FAX

BERKELEY
CARLSBAD
FRESNO

IRVINE
PALM SPRINGS
POINT RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

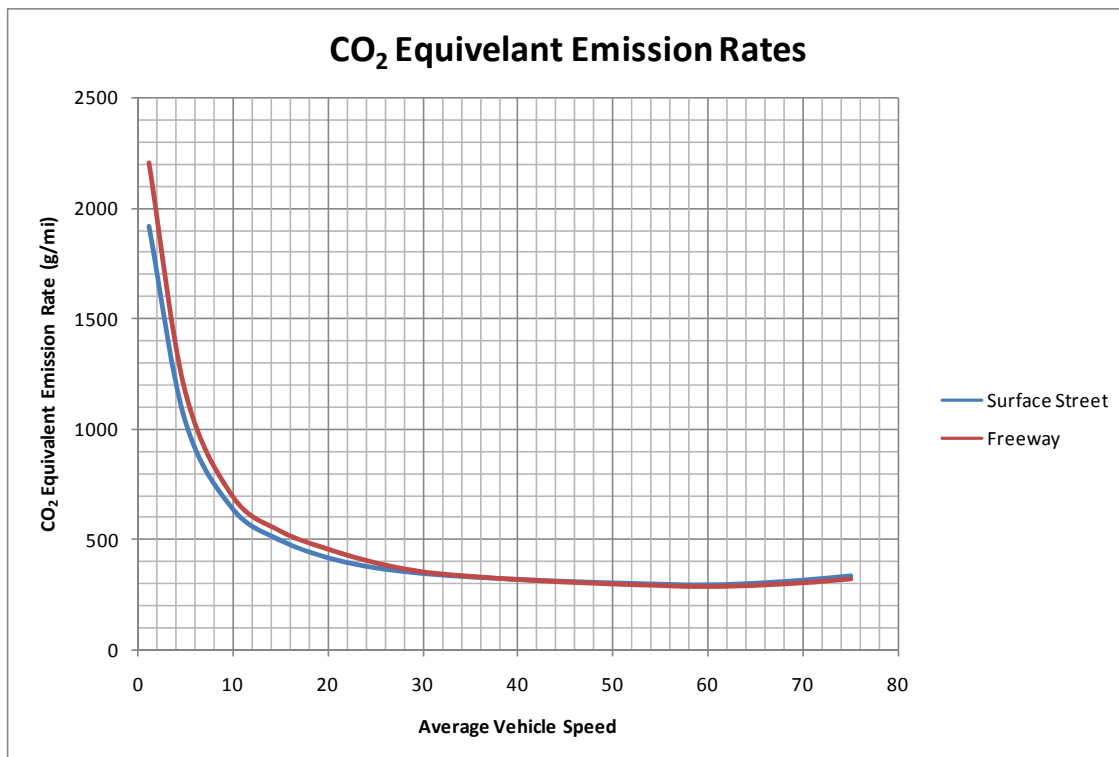
MEMORANDUM

DATE: June 9, 2009
TO: Matt Wempe
FROM: Sean McAtee
SUBJECT: Mountain Vista Plan: Greenhouse Gas and Air Quality Impacts

Greenhouse Gas Emissions

At your request, LSA has compared the 2035 greenhouse gas (GHG) impacts of the previous (1999) Mountain Vista Subarea Plan and the current Preferred Draft Plan. The comparison was performed using a version of the North Front Range Regional Travel Model (NFR RTM) that has been modified based on input from the City. The modified model uses citywide socioeconomic data inputs that have been provided by the city. Representation of the Mountain Vista subarea has been adjusted to be consistent with the current preferred draft update to the Mountain Vista Subarea Plan.

Greenhouse gas emission rates were computed based on the latest draft version of the EPA Motor Vehicle Emission Simulator (EPA MOVES). These emission rates are sensitive to vehicle speed as shown in the figure below. The rates include Carbon Dioxide (CO₂), Methane (CH₄), and Nitrous Oxide (N₂O) in units of equivalent CO₂.



These emission rates were used to compute GHG emissions for the land use and transportation system defined by the previous Mountain Vista Subarea Plan as well as the current Preferred Draft Plan. Because greenhouse gas emissions contribute to a global problem rather than a localized problem, Emissions were computed for three different subareas as shown in the table below. A discussion of the results follows.

CO2 Equivalent Tons / Day	Previous Plan	Updated Plan
Mountain Vista Subarea	93.7	93.7
Fort Collins and Vicinity	1,662	1,671
North Front Range	7,867	7,860

1. ***Subarea GHG Emissions:*** This measure considers emissions from all passenger vehicle travel occurring in the Mountain Vista Subarea. Because the updated plan includes roughly the same amount of activity as the previous plan, the GHG emissions from within the subarea are nearly identical.
2. ***Citywide GHG Emissions:*** This measure considers emissions from all passenger vehicle travel occurring in the City of Fort Collins and vicinity. The total emissions increase slightly with the updated plan, but the increase is offset by a regional decrease in GHG as described below.
3. ***Regional GHG Emissions:*** This measure considers emissions for all passenger vehicle travel within the North Front Range, including travel within the Mountain Vista Subarea and the City of Fort Collins. The total emissions decrease slightly with the updated plan, but the change is minimal.

In conclusion, the updated to the Mountain Vista Subarea Plan has little or no impact on GHG emissions as compared to the previous plan. Within the study area, total emissions remain constant. Because GHG impacts are a global concern, a citywide and regional analysis was also performed. This analysis showed a slight decrease in regional GHG emissions, but the change is insignificant given the precision of the modeling tools used to perform the analysis.

Other Emissions

In addition to greenhouse gas emissions, a brief inventory of other emissions was prepared. The results are shown in the following tables.

VMT and VHT – Mountain Vista Subarea

	1999 Plan	2009 Plan
Total Vehicle Miles Traveled (VMT)	251,952	243,866
Total Vehicle Hours Traveled (VHT)	7,342	7,706

Other Emissions – Mountain Vista Subarea (Tons / Day)

	1999 Plan	2009 Plan
Carbon Monoxide (CO)	4.1	3.99
Volatile Organic Compounds (VOC)	0.13	0.13
Nitrogen Oxide (NOX)	0.10	0.10

These numbers are for the Mountain Vista subarea only.

Other Emissions – Fort Collins (Tons / Day)

	1999 Plan	2009 Plan
Carbon Monoxide (CO)	56.53	56.73
Volatile Organic Compounds (VOC)	1.77	1.79
Nitrogen Oxide (NOX)	1.38	1.39

These numbers are for the Fort Collins nonattainment area.

Other Emissions – Regional (Tons / Day)

	1999 Plan	2009 Plan
Carbon Monoxide (CO)	232.87	232.83
Volatile Organic Compounds (VOC)	7.48	7.47
Nitrogen Oxide (NOX)	5.69	5.69

These numbers are for the entire North Front Range (based on the MPO boundary).