Appendix B: Air Quality/Noise

County Air Quality Policy List and URBEMIS Results

Madera County Guidance – Air Quality, Transportation and Development

Appendix B of the Madera County General Plan Policy Document[1] (1995) provides a compilation of policies and implementation programs located in various sections of the General Plan Policy Document that address air quality implications of transportation and development. These are presented below:

Land Use

Policy 1.A. 3. New development should be centered in existing communities and designated new growth areas.

Policy 1.A. 4. The County shall encourage infill development and development contiguous to existing cities and unincorporated communities to minimize premature conversion of agricultural land and other open space lands.

Policy 1.B. 2. The County shall require the planning and design of new growth areas carries out the following objectives:

a. Concentrate higher-density residential uses and appropriate support services along segments of the transportation system with good road and possible transit connections to the remainder of the region;

b. Support concentrations of medium- and high-density residential uses and higher intensities of non-residential uses near existing or future transit stops along trunk lines of major transportation systems;

c. Support the development of integrated mixed-use areas by mixing residential, retail, office, open space, and public uses while making it possible to travel by transit, bicycle, or foot, as well as by automobile; and

d. Provide buffers between residential and incompatible non-residential land uses.

Policy 1.C. 2. The County shall promote the development of higher-density residential development along major transportation corridors and transit routes.

Policy 1.C. 8. The County shall require residential subdivisions to be designed to provide well-connected internal and external street, bikeway, and pedestrian systems.

Policy 1.D.3. The County shall promote new commercial development that is designed to encourage and facilitate pedestrian circulation within and between commercial sites and nearby residential areas rather than being designed only to serve vehicular circulation.

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[1] Madera County General Plan Policy Document, Madera County, October 24, 1995

Policy 1.E.1 The County shall promote new industrial development that has the following characteristics:

a. Adequate infrastructure and services;
b. Convenient connections to the regional transportation network, including connections to existing transit and other non-automobile transportation;
c. Sufficient buffering from residential areas to avoid impacts associated with noise, odors, and the potential release of hazardous materials;
d. Mitigable environmental impacts; and
e. Minimal adverse effects on scenic routes, recreation areas, and public vistas.

Policy 1.E.7. The County shall support the development of primary wage-earner job opportunities in Madera County to provide residents an alternative to commuting to Fresno.

Policy 1.F.1. The County shall concentrate most new growth within existing communities and designated new growth areas and shall emphasize infill development, intensified use of existing development, and expanded services so individual communities become more complete, diverse, and balanced.

Policy 1.F.2. The County shall designate and encourage the development of employment-generating uses in appropriate areas near existing and designated residential development.

Policy 1.J.1. The County will coordinate land use, infrastructure, and public facility planning with cities in the county, regional planning agencies, neighboring jurisdictions, and state and federal agencies, and shall comment on land use and transportation plans concerning Madera County.

Transportation and Circulation

Policy 2.A.9. To identify the potential impacts of new development on traffic service levels, the County shall require the preparation of traffic impact analyses for developments determined to be large enough to have potentially significant traffic impacts. The County may allow exceptions to the level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable. In allowing any exception to the standards, the County shall consider the following factors:

a. The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.
b. The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.

c. The right-of-way needs and the physical impacts on surrounding properties.

d. The visual aesthetics of the required improvement and its impact on community identity and character.

e. Environmental impacts including *air quality* and noise impacts.

f. Construction and right-of-way acquisition costs.

g. The impacts on general safety.

h. The impacts of the required construction phasing and traffic maintenance.

i. The impacts on quality of life as perceived by residents.

Policy 2.A.10. The County shall strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

Policy 2.B.1. The County shall work with transit providers to plan and implement additional transit services within and to the county that are timely, cost-effective, and responsive to growth patterns and existing and future transit demand.

Policy 2.B.2. The County shall consider the need for future transit right-of-way in reviewing and approving plans for development and roads and highways. Planning for new growth areas should incorporate features to encourage transit and should reserve rights-of-way for future transit access. Rights-of-way may either be exclusive or shared with other vehicles.

Policy 2.B.3. The County shall pursue all available sources of funding for capital and operating costs of transit services.

Policy 2.B.4. The County shall undertake, as funding permits, and participate in studies of inter-regional recreational transit services to Yosemite.

Policy 2.B.5. The County shall consider the transit needs of senior, disabled, low-income, and transit-dependent persons in making decisions regarding transit services and in compliance with the Americans with Disabilities Act.

Policy 2.B.6. The County shall encourage the development of facilities for convenient transfers between different transportation systems. (e.g., train-to-bus, bus-to-bus)

Policy 2.B.7. The County shall, where appropriate, require new development to provide sheltered public transit stops, with turnouts. The County will also consider development of turnouts in existing developed areas when roadway improvements are made or as deemed necessary for traffic flow and public safety.

Policy 2.B.8. The County shall encourage and promote the use of passenger rail.

Policy 2.B.9. The County shall support additional connecting services and service additions to rail service in the San Joaquin Valley. To this end, the County will encourage Amtrak to provide direct service from Madera County to the Sacramento and Los Angeles metropolitan areas.

Policy 2.B.10. The County shall support the relocation of the Amtrak station to an intermodal station in the city of Madera or other appropriate location.

Policy 2.B.11. The County shall work with the Madera County Transportation Commission in periodically reviewing and updating its short-range transit plan at least as often as required by State law.

Policy 2.B.12. The County shall continue to participate in planning for and implementing improved passenger rail service to Madera County.

Policy 2.B.13. The County shall work with Caltrans and other agencies to determine the need for additional or expanded park-and-ride lots and to identify additional sites for such lots.

Policy 2.B.14. The County shall assist transit planning agencies and transit providers in assessing transit demand and the adequacy of existing services.

Policy 2.B.15. The County shall work with other agencies to identify and pursue funding for transit.

Policy 2.B.16. As appropriate, the County shall adopt resolutions in support of local, state, and federal legislation and funding for rail service.

Policy 2.B.17. The County shall assist and participate in a project study with Caltrans and the Council of Fresno County Governments involving the possibility of using State Highway 41 for public transit purposes, (e.g., light rail).

Policy 2.C.1. The County shall promote the use of transportation control measures (TCM) that divert automobile trips to transit, waling, and bicycling, through planning and provision of appropriate facilities and incentives. TCM programs shall include the following:

a. Passenger rail
b. Trip reduction programs
c. Telecommunications
d. Traffic flow improvements

e. Park-and-ride lots
f. Ride share programs
g. Parking management
h. Bicycling programs
i. Short-range transit
j. Alternative work schedules
k. Fleet operators alternative fuel program

Policy 2.C.2. The County shall continue to investigate and promote feasible land use and transportation strategies that will result in fewer automobile trips. To this end, the County shall encourage the concentration of urban development to maximize the feasibility of transit.

Policy 2.C.3. The County shall promote the use, by both the public and private sectors, of TCM programs that increase the average occupancy of vehicles.

Policy 2.C.4. The County shall encourage major traffic generators to develop and implement trip reduction measures.

Policy 2.C.5. The County should require major development projects to prepare transportation studies that address potential use of bicycle routes and facilities and the use of public transportation.

Policy 2.C.6. The County shall work with other responsible agencies, including the Madera County Transportation Commission and the San Joaquin Valley Unified Air Pollution Control District, to develop other measures to reduce vehicular travel demand and meet air quality goals.

Program 2.18. The County shall investigate the feasibility of various TCM programs in the county and shall identify possible incentives to promote the use of such measures.

Policy 2.D.1. The County shall promote the development of a comprehensive and safe system of bicycle routes for short-range commuting and shopping trips and recreational uses. Bikeways should be constructed that will serve the greatest number of users.

Policy 2.D.2. The County shall work with cities and neighboring jurisdictions to coordinate planning and development of the County's bikeways and multi-purpose trails with those of neighboring jurisdictions.

Policy 2.D.3. New bikeways should be linked with other bikeways, bicycle rest stops, and parks to provide safe and continuous routes.

Policy 2.D.4. The County shall encourage the provision for bicycle routes along state highways. Where this occurs, automobile and bicycle facilities should be separated.

Policy 2.D.5. The County shall pursue all available sources of funding for the development and improvement of trails for non-motorized transportation (bikeways, pedestrian, and equestrian).

Policy 2.D.6. The County shall promote non-motorized travel (bikeways, pedestrian, and equestrian) through appropriate facilities, programs, and information, including through the school system and local media.

Policy 2.D.7. The County shall require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.

Policy 2.D.8. The County shall support the development of parking areas near access to hiking and equestrian trails.

Program 2.19 The County shall prepare a *Bicycle Master Plan* jointly with the City of Madera consistent with the City and County General Plans.

Program 2.20 The County shall require that bikeways recommended in the *Bicycle Master Plan* be developed when roadway projects are constructed and when street frontage improvements are required of new development.

Program 2.21 The County shall develop and adopt standards for bicycle, pedestrian, and equestrian facilities. These standards should vary by types of land use and terrain. Until such standards are adopted, the County shall continue to use state standards as guidelines for construction of bicycle lanes and bicycle trails.

Policy 2.G.1. The County shall require that land use form and transportation systems in designated new growth areas be designed to provide residents and employees with the opportunity to accomplish many of their trips within the new growth area by walking, bicycling, and using transit.

Public Facilities and Services

Policy 3.I.5. The County shall encourage the location of schools in areas with safe pedestrian and bicycle access.

Agricultural and Natural Resources

Policy 5.J.1. The County shall cooperate with other agencies to develop a consistent and effective approach to air quality planning and management. To this end, the

County shall coordinate with other jurisdictions in the San Joaquin Valley to establish parallel air quality programs and implementation measures.

Policy 5.J.2. The County shall support the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.

Policy 5.J.3. The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.

Policy 5.J.4. The County shall submit development proposals to the adopted SJVUAPCD fro review and comment in compliance with California Environmental Quality Act (CEQA) prior to consideration by the appropriate decision –making body.

Policy 5.J.5. The County shall require new development projects that exceed SJVUAPCD emission thresholds to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the SJVUAPCD's 1991 *Air Quality Attainment Plan* (or updated edition).

Policy 5.J.6. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

Policy 5.J.7. The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.

Policy 5.J.8. In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.

Policy 5.J.9. The County shall support and participate in the air quality education programs of the SJVUAPCD.

Policy 5.J.10. The County should publicize the requirements of the San Joaquin Valley Unified Air Pollution Control District's Regulation VIII concerning control of PM-10 emissions.

Policy 5.J.11. The County shall require developers to pave all access roads, driveways, and parking areas serving new commercial and industrial development.

Policy 5.J.12. The County shall reduce PM-10 emissions from County-maintained roads to the maximum extent feasible.

Program 5.10. The County shall coordinate with other local, regional, and state agencies, including the SJVUAPCD and the California Air Resources board (ARB), in incorporating regional and state clean air plans into County planning and project review procedures. The County shall also cooperate with the SJVUAPCD and ARB in the following efforts:

a. Enforcing the provision of the California and Federal Clean Air Acts, state and regional policies, and established standards for air quality;
b. Establishing monitoring stations to accurately determine the status of carbon monoxide, ozone, nitrogen dioxide, hydrocarbon, and PM-10 concentrations;
c. Developing consistent procedures and thresholds for evaluating both project-specific and cumulative air quality impacts for proposed projects.

Program 5.10. The County shall encourage the SJVUAPCD to revise its *Air Quality Attainment Plan* (AQAP) as required every three years. For the 1994 AQAP, the County shall ensure that the SJVUAPCD revises its AQAP to reflect the new estimates of population and vehicle travel associated with the updated *General Plan*. The 1994 AQAP should incorporate additional air quality programs that are not currently in the AQAP to compensate for the increased population and emissions associated with anticipated development.

Program 5.12. The County should ensure that the U.S. Environmental Protection Agency (EPA), in the preparation of the Federal Implementation Plan (FIP) for the San Joaquin Valley Air Basin, uses the General Plan population projections associated with the Madera County portion of the San Joaquin Valley Air Basin. The County should also ensure that the SJVUAPCD uses the General Plan population projections associated with the Madera County portion of the San Joaquin Valley Air Basin in the preparation of the State Implementation Plan (SIP).

Policy 5.K.1. The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

Policy 5.K.2. The County shall continue and, where appropriate, expand the use of synchronized traffic signals on roadways susceptible to emissions improvement through approach control.

Policy 5.K.13 The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

Policy 5.K.4. The County shall endeavor to secure adequate funding for transit services so that transit is a viable transportation alternative. New development shall pay its fair share of the cost of transit equipment and facilities required to serve new projects.

Policy 5.K.5. The County shall require large new developments to dedicate land for and construct appropriate improvements for suitably located park-and-ride lots, subject to the requirements of *California Government Code* Section 66000 et seq. (AB 1600).

Policy 5.L.1. The County shall encourage developers to limit fireplace installations in new developments.

Policy 5.L.2. The County shall encourage the installation of low emitting, EPA-certified fireplace inserts and woodstoves, pellet stoves, or natural gas fireplaces in new developments as an alternative to conventional woodburning fireplaces and appliances.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\North Fork Village\NFV - Const 2008.urb
Project Name: North Fork Village - Construction 2008
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	2.96	6.60	8.66	0.00	0.37	0.25	0.12

DETAIL REPORT
(Tons/Year)

Construction Start Month and Year: January, 2008
Construction Duration: 12
Total Land Use Area to be Developed: 3 acres
Maximum Acreage Disturbed Per Day: 0.8 acres
Single Family Units: 0.8 Multi-Family Units: 164.1
Retail/Office/Institutional/Industrial Square Footage: 66250

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)

Source *** 2008***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.11	-	0.11
Off-Road Diesel	0.06	0.38	0.49	-	0.01	0.01	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total tons/year	0.06	0.38	0.50	0.00	0.12	0.01	0.11
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.91	6.10	7.35	-	0.24	0.24	0.00
Bldg Const Worker Trips	0.05	0.03	0.64	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	1.91	-	-	-	-	-	-
Arch Coatings Worker Trips	0.01	0.00	0.07	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.01	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.01	0.07	0.10	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	2.90	6.22	8.16	0.00	0.25	0.24	0.01
Total all phases tons/yr	2.96	6.60	8.66	0.00	0.37	0.25	0.12

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 1.3 months
On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Crawler Tractors	143	0.575	8.0
0	Graders	174	0.575	8.0
0	Off Highway Trucks	417	0.490	8.0
0	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
0	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '08
Phase 3 Duration: 10.7 months
  Start Month/Year for SubPhase Building: Feb '08
  SubPhase Building Duration: 10.7 months
  Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	8.0

  Start Month/Year for SubPhase Architectural Coatings: Nov '08
  SubPhase Architectural Coatings Duration: 1.1 months
  Start Month/Year for SubPhase Asphalt: Dec '08
  SubPhase Asphalt Duration: 0.5 months
  Acres to be Paved: 4.3

  Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.59/.27 to 11.28/
The Trip Rate and/or Acreage values for Apartments low rise
 have changed from the defaults 6.89/.99 to 11.11/
The Trip Rate and/or Acreage values for Apartments mid rise
 have changed from the defaults 5.77/1.01 to 10.61/
The Trip Rate and/or Acreage values for Apartments high rise
 have changed from the defaults 5.29/1.15 to 9.05/
The Trip Rate and/or Acreage values for Condominium/townhouse general
 have changed from the defaults 6.91/.88 to 9.07/
The Trip Rate and/or Acreage values for Condominium/townhouse high rise
 have changed from the defaults 5.27/.39 to 9/

Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.00602
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\North Fork Village\NFV - Const 2024.urb
Project Name: North Fork Village - Construction 2024
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2020 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	2.92	6.08	8.48	0.00	0.32	0.20	0.12

DETAIL REPORT
(Tons/Year)

Construction Start Month and Year: January, 2020
Construction Duration: 12
Total Land Use Area to be Developed: 3 acres
Maximum Acreage Disturbed Per Day: 0.8 acres
Single Family Units: 0.8 Multi-Family Units: 164.1
Retail/Office/Institutional/Industrial Square Footage: 66250

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)

Source *** 2020***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.11	-	0.11
Off-Road Diesel	0.06	0.36	0.50	-	0.01	0.01	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.06	0.36	0.50	0.00	0.12	0.01	0.11
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.91	5.64	7.62	-	0.19	0.19	0.00
Bldg Const Worker Trips	0.02	0.01	0.23	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	1.91	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.01	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.01	0.07	0.10	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	2.86	5.72	7.98	0.00	0.20	0.19	0.01
Total all phases tons/yr	2.92	6.08	8.48	0.00	0.32	0.20	0.12

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '20

Phase 2 Duration: 1.3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Crawler Tractors	143	0.575	8.0
0	Graders	174	0.575	8.0
0	Off Highway Trucks	417	0.490	8.0
0	Rubber Tired Loaders	165	0.465	8.0
0	Scrapers	313	0.660	8.0
0	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '20
Phase 3 Duration: 10.7 months
Start Month/Year for SubPhase Building: Feb '20
SubPhase Building Duration: 10.7 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Nov '20
SubPhase Architectural Coatings Duration: 1.1 months
Start Month/Year for SubPhase Asphalt: Dec '20
SubPhase Asphalt Duration: 0.5 months
Acres to be Paved: 4.3

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

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Changes made to the default values for Construction

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.00602
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0116

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\North Fork Village\NFV - Operational 2015.urb
Project Name: North Fork Village - Mid Buildout 2015
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	19.70	3.65	51.14	0.16	8.04

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	22.95	24.72	255.26	0.27	24.07

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	42.65	28.37	306.40	0.44	32.11

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.20	2.68	1.49	0.00	0.01
Hearth	6.14	0.96	49.23	0.16	8.03
Landscaping	0.06	0.01	0.41	0.00	0.00
Consumer Prdcts	11.77	-	-	-	-
Architectural Coatings	1.53	-	-	-	-
TOTALS (tpy, unmitigated)	19.70	3.65	51.14	0.16	8.04

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Rural	0.06	0.07	0.75	0.00	0.07
Very Low Density	1.28	1.44	15.11	0.02	1.44
Low Density	2.95	3.30	34.65	0.04	3.31
Medium Density	4.80	5.26	55.20	0.06	5.27
High Density	0.94	1.04	10.87	0.01	1.04
Mixed Use Residential	1.65	1.81	18.99	0.02	1.81
Total Commercial	10.75	11.38	115.30	0.12	10.71
General office	0.50	0.43	4.39	0.00	0.42
TOTAL EMISSIONS (tons/yr)	22.95	24.72	255.26	0.27	24.07

Includes correction for passby trips.
Includes the following double counting adjustment for internal trips:
Residential trips: 0.00 % reduction. Nonresidential trips: 0.00 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2015 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Rural	0.00	11.28 trips/dwelling unit	6.20	69.94
Very Low Density	0.00	11.11 trips/dwelling unit	127.10	1,412.08
Low Density	0.00	10.61 trips/dwelling unit	305.30	3,239.23
Medium Density	0.00	9.05 trips/dwelling unit	570.20	5,160.31
High Density	0.00	9.07 trips/dwelling unit	112.00	1,015.84
Mixed Use Residential	0.00	9.00 trips/dwelling unit	197.30	1,775.70
Total Commercial		42.94 trips/1000 sq. ft.	387.2016	,626.37
General office		3.32 trips/1000 sq. ft.	142.78	474.03

Sum of Total Trips	29,773.50
Total Vehicle Miles Traveled	176,419.67

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.13	0.40	99.40	0.20
Light Truck < 3,750 lbs	22.46	0.70	98.00	1.30
Light Truck 3,751- 5,750	16.44	0.60	98.80	0.60
Med Truck 5,751- 8,500	6.42	0.00	98.60	1.40
Lite-Heavy 8,501-10,000	0.16	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.03	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.72	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.52	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	50.00	50.00
Motorcycle	1.26	50.00	50.00	0.00
School Bus	0.01	0.00	0.00	100.00
Motor Home	0.75	0.00	93.30	6.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Total Commercial				2.0	1.0	97.0
General office				35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/2.07 to 11.28/.
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/7.94 to 11.11/.
The Trip Rate and/or Acreage values for Apartments mid rise
have changed from the defaults 5.76/8.03 to 10.61/.
The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/9.2 to 9.05/.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/7. to 9.07/.
The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.08 to 9/.

Changes made to the default values for Area

The landscape year changed from 2005 to 2015.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Mitigation measure Residential Electric Landscape Maintenance Equipment
     has been changed from off to on.
Mitigation measure Commercial/Industrial Electric Landscape Maintenance Equipment
     has been changed from off to on.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The light auto percentage changed from 54.4 to 51.13.
The light truck < 3750 lbs percentage changed from 15.3 to 22.46.
The light truck 3751-5750 percentage changed from 16.4 to 16.44.
The med truck 5751-8500 percentage changed from 7.3 to 6.42.
The lite-heavy truck 8501-10000 percentage changed from 1.1 to 0.16.
The lite-heavy truck 10001-14000 percentage changed from 0.3 to 0.03.
The med-heavy truck 14001-33000 percentage changed from 1.0 to 0.72.
The heavy-heavy truck 33001-60000 percentage changed from 0.8 to 0.52.
The urban bus percentage changed from 0.2 to 0.10.
The motorcycle percentage changed from 1.6 to 1.26.
The school bus percentage changed from 0.1 to 0.01.
The motorhome percentage changed from 1.5 to 0.75.
The operational emission year changed from 2005 to 2015.
The paved road silt loading factor changed from 0.1 to .031.

URBEMIS 2002 For Windows 8.7.0

File Name: E:\URBEMIS\North Fork Village\NFV - Operational 2025.urb
Project Name: North Fork Village - Full Buildout 2025
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	43.62	8.10	112.88	0.36	17.81

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	25.90	24.35	272.95	0.61	53.71

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	69.52	32.45	385.83	0.97	71.52

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.45	5.96	3.34	0.00	0.01
Hearth	13.62	2.14	109.11	0.36	17.80
Landscaping	0.06	0.01	0.44	0.00	0.00
Consumer Prdcts	26.08	-	-	-	-
Architectural Coatings	3.41	-	-	-	-
TOTALS (tpy, unmitigated)	43.62	8.10	112.88	0.36	17.81

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Rural	0.07	0.07	0.81	0.00	0.16
Very Low Density	1.45	1.43	16.28	0.04	3.24
Low Density	3.35	3.27	37.35	0.08	7.43
Medium Density	5.29	5.06	57.79	0.13	11.50
High Density	1.07	1.03	11.71	0.03	2.33
Mixed Use Residential	1.88	1.79	20.48	0.05	4.07
Total Commercial	12.19	11.28	123.81	0.27	24.04
General office	0.60	0.42	4.73	0.01	0.94
TOTAL EMISSIONS (tons/yr)	25.90	24.35	272.95	0.61	53.71

Includes correction for passby trips.
Includes the following double counting adjustment for internal trips:
Residential trips: 0.00 % reduction. Nonresidential trips: 0.00 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2025 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Rural	37.00	11.28 trips/dwelling unit	14.00	157.92
Very Low Density	494.00	11.11 trips/dwelling unit	286.00	3,177.46
Low Density	566.00	10.61 trips/dwelling unit	687.00	7,289.07
Medium Density	302.00	9.11 trips/dwelling unit	1,238.00	11,278.18
High Density	60.00	9.07 trips/dwelling unit	252.00	2,285.64
Mixed Use Residential	101.00	9.00 trips/dwelling unit	444.00	3,996.00
Total Commercial		42.94 trips/1000 sq. ft.	871.20	37,409.33
General office		3.32 trips/1000 sq. ft.	321.26	1,066.58
		Sum of Total Trips		66,660.18
		Total Vehicle Miles Traveled		394,472.70

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	50.28	0.00	100.00	0.00
Light Truck < 3,750 lbs	23.04	0.00	99.40	0.60
Light Truck 3,751- 5,750	16.53	0.00	100.00	0.00
Med Truck 5,751- 8,500	6.59	0.00	98.70	1.30
Lite-Heavy 8,501-10,000	0.14	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.02	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.64	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.51	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.09	0.00	50.00	50.00
Motorcycle	1.17	40.00	60.00	0.00
School Bus	0.00	0.00	0.00	100.00
Motor Home	0.99	0.00	90.00	10.00

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Total Commercial				2.0	1.0	97.0
General office				35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/4.67 to 11.28/37
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/17.88 to 11.11/494
The Trip Rate and/or Acreage values for Apartments mid rise
have changed from the defaults 5.76/18.08 to 10.61/566
The Trip Rate and/or Acreage values for Apartments high rise
have changed from the defaults 5.29/19.97 to 9.11/302
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/15.75 to 9.07/60
The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/6.94 to 9./101

Changes made to the default values for Area

The landscape year changed from 2005 to 2015.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.00602.

The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0116.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The light auto percentage changed from 53.5 to 50.28.
The light truck < 3750 lbs percentage changed from 15.7 to 23.04.
The light truck 3751-5750 percentage changed from 16.5 to 16.53.
The med truck 5751-8500 percentage changed from 7.5 to 6.59.
The lite-heavy truck 8501-10000 percentage changed from 1.0 to .14.
The lite-heavy truck 10001-14000 percentage changed from 0.3 to .02.
The med-heavy truck 14001-33000 percentage changed from 0.9 to .64.
The heavy-heavy truck 33001-60000 percentage changed from 0.8 to .51.
The urban bus percentage changed from 0.2 to .09.
The motorcycle percentage changed from 1.5 to 1.17.
The school bus percentage changed from 0.1 to 0.
The motorhome percentage changed from 2.0 to .99.
The operational emission year changed from 2005 to 2025.
The paved road silt loading factor changed from 0.1 to .031.

Acoustical Analysis Report

ACOUSTICAL ANALYSIS REPORT
for
North Folk Village Specific Plan
Madera County, California

Prepared For:

Madera County
Resource Agency
Planning Department
2037 W. Cleveland Avenue
Madera, CA 93637

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December 4, 2006

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Appendix A: FHWA-RD-77-108 Noise Model Worksheets

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SECTION 1:
INTRODUCTION AND SETTING

1.1 - Purpose of Report and Study Objectives

This noise study was prepared to address the potential for significant effects related to noise. The objectives of this study include the following:

- Determine if County of Madera land use compatibility standards would be exceeded;
- Discuss analytical methodology and parameters used for noise modeling and evaluate the noise level results; and
- Determine necessary mitigation measures that would maintain required noise levels.

1.2 - Project Description and Setting

1.2.1 - Site Location

The proposed North Fork Village project site is a 2,238-acre project site is situated in southern Madera County, approximately 1 mile northwest of Friant, California and is the northernmost property of the Rio Mesa Area Plan (RMAP). The site is in unincorporated portion of the Madera County and lies adjacent to Millerton Lake.

The property is bounded by the Sierra Nevada foothills to the north, State Route (SR) 145 to the west, Road 206 to the south and Lake Millerton to the east.

1.2.2 - Development Description

The applicant is requesting approval of a mixed-use project called North Fork Village-1 (NFV-1) and associated actions for the entitlements necessary to develop the 2,238-acre project site. The actions needed to develop the property include approval of: 1) Environmental Impact Report; 2) Specific Plan; 3) Vesting Tentative Tract Map; and 4) Development Agreement between the applicant, Friant Development Corporation and the County of Madera. The NFV-1 project has been designed consistent with the land use allocations in the RMAP. However, a minor General Plan Amendment to conform the general land use categories of the RMAP more precisely with the specific land uses in the NFV-1 Specific Plan is also proposed.

The applicant proposes to develop approximately 3,000 residential, dwelling units and approximately 1,500,000 square feet (sq ft) of commercial/mixed use space, a 14.9-acre elementary school, and

supporting infrastructure improvements. A total of 619 acres of open space and additional revegetation areas are also planned as part of the project.

The project is located within the RMAP, which was adopted by the Madera County Board of Supervisors in March 1995. The NFV-1 Specific Plan is a comprehensive document that guides future development of the northern portion of the North Fork Neighborhood subarea of the RMAP and serves as the zoning document for the entire Specific Plan area. The Specific Plan contains a conceptual development plan, development regulations, design guidelines, and implementation consistent with the goals, objectives, and policies of the Madera County General Plan and the RMAP.

The Specific Plan is divided into six Neighborhoods, divided along natural landmarks and topographic features. As illustrated on Exhibit 3-3, General Plan Land Use, the project is located within North Fork Neighborhood, one of three community Neighborhoods of the RMAP. The Land Use Plan contained within the NFV-1 Specific Plan designates the project site for medium, low, very low, and rural residential, commercial, mixed use, open space and public lands.

The Specific Plan contains provisions to monitor future development, to ensure compliance with the regulations and standards of the Madera County General Plan and to establish a record of progress in the phasing of development and the implementation of required infrastructure. To accomplish these tasks, the RMAP monitoring program requires that each sub-Neighborhood create a self-sustaining infrastructure master plan.

1.3 - Existing Noise Levels

The project site is currently vacant property. The Arnold Ranch Airport is located 7 miles to the southwest and consists of a single runway, oriented to the West, capable of supporting only small airplanes. The Fresno Air Terminal is located 15 miles to the south; its runway oriented to the northwest. The project site is outside of the 60 dBA CNEL noise contour for the airport and the designated aircraft landing and take-off paths are not over the proposed site. Therefore, aircraft noise onsite is minimal.

Dominant noise sources at the project site are vehicle traffic on Road 145 and Millerton Rd on the north western boundary, Road 206 on the eastern and southern boundary, and Highway 41 just over 3 miles to the west. All these roadways contact the project site with the exception of Highway 41. The town of Friant is less than a mile to the southeast of the project site.

SECTION 2:
DEFINITION OF TERMS

2.1 - Noise Terminology

Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA. Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3 dBA decrease. Table 1 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dB L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3)}$ would represent a 3-hour average. When no period is specified, a one hour average is assumed. Noise standards for land use compatibility, which are addressed in the Riverside County General Plan Noise Element, are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (Ldn). CNEL is a 24-hour weighted average measure of community noise. The computation of CNEL adds 5 dBA to the average hourly noise levels between 7 p.m. and 10 p.m. (evening hours), and 10 dBA to the average hourly noise levels between 10 p.m. and 7:00 a.m. (nighttime hours). This weighting accounts for the increased human sensitivity to noise in the evening and nighttime hours. Ldn is a very similar 24-hour weighted average which weights only the nighttime hours and not the evening hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increases or decreases; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud (Caltrans 1998).

Table 1 – Sound Levels of Typical Noise Sources and Noise Environments

Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
Military Jet Take-off with After-burner (50 ft) Civil Defense Siren (100 ft)	130	Carrier Flight Deck	
Commercial Jet Take-off (200 ft)	120	Airport Runway	Threshold of Pain *32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Power Lawn Mower (3 ft) Motorcycle (25 ft) Propeller Plane Flyover (1,000 ft) Diesel Truck, 40 mph (50 ft) Garbage Disposal (3 ft)	100 90 80	 Boiler Room Printing Press Plant High Urban Ambient Sound	Very Loud *8 times as loud *4 times as loud *2 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (3 ft) Electronic Typewriter (10 ft)	 70 	Busy Shopping Mall Indoor Sports Park	 Moderately Loud *70 dB (Reference Loudness)
Normal Conversation (5 ft) Air Conditioning Unit (100 ft)	60	Data Processing Center Department Store	*1/2 as loud
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	Quiet *1/8 as loud
Soft Whisper (5 ft)	30 20 10	Rural Residential Area Quiet Bedroom	 Just Audible Threshold of Hearing

SECTION 3: ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

3.1 - Noise Standards

The County of Madera has adopted the State of California noise/land use compatibility standards shown in Table 2. Pursuant to this table, exterior noise levels for residential ranging up to 65 dBA CNEL are classified as "normally acceptable," based upon the assumption that the homes are built with normal conventional construction. Exterior noise levels for schools and office space ranging up to 70 dBA CNEL are classified as "normally acceptable. Exterior noise levels ranging up to 70 dBA CNEL at residential uses are "conditionally acceptable." "Conditionally acceptable" means that noise levels are acceptable only when a detailed noise analysis is conducted and needed noise insulation features are included in the design. Noise levels above 70 dBA CNEL for residential and schools and 75 dBA CNEL for office uses are normally unacceptable and development of these land uses in noise environments are discouraged.

Also of concern are project generated impacts to sensitive receptors in the project area. The County of Madera defines sensitive receptors of noise as residences, schools, libraries, hospitals, churches, etc. "Noise impacted projects" are defined as residential projects, or portions thereof, which are exposed to an exterior noise level of 60 dBA CNEL or greater. As presented in Table 2, the State of California's noise/land use compatibility standards categorize residential outdoor noise levels of up to 60 dB CNEL as "normally" acceptable. If outdoor noise levels are expected to exceed 60 dB CNEL, a detailed noise analysis may be required. The County of Madera has established standards and guidelines to more specifically implement the residential element of the State of California noise/land use compatibility guidelines. In relation to the development of new homes and potential traffic noise impacts, the County requires that residential outdoor noise levels not exceed 60 dB Ldn/CNEL and indoor noise levels in residential dwellings not exceed 45 dB Ldn/CNEL.

3.2 - Noise Model and Noise Model Input

Future peak hour traffic noise levels were modeled using the Federal Highway Administration Noise Prediction Model (FHWA-RD-77-108). The model can calculate noise levels for varying traffic volumes, mix and speeds. Output sheets from this model are included as Appendix A.

Table 2 – California Land Use Compatibility Noise Guidelines

Land Use Category	Community Noise Exposure (Ldn, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential—Low Density, Single-family, Duplex, Mobile Homes	50-60	55-70	70-75	75-85
Residential—Multi-family	50-65	60-70	70-75	75-85
Transient Lodging—Motels, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	NA	65-85
Sports Arenas, Outdoor Spectator Sports	NA	50-75	NA	70-85
Playgrounds, Neighborhood Parks	50-70	NA	67.5-75	72.5-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	NA
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	NA

Source: County of Madera General Plan Noise Element 2005.

Notes:

Normally Acceptable—Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable. New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable. New construction or development should generally not be undertaken.

NA: Not Applicable

3.2.1 - Affected Roadways

Existing and proposed residential units may be affected by traffic noise generated on adjacent roadways. Traffic volumes were entered into the noise model for each of the roadways. The affected roadways include:

- State Highway (SR) 41 south of Avenue 12;
- SR-41 between Avenue 12 to Avenue 15;
- SR-41 between Avenue 15 and Road 145;
- SR-41 between Road 145 to Road 208;
- Friant Road south from Road 206 to North Willow (FSB);
- Road 211 north of Road 145/Road 206 (211NB);
- Road 145 west from Road 206/Road 211;
- Road 145 between SR 41 to Road 206/Road 211;and
- Road 206 south from Road 145/Road 211 to Fraint Road.

3.2.2 - Speed and Traffic Mix

The model used a speed of 45 miles per hour (mph) for all of the roadways. The traffic mix of approximately 95 percent automobiles, 4 percent medium duty trucks, and 1 percent heavy-duty trucks,

3.2.3 - Site Parameters/Terrain

The area was modeled as an all pavement “hard” site to predict worst-case impacts.

3.2.4 - Sensitive Receptors

Sensitive receptors are activities or land uses that may be subject to the stress of significant interference from noise. Land uses associated with sensitive receptors often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries. The town of Friant is less than a mile to the southeast and less than two miles to the south is Lost Lake Recreation Area. Located to the south between 4 and 8 miles are three golf clubs, River Bend, Copper River, and Fort Washington respectively.

SECTION 4:
FINDINGS AND RECOMMENDATIONS

4.1 - Construction Noise Impacts

Development of the project would require site preparation (i.e., land clearing, grading, excavation and trenching) and construction of the buildings and infrastructure. These activities typically involve the use of heavy equipment, such as graders, backhoes, and cranes. Trucks would be used to deliver equipment and building materials, and to haul away waste materials. Smaller equipment, such as air compressors, pneumatic tools, plate compactors, and concrete vibrators would also be used throughout the site during its development. This equipment would generate noise that would be heard both on and off the Project site. Table 3 lists typical construction equipment noise levels for equipment that would be used during construction of the proposed project. Construction activities are carried out in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 3 – Noise Associated with Typical Construction Equipment

Type of Equipment	Maximum Noise Levels Measured (dBA at 50 feet)
Grader	89
Backhoe	90
Pneumatic Tools	88
Air Compressor	86
Crane	83
Plate Compactor	89
Concrete Vibrator	85
Trucks	87
Source: Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, BBN 1971.	

The grading and site preparation phase tends to create the highest noise levels, because the noisiest construction equipment is found in the earthmoving equipment category. This category includes excavating machinery (backhoes) and earthmoving and compacting equipment (graders compactors

etc.). Typical operating cycles may involve 1 or 2 minutes of full power operation producing noise levels similar to those shown in Table 2, followed by 3 or 4 minutes of lower power settings. Combined instantaneous noise levels at 50 feet from earthmoving equipment range from 73 to 100 dBA while combined Leq noise levels range up to about 89 dBA.

The construction schedule and phasing of the project is unknown at this time. However, it can be reasonably expected that once the initial phases of the development are built, that residential units in the initial phase of the project may be in close proximity to construction activities associated with subsequent phasing of the project. For this reason, mitigation is needed to reduce temporary noise impacts associated with construction.

Another potential noise impact resulting from construction of the proposed project is groundborne vibrations. Perceptible groundborne vibrations are typically associated with blasting operations and potentially the use of pile drivers, neither of which will be used during construction of the proposed project. As such, no excessive groundborne vibration would be created by the proposed project, and therefore, impacts due to project generated groundborne vibrations are less than significant.

4.2 - Long-Term Vehicular Noise Impacts

Outdoor Noise Levels. In reviewing project impacts, future noise levels were compared with the County standards for residential uses since these are the sensitive receptors in the project area and have the most restrictive noise standards. The County of Madera new home residential outdoor noise levels must not exceed 60 dB Ldn/CNEL. Future evening peak hour traffic noise levels were modeled and converted to CNEL to address potential exceedances of the 60 dB CNEL standard using a day/evening/night traffic split of 75/10/15. Table 4 summarizes the results of this analysis. Project related impacts are greatest on Road 211, Road 206, and Road 145 immediately adjacent to the project site (2.8 dBA differential between with and without project). Noise levels at these locations violate the County's 60 dBA CNEL standard and mitigation is required to reduce these noise levels. The County's 60 dBA CNEL standard is exceeded in, existing, and future with and without the project adjacent to or exposed to and near all other road segments modeled except Friant Road. Because of the high traffic volumes on these roadways, existing and future noise levels adjacent to these roadways exceed the County's 60 dBA CNEL standard for residential properties. However, the project's contribution to the cumulative noise level is estimated to be extremely low (between 1.3 to less than 0.1 dBA) and would not be perceptible.

Table 4 – Existing and Future Year 2030 Noise Impacts

Street-Segment	Existing	Future-No Project	Future-With Project	Change from Existing	Change from Future with No Project
SR-41 south of Avenue 12[1]	64.2	64.9	64.9	0.7	>0.1
SR-41 between Avenue 12 to Avenue 15[1]	62.0	62.4	63.2	1.2	0.8
SR-41: between Avenue 15 and Road 145	60.3	64.0	65.3	5.0	1.3
SR-41 between Road 145 to Road 208 [1]	60.7	63.2	63.3	2.6	0.1
Friant Road south of Road 206 [2]	51.9	53.6	53.7	1.8	0.1
Road 211[1]	47.2	59.0	61.8	14.7	2.8
Road 145 west of SR-41[1]	50.6	60.2	62.9	12.3	2.7
Road 145: between of SR-41 to Road 206/Road 211[1]	53.4	62.6	64.7	11.3	2.1
Road 206: between Road 145 to Friant Road[1]	57.1	59.9	62.2	5.1	2.3

Source: MBA 2006

[1] Measured at 228 feet from roadway centerline (approximate location of the closest edge of residential property lines)

[2] Measured at 114 feet from roadway centerline (approximate location of the closest edge of residential property lines)

Indoor Noise Levels. Standard construction, as required by the Uniform Building Code and Title 24 of the California Code of Regulations, typically can provide a 20 dB noise reduction. Therefore, homes with outdoor noise levels that do not exceed 65 dB CNEL would most likely have indoor noise levels that do not exceed 45 dB CNEL. When project grading plans and architectural plans become available, an indoor noise analysis should be conducted for the proposed residential units within the North Fork Specific Plan in close proximity to or exposed to Road 145, Road 206, or Road 211 to insure that the interior noise levels are not exceeded within future residential uses.

4.3 - Recommendations

A construction noise mitigation plan should be prepared and approved prior to the start of construction that contains the following:

Noise Mitigation 1 The final grading and construction plans will include conditions requiring all construction equipment to be properly maintained with operating mufflers and air intake silencers, and prioritize the location of equipment staging and storage away from residential uses when practical. This measure shall be implemented to the satisfaction of the County Planning Director.

The following measures shall be implemented to ensure that long-term exterior noise levels do not exceed County standards:

Noise Mitigation 2 Perimeter walls, berms or other noise attenuation features of sufficient height (approximately 6 feet tall) to reduce exterior traffic noise to 60 dB CNEL or less will be erected adjacent to any proposed residential units within 600 feet of Road 145, Road 206, or Road 211.

Noise Mitigation 3 An acoustical study shall be performed for all residential units proposed along any collector street or arterial roadway within the proposed specific plan. The study shall be completed and submitted prior to final plan check approval. Perimeter walls, berms or other attenuation features as recommended in the study sufficient to reduce exterior traffic noise to 60 dB CNEL or less will be erected at the locations designated in the study.

With mitigation incorporated into the project to reduce outdoor noise levels at the proposed residential units along all roadways, impacts are less than significant.

When grading plans and architectural plans become available, an indoor noise analysis should be conducted for the proposed residential units in close proximity to or exposed to roadway noise as follows:

Noise Mitigation 4 An acoustical study shall be performed ground level and second stories of residential units adjacent to all collector and arterial roadways to verify that the structural features are adequate to meet the 45 dB CNEL interior standard. The study shall be completed and submitted prior to final plan

check approval. Noise attenuation features recommended in the study such as dual-paned windows, deck balcony enclosures, and/or additional insulation requirements sufficient to reduce interior noise levels to 45 dB CNEL or less interior noise levels shall be implemented.

With mitigation incorporated into the proposed project interior noise levels meet the thresholds and impacts are less than significant.

SECTION 5:
REFERENCES

Federal Highway Administration (FHWA)
1979 FHWA Highway Noise Prediction Model. Report No. FHWA-RD-77-108.

California Department of Transportation (Caltrans)
1983 California Vehicle Emission Noise Levels (Calveno). Report No. FHWA/CA/TI-84/13. August 1983.

California Department of Transportation (Caltrans)
1998 Traffic Noise Analysis Protocol for New Highway and Reconstruction Projects, including Technical Noise Supplement. October 1998.

County of Madera Planning Department
1994 Rio Mesa Area Plan Draft EIR. March 1994.

County of Madera Planning Department
2005 County of Madera General Plan, Noise Element. Adopted 2005.

County of Madera Planning Department
2006 North Fork Village Specific Plan. Draft 2006.

Peters Engineering Group
2006 Traffic Impact Study Proposed NFV1 Specific Plan, Madera CA. November 2, 2006.

Appendix A:
FHWA-RD-77-108 Noise Model Worksheets

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: SR-41 South of Avenue 12

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) 57	114	228	456	912	1824	3648
				(meters) 17	35	69	139	278	556	1112
EXISTING										
Autos	30372	2974	71.4	70.4	65.9	61.4	56.9	52.3	47.8	43.3
Med Trucks	1279	125	68.6	67.6	63.1	58.6	54.1	49.6	45.1	40.5
Hvy Trucks	320	31	67.4	66.4	61.9	57.4	52.9	48.4	43.8	39.3
TOTAL	31970	3130	74.2	73.3	68.7	64.2	59.7	55.2	50.7	46.2
FUTURE NO PROJECT										
Autos	35169	3444	72.0	71.0	66.5	62.0	57.5	53.0	48.5	43.9
Med Trucks	1481	145	69.2	68.3	63.8	59.2	54.7	50.2	45.7	41.2
Hvy Trucks	370	36	68.0	67.1	62.5	58.0	53.5	49.0	44.5	40.0
TOTAL	37020	3625	74.8	73.9	69.4	64.9	60.3	55.8	51.3	46.8
FUTURE WITH PROJECT										
Autos	35692	3495	72.1	71.1	66.6	62.1	57.6	53.0	48.5	44.0
Med Trucks	1503	147	69.3	68.3	63.8	59.3	54.8	50.3	45.8	41.2
Hvy Trucks	376	37	68.1	67.1	62.6	58.1	53.6	49.1	44.5	40.0
TOTAL	37570	3679	74.9	74.0	69.4	64.9	60.4	55.9	51.4	46.9
CHANGE FROM EXISTING										
Autos	5320	521	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Med Trucks	224	22	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Hvy Trucks	56	5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
TOTAL	5600	548	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
CHANGE FROM FUTURE NO PROJECT										
Autos	523	51	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Med Trucks	22	2	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Hvy Trucks	6	1	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
TOTAL	550	54	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: SR-41 Bwtween Avenue 12 and Avenue 15

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) (meters) 57 17	114 35	228 69	456 139	912 278	1824 556	3648 1112
EXISTING										
Autos	18060	1768	69.1	68.1	63.6	59.1	54.6	50.1	45.6	41.0
Med Trucks	760	74	66.3	65.4	60.9	56.3	51.8	47.3	42.8	38.3
Hvy Trucks	190	19	65.1	64.2	59.6	55.1	50.6	46.1	41.6	37.1
TOTAL	19010	1861	72.0	71.0	66.5	62.0	57.4	52.9	48.4	43.9
FUTURE NO PROJECT										
Autos	20150	1973	69.6	68.6	64.1	59.6	55.1	50.6	46.0	41.5
Med Trucks	848	83	66.8	65.8	61.3	56.8	52.3	47.8	43.3	38.8
Hvy Trucks	212	21	65.6	64.6	60.1	55.6	51.1	46.6	42.1	37.5
TOTAL	21210	2077	72.4	71.5	67.0	62.4	57.9	53.4	48.9	44.4
FUTURE WITH PROJECT										
Autos	23950	2345	70.3	69.4	64.9	60.3	55.8	51.3	46.8	42.3
Med Trucks	1008	99	67.6	66.6	62.1	57.6	53.1	48.5	44.0	39.5
Hvy Trucks	252	25	66.3	65.4	60.9	56.4	51.8	47.3	42.8	38.3
TOTAL	25210	2468	73.2	72.2	67.7	63.2	58.7	54.2	49.6	45.1
CHANGE FROM EXISTING										
Autos	5890	577	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Med Trucks	248	24	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Hvy Trucks	62	6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
TOTAL	6200	607	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
CHANGE FROM FUTURE NO PROJECT										
Autos	3800	372	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Med Trucks	160	16	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hvy Trucks	40	4	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
TOTAL	4000	392	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day		Fleet Mix	
70.0%	Day	95.0%	Autos
15.0%	Evening	4.0%	Medium Trucks
15.0%	Night	1.0%	Heavy Trucks
100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: SR-41 between Avenue 15 to Road 145

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) (meters) 57 17	114 35	228 69	456 139	912 278	1824 556	3648 1112
EXISTING										
Autos	12227	1197	67.4	66.4	61.9	57.4	52.9	48.4	43.9	39.4
Med Trucks	515	50	64.6	63.7	59.2	54.6	50.1	45.6	41.1	36.6
Hvy Trucks	129	13	63.4	62.5	57.9	53.4	48.9	44.4	39.9	35.4
TOTAL	12870	1260	70.3	69.3	64.8	60.3	55.8	51.2	46.7	42.2
FUTURE NO PROJECT										
Autos	29156	2855	71.2	70.2	65.7	61.2	56.7	52.2	47.6	43.1
Med Trucks	1228	120	68.4	67.5	62.9	58.4	53.9	49.4	44.9	40.4
Hvy Trucks	307	30	67.2	66.2	61.7	57.2	52.7	48.2	43.7	39.1
TOTAL	30690	3005	74.0	73.1	68.6	64.0	59.5	55.0	50.5	46.0
FUTURE WITH PROJECT										
Autos	38912	3810	72.4	71.5	67.0	62.4	57.9	53.4	48.9	44.4
Med Trucks	1638	160	69.7	68.7	64.2	59.7	55.2	50.6	46.1	41.6
Hvy Trucks	410	40	68.4	67.5	63.0	58.5	53.9	49.4	44.9	40.4
TOTAL	40960	4011	75.3	74.3	69.8	65.3	60.8	56.3	51.7	47.2
CHANGE FROM EXISTING										
Autos	26686	2613	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Med Trucks	1124	110	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Hvy Trucks	281	28	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
TOTAL	28090	2750	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
CHANGE FROM FUTURE NO PROJECT										
Autos	9757	955	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Med Trucks	411	40	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Hvy Trucks	103	10	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
TOTAL	10270	1006	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: SR-41 between Road 145 and Road 208

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) 57 (17 meters)	114 (35 meters)	228 (69 meters)	456 (139 meters)	912 (278 meters)	1824 (556 meters)	3648 (1112 meters)
EXISTING										
Autos	13357	1308	67.8	66.8	62.3	57.8	53.3	48.8	44.3	39.7
Med Trucks	562	55	65.0	64.1	59.5	55.0	50.5	46.0	41.5	37.0
Hvy Trucks	141	14	63.8	62.8	58.3	53.8	49.3	44.8	40.3	35.8
TOTAL	14060	1377	70.6	69.7	65.2	60.7	56.1	51.6	47.1	42.6
FUTURE NO PROJECT										
Autos	24111	2361	70.4	69.4	64.9	60.4	55.9	51.3	46.8	42.3
Med Trucks	1015	99	67.6	66.6	62.1	57.6	53.1	48.6	44.1	39.5
Hvy Trucks	254	25	66.4	65.4	60.9	56.4	51.9	47.3	42.8	38.3
TOTAL	25380	2485	73.2	72.2	67.7	63.2	58.7	54.2	49.7	45.2
FUTURE WITH PROJECT										
Autos	24301	2379	70.4	69.4	64.9	60.4	55.9	51.4	46.9	42.3
Med Trucks	1023	100	67.6	66.7	62.1	57.6	53.1	48.6	44.1	39.6
Hvy Trucks	256	25	66.4	65.4	60.9	56.4	51.9	47.4	42.9	38.4
TOTAL	25580	2505	73.2	72.3	67.8	63.3	58.7	54.2	49.7	45.2
CHANGE FROM EXISTING										
Autos	10944	1072	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Med Trucks	461	45	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Hvy Trucks	115	11	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
TOTAL	11520	1128	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
CHANGE FROM FUTURE NO PROJECT										
Autos	190	19	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Med Trucks	8	1	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Hvy Trucks	2	0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
TOTAL	200	20	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: Friant Road South of Rd 208

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) 57	114	228	456	912	1824	3648
				17	35	69 (meters)	139	278	556	1112
EXISTING										
Autos	627	61	54.5	53.5	49.0	44.5	40.0	35.5	31.0	26.5
Med Trucks	26	3	51.7	50.8	46.3	41.7	37.2	32.7	28.2	23.7
Hvy Trucks	7	1	50.5	49.6	45.0	40.5	36.0	31.5	27.0	22.5
TOTAL	660	65	57.4	56.4	51.9	47.4	42.9	38.3	33.8	29.3
FUTURE NO PROJECT										
Autos	931	91	56.2	55.3	50.7	46.2	41.7	37.2	32.7	28.2
Med Trucks	39	4	53.5	52.5	48.0	43.5	38.9	34.4	29.9	25.4
Hvy Trucks	10	1	52.2	51.3	46.8	42.2	37.7	33.2	28.7	24.2
TOTAL	980	96	59.1	58.1	53.6	49.1	44.6	40.1	35.5	31.0
FUTURE WITH PROJECT										
Autos	960	94	56.4	55.4	50.9	46.4	41.8	37.3	32.8	28.3
Med Trucks	40	4	53.6	52.6	48.1	43.6	39.1	34.6	30.0	25.5
Hvy Trucks	10	1	52.4	51.4	46.9	42.4	37.9	33.3	28.8	24.3
TOTAL	1010	99	59.2	58.2	53.7	49.2	44.7	40.2	35.7	31.2
CHANGE FROM EXISTING										
Autos	333	33	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Med Trucks	14	1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Hvy Trucks	4	0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
TOTAL	350	34	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
CHANGE FROM FUTURE NO PROJECT										
Autos	29	3	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Med Trucks	1	0	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Hvy Trucks	0	0	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
TOTAL	30	3	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: Road 211

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) 57	114	228	456	912	1824	3648
				17	35	69 (meters)	139	278	556	1112
EXISTING										
Autos	599	59	54.3	53.3	48.8	44.3	39.8	35.3	30.8	26.3
Med Trucks	25	2	51.5	50.6	46.1	41.5	37.0	32.5	28.0	23.5
Hvy Trucks	6	1	50.3	49.4	44.8	40.3	35.8	31.3	26.8	22.3
TOTAL	630	62	57.2	56.2	51.7	47.2	42.7	38.1	33.6	29.1
FUTURE NO PROJECT										
Autos	9215	902	66.2	65.2	60.7	56.2	51.7	47.2	42.6	38.1
Med Trucks	388	38	63.4	62.5	57.9	53.4	48.9	44.4	39.9	35.4
Hvy Trucks	97	9	62.2	61.2	56.7	52.2	47.7	43.2	38.7	34.1
TOTAL	9700	950	69.0	68.1	63.6	59.0	54.5	50.0	45.5	41.0
FUTURE WITH PROJECT										
Autos	17556	1719	69.0	68.0	63.5	59.0	54.5	50.0	45.4	40.9
Med Trucks	739	72	66.2	65.3	60.7	56.2	51.7	47.2	42.7	38.2
Hvy Trucks	185	18	65.0	64.0	59.5	55.0	50.5	46.0	41.5	36.9
TOTAL	18480	1810	71.8	70.9	66.4	61.8	57.3	52.8	48.3	43.8
CHANGE FROM EXISTING										
Autos	16958	1660	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Med Trucks	714	70	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Hvy Trucks	179	17	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
TOTAL	17850	1748	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
CHANGE FROM FUTURE NO PROJECT										
Autos	8341	817	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Med Trucks	351	34	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Hvy Trucks	88	9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
TOTAL	8780	860	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: Road 145 west of SR-41

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) 57	114	228	456	912	1824	3648
				17	35	69 (meters)	139	278	556	1112
EXISTING										
Autos	1321	129	57.7	56.8	52.3	47.8	43.2	38.7	34.2	29.7
Med Trucks	56	5	55.0	54.0	49.5	45.0	40.5	36.0	31.4	26.9
Hvy Trucks	14	1	53.8	52.8	48.3	43.8	39.3	34.7	30.2	25.7
TOTAL	1390	136	60.6	59.6	55.1	50.6	46.1	41.6	37.1	32.5
FUTURE NO PROJECT										
Autos	12037	1179	67.3	66.4	61.9	57.3	52.8	48.3	43.8	39.3
Med Trucks	507	50	64.6	63.6	59.1	54.6	50.1	45.5	41.0	36.5
Hvy Trucks	127	12	63.4	62.4	57.9	53.4	48.8	44.3	39.8	35.3
TOTAL	12670	1241	70.2	69.2	64.7	60.2	55.7	51.2	46.7	42.1
FUTURE WITH PROJECT										
Autos	22183	2172	70.0	69.0	64.5	60.0	55.5	51.0	46.5	41.9
Med Trucks	934	91	67.2	66.3	61.8	57.2	52.7	48.2	43.7	39.2
Hvy Trucks	234	23	66.0	65.0	60.5	56.0	51.5	47.0	42.5	38.0
TOTAL	23350	2286	72.8	71.9	67.4	62.9	58.3	53.8	49.3	44.8
CHANGE FROM EXISTING										
Autos	20862	2043	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Med Trucks	878	86	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Hvy Trucks	220	22	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
TOTAL	21960	2150	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
CHANGE FROM FUTURE NO PROJECT										
Autos	10146	993	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Med Trucks	427	42	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Hvy Trucks	107	10	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTAL	10680	1046	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day		Fleet Mix	
70.0%	Day	95.0%	Autos
15.0%	Evening	4.0%	Medium Trucks
15.0%	Night	1.0%	Heavy Trucks
100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: Road 145 between SR-41 and Road 206/211

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) (meters) 57	114	228	456	912	1824	3648
				17	35	69	139	278	556	1112
EXISTING										
Autos	2518	247	60.5	59.6	55.1	50.6	46.0	41.5	37.0	32.5
Med Trucks	106	10	57.8	56.8	52.3	47.8	43.3	38.8	34.2	29.7
Hvy Trucks	27	3	56.6	55.6	51.1	46.6	42.1	37.5	33.0	28.5
TOTAL	2650	259	63.4	62.4	57.9	53.4	48.9	44.4	39.9	35.3
FUTURE NO PROJECT										
Autos	21043	2060	69.8	68.8	64.3	59.8	55.3	50.7	46.2	41.7
Med Trucks	886	87	67.0	66.0	61.5	57.0	52.5	48.0	43.5	38.9
Hvy Trucks	222	22	65.8	64.8	60.3	55.8	51.3	46.8	42.2	37.7
TOTAL	22150	2169	72.6	71.7	67.1	62.6	58.1	53.6	49.1	44.6
FUTURE WITH PROJECT										
Autos	33972	3326	71.8	70.9	66.4	61.9	57.3	52.8	48.3	43.8
Med Trucks	1430	140	69.1	68.1	63.6	59.1	54.6	50.1	45.5	41.0
Hvy Trucks	358	35	67.9	66.9	62.4	57.9	53.4	48.8	44.3	39.8
TOTAL	35760	3502	74.7	73.7	69.2	64.7	60.2	55.7	51.2	46.6
CHANGE FROM EXISTING										
Autos	31455	3080	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Med Trucks	1324	130	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Hvy Trucks	331	32	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
TOTAL	33110	3242	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
CHANGE FROM FUTURE NO PROJECT										
Autos	12930	1266	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Med Trucks	544	53	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Hvy Trucks	136	13	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
TOTAL	13610	1333	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day			Fleet Mix	
	70.0%	Day	95.0%	Autos
	15.0%	Evening	4.0%	Medium Trucks
	15.0%	Night	1.0%	Heavy Trucks
	100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group

Table 1
TRAFFIC NOISE IMPACT
North Folk Village
YEAR 2030

Location: Road 206 between Friant and Road 145

Vehicle Type	Traffic Volume 24-hr volume	Traffic Volume Equiv 1-hr	Noise Reference Level (15 meters	Noise Level (dB Ldn) Centerline Distance (feet) (meters) 57	114	228	456	912	1824	3648
				17	35	69	139	278	556	1112
EXISTING										
Autos	5947	582	64.3	63.3	58.8	54.3	49.8	45.3	40.7	36.2
Med Trucks	250	25	61.5	60.5	56.0	51.5	47.0	42.5	38.0	33.5
Hvy Trucks	63	6	60.3	59.3	54.8	50.3	45.8	41.3	36.8	32.2
TOTAL	6260	613	67.1	66.2	61.7	57.1	52.6	48.1	43.6	39.1
FUTURE NO PROJECT										
Autos	11362	1113	67.1	66.1	61.6	57.1	52.6	48.1	43.6	39.0
Med Trucks	478	47	64.3	63.4	58.8	54.3	49.8	45.3	40.8	36.3
Hvy Trucks	120	12	63.1	62.1	57.6	53.1	48.6	44.1	39.6	35.1
TOTAL	11960	1171	69.9	69.0	64.5	59.9	55.4	50.9	46.4	41.9
FUTURE WITH PROJECT										
Autos	19181	1878	69.4	68.4	63.9	59.4	54.9	50.3	45.8	41.3
Med Trucks	808	79	66.6	65.6	61.1	56.6	52.1	47.6	43.1	38.5
Hvy Trucks	202	20	65.4	64.4	59.9	55.4	50.9	46.4	41.8	37.3
TOTAL	20190	1977	72.2	71.3	66.7	62.2	57.7	53.2	48.7	44.2
CHANGE FROM EXISTING										
Autos	13234	1296	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Med Trucks	557	55	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Hvy Trucks	139	14	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
TOTAL	13930	1364	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
CHANGE FROM FUTURE NO PROJECT										
Autos	7819	766	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Med Trucks	329	32	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Hvy Trucks	82	8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
TOTAL	8230	806	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3

Average speed: 72.4 km/hr= 45.0 mi/hr

Time of day		Fleet Mix	
70.0%	Day	95.0%	Autos
15.0%	Evening	4.0%	Medium Trucks
15.0%	Night	1.0%	Heavy Trucks
100.0%		100.0%	

Notes: Based on methods of Federal Highway Administration "Highway Traffic Noise Model", FHWA-RD-77-108, December, 1978.
Traffic data obtained from Peters Engineering Group