APPENDIX E: RECORD OF NON-APPLICABILITY AND AIR QUALITY DATA

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RECORD OF NON-APPLICABILITY (RONA)
FOR THE
PROPOSED SECTION 408 APPLICATION
FOR
CITY OF DALLAS' MODIFICATIONS
TO THE DALLAS FLOODWAY SYSTEM
DALLAS COUNTY, TEXAS
CLEAN AIR ACT CONFORMITY
METROPOLITAN DALLAS FORT WORTH
AIR QUALITY CONTROL REGION (AQCR)

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) published *Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* in the 30 November 1993, Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). This publication provides implementing guidance to document the Clean Air Act (CAA) Conformity Determination requirements. Subsequent to the 1993 rule, EPA collected information from other federal agencies on how to maintain the same environmental protections while streamlining the general conformity implementation process. This information was used to develop and propose regions to the general conformity rule. After soliciting comments on these revisions from the public, EPA issued a final rule revision on April 5, 2010.

Federal regulations state that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable implementation plan before the action is taken (40 CFR Part 1 51.850[a]).

The general conformity rule applies to federal actions proposed within areas which are designated as either nonattainment or maintenance areas for the National Ambient Air Quality Standards (NAAQS) for any of the criteria pollutants. Former nonattainment areas that have attained the NAAQS are designated as maintenance areas. Emissions of pollutants for which an area is in attainment are exempt from conformity analyses.

The Proposed Action Alternative would occur within the Metropolitan Dallas-Fort Worth (DFW) Air Quality Control Region (AQCR), which is currently in serious nonattainment for the 8-hour ozone (O_3) NAAQS and attains the NAAQS for all other criteria pollutants. Therefore, only project emissions of O_3 precursors (volatile organic compounds [VOCs] and oxides of nitrogen [NO_x]) were analyzed for conformity rule applicability. The general conformity regulation, published November 30, 1993, [58 Federal Regulation (FR) 63214] applies to the Proposed Action Alternative.

The regulations recognize that the vast majority of federal actions do not result in a significant increase in emissions and therefore, include a number of exemptions such as *de minimis*

emission levels based on the type and severity of the nonattainment problem. The annual *de minimis* levels for the DFW region are 50 tons/year of VOC and NO_x, as listed in **Table E-1**. Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels (40 CFR Part 1, Section 51.853[b]).

Table E-1: Conformity *De Minimis* Levels for Precursors for Ozone in the Metropolitan Dallas-Fort Worth AQCR

Criteria Pollutant	*De minimis* Level in tons/year
Volatile Organic Compounds (VOCs)	50
Nitrogen oxides (NOx)	50

Source: EPA. Final Rule for Revisions to the General Conformity Regulations. 75 FR 17254. April 5, 2010.

PROPOSED ACTION ALTERNATIVE

Action Proponent: City of Dallas

Location: City of Dallas, Texas

Proposed Action Alternative Name: Proposed Section 408 Application for City of Dallas' Modifications to the Dallas Floodway System, Dallas County, Texas.

Proposed Action Alternative Summary: The Proposed Action Alternative includes the construction of cutoff walls; concrete paving at the Hampton Pump Station outfall channels for erosion control; and construction of a 1-mile long, 10-foot wide, 6 inches thick, concrete pathway along the West Levee for maintenance. The pathway would extend from just east of IH 35E to just west of the Atchison, Topeka and Santa Fe Railroad. Construction of the proposed project is planned to begin in the spring/summer of 2012 and end by the end of 2012. Construction of the cutoff walls would be accomplished by excavating a trench, backfilling it with a soil-bentonite or cement bentonite slurry mix, and capping the walls with a layer of clay.

Assumptions: Construction of the Proposed Action Alternative is planned for completion in 6 months during the calendar year 2012. It should be noted that because no single piece of equipment would be utilized continuously (12 hours/day, 6 days a week), total equipment hours (i.e. number of dump trucks hours) were used in the emissions calculations. The total equipment hours represents the total number of hours the equipment would be utilized and was estimated based on production rate calculations. These and other assumptions can be found in **Tables E-3** through **E-5**.

Material from a borrow area would be necessary for the cutoff wall clay cap. The borrow area, located within the construction limits of the East Levee would be approximately 8 acres in size. It is anticipated that the borrow area would be excavated up to 3 feet in depth. After construction, the borrow area would be returned to pre-construction elevations. The borrow area, located within the floodplains, is shown in **Exhibit 7: Corridor Maps**. Any unused material would be utilized to restore the existing maintenance roads.

Air Emissions Summary: Estimated construction emissions resulting from the implementation of the Proposed Action are included in **Table E-2**. Based on the air quality analysis for the

Proposed Action, the maximum estimated emissions would be below conformity *de minimis* levels for the analysis year.

Table E-2: Estimated Emissions Resulting from the Construction of Proposed Action Alternative

Estimated Emissions in tons/year	Pollutant					
	VOC[1]	**NOx[1]**	**CO[2]**	**SOx[2]**	**PM10[2]**	**PM2.5[2]**
Annual Emissions (2012)	4.93	48.73	18.31	0.56	3.37	2.39
De minimis threshold in tons/year	50	50	50	50	50	50
Exceedance of *de minimis* threshold (Yes/No)	No	No	No	No	No	No

Notes: [1]Because the Proposed Action Alternative is located within a "serious" nonattainment area for ozone, emissions for the formation of ozone were compared to de minimis values of VOC and NOx.

[2]The Proposed Action Alternative is located within an attainment area for the rest of the NAAQS. Therefore, the estimated emissions were compared to de minimis values for CO, SOx, PM10, and PM2.5 for planning purposes only.

Affected Air Basin: Metropolitan DFW

Date RONA Prepared: October 26, 2011

RONA Prepared By: City of Dallas with direct support from HNTB Corporation.

EMISSIONS EVALUATION AND CONCLUSION

Emissions associated with the Proposed Action Alternative were estimated in order to determine if a conformity determination would be required for the Proposed Action Alternative in accordance with the latest general conformity rule. Total emissions for implementation year 2012 were estimated for the worst case scenario using diesel vehicles and standard emission factors. The average annual emissions were then compared to the EPA *de minimis* values. The City of Dallas concludes that the *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion are shown in **Table E-2** and included in **Tables E-3** through **E-5**. The City of Dallas concludes that implementation of the Proposed Action would not trigger a formal conformity determination under Section 176(c) of the CAA, which consequently results in this RONA.

Table E-3: Construction Equipment Emissions for 2012

Proposed Action Alternative	Fuel	HP	Load Factor[1]	Emission Factors in g/bhp-hr[2]								Total Equipment Hours [3]	Total Equipment Days [4]	Emissions in lbs/day								Emissions in tons/year							
Equipment				CO	VOC	NOx	SOx	PM10	PM2.5	CO2	CH4			CO	VOC	NOx	SOx	PM10	PM2.5	CO2	CH4	CO	VOC	NOx	SOx	PM10	PM2.5	CO2	CH4
Front End Loader	Diesel	108	1	4.070	1.190	7.160	0.007	0.654	0.582	568.300	0.108	109	144	0.73	0.21	1.29	0.00	0.12	0.10	152.06	0.0000	0.05	0.02	0.09	0.00	0.01	0.01	10.95	0.00000
Dump Truck	Diesel	350	1	1.820	0.570	5.550	0.006	0.295	0.263	568.300	0.051	8,480	144	82.71	25.91	252.23	0.27	13.41	11.93	492.79	0.0010	5.96	1.87	18.16	0.02	0.97	0.86	35.48	0.00007
Water Truck	Diesel	250	1	1.820	0.570	5.550	0.006	0.295	0.263	568.300	0.051	5,517	144	38.44	12.04	117.21	0.13	6.23	5.54	351.99	0.0004	2.77	0.87	8.44	0.01	0.45	0.40	25.34	0.00003
Excavator	Diesel	250	1	2.190	0.590	6.150	0.006	0.229	0.204	568.300	0.053	7,505	144	62.92	16.95	176.69	0.17	6.58	5.86	351.99	0.0005	4.53	1.22	12.72	0.01	0.47	0.42	25.34	0.00003
Concrete Truck	Diesel	335	1	2.700	0.680	8.380	0.535	0.400	0.388	568.300	0.051	444	144	6.15	1.55	19.09	1.22	0.91	0.88	432.77	0.0001	0.44	0.11	1.37	0.09	0.07	0.06	31.16	0.00001
Compactor	Diesel	8	1	3.470	0.680	4.330	0.009	0.274	0.244	568.300	0.061	608	144	0.26	0.05	0.32	0.00	0.02	0.02	11.26	0.0000	0.02	0.00	0.02	0.00	0.00	0.00	0.81	0.00000
Concrete Pump Truck	Diesel	400	1	2.700	0.680	8.380	0.535	0.400	0.388	568.300	0.051	74	144	1.22	0.31	3.80	0.24	0.18	0.18	516.74	0.0000	0.09	0.02	0.27	0.02	0.01	0.01	37.21	0.00000
Dozer	Diesel	150	1	2.700	0.680	8.380	0.535	0.400	0.388	568.300	0.051	3,994	144	24.77	6.24	76.88	4.91	3.67	3.56	193.78	0.0003	1.78	0.45	5.54	0.35	0.26	0.26	13.95	0.00002
Slurry Truck	Diesel	100	1	3.700	0.338	2.800	0.160	0.400	0.388	568.300	0.051	3,386	144	19.18	1.75	14.52	0.83	2.07	2.01	129.19	0.0002	1.38	0.13	1.05	0.06	0.15	0.14	9.30	0.00001
Water Pump	Diesel	25	1	2.340	0.290	4.490	0.006	0.320	0.310	568.300	0.051	1,276	144	1.14	0.14	2.19	0.00	0.16	0.15	32.30	0.0000	0.08	0.01	0.16	0.00	0.01	0.01	2.33	0.00000
Pile Driving Crane	Diesel	100	1	3.700	0.338	2.800	0.160	0.400	0.388	568.300	0.051	48	144	0.27	0.02	0.21	0.01	0.03	0.03	129.19	0.0000	0.02	0.00	0.01	0.00	0.00	0.00	9.30	0.00000
Jet Grouting	Diesel	100	1	3.700	0.338	2.800	0.160	0.400	0.388	568.300	0.051	76	144	0.43	0.04	0.33	0.02	0.05	0.05	129.19	0.0000	0.03	0.00	0.02	0.00	0.00	0.00	9.30	0.00000
Hydro Seeder	Diesel	250	1	1.820	0.570	5.550	0.006	0.295	0.263	568.300	0.051	48	144	0.33	0.10	1.02	0.00	0.05	0.05	322.96	0.0000	0.02	0.01	0.07	0.00	0.00	0.00	23.25	0.00000
																					Annual Total for 2012	**17.18**	**4.70**	**47.94**	**0.56**	**2.41**	**2.19**	**233.73**	**0.00018**

Assumptions

Work includes cutoff walls along the East Levee to be constructed by two excavators (one capable of reaching deep at the bed rock and one of normal type).

It was assumed that the greenhouse gases emissions from the project would consist of carbon dioxide (CO2) and methane (CH4).

(1) Load Factor represents the average percentage of rated horsepower used during a source's operational profile. For a worst case estimate, the load factor was assumed to be 1 for all equipment. Typical load factors vary from 0.4 to 0.6.

(2) Source of emission factors: Environmental Assessment for the Proposed Pavaho Pumping Plant Improvements, Dallas, Texas (Appendix D, June 2010). Emission factors for the slurry mixing tank truck were obtained from the EPA Exhaust Emission Factors for Non-Road Engine Modeling-Compression-Ignition Report No. NR-009A. June 1998. Available on-line at: http://www.epa.gov/oms/models/nonrdmdl/nr-009a.pdf and http://www.dieselnet.com/standards/us/nonroad.php.

(3) The total equipment hours represents the total hours of equipment utilized over the duration of construction estimated based on the production rate calculation included in Table E-5.

(4) It was assumed that the critical path would be the construction of the East Levee cutoffwall for which work would be accomplished using two crews over 12 hours/day, 6 days/week or 144 working days 2012.

Table E-4: Construction Truck Emissions in 2012

Vehicle Class	No. of Trucks	Speed in mph	VMT (mi/veh-day)	Emission Factors in g/mi [1]												Emissions, lbs/day								Emissions, tons/year							
				CO Running Exhaust (g/mi)	NOx Running Exhaust (g/mi)	VOC Running Exhaust (g/mi)	SOx Running Exhaust (g/mi)	PM10			PM2.5			CO2	CH4	CO	NOx	VOC	SOx	PM10	PM2.5	CO2	CH4	CO	NOx	VOC	SOx	PM10	PM2.5	CO2	CH4
								Running Exhaust in g/mi	Tire Wear in g/mi	Break Wear in g/mi	Running Exhaust in g/mi	Tire Wear in g/mi	Break Wear in g/mi	Running Exhaust (g/mi)	Running Exhaust (g/mi)																
Heavy duty diesel Foreman's pickup truck[2]	7	27	40	6.303	17.209	1.262	0.019	0.713	0.036	0.028	0.656	0.009	0.012	1992.67	0.059	3.89	10.62	0.779	0.012	0.48	0.42	1230.27	0.04	0.198	0.5419	0.04	0.0006	0.0245	0.02	62.74	0.00186
Heavy duty diesel trucks	26	27	40	6.303	17.209	1.262	0.019	0.713	0.036	0.028	0.656	0.009	0.012	1992.67	0.059	14.5	39.46	2.894	0.044	1.78	1.55	4569.59	0.14	0.933	0.2546	0.187	0.0028	0.115	0.10	294.82	0.00873
																Annual Total for 2012								**1.131**	**0.7965**	**0.226**	**0.0007**	**0.1394**	**0.1215**	**357.6**	**0.01059**

Unpaved Road Emissions		
E=	k(s/12)^a(W/3)^b	
s =	8.5	8.5
W =	10	10
	PM10	**PM2.5**
k =	1.50	0.15
a =	0.90	0.90
b =	0.45	0.45
Emission Factor =	1.89	0.19
Control Efficiency	61.00	61.00
VMT[3]	25.00	25.00
Working days[4]	102	102
Emissions, lbs/day	129.03	12.90
Emissions, tons/year	6.58	0.66
Emission in tons/year for 2012	**0.82**	**0.08**

Where:

E= specific emission factor in lb/VMT

s= surface material silt content (%)

W= mean vehicle weight in tons

k, a, b = constants for industrial roads

VMT= miles of travel per vehicle per day (length of the existing maintenance roads)

Emissions in lb/day= E(number of trucks)[(100-control efficiency)/100](VMT)

Emissions in tons/year= Emissions in lbs/day(working days)/2000

Assumptions

It was assumed that construction for the Proposed Action Alternative would occur over 4 months, starting in the spring/summer of 2012 and ending in by the end of 2012.

It was assumed that the greenhouse gases emissions from the project would consist of carbon dioxide (CO2) and methane (CH4).

Sources: Environmental Assessment for the Proposed Pavaho Pumping Plant Improvements, Dallas, Texas (Appendix D, June 2010).

EPA.2003.AP-42 Section 13.2.2 Unpaved Roads, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources.

(1) Source of emission factors per the Environmental Assessment for the Proposed Pavaho Pumping Plant Improvements, Dallas, Texas (Appendix D, June 2010), EMFAC2007, Year 2009, 60F, 27 mph.

(2) One heavy duty truck was included in the anlaysis to account for vehicles transporting one slurry mixing tank.

(3) Assumes 25 miles of unpaved roads.

(4) It was assumed that work would be performed over 144 days in 2012.

Table E-5: Production Rate Calculations

Equipment	East Levee Soil-Bentonite Cutoff Wall (3 feet thick)	2 crews	East Levee Soil-Bentonite Cutoff Wall (3 feet thick)	1 crew	East Levee Cement-Bentonite Cutoff Wall (2.5 feet thick)		East Levee Jet Grout		Cutoff Walls & Hampton Pump Station Clay Cap Excavation & Placement		Wetland Mitigation Area & Maintenance Way		Dewatering, Excavation, Concrete and Rip-rap at the Hampton Pump Station Outfall Channels		Hydro Seeding in square yards		Total Equipment Hours
	Area in square feet	Equipment Hours	Area in square feet	Equipment Hours	Area in square feet	Equipment Hours	Area in square feet	Equipment Hours	Volume in cubic yards	Equipment Hours	Volume in cubic yards	Equipment Hours	N/A	Equipment Hours		Equipment Hours	
	672,288		47,440		17,350		50,466		14,527		22,023				370,627		
	Number of equipment		Number of equipment		Number of equipment		Number of equipment		Number of equipment		Number of equipment		Number of equipment		Number of equipment		
Excavator	4	1607	2	120	2	52	1		1	218	1	329	1	186			**7505**
Slurry Truck	2	1607	1	120	1	52											**3386**
Dump Truck	3	1607	3	120					7	200	5	329	3	107			**8480**
Water Truck	3	1607	2	120	2	52	2	76	1	200							**5517**
Dozer	2	1607	1	120	1	52			1	200	1	329	1	79			**3994**
Compactor									1	200	1	329	1	79			**608**
Front End Loader											1	109					**109**
Concrete Truck													6	74			**444**
Concrete Pump Truck													1	74			**74**
Water Pump							1	76					2	600			**1276**
Pile Driving Crane													1	48			**48**
Jet Grouting							1	76									**76**
Hydro Seeder															1	48	**48**