

# Prioritization of CMAQ Projects

Northern Transportation and Air Quality Summit 2010

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# CMAQ Guidance

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## Federal

- FHWA's October 31, 2008 Final Program Guidance

## State

- CMAQ Program Guidance & Emissions Calculation Examples for CMAQ Improvement Program, June 12, 2002
- The 2010 Draft CMAQ Program Guidance

# CMAQ Guidance

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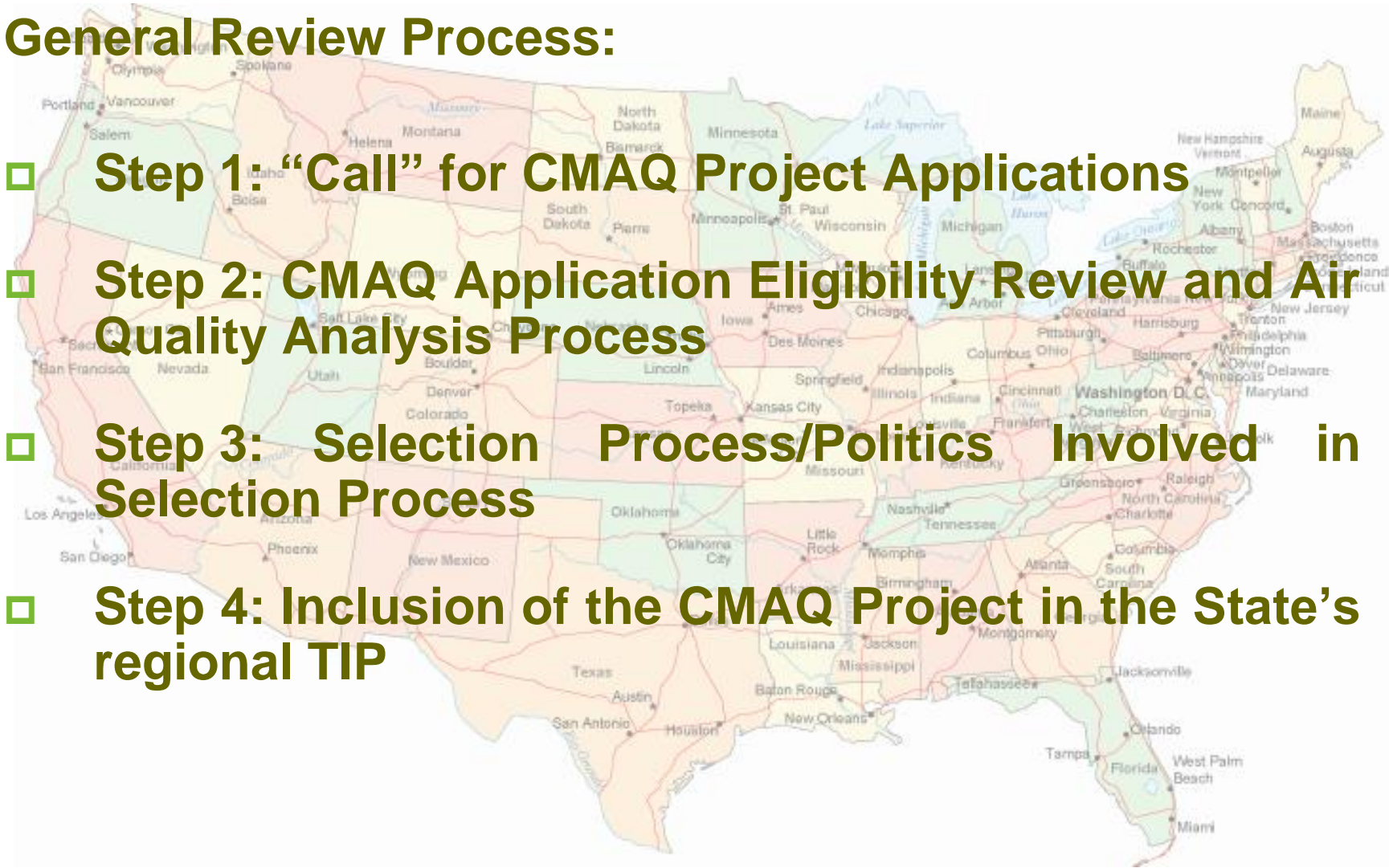
## NYSDOT's Draft Guidance Consists of:

- ❑ NYSDOT Policy
- ❑ Legal Basis
- ❑ Summary of FHWA's Final Program Guidance
- ❑ Areas of New York eligible for CMAQ funding and non-attainment/maintenance status
- ❑ Greenhouse Gases
- ❑ Completeness Determinations
- ❑ CMAQtraq
- ❑ Emission Scoring

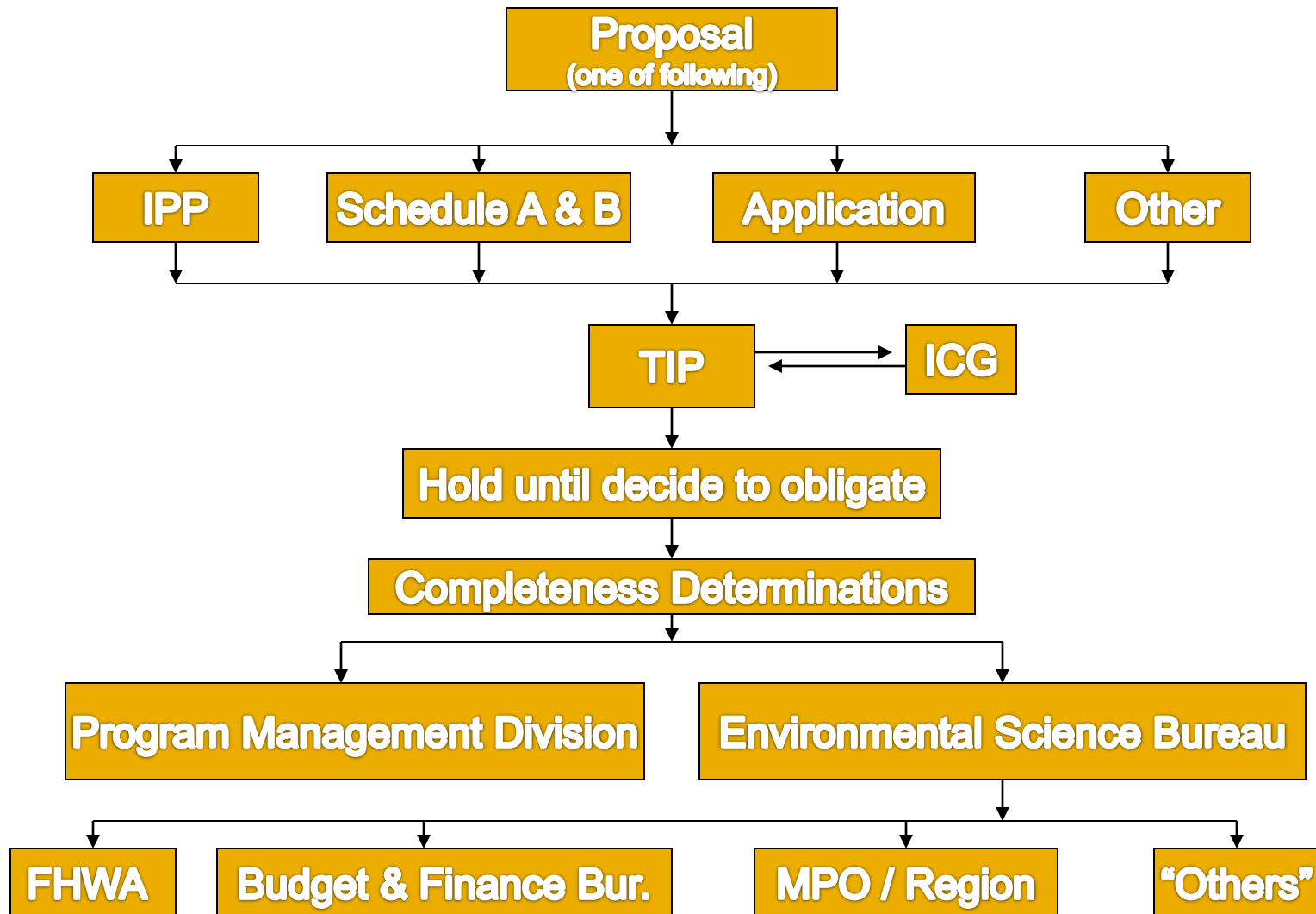
# Other States

## General Review Process:

- ❑ **Step 1: “Call” for CMAQ Project Applications**
- ❑ **Step 2: CMAQ Application Eligibility Review and Air Quality Analysis Process**
- ❑ **Step 3: Selection Process/Politics Involved in Selection Process**
- ❑ **Step 4: Inclusion of the CMAQ Project in the State’s regional TIP**



# NYS CMAQ Project Approval Process



# NYS CMAQ Project Approval Process

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A summary of the NYS project approval process is as follows:

- ❑ Submit Application for new project
- ❑ Project identified as potential CMAQ funded project
- ❑ Analysis and ranking of projects conducted by the regional MPO
- ❑ Project eligibility established
- ❑ Project added to the Transportation Improvement Program (TIP)
- ❑ Completeness Determination (CD) packet developed for the NYSDOT Environmental Science Bureau (ESB) located in the Main Office
- ❑ CD made by NYSDOT ESB
- ❑ Notification to FHWA, sponsor and Region
- ❑ Obligation of funds according to FHWA/NYSDOT process

# Completeness Determinations

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- ❑ Agreement with FHWA & NYSDOT
- ❑ FHWA won't obligate money till CD received from ESB
- ❑ Completeness Determination
  - Ensures project is eligible
  - Ensures emission estimates are calculated properly
  - Ensures project assumptions are not atypical

# Completeness Determinations

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## What's required for a Completeness Determination:

- ❑ Project Title and PIN
- ❑ A project description
- ❑ A project scope
- ❑ Estimated emission benefits using CMAQtraq (or other method, as appropriate)
- ❑ Supporting calculations and assumptions
- ❑ References identifying the sources of the input data
- ❑ A timetable with the anticipated completion date
- ❑ A funding analysis including the total cost of the project and the amount of CMAQ funds being requested

# Emission Score

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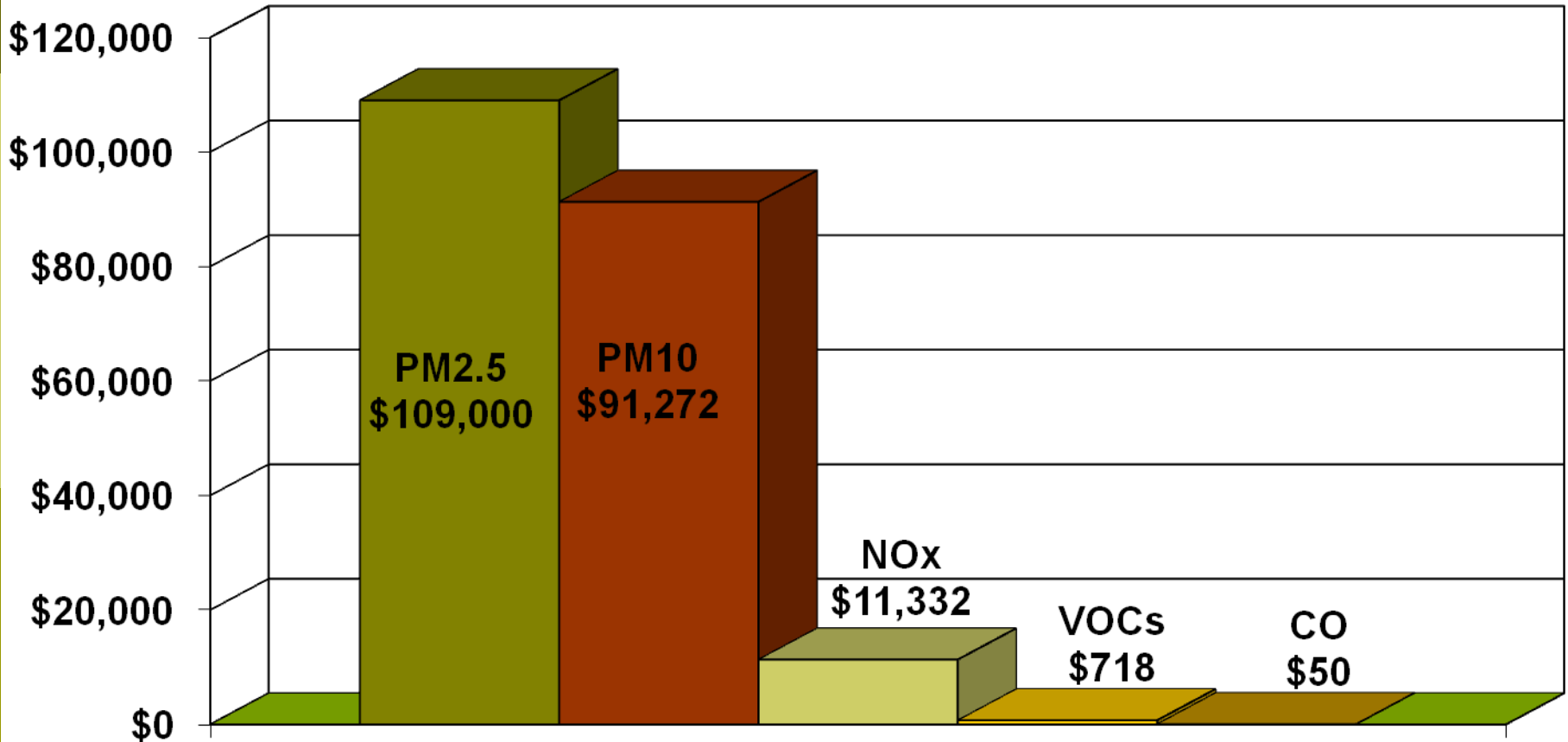
- ❑ Under Federal law: CMAQ projects must improve air quality
- ❑ Complicated when precursor emissions are involved **or** for areas in non-attainment or maintenance for more than one pollutant
- ❑ Also some projects reduce some emissions of some pollutants and increase emissions for other pollutants
- ❑ FHWA's Guidance: "weigh the net benefit of the project"
- ❑ Based on this the ESB has decided to implement an 'emission score' protocol for CMAQ projects

# Emission Score

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- ❑ A 1999 study titled “The Health Costs of Motor-Vehicle-Related Air Pollution”: health related costs of a kg of various air pollutants were analyzed
- ❑ This emission score formula is based on the health costs associated with the criteria pollutants
- ❑ Weighting factor: CO, VOC, NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> **(0.07:1:16:127:152)**
- ❑ Using the Emission Scores to compare different projects, diesel engine retrofit and projects that reduced VMT were favored

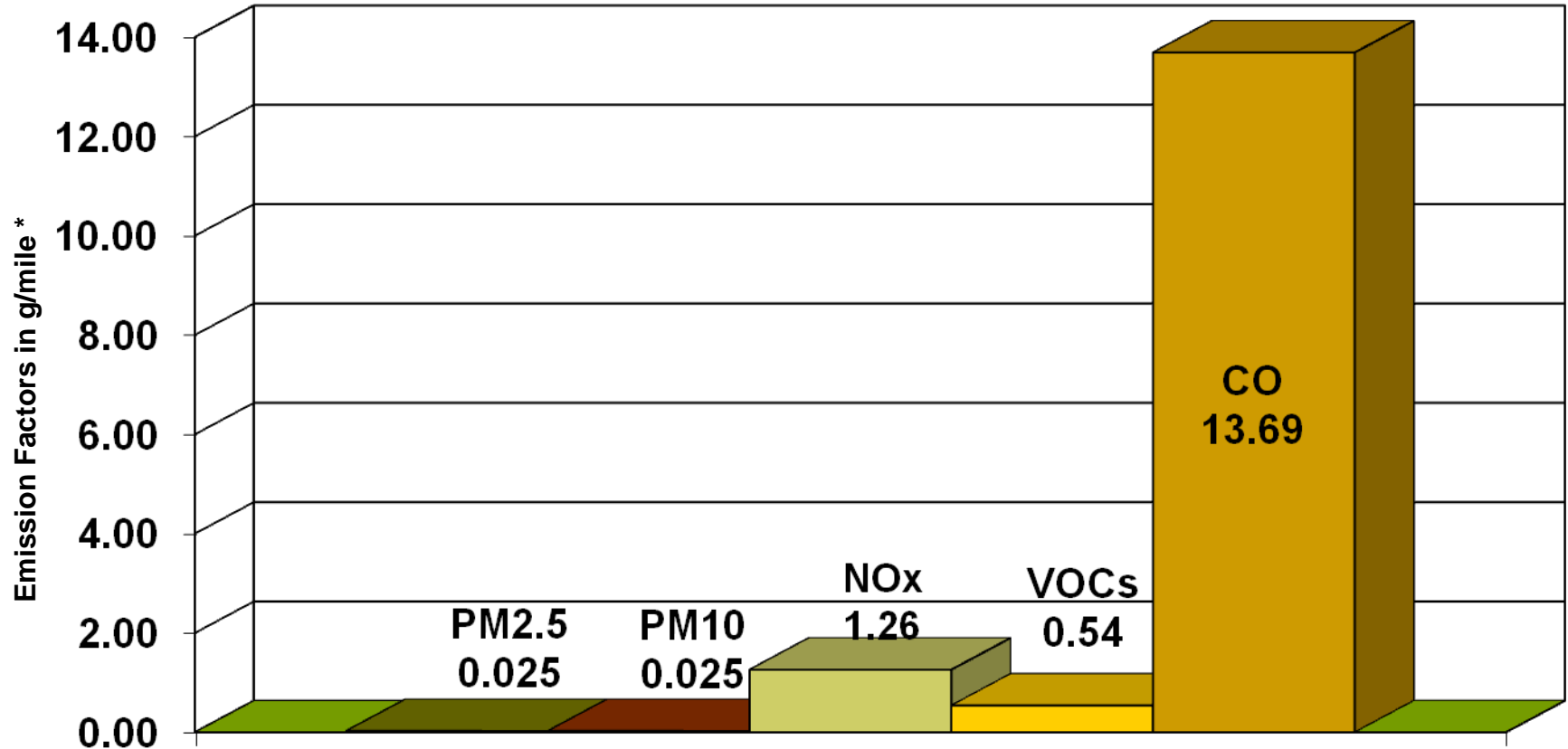
# Emission Score



Source: <http://www.engelhard.com/documents/051205%20Wescott%20Diesel%20Study%20FINALPosting.pdf>

Study Prepared by: McCubbin, Donald and Mark Delucchi (1999), The Health Costs of Motor-Vehicle-Related Air Pollution, *Journal of Transport Economics and Policy*, September, Vol. 33, Part 3, pp. 253-86

# Emission Score



\* Emission Factors used for Capital District area, emission year 2010, road type 01, speed 45 mph.

# Emission Score

	VOC	CO	NOx	PM 10	PM2.5	NET Total	Project Description	Effect of Weighting Score
Previous	5.06	129.36	-0.41	-	-	134.01	Intersections improvements	Would still be approved even with NOx disbenefit
With Weighting Factor	<b>5.06</b>	<b>9.06</b>	<b>-6.61</b>	-	-	<b>7.51</b>		
Previous	1.19	59.13	-0.22	2.00	-	62.11	Signal System Upgrade	Would score higher because of PM
With Weighting Factor	<b>1.19</b>	<b>4.14</b>	<b>-3.47</b>	<b>254.00</b>	-	<b>255.86</b>		
Previous	0.64	-0.77	3.99	0.21	-	4.07	Purchase of Clean Fuel Buses	Would score higher because of PM and NOx
With Weighting Factor	<b>0.64</b>	<b>-0.05</b>	<b>63.90</b>	<b>26.04</b>	-	<b>90.53</b>		
Previous	2.46	59.29	-2.09	-0.34	-0.36	58.97	New Transit Bus Route	Wouldn't be approved with weighting factor
With Weighting Factor	<b>2.46</b>	<b>4.15</b>	<b>-33.41</b>	<b>-43.69</b>	<b>-54.11</b>	<b>-124.60</b>		
Previous	2.49	52.26	10.12	-1.37	-0.90	62.60	Alternative Fuel Vehicles program	Wouldn't be approved with weighting factor
With Weighting Factor	<b>2.49</b>	<b>3.66</b>	<b>161.94</b>	<b>-173.74</b>	<b>-136.50</b>	<b>-142.15</b>		
Previous	418.41	-20.56	-47.31	-	-	350.54	ITS	Wouldn't be approved with weighting factor
With Weighting Factor	<b>418.41</b>	<b>-1.44</b>	<b>-756.96</b>	-	-	<b>-339.99</b>		

# Emission Score

	VOC	CO	NOx	PM 10	PM2.5	NET Total	Project Description	Effect of Weighting Score
Previous	18.80	-19.44	2.95	-	-	2.31	Signal System Upgrade	Would score higher because of NOx
With Weighting Factor	<b>18.80</b>	<b>-1.36</b>	<b>47.20</b>	-	-	<b>64.64</b>		
Previous	40.00	19.00	-11.00	-	-	48.00	ITS	Wouldn't be approved with weighting factor
With Weighting Factor	<b>40.00</b>	<b>1.33</b>	<b>-176.00</b>	-	-	<b>-134.67</b>		
Previous	18.72	107.99	5.12	-0.03	-0.02	131.78	Intersections improvements	Would still be approved even with PM disbenefit
With Weighting Factor	<b>18.72</b>	<b>7.56</b>	<b>81.92</b>	<b>-3.81</b>	<b>-3.04</b>	<b>101.35</b>		
Previous	0.56	11.81	3.51	-0.32	0.19	15.75	Alternative Fuel Vehicles program	Would still be approved (and score higher) even with PM disbenefit
With Weighting Factor	<b>0.56</b>	<b>0.83</b>	<b>56.16</b>	<b>-40.64</b>	<b>28.88</b>	<b>45.79</b>		
Previous	0.56	-7.70	0.09	-	-	-7.05	Signal System Upgrade	Would still be approved even with CO disbenefit
With Weighting Factor	<b>0.56</b>	<b>-0.54</b>	<b>1.44</b>	-	-	<b>1.46</b>		
Previous	0.50	-2.29	0.30	-	-	-1.49	Signal System Upgrade	Would still be approved even with CO disbenefit
With Weighting Factor	<b>0.50</b>	<b>-0.16</b>	<b>4.80</b>	-	-	<b>5.14</b>		

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## QUESTIONS?

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