

Cit of Arvin CMAQ Emission Calculations			
<b>Project Description</b>			
The portion of Arvin Avenue and C Street within the project limits is located in the City of Arvin and approximately 0.14 miles in length. The project will construct asphalt concrete shoulders along C Street from State Route 223 to Arvin Ave, and along Arvin Avenue from B Street to C Street. Project improvements will include sidewalk, curb and gutter, curb ramps, drive approaches, and ancillary facilities necessary for compliance with Caltrans, City of Arvin, and the requirements of the Americans with Disabilities Act design standards.			
<b>Inputs to Calculate Cost-Effectiveness:</b>			
Total Project Cost:	\$429,000		
CMAQ Dollars:	\$379,794		
Effectiveness Period (Life):	20	yrs	
Days of Use/year (D):	365	days	
Length (L) of Curb and Gutter:	0.14	miles	
Annual Average Daily Traffic (ADT):	1120	vpd	
Length of auto trips eliminated (L <sub>vmt</sub> ):	1		
Weeks of operation per year (W):	50	yrs	
Adjustment (A) for auto access trips to transit, van & carpools:	0.0019	days	
Activity Center Credit (C):	0.0015	days	
<b>Emissions Factors (g/vehicle mile from the SJV Amended 2003 PM-10 Plan &amp; SJV Air District):</b>			
	Before Emission Factor	After Emission Factor	
PM10 Factor	907.18	1.58	
		1.58 for paved local roads 4.54 for rural local roads	
<b>Annual Emission Reductions (PM10 in pounds/year)</b>			
Daily PM10 Reductions (kg/day)	=	0.11	(After Factor / 2)*(ADT * L)*0.91/(1,000 g / kg)
Annual Emission Reductions (lbs/yr)	=	88.33	Reductions (kg/day)* 2.2 lbs/kg* 365 days/year
<b>VMT Reductions</b>			
Annual Auto VMT Reduced $D \times ADT \times (A + C) \times L_{vmt}$	=	1390	
<b>Capital Recovery Factor (CRF)</b>			
$= \frac{(1+i)^n \times i}{(1+i)^n - 1}$ <p>where <math>i</math> = Discount Rate (3%) and <math>n</math> = Project Life</p> <p>So, the capital recovery factor =</p>			
<b>Cost - Effectiveness of Funding Dollars</b>			
= (CRF x Funding)/(Annual PM10 )			300.98