

# Malden River Ecosystem Restoration Detailed Project Report

## APPENDIX G

### MASSACHUSETTS AIR QUALITY CONFORMANCE

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**US Army Corps  
of Engineers®**  
New England District



## **RECORD OF NON-APPLICABILITY (RONA)**

### **Emissions Calculations for:**

Malden River Ecosystem Restoration Project  
Malden, Medford & Everett, Massachusetts

**GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY**

**Project/Action Name:** *Malden River Ecosystem Restoration Project,  
Malden, Medford & Everett, Massachusetts*

**Project/Action Point of  
Contact:** *Michael Tuttle, Study Manager  
phone: 978-318-8677*

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project/action because:

Total direct and indirect emission from this project/action are estimated at less than 100 tons for Ozone, and are below the conformity threshold value established at 40 CFR 93.153(b) of 100 tons/year of Ozone;

**AND**

The project/action is not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation and emissions estimates are:

- ATTACHED
- APPEAR IN THE NEPA DOCUMENTATION (Section 6.8)
- OTHER

**SIGNED** \_\_\_\_\_  
*Jay Mackay, Chief Environmental Resources Section*

**GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY**

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General Conformity Review and Emission Inventory for the Malden River Ecosystem Restoration Project, Malden, Medford & Everett, Massachusetts													
(Worst Case Analysis)													
1	2	3	4	5	6	7	8	9	10	11			
Project Emission Sources and Estimated Power							NOx Emission Estimates		VOC Emission Estimates				
							NOx	NOx	VOC	VOC			
Equipment/Engine Category							EF	Emissions	EF	Emissions			
							(g/hp-hr)	(tons)	(g/hp-hr)	(tons)			
Fish Substrate Placement SA 1, 3, 4, 5, 6													
Derrick Barge, 150 HP	1	150	1.00	12	50	90,000	9.200	0.91	1.300	0.13			
Truck, 330 HP	1	330	1.00	12	50	198,000	9.200	2.01	1.300	0.28			
Phrag Removal & Replanting SA 3, 4, 5													
Excavator, 150 HP	1	150	1.00	12	95	171,000	9.200	1.73	1.300	0.25			
Dozer, 440 HP	1	440	1.00	12	182	960,960	9.200	9.75	1.300	1.38			
Truck, 330 HP	1	330	1.00	12	190	752,400	9.200	7.63	1.300	1.08			
Grader, 140 HP	2	140	1.00	12	130	436,800	9.200	4.43	1.300	0.63			
Wetland Creation SA 4													
Excavator, 150 HP	1	150	1.00	12	195	351,000	9.200	3.56	1.300	0.50			
Dozer, 440 HP	2	440	1.00	12	195	2,059,200	9.200	20.88	1.300	2.95			
Truck, 330 HP	2	330	1.00	12	200	1,584,000	9.200	16.06	1.300	2.27			
Debris Removal SA 1, 2, 3, 4, 5, 6													
Excavator, 150 HP	1	150	1.00	12	30	54,000	9.200	0.55	1.300	0.08			
Dozer, 440 HP	1	440	1.00	12	45	237,600	9.200	2.41	1.300	0.34			
Truck, 330 HP	1	330	1.00	12	50	198,000	9.200	2.01	1.300	0.28			
Work/Survey Boat, 140 HP	1	140	1.00	12	75	126,000	9.200	1.28	1.300	0.18			
<b>Total Emissions</b>							<b>NOx Total</b>	<b>73.21</b>	<b>VOC Total</b>	<b>10.34</b>			
<b>Horsepower Hours</b>													
hp-hr = # of engines*hp*LF*hrs/day*days of operation													
<b>Load Factors</b>													
Load Factor (LF) represents the average percentage of rated horsepower used during a source's operational profile. For this worst case estimate, LF is held at 1 for all equipment. Typical is 0.4 to 0.6													
<b>Emission Factors</b>													
NOx Emissions Factor for Off-Road Construction Equipment is 9.20 g/hp-hr													
VOC Emissions Factor for Off-Road Construction Equipment is 1.30 g/hp-hr													
Emissions (g) = Power Demand (hp-hr) * Emission Factor (g/hp-hr)													
Emissions (tons) = Emissions (g) * (1 ton/907200 g)													
<b>Note: Duration of project is 12 months. Calculations are broken down by construction season, and indicate total estimated emissions for one construction year.</b>													

