Appendix H

Water Quality Data

I-290 Eisenhower Expressway
Cook County, Illinois

Prepared For:

Illinois Department of Transportation

Prepared By:

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September 2016

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APPENDIX H
TABLE 1: SELDM INPUTS
Des Plaines River
I-290 Project Corridor: September 2016

Tab	Input (Existing)	Input (Build)	Source	Notes	Reference
Highway Site Characteristics	41°52'19.40"N	87°49'32.12"W	H&H GIS		
Latitude	41.872056	41.872056	H&H GIS		
Longitude	-87.825589	-87.825589	H&H GIS		
Drainage Area (acres)	307,200	307,200	Driscoll Input Table		
Drainage Length (ft)	35,376	35,376	H&H GIS	Drainage length of watershed (existing), Drainage length of watershed (proposed)	
Mean Basin Slope (ft per mile)	8.68	8.14	Chloride Calcs - PB/CBBEL data		
Impervious Fraction (0-1)	0.464	0.549	Driscoll Input Table	11.56 (impervious) /71.88 (ROW)	
Basin Development Factor	-1	-1	SELDM Manual	Input of -1 indicates use of TIA within SELDM	
Total Lanes	4	7	PB	See "New Lane Miles"	
Lane Width (ft)	12	12	H&H GIS/PB CADD files		
ADT	185,720	197,540	PB	See "Traffic Data"	
Pavement Material	Concrete	Concrete	PB		
Type of Curb					
Other Characteristics					
Grid	Uses Site Lat/Long	Uses Site Lat/Long	SELDM Default		
Eco Region	Uses Site Lat/Long	Uses Site Lat/Long	SELDM Default		
Upstream Basin Characteristics					
Drainage Area (miles squared)	360	360	USGS stream stats	Closest USGS gauge with present streamflow data is Des Plaines River near Des Plaines (05529000)	U.S. Geological Survey (2015)
Drainage Length (ft)	334435.2	334435.2	USGS stream stats	63.34	U.S. Geological Survey (2015)
Mean Basin Slope (ft per mile)	1.11	1.11	USGS stream stats	Unadjusted	U.S. Geological Survey (2015)
Impervious Fraction (0-1)	0.16	0.16	*Total Maximum Daily Loads for the East Branch of the DuPage River, Illinois* (October 2004) CH2MHill with Applied Environmental Engineering, LLC and AQUA TERRA Consultants		
Basin Development Factor	-1	-1			
Hydrograph Recession					
Minimum			SELDM Default		Granato (2013)
MPV			SELDM Default		Granato (2013)
Maximum			SELDM Default		Granato (2013)
Empirical Loading & Dilution					
Rain Zone			Per the model and Lat/Long		
Model has rainfall data pre-loaded					

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Tab	Input (Existing)	Input (Build)	Source	Notes	Reference
Synoptic Storm-Event Precipitation Statistics: Select Statistics					
Precipitation-Statistics Datasets	FHWA, 2010	FHWA, 2010	SELDM Default		
	Avg. of Ecoregion: 54 Central Corn Belt				
Basis (i.e Rain Region, Eco-Region, Station, etc)	Plains DS:3		SELDM Default		Granato (2013)
Storm Event Volume, Average (inches)	0.61		SELDM Default		Granato (2013)
Storm Event Volume, COV	0.96		SELDM Default		Granato (2013)
Storm Event Duration Average (hours)	7.07		SELDM Default		Granato (2013)
Storm Event Duration COV	0.86		SELDM Default		Granato (2013)
Time Between Storm Events, Average (hours)	173		SELDM Default		Granato (2013)
Time Between Storm Events, COV	1.25		SELDM Default		Granato (2013)
Storm Events Per Year, Average	49		SELDM Default		Granato (2013)
Storm Events Per Year, COV	0.25		SELDM Default		Granato (2013)
Total Annual Precipitation, Average (inches)	29.78		SELDM Default		Granato (2013)
Total Annual Precipitation, COV	0.27		SELDM Default		Granato (2013)
Number of Stations Used for Calculation	41		SELDM Default		Granato (2013)
Synoptic Storm-Event Precipitation Options					
Selected Station Average	(X) User-defined	(X) User-defined	User-defined	Generate Statistics	
Streamflow Statistics				Station look-up or **manual input**	
Selection Options					
Fraction of Daily-Mean Zero Flow	(X) User-defined	(X) User-defined	User-defined		
Arithmetric:				Based on USGS Station Number: 05529000	
Mean	401	401	USGS daily discharge	1978 through 2014	U.S. EPA DFLOW 3.1 (2006)
Median	231	231	USGS daily discharge	1978 through 2014	U.S. EPA DFLOW 3.1 (2006)
Std Dev	478	478	USGS daily discharge	1978 through 2014	U.S. EPA DFLOW 3.1 (2006)
Skew	2.987	2.987	USGS daily discharge		U.S. EPA DFLOW 3.1 (2006)
Log 10				Retransformed to Arithmetic Space	
Mean	2.389	2.389	USGS daily discharge	244.9	U.S. EPA DFLOW 3.1 (2006)
Median	2.364	2.364	USGS daily discharge	231.2	U.S. EPA DFLOW 3.1 (2006)
Std Dev	0.421	0.421	USGS daily discharge	2.6	U.S. EPA DFLOW 3.1 (2006)
Skew	0.334	0.334	USGS daily discharge	2.5	U.S. EPA DFLOW 3.1 (2006)
Low Flow					
7Q10	47	47	USGS daily discharge	1978 through 2014	U.S. EPA DFLOW 3.1 (2006); U.S. EPA (1986)
1B3	40	40	USGS daily discharge	1B3 is a biologically-based 1-day average flow event which occurs (on average) once every 3 years. Period: 1978 through 2014	U.S. EPA DFLOW 3.1 (2006); U.S. EPA (1986)
4B3	46.1	46.1	USGS daily discharge	4B3 is a biologically-based 4-day average flow event which occurs (on average) once every 3 years. Period: 1978 through 2014	U.S. EPA DFLOW 3.1 (2006); U.S. EPA (1986)
Number of streamgages used	1	1			

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Des Plaines River
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Tab	Input (Existing)	Input (Build)	Source	Notes	Reference
Water Quality Consitutents					
TSS			*Select Highway Dependent; SSC from TSS*		
Phosphorous			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Phosphorous			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
SSC			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Cadmium			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Chromium			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Copper			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Hardness			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Lead			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Nitrogen			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
Zinc			HRDB or ProUCL		FHWA (2009), U.S. EPA (2013)
pH			Select pH (random) Eco: 54		
Best Management Practices (BMPs)					
Hydraulics	**Detention Basin (Trapezoidal)** ***Ratio of BMP outflow to inflow***	**Detention Basin (Trapezoidal)** ***Flow weighted (Existing)***	**Detention Basin (Trapezoidal)** ***Flow weighted (Proposed)***	**Notes**	
NR	13	13	13	number of sites with at least three storms used to calculate the median ratio statistics	Granato (2014)
Min	0.1466	0.983	0.889	minimum value	Granato (2014)
Lower MPV	0.1466	0.983	0.889	lower bound of the most probable value	Granato (2014)
Upper MPV	0.657	0.993	0.955	upper bound of the most probable value	Granato (2014)
Max[1]	1.000	1.000	1.000	Maximum value	Granato (2014)
Rank Correlation to inflow volume	0.070	0.070	0.070	Spearman's rho (min)	Granato (2014)
Percent GT	5.9	5.9	5.9	Pct GT 1, the percentage of storms in which outflows exceed inflows and thus, ratio is greater than 1	
BMP fraction	100%	2%	13%		
BMPs	**Detention Basin (Trapezoidal)** ***Median stormflow extension statistics***	**Detention Basin (Trapezoidal)** ***Median stormflow extension statistics (Existing)***	**Detention Basin (Trapezoidal)** ***Median stormflow extension statistics (Proposed)***	**Notes**	
NR	12	12	12	number of sites with at least three storms used to calculate the median ratio statistics	Granato (2014); Table 3
Min	0	0.980	0.870	minimum value	Granato (2014); Table 3
Lower MPV	0	0.980	0.870	lower bound of the most probable value	Granato (2014); Table 3
Upper MPV	0	0.980	0.870	upper bound of the most probable value	Granato (2014); Table 3
Max	18	1.340	3.210	Maximum value	Granato (2014); Table 3
Rank Correlation to inflow volume	0.565	0.565	0.565	Spearman's rho (min)	Granato (2014); Table 3
BMP fraction	100%	2%	13%		
BMPs	**Detention Basin (Spearman's rho)**		**Source**	**Notes**	
NR	8		Statistics from International BMP Database	number of sites with at least three storms used to calculate the median ratio statistics	Granato (2014); Table 3
Min	0.07		Statistics from International BMP Database	minimum value	Granato (2014); Table 3
Lower MPV	-0.57		Statistics from International BMP Database	lower bound of the most probable value	Granato (2014); Table 3
Upper MPV	0.48		Statistics from International BMP Database	upper bound of the most probable value	Granato (2014); Table 3

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Tab	Input (Existing)	Input (Build)	Source	Notes	Reference
BMPs-Trapezoidal Distribution	**Detention Basin (Cu)**	**Detention Basin (Cu)-Flow Weighted (Existing)[3]**	**Detention Basin (Cu)-Flow Weighted (Proposed)[4]**	**Notes**	
N	11	11	11	sample size	Granato (2014)
Min	0.151	0.983	0.890	minimum value	Granato (2014)
Lower MPV	0.415	0.988	0.924	lower bound of the most probable value	Granato (2014)
Upper MPV	0.628	0.993	0.952	upper bound of the most probable value	Granato (2014)
Max[1]	1.000	1.000	1.000	Maximum value	Granato (2014)
Rho	-0.366	-0.366	-0.366	Rho distribution statistics	Granato (2014)
MIC	1.100	1.100	1.100	Minimum irreducible concentration	Granato (2014)
BMP fraction	100%	2%	13%	Fraction of flow to BMP	
BMPs-Trapezoidal Distribution	**Detention Basin (TSS)**	**Detention Basin (TSS)-Flow Weighted (Existing)[3]**	**Detention Basin (TSS)-Flow Weighted (Proposed)[4]**	**Notes**	
N	16	16	16	sample size	Granato (2014)
Min	0.056	0.981	0.877	minimum value	Granato (2014)
Lower MPV	0.073	0.981	0.879	lower bound of the most probable value	Granato (2014)
Upper MPV	0.110	0.982	0.884	upper bound of the most probable value	Granato (2014)
Max[1]	1.000	1.000	1.000	Maximum value	Granato (2014)
Rho	-0.514	-0.514	-0.514	Rho distribution statistics	Granato (2014)
MIC	0.890	0.890	0.890	Minimum irreducible concentration	Granato (2014)
BMP fraction	100%	2%	13%	Fraction of flow to BMP	
BMPs-Trapezoidal Distribution	**Detention Basin (Pb)**	**Detention Basin (Pb)-Flow Weighted (Existing)[3]**	**Detention Basin (Pb)-Flow Weighted (Proposed)[4]**	**Notes**	
N	9	9	9	sample size	Granato (2014)
Min	0.058	0.981	0.878	minimum value	Granato (2014)
Lower MPV	0.278	0.986	0.906	lower bound of the most probable value	Granato (2014)
Upper MPV	0.335	0.987	0.914	upper bound of the most probable value	Granato (2014)
Max[1]	1.000	1.000	1.000	Maximum value	Granato (2014)
Rho	-0.289	-0.289	-0.289	Rho distribution statistics	Granato (2014)
MIC	0.760	0.760	0.760	Minimum irreducible concentration	Granato (2014)
BMP fraction	100%	2%	13%	Fraction of flow to BMP	
BMPs-Trapezoidal Distribution	**Detention Basin (Zn)**	**Detention Basin (Zn)-Flow Weighted (Existing)[2]**	**Detention Basin (Zm)-Flow Weighted (Proposed)[3]**	**Notes**	
N	12	12	12	sample size	Granato (2014)
Min	0.060	0.981	0.878	minimum value	Granato (2014)
Lower MPV	0.102	0.982	0.883	lower bound of the most probable value	Granato (2014)
Upper MPV	0.213	0.984	0.898	upper bound of the most probable value	Granato (2014)
Max[1]	1.000	1.000	1.000	Maximum value	Granato (2014)
Rho	-0.560	-0.560	-0.560	Rho distribution statistics	Granato (2014)
MIC	2.800	2.800	2.800	Minimum irreducible concentration	Granato (2014)
BMP fraction	100%	2%	13%	Fraction of flow to BMP	

[1]Assume Maximum value is based on literature value (Granato, 2014) if less than 1.0 or otherwise set to 1.0.

[2]Two percent of stormwater runoff from existing roadway drains into a detention basin. If warranted, review Granato's recent publication on BMP factors for SELDM model

[3]Thirteen percent of stormwater runoff from proposed roadway drains into a detention basin.

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TABLE 2: SELDM INPUT REFERENCES

I-290 Project Corridor: September 2016

Source	Citation
FHWA (2009)	FHWA, 2009. Highway-Runoff Database (HRDB Version 1.0): A Data Warehouse and Preprocessor for the Stochastic Empirical Loading and Dilution Model. FHWA-HEP-09-004-2009.
Granato (2013)	Granato, G.E., 2013, Stochastic empirical loading and dilution model (SELDM) version 1.0.0: U.S. Geological Survey Techniques and Methods, book 4, chap. C3, 112 p.,
Granato (2014)	Granato, G. 2014. Statistics for Stochastic Modeling of Volume Reduction, Hydrograph Extension, and Water-Quality Treatment by Structural Stormwater Runoff Best Management Practices (BMPs). USGS. 2-14-5037.
U.S. EPA (1986)	U.S. EPA, 1986. Technical Guidance Manual for Performing Wasteload Allocations, Book VI: Design Conditions-Chapter : Stream Design Flow for Steady-State Modeling. EPA440/4/86-014
U.S. EPA (2006)	U.S. EPA, 2006. DFLOW 3.1. Available at: http://water.epa.gov/scitech/datait/models/dflow/
U.S. EPA (2013)	U.S. EPA,2013. ProUCL Version 5.0.00 Technical Guide. Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations.
U.S. Geological Survey (2015)	U.S. Geological Survey, 2015. The StreamStats program, online at http://streamstats.usgs.gov

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TABLE 3: I-290 Annual Average Daily Traffic Comparison

I-290 Project Corridor: September 2016

Subwatershed	I-290 Mainline Segment		2012 Base All Lanes	2040 Base All Lanes
Salt Creek	I-88	Mannheim	**150,100**	**159,600**
Des Plaines River-W	Mannheim	25th	182,400	194,300
Des Plaines River-W	25th	1st	183,100	192,600
Des Plaines River	1st	Harlem	178,200	191,500
Des Plaines River-E	Harlem	Austin	185,100	198,600
	Austin	Central	199,800	210,700
	Average		**185,720**	**197,540**
S. Branch Chicago River	Central	Cicero	196,700	215,900
	Cicero	Kostner	191,300	210,000
	Kostner	Independence	210,600	228,000
	Independence	Sacramento	217,700	232,500
	Sacramento	Western	217,700	232,500
	Western	Oakley	194,100	204,200
	Oakley	Damen	204,500	216,400
	Damen	Racine	176,200	185,700
	Racine	Halsted	177,800	190,900
	Average		**198,511**	**212,900**

Source: Traffic data provided by PB, based on the CMAP Expressway Atlas 2012, Part 3.

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TABLE 3B: I-290 Annual Average Daily Traffic Frontage Rd (25th Ave to 1st Street)

I-290 Project Corridor: September 2016

Subwatershed	I-290 Mainline Segment[1]	2040 Base All Lanes
Des Plaines River-W	Harrison St[1]	2,990
Des Plaines River-W	Bataan Dr[1]	3,023
	Average	**3,007**

Source: Traffic data provided by PB, based on the CMAP Expressway Atlas 2012, Part 3.

[1] Traffic Data for Frontage Roads (Harrison St and Bataan Dr.) are included to account for proposed sewer collecting stormwater runoff from 25th Ave to 1st Avenue and discharge to the Des Plaines River (2040 Base).

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Table 4:Watersheds Receiving Project Corridor Storm Water

I-290 Project Corridor: September 2016

Watershed	Miles of I-290 in Watershed	Miles of I-290 Runoff Reaching Stream
Salt Creek	0	1.5
Addison Creek	3.4	0
Des Plaines River	2.1	6.7
Chicago Ship & Sanitary Canal	3.9	0
South Branch Chicago River	1.2	2.4
TOTAL:	10.6	10.6

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TABLE 5: Lane Mile Calculations
Existing to Build

I-290 Project Corridor: September 2016

I-290 Lane Mile Calculations
Existing to Build

0.000189

Butterfield to Mannheim (does not include CD road or Mannheim interchange as there are no changes to those) (Salt Creek)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
Eastbound (EB)	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***Eastbound (EB)***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
I-290 to I-290 ML, to Mannheim (2 lanes ex)	1.68	8844	2	17688	3.4	I-290 to I-290 ML, to Mannheim (no changes other than lane shift)	1.67	8823	2	17646	3.3	I-290 to I-290 ML (2 lanes ex, 3 lanes by butterfield)	3.53	18650	1	18650.0	3.53	I-290 to I-290 (no changes other than minor lane shift)	3.53	18650	1	18650	3.5
I-290 to CD Road (no changes)	0.44	2305	1	2305	0.4	I-290 to CD Road (no changes)	0.44	2305	1	2305	0.4	I-290 to I-88 ML (2 lanes ex)	1.58	8332	2	16664.0	3.16	I-290 to I-88 (no changes other than minor lane shift)	1.58	8332	2	16664	3.2
I-88 (from Darmstadt Rd) to I-290 ML, to Mannheim (1 lane ex, 2 lanes ex	1.45	7650	1	7650	1.4	I-88 (from Darmstadt Rd) (no changes other than lane shift)	1.57	8264	1	8264	1.6												
I-88 (from OH sign on I-88) to CD road (no changes)	0.38	2006	1	2006	0.4	I-88 (from OH sign on I-88) to CD road (no changes)	0.38	2006	1	2006	0.4												
TOTAL FOR SECTION				**29649**	**5.6**	**TOTAL FOR SECTION**				**30221**	**5.7**	**TOTAL FOR SECTION**				**35314.0**	**6.7**	**TOTAL FOR SECTION**				**35314.0**	**6.7**

Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Mannheim to 25th ML (3 lanes ex)	1.02	5400	3	16200	3.1	Mannheim to 25th ML (3 lanes Mann to CD road, 4 lanes CD to 25th)	3.66	19322	1	19322	3.7	Mannheim to 25th ML (3 lanes)	1.02	5408	3	16224.0	3.07	Mannheim to 25th ML (4 lanes)	1.02	5408	4	21632	4.1
25th EB exit ramp to Indian Joe, gore to local street (1 lane)	0.11	560	1	560	0.1	25th NEW EB exit ramp (DDI, includes 2 lane LT ramps)	0.39	2035	1	2035	0.4	WB exit loop ramp to SB	0.20	1040	1	1040.0	0.20	25th NEW WB enter ramp (DDI, includes 2 lane LT ramps)	0.41	2170	1	2170	0.4
25th SB to EB enter loop ramp	0.21	1093	1	1093	0.2							WB enter ramp (Harrison to gore)	0.18	926	1	926.0	0.18						
TOTAL FOR SECTION				**17853**	**3.4**	**TOTAL FOR SECTION**				**21357**	**4.0**	**TOTAL FOR SECTION**				**18190.0**	**3.4**	**TOTAL FOR SECTION**				**23802**	**4.5**

25th to 17th (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
25th to 17th ML (3 lanes)	0.51	2693	3	8079	1.5	25th to 17th ML (4 lanes)	0.51	2693	4	10772	2.0	25th to 17th ML (3 lanes)	0.51	2690	3	8070.0	1.53	25th to 17th (4 lanes)	0.51	2690	4	10760	2.0
25th EB exit loop ramp	0.18	960	1	960	0.2	25th NEW EB enter ramp (DDI, includes 2 lane LT ramps)	0.47	2490	1	2490	0.5	17th WB enter ramp (from Harrison)	0.18	960	1	960.0	0.18	25th NEW WB exit ramp (DDI, includes 2 lane	0.38	1990	1	1990	0.4
25th EB enter ramp	0.29	1527	1	1527	0.3							25th WB exit ramp	0.20	1035	1	1035.0	0.20						
17th EB exit ramp	0.25	1332	1	1332	0.3																		
TOTAL FOR SECTION				**11898**	**2.3**					**13262**	**2.5**	**TOTAL FOR SECTION**				**10065.0**	**1.9**	**TOTAL FOR SECTION**				**12750**	**2.4**

17th to 9th (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
17th to 9th ML (3 lanes)	0.51	2685	3	8055	1.5	17th to 9th ML (4 lanes)	0.51	2685	4	10740	2.0	17th to 9th ML (3 lanes)	0.43	2273	3	6819.0	1.29	17th to 9th ML (4 lanes)	0.43	2273	4	9092	1.7
17th EB enter ramp (Bataan to gore)	0.16	825	1	825	0.2	17th EB enter ramp (Bataan to gore)	0.33	1765	1	1765	0.3	17th WB exit ramp (gore to Harrison)	0.14	725	1	725.0	0.14	17th WB exit ramp (gore to Harrison)	0.28	1460	1	1460	0.3
TOTAL FOR SECTION				**8880**	**1.7**					**12505**	**2.4**	**TOTAL FOR SECTION**				**7544.0**	**1.4**	**TOTAL FOR SECTION**				**10552**	**2.0**

9th to 1st (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
9th to 1st ML (3 lanes)	0.51	2678	3	8034	1.5	9th to 1st ML (4 lanes, shifted north)	1.52	8034	4	32136	6.1	9th to 1st (3 lanes)	0.51	2674	3	8022.0	1.52	9th to 1st (4 lanes, shifted north)	0.51	2674	4	10696	2.0
9th EB enter ramp (Bataan to gore)	0.17	910	1	910	0.2	1st EB Exit ramp (SPUI ramp, includes two lane LT ramp)	0.45	2350	1	2350	0.4	1st WB enter ramp (Harrison to gore)	0.14	740	1	740.0	0.14	1st WB Enter ramp (SPUI ramp, includes two lane LT ramp)	0.49	2590	1	2590	0.5
1st EB exit ramp (gore to Bataan)	0.16	825	1	825	0.2							9th WB exit ramp (gore to Harrison)	0.18	958	1	958.0	0.18						
TOTAL FOR SECTION				**9769**	**1.9**					**34486**	**6.5**	**TOTAL FOR SECTION**				**9712.0**	**1.8**	**TOTAL FOR SECTION**				**13286**	**2.5**

1st to Des Plaines River Bridge (1st interchange modified to SPUI from diamond) (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
1st to Des Plaines River Bridge ML (3 lanes)	0.42	2235	3	6705	1.3	1st to Des Plaines River Bridge ML (4 lanes, shifted far north in parts)	0.42	2229	4	8916	1.7	1st to Des Plaines River Bridge ML (3 lanes)	0.42	2216	3	6648.0	1.26	1st to Des Plaines River Bridge ML (4 lanes, shifted far north in parts)	0.42	2230	4	8920	1.7
1st EB enter ramp (plus right turn ramp)	0.30	1570	1	1570	0.3	1st EB Enter ramp (SPUI ramp, includes two lane LT ramp)	0.36	1880	1	1880	0.4	1st WB exit ramp	0.22	1153	1	1153.0	0.22	1st WB exit ramp (SPUI ramp, includes two lane LT ramp)	0.36	1895	1	1895	0.4
TOTAL FOR SECTION				**8275**	**1.6**	**TOTAL FOR SECTION**				**10796**	**2.0**	**TOTAL FOR SECTION**				**7801**	**1.5**	**TOTAL FOR SECTION**				**10815**	**2.0**

Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Des Plaines River Bridge to Des Plaines Ave ML (3 lanes)	0.53	2806	3	8418	1.6	Des Plaines River Bridge to Des Plaines Ave ML (4 lanes, shifted	0.53	2824	4	11296	2.1	Des Plaines River Bridge to Des Plaines Ave ML (3 lanes)	0.54	2841	3	8523.0	1.61	Des Plaines River Bridge to Des Plaines Ave ML (4 lanes, shifted far north in parts)	0.53	2821	4	11284	2.1
Des Plaines EB exit ramp	0.21	1120	1	1120	0.2	Des Plaines EB exit ramp (shifted and lengthened)	0.22	1180	1	1180	0.2	Des Plaines WB enter ramp plus rt turn ramp	0.22	1176	1	1176.0	0.22	Des Plaines WB enter ramp (plus rt ramp)	0.24	1290	1	1290	0.2
TOTAL FOR SECTION				**9538**	**1.8**	**TOTAL FOR SECTION**				**12476**	**2.4**	**TOTAL FOR SECTION**				**9699**	**1.8**	**TOTAL FOR SECTION**				**12574**	**2.4**

Des Plaines to Austin (Des Plaines River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Des Plaines to Austin ML (3 lanes)	2.15	11330	3	33990	6.4	Des Plaines to Austin ML (4 lanes)	2.15	11330	4	45320	8.6	Des Plaines to Austin ML (3 lanes)	2.14	11300	3	33900.0	6.42	Des Plaines to Austin ML (4 lanes)	2.14	11300	4	45200	8.6
Harlem EB exit ramp (1 lane, splits to 2 lanes)	0.25	1325	1	1325	0.3	Harlem EB exit ramp (1 lane, splits to 3 lanes)	0.41	2160	1	2160	0.4	Austin WB enter ramp	0.31	1650	1	1650.0	0.31	Austin WB enter ramp	0.36	1900	1	1900	0.4
Harlem EB enter ramp	0.36	1900	1	1900	0.4	Harlem EB enter ramp (1 lane)	0.35	1860	1	1860	0.4	Harlem WB exit ramp (1 lane to 2 lanes)	0.32	1705	1	1705.0	0.32	Harlem WB exit ramp (1 lane to 2 lanes)	0.48	2515	1	2515	0.5
Austin EB exit ramp (1 lane, splits to 2)	0.31	1650	1	1650	0.3	Austin EB exit ramp (1 lane, splits to 2)	0.51	2680	1	2680	0.5	Harlem WB enter ramp	0.27	1400	1	1400.0	0.27	Harlem WB enter ramp	0.27	1450	1	1450	0.3
TOTAL FOR SECTION				**38865**	**7.4**					**52020**	**9.9**	**TOTAL FOR SECTION**				**38655**	**7.3**	**TOTAL FOR SECTION**				**51065**	**9.7**

Austin to Central (Des Plaines River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Austin to Central ML (3 lanes to end of Austin EB enter ramp, 4 lanes to e	1.71	9010	1	9010	1.7	Austin to Central ML (4 lanes)	0.50	2615	4	10460	2.0	Austin to Central ML (3 lanes to end of Austin WB exit ramp, 4 lanes to east)	1.68	8884	1	8884.0	1.68	Austin to Central ML (4 lanes)	0.51	2690	4	10760	2.0
Austin EB enter ramp	0.27	1425	1	1425	0.3	Austin EB enter ramp (two lanes merge to one)	0.44	2330	1	2330	0.4	Austin WB exit ramp	0.35	1859	1	1859.0	0.35	Austin WB exit ramp (1 lane splits to 3 lanes)	0.49	2570	1	2570	0.5
Central EB exit ramp	0.23	1200	1	1200	0.2	Central EB exit ramp (splits to 2 lanes at Central)	0.65	3450	1	3450	0.7	Central WB enter ramp	0.21	1100	1	1100.0	0.21	Central WB enter ramp (2 lanes merge to 1)	0.58	3076	1	3076	0.6
TOTAL FOR SECTION				**11635**	**2.2**					**16240**	**3.1**	**TOTAL FOR SECTION**				**11843.0**	**2.2**	**TOTAL FOR SECTION**				**16406**	**3.1**

Central to Cicero (S. Branch Chicago River)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Central to Cicero ML (4 lanes)	1.01	5314	4	21256	4.0	Central to Cicero (4 lanes)	1.01	5314	4	21256	4.0	Central to Cicero ML (4 lanes)	1.01	5322	4	21288.0	4.03	Central to Cicero ML (4 lanes)	1.01	5322	4	21288	4.0
Central EB enter ramp	0.27	1430	1	1430	0.3	Central EB enter ramp (2 lanes merge to 1 lane)	0.34	1800	1	1800	0.3	Central WB exit ramp (gore to local street)	0.22	1140	1	1140.0	0.22	Central WB exit ramp (gore to local street)	0.20	1055	1	1055	0.2
Laramie EB enter ramp (Lexington to gore)	0.15	807	1	807	0.2	Laramie EB enter ramp (plus turnaround)	0.37	1970	1	1970	0.4	Laramie WB exit ramp (gore to local street)	0.21	1100	1	1100.0	0.21	Laramie WB exit ramp (gore to local street)	0.32	1700	1	1700	0.3
Cicero EB exit ramp (gore to Lexington)	0.22	1140	1	1140	0.2	Cicero EB exit ramp (gore to local street)	0.25	1330	1	1330	0.3	Cicero WB enter ramp	0.16	865	1	865.0	0.16	Cicero WB enter ramp (local street to gore, plus turnaround ramp)	0.36	1880	1	1880	0.4
TOTAL FOR SECTION				**24633**	**4.4**					**26356**	**5.0**	**TOTAL FOR SECTION**				**24393.0**	**4.6**	**TOTAL FOR SECTION**				**25923**	**4.9**

Cicero to Racine (ML RESTRIPING ONLY. NO INTERCHANGE MODS) (S. Branch Chicago River)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING					BUILD (no ramp, CD Road changes)				
EB	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***EB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*	***WB***	***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*		***Miles***	*feet*	*no. lanes*	*subtotal*	*Subtotal (miles)*
Cicero to Racine ML	4.58	24162	4	96648	18.3	Cicero to Racine ML	4.58	24162	4	96648	18.3	Cicero to Racine ML	4.58	24165	4	96660.0	18.31	Cicero to Racine ML	4.58	24165	4	96660	18.3
TOTAL FOR SECTION				**96648**						**96648**	**18.3**	**TOTAL FOR SECTION**				**96660.0**	**18.3**	**TOTAL FOR SECTION**				**96660**	**18.3**

APPENDIX H
TABLE 5: Lane Mile Calculations
Existing to Build

I-290 Project Corridor: September 2016

EB+WB Combined			EB+WB Combined
EXISTING		**BUILD**	
Butterfield to Mannheim (does not include CD road or Mannheim interchange as there are no changes to those) (Salt Creek)	**Lane *Miles***	**Butterfield to Mannheim (does not include CD road or Mannheim interchange as there are no changes to those) (Salt Creek)**	**Lane *Miles***
I-290 to I-290 ML, to Mannheim (no changes other than lane shift)	6.88	I-290 to I-290 ML, to Mannheim (no changes other than lane shift)	6.87
I-290 to CD Road (no changes)	3.6	I-290 to CD Road (no changes)	3.6
I-88 (from Darmstadt Rd) (no changes other than lane shift)	1.4	I-88 (from Darmstadt Rd) (no changes other than lane shift)	1.6
I-88 (from OH sign on I-88) to CD road (no changes)	0.4	I-88 (from OH sign on I-88) to CD road (no changes)	0.4
Subtotal	**12.3**	*Subtotal*	**12.4**
Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-West)	**Lane *Miles***	**Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-West)**	**Lane *Miles***
Mannheim to 25th ML (3 lanes Mann to CD road, 4 lanes CD to 25th)	6.1	Mannheim to 25th ML (3 lanes Mann to CD road, 4 lanes CD to 25th)	7.8
25th NEW EB exit ramp (DDI, includes 2 lane LT ramps)	0.3	25th NEW EB exit ramp (DDI, includes 2 lane LT ramps)	0.8
25th SB to EB enter loop ramp	0.4	0	0.0
Subtotal	**6.8**	*Subtotal*	**8.6**
25th to 17th (Des Plaines River-West)	**Lane *Miles***	**25th to 17th (Des Plaines River-West)**	**Lane *Miles***
25th to 17th ML (3 lanes)	3.1	25th to 17th ML (4 lanes)	4.1
25th EB exit loop ramp	0.4	25th NEW EB enter ramp (DDI, includes 2 lane LT ramps)	0.8
25th EB enter ramp	0.5	0	0.0
17th EB exit ramp	0.3	0	
Subtotal	**4.2**	*Subtotal*	**4.9**
17th to 9th (Des Plaines River-West)	**Lane *Miles***	**17th to 9th (Des Plaines River-West)**	**Lane *Miles***
17th to 9th ML (4 lanes)	2.8	17th to 9th ML (4 lanes)	3.8
17th EB enter ramp (Bataan to gore)	0.3	17th EB enter ramp (Bataan to gore)	0.6
Subtotal	**3.1**	*Subtotal*	**4.4**
9th to 1st (Des Plaines River-West)	**Lane *Miles***	**9th to 1st (Des Plaines River-West)**	**Lane *Miles***
9th to 1st ML (3 lanes)	3.0	9th to 1st ML (4 lanes, shifted north)	8.1
9th EB enter ramp (Bataan to gore)	0.3	1st EB Exit ramp (SPUI ramp, includes two lane LT ramp)	0.9
1st EB exit ramp (gore to Bataan)	0.3		
Subtotal	**3.7**	*Subtotal*	**9.0**
1st to Des Plaines River Bridge (1st interchange modified to SPUI from diamond) (Des Plaines River-West)	**Lane *Miles***	**1st to Des Plaines River Bridge (1st interchange modified to SPUI from diamond) (Des Plaines River-West)**	**Lane *Miles***
1st to Des Plaines River Bridge ML (3 lanes)	2.5	1st to Des Plaines River Bridge ML (4 lanes, shifted far north in parts)	3.4
1st EB enter ramp (plus right turn ramp)	0.5	1st EB Enter ramp (SPUI ramp, includes two lane LT ramp)	0.7
Subtotal	**3.0**	*Subtotal*	**4.1**
Des Plaines-West (Existing)	**17.6**	**Des Plaines River (Build)**	**27.1**
Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)	**Lane *Miles***	**Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)**	**Lane *Miles***
Des Plaines River Bridge to Des Plaines Ave ML (3 lanes)	3.2	Des Plaines River Bridge to Des Plaines Ave ML (4 lanes, shifted far north in	4.3
Des Plaines EB exit ramp	0.4	Des Plaines EB exit ramp (shifted and lengthened)	0.5
Subtotal	**3.6**	*Subtotal*	**4.7**
Des Plaines to Austin (Des Plaines River-East)	**Lane *Miles***	**Des Plaines to Austin (Des Plaines River-East)**	**Lane *Miles***
Des Plaines to Austin ML (4 lanes)	12.9	Des Plaines to Austin ML (4 lanes)	17.1
Harlem EB exit ramp (1 lane, splits to 3 lanes)	0.6	Harlem EB exit ramp (1 lane, splits to 3 lanes)	0.8
Harlem EB enter ramp (1 lane)	0.7	Harlem EB enter ramp (1 lane)	0.8
Austin EB exit ramp (1 lane, splits to 2)	0.6	Austin EB exit ramp (1 lane, splits to 2)	0.8
Subtotal	**14.7**	*Subtotal*	**19.5**
Austin to Central (Des Plaines River-East)	**Lane *Miles***	**Austin to Central (Des Plaines River-East)**	**Lane *Miles***
Austin to Central ML (4 lanes)	3.4	Austin to Central ML (4 lanes)	4.0
Austin EB enter ramp (two lanes merge to one)	0.6	Austin EB enter ramp (two lanes merge to one)	0.9
Central EB exit ramp (splits to 2 lanes at Central)	0.4	Central EB exit ramp (splits to 2 lanes at Central)	1.2
Subtotal	**4.4**	*Subtotal*	**6.2**
Des Plaines-West (Existing)	**19.5**	**Des Plaines River (Build)**	**25.4**
Central to Cicero (S. Branch Chicago River)	**Lane *Miles***	**Central to Cicero (S. Branch Chicago River)**	**Lane *Miles***
Central to Cicero (4 lanes)	8.1	Central to Cicero (4 lanes)	8.1
Central EB enter ramp (2 lanes merge to 1 lane)	0.5	Central EB enter ramp (2 lanes merge to 1 lane)	0.5
Laramie EB enter ramp (plus turnaround)	0.4	Laramie EB enter ramp (plus turnaround)	0.7
Cicero EB exit ramp (gore to local street)	0.4	Cicero EB exit ramp (gore to local street)	0.6
Subtotal	**9.3**	*Subtotal*	**9.9**
Cicero to Racine (ML RESTRIPING ONLY. NO INTERCHANGE MODS) (S. Branch Chicago River)	**Lane *Miles***	**Cicero to Racine (ML RESTRIPING ONLY. NO INTERCHANGE MODS) (S. Branch Chicago River)**	**Lane *Miles***
Cicero to Racine ML	36.6	Cicero to Racine ML	36.6
South Branch of Chicago River (Existing)	**44.7**	**South Branch of Chicago River (Build)**	**44.7**

Appendix H
TABLE 5B: Lane Mile Calculations
Existing to Build (Frontage Rds from 25th Ave to 1st Ave)

I-290 Project Corridor: September 2016

I-290 Lane Mile Calculations
Existing to Build (Frontage Roads; stormwater draining to waterways)

0.000189

Butterfield to Mannheim (does not include CD road or Mannheim interchange as there are no changes to those) (Salt Creek)

	EXISTING					BUILD						EXISTING						BUILD (no Frontage rd changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)
I-290 to I-290 Frontage, to Mannheim (2 lanes ex)	0.00	0	1	0	0.0	I-290 to I-290 Frontage, to Mannheim (no changes other than lane shift)	0.00	0	1	0	0.0	I-290 to I-290 Frontage	0.00	0	1	0	0.00	I-290 to I-290 (no changes other than minor lane shift)	0.00	0	1	0	0.0
I-290 to CD Road (no changes)	0.00	0	1	0	0.0	I-290 to CD Road (no changes)	0.00	0	1	0	0.0	I-290 to I-88 Frontage (2 lanes ex)	0.00	0	1	0	0.00	I-290 to I-88 (no changes other than minor lane shift)	0.00	0	1	0	0.0
I-88 (from Darmstadt Rd) to I-290 Frontage, to Mannheim	0.00	0	1	0	0.0	I-88 (from Darmstadt Rd) (no changes other than lane shift)	0.00	0	1	0	0.0								0.00				0.0
I-88 (from OH sign on I-88) to CD road (no changes)	0.00	0	1	0	0.0	I-88 (from OH sign on I-88) to CD road (no changes)	0.00	0	1	0	0.0								0.00				0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no Frontage rd changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)
Mannheim to 25th Frontage	0.00	0	1	0	0.0	Mannheim to 25th Frontage	0.00	0	1	0	0.0	Mannheim to 25th Frontage	0.00	0	1	0	0.00	Mannheim to 25th Frontage (4 lanes)	0.00	0	1	0	0.0
25th EB exit ramp to Indian Joe, gore to local street (1 lane)	0.00	0	1	0	0.0	25th NEW EB exit ramp	0.00	0	1	0	0.0	WB exit loop ramp to SB	0.00	0	1	0	0.00	25th NEW WB enter ramp (DDI, includes 2 lane LT ramps)	0.00	0	1	0	0.0
25th SB to EB enter loop ramp	0.00	0	1	0	0.0							WB enter ramp (Harrison to gore)	0.00	0	1	0	0.00						0.0
																							0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

25th to 23rd (Des Plaines River-West)

	EXISTING					BUILD						EXISTING						BUILD (no Frontage rd changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)
25th to 23rd Frontage Rd (existing stormwater is sewered to MWRDGC)	0.00	0	1	0	0.0	25th to 23rd Frontage Rd (proposed stormwater will be sewered to MWRDGC)	0.00	0	2	0	0.0	25th to 23rd Frontage (existing stormwater will be sewered to MWRDGC)	0.00	0	1	0	0.00	25th to 23rd	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

23rd to 21st (Des Plaines River-West)

	EXISTING					BUILD						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)
23rd to 21st Frontage Rd (existing stormwater is sewered to MW	0.00	0	1	0	0.0	23rd to 21st Frontage	0.13	691	1	691	0.1	23rd to 21st Frontage (existing stormwater will be sewered to MWRDGC)	0.00	0	1	0	0.00	23rd to 21st Frontage	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**1395**	**0.3**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

21st to 17th (Des Plaines River-West)

	EXISTING					BUILD						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)
21st to 17th Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0	0.0	21st to 17th Frontage	0.26	1360	1	1360	0.26	21st to 17th Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0.0	0.00	21st to 17th Frontage	0.25	1345	1	1345	0.3
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**2714**	**0.51**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**1345**	**0.3**

17th to 9th (Des Plaines River-West)

	EXISTING					BUILD						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
17th to 9th Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0	0.0	17th to 9th Frontage	0.50	2657	2	5315	1.0	17th to 9th Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0.0	0.00	17th to 9th Frontage	0.50	2653	2	5306	1.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**5315**	**1.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**5306**	**1.0**

9th to 1st (Des Plaines River-West)

	EXISTING					BUILD						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
9th to 1st Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0	0.0	9th to 1st Frontage	0.51	2675	2	5350	1.0	9th to 1st (existing stormwater is sewered to MWRDGC)	0.00	0	1	0.0	0.00	9th to 1st Frontage	0.51	2694	2	5388	1.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**5350**	**1.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**5388**	**1.0**

1st to Des Plaines River Bridge (Des Plaines River-West)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
1st to Des Plaines River Bridge Frontage	0.00	0	1	0	0.0	1st to Des Plaines River Bridge Frontage	0.00	0	1	0	0.0	1st to Des Plaines River Bridge Frontage (existing stormwater is sewered to MWRDGC)	0.00	0	1	0.0	0.00	1st to Des Plaines River Bridge Frontage	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
Des Plaines River Bridge to Des Plaines Ave Frontage	0.00	0	1	0	0.0	Des Plaines River Bridge to Des Plaines Ave Frontage	0.00	0	1	0	0.0	Des Plaines River Bridge to Des Plaines Ave Frontage	0.00	0	1	0.0	0.00	Des Plaines River Bridge to Des Plaines Ave Frontage	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Des Plaines to Austin (Des Plaines River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
Des Plaines to Austin Frontage	0.00	0	1	0	0.0	Des Plaines to Austin Frontage	0.00	0	1	0	0.0	Des Plaines to Austin Frontage	0.00	0	1	0.0	0.00	Des Plaines to Austin Frontage	0.00	0	10	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Austin to Central (Des Plaines River-East)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
Austin to Central Frontage	0.00	0	1	0	0.0	Austin to Central Frontage	0.00	0	1	0	0.0	Austin to Central Frontage	0.00	0	1	0.0	0.00	Austin to Central Frontage	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Central to Cicero (S. Branch Chicago River)

	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
Central to Cicero Frontage	0.00	0	1	0	0.0	Central to Cicero	0.00	0	1	0	0.0	Central to Cicero Frontage	0.00	0	1	0.0	0.00	Central to Cicero Frontage (4 lanes)	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

Cicero to Racine (S. Branch Chicago River)

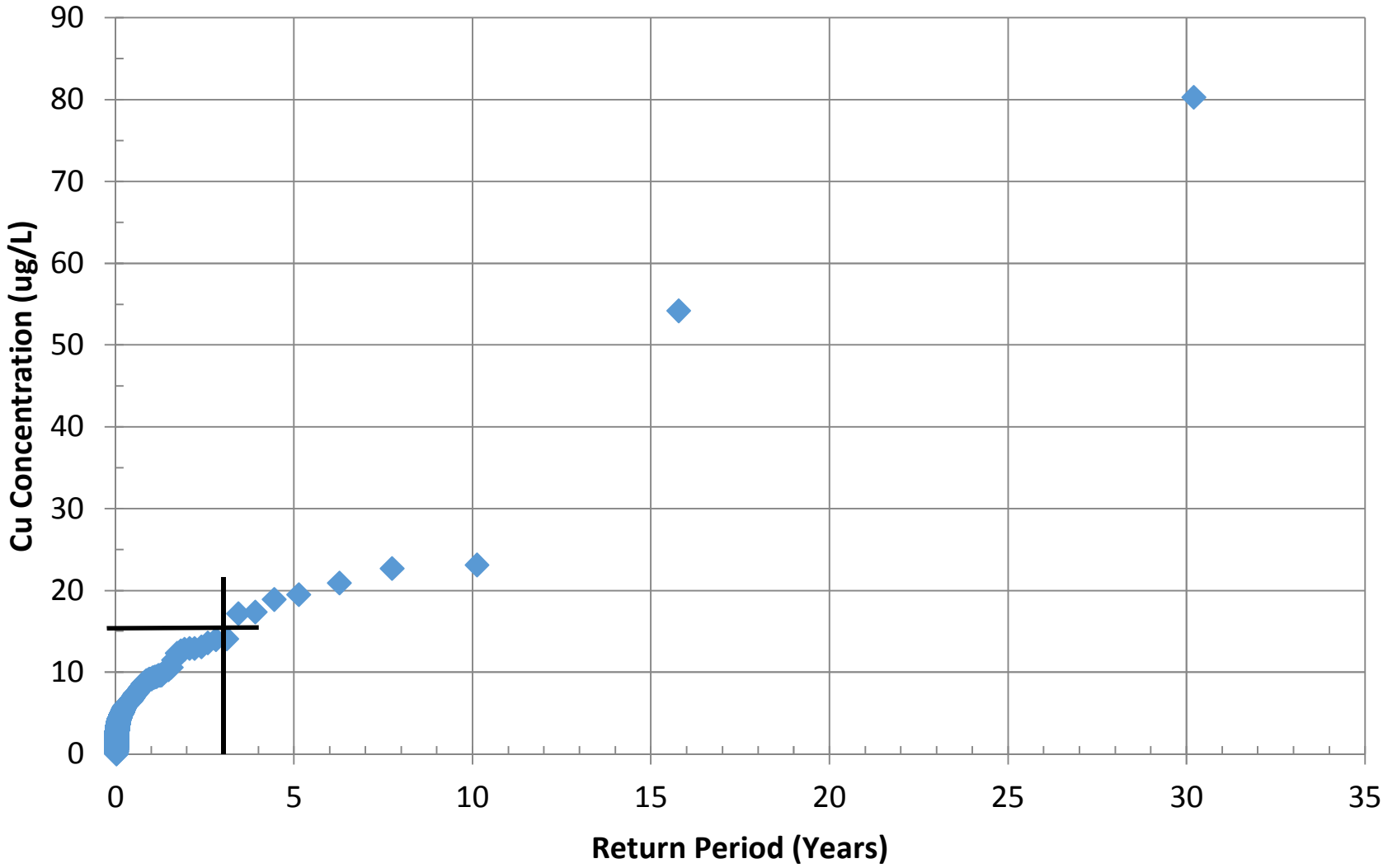
	EXISTING					BUILD (no ramp, CD Road changes)						EXISTING						BUILD (no ramp, CD Road changes)				
EB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)	WB	Miles	feet	no. lanes	subtotal	Subtotal (miles)		Miles	feet	no. lanes	subtotal	Subtotal (miles)
Cicero to Racine Frontage	0.00	0	1	0	0.0	Cicero to Racine Frontage	0.00	0	1	0	0.0	Cicero to Racine Frontage	0.00	0	1	0.0	0.00	Cicero to Racine Frontage	0.00	0	1	0	0.0
TOTAL FOR SECTION				**0**		**TOTAL FOR SECTION**				**0**	**0.0**	**TOTAL FOR SECTION**				**0.0**	**0.0**	**TOTAL FOR SECTION**				**0**	**0.0**

EB+WB Combined		EB+WB Combined	
EXISTING		**BUILD**	
Mannheim interchange as there are no changes to those) (Salt Creek)	**Lane *Miles***	**Butterfield to Mannheim (does not include CD road or Mannheim interchange as there are no changes to those) (Salt Creek)**	**Lane *Miles***
I-290 to I-290 Frontage, to Mannheim (no changes other than lane shift)	0.00	I-290 to I-290 Frontage, to Mannheim (no changes other than lane shift)	0.00
I-290 to CD Road (no changes)	0.0	I-290 to CD Road (no changes)	0.0
I-88 (from Darmstadt Rd) (no changes other than lane shift)	0.0	I-88 (from Darmstadt Rd) (no changes other than lane shift)	0.0
I-88 (from OH sign on I-88) to CD road (no changes)	0.0	I-88 (from OH sign on I-88) to CD road (no changes)	0.0
Subtotal	**0.0**	*Subtotal*	**0.0**
Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-	**Lane *Miles***	**Mannheim to 25th (does not include CD road or Mannheim interchange as there are no changes to those) (Des Plaines River-**	**Lane *Miles***
Mannheim to 25th Frontage (3 lanes Mann to CD road, 4 lanes CD to 25th)	0.0	Mannheim to 25th Frontage	0.0
25th NEW EB exit ramp (DDI, includes 2 lane LT ramps)	0.0	25th NEW EB exit ramp	0.0
25th SB to EB enter loop ramp	0.0	0	0.0
Subtotal	0.0	*Subtotal*	0.0
25th to 23rd (Des Plaines River-West)	**Lane *Miles***	**25th to 23rd (Des Plaines River-West)**	**Lane *Miles***
25th to 23rd Frontage Rd (existing stormwater is sewered to MWRDGC)	0.0	25th to 23rd Frontage Rd (proposed stormwater will be sewered to MWRDGC)	0.0
Subtotal	**0.0**	*Subtotal*	**0.0**
23rd to 21st (Des Plaines River-West)	**Lane *Miles***	**23rd to 21st (Des Plaines River-West)**	**Lane *Miles***
23rd to 21st Frontage Rd (existing stormwater is sewered to MWRDGC)	0.0	23rd to 21st Frontage	0.3
Subtotal	0.0	*Subtotal*	0.3
21st to 17th (Des Plaines River-West)	**Lane *Miles***	**21st to 17th (Des Plaines River-West)**	**Lane *Miles***
21st to 17th Frontage (existing stormwater is sewered to MWRDGC)	0.0	21st to 17th Frontage	0.8
Subtotal	0.0	*Subtotal*	0.8
17th to 9th (Des Plaines River-West)	**Lane *Miles***	**17th to 9th (Des Plaines River-West)**	**Lane *Miles***
17th to 9th Frontage (existing stormwater is sewered to MWRDGC)	0.0	17th to 9th Frontage	2.0
Subtotal	0.0	*Subtotal*	2.0
9th to 1st (Des Plaines River-West)	**Lane *Miles***	**9th to 1st (Des Plaines River-West)**	**Lane *Miles***
9th to 1st Frontage (existing stormwater is sewered to MWRDGC)	0.0	9th to 1st Frontage	2.0
Subtotal	0.0	*Subtotal*	2.0
1st to Des Plaines River Bridge (Des Plaines River-West)	**Lane *Miles***	**1st to Des Plaines River Bridge (Des Plaines River-West)**	**Lane *Miles***
1st to Des Plaines River Bridge Frontage	0.0	1st to Des Plaines River Bridge Frontage	0.0
Subtotal	0.0	*Subtotal*	0.0
Des Plaines-West (Existing)	**0.0**	**Des Plaines River (Build)**	**5.1**
Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)	**Lane *Miles***	**Des Plaines River Bridge to Des Plaines Avenue (Des Planes River-East)**	**Lane *Miles***
Des Plaines River Bridge to Des Plaines Ave Frontage	0.0	Des Plaines River Bridge to Des Plaines Ave Frontage	0.0
Subtotal	0.0	*Subtotal*	0.0
Des Plaines to Austin (Des Plaines River-East)	**Lane *Miles***	**Des Plaines to Austin (Des Plaines River-East)**	**Lane *Miles***
Des Plaines to Austin Frontage	0.0	Des Plaines to Austin Frontage	0.0
Subtotal	0.0	*Subtotal*	0.0
Austin to Central (Des Plaines River-East)	**Lane *Miles***	**Austin to Central (Des Plaines River-East)**	**Lane *Miles***
Austin to Central Frontage	0.0	Austin to Central Frontage	0.0
Subtotal	0.0	*Subtotal*	0.0
Des Plaines-West (Existing)	**0.0**	**Des Plaines River (Build)**	**0.0**
Central to Cicero (S. Branch Chicago River)	**Lane *Miles***	**Central to Cicero (S. Branch Chicago River)**	**Lane *Miles***
Central to Cicero	0.0	Central to Cicero	0.0
Subtotal	0.0	*Subtotal*	0.0
Cicero to Racine (S. Branch Chicago River)	**Lane *Miles***	**Cicero to Racine (S. Branch Chicago River)**	**Lane *Miles***
Cicero to Racine Frontage	0.0	Cicero to Racine Frontage	0.0
Subtotal	0.0	*Subtotal*	0.0
South Branch of Chicago River (Existing)	**0.0**	**South Branch of Chicago River (Build)**	**0.0**

SELDM Predicted Existing Downstream Copper Concentration:

HRDB Runoff (ADT >50k, Log10 Transformed)

MWRD (Belmont Ave) Upstream

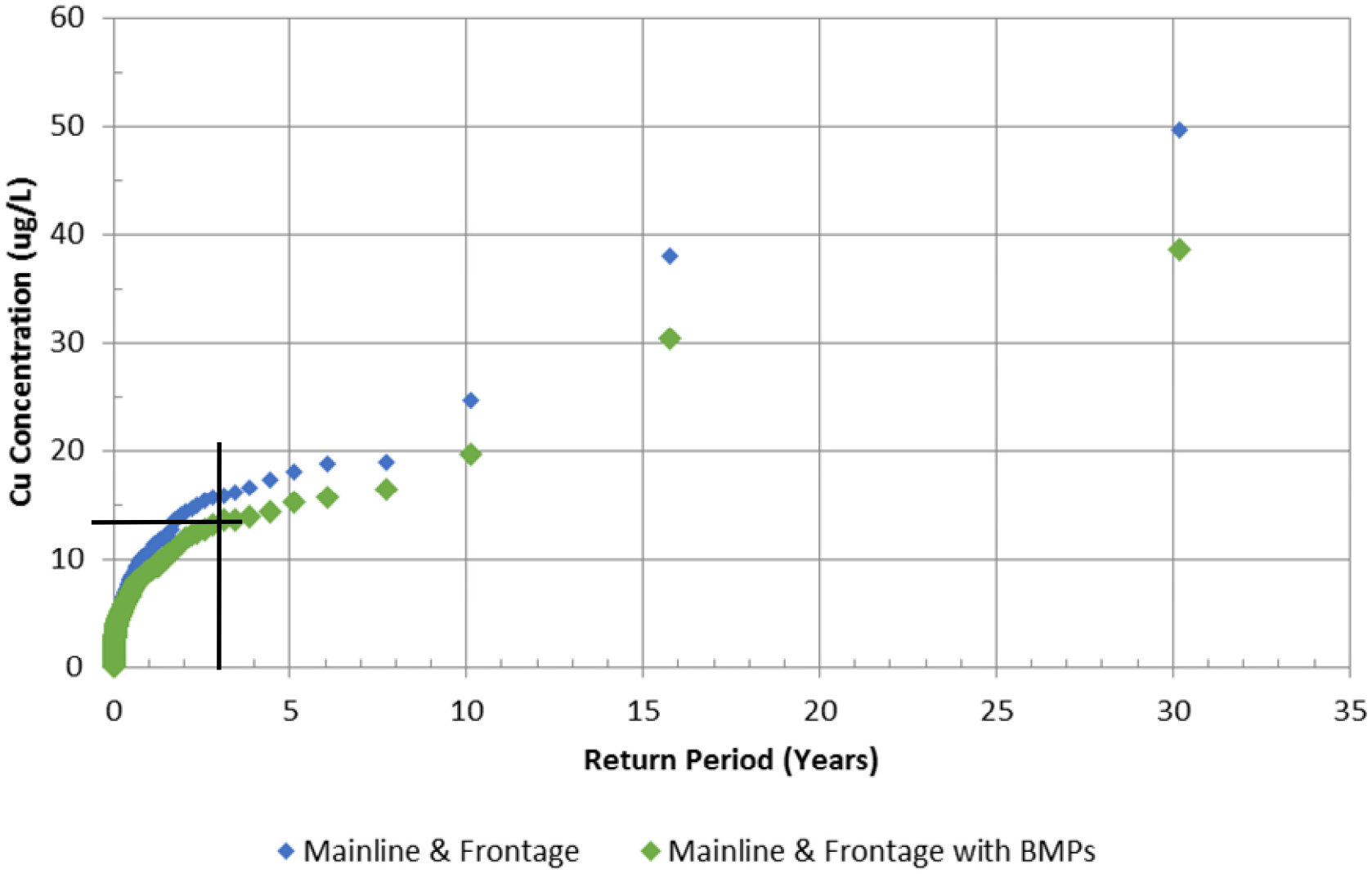


SELDM Predicted Proposed Build Comparison

Downstream Copper Concentration:

HRDB Runoff (ADT >50k, Log10 Transformed)

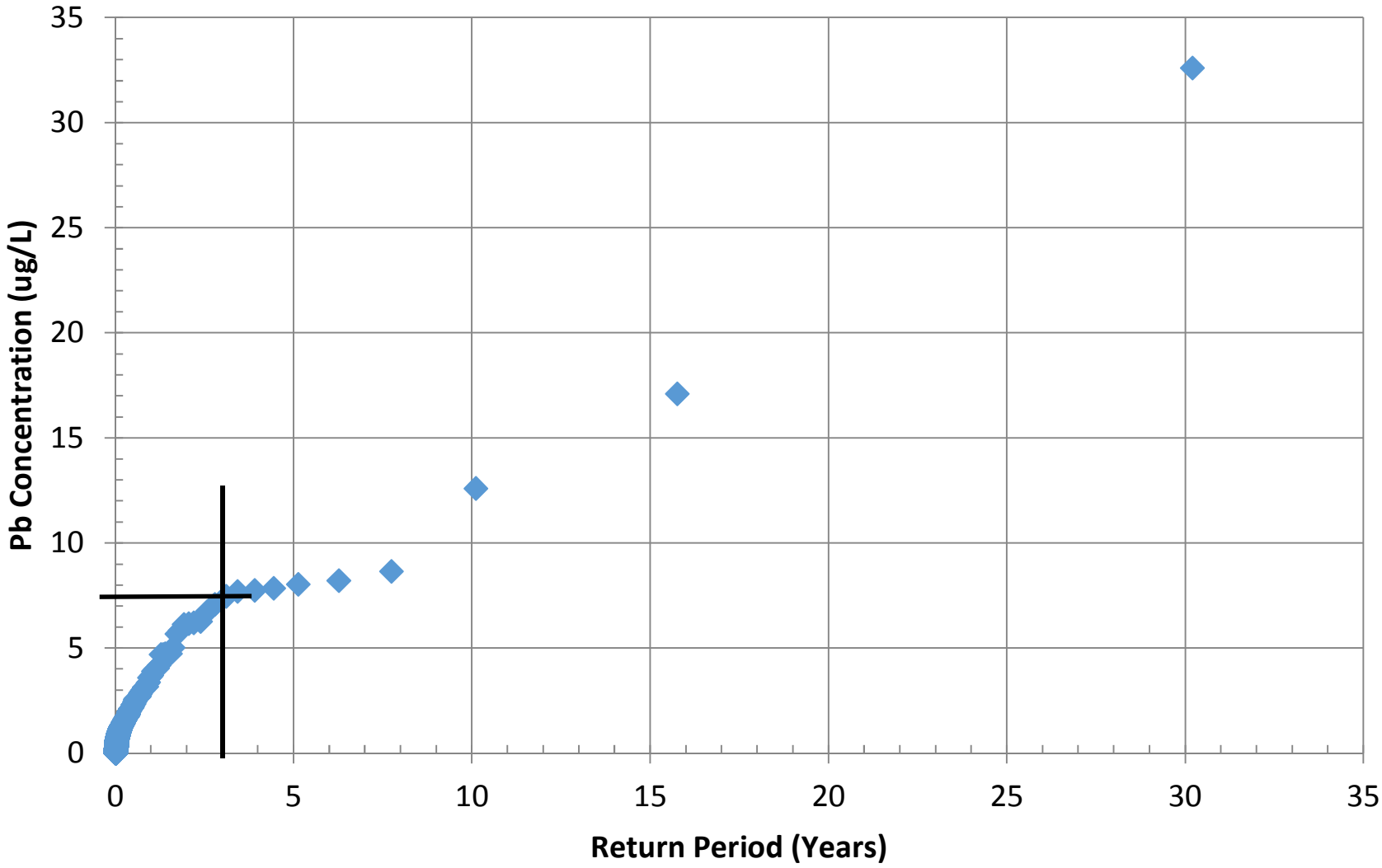
MWRD (Belmont Ave) Upstream



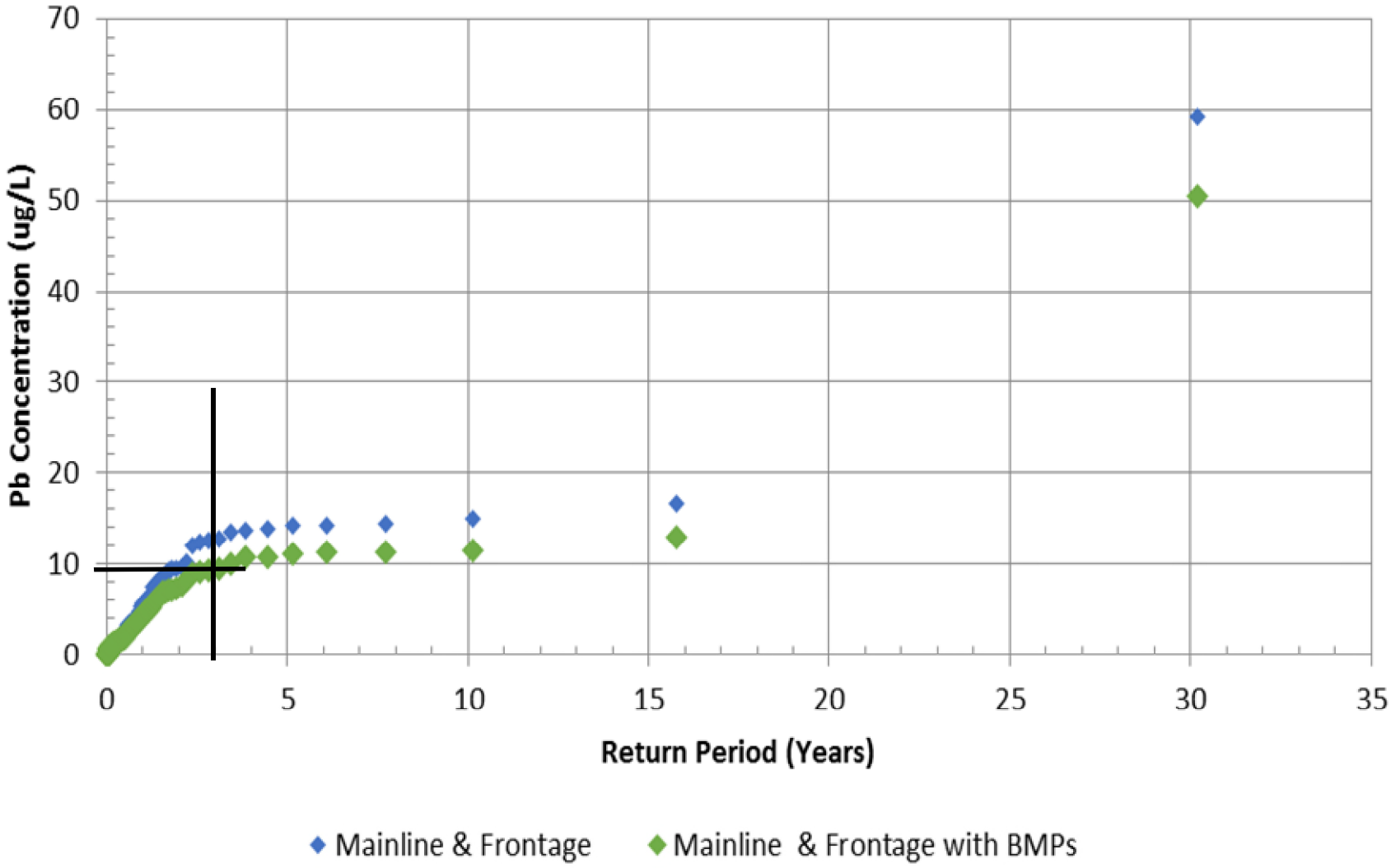
SELDM Predicted Existing Downstream Lead Concentration:

HRDB Runoff (ADT >50k, Log10 Transformed)

MWRD (Belmont Ave) Upstream



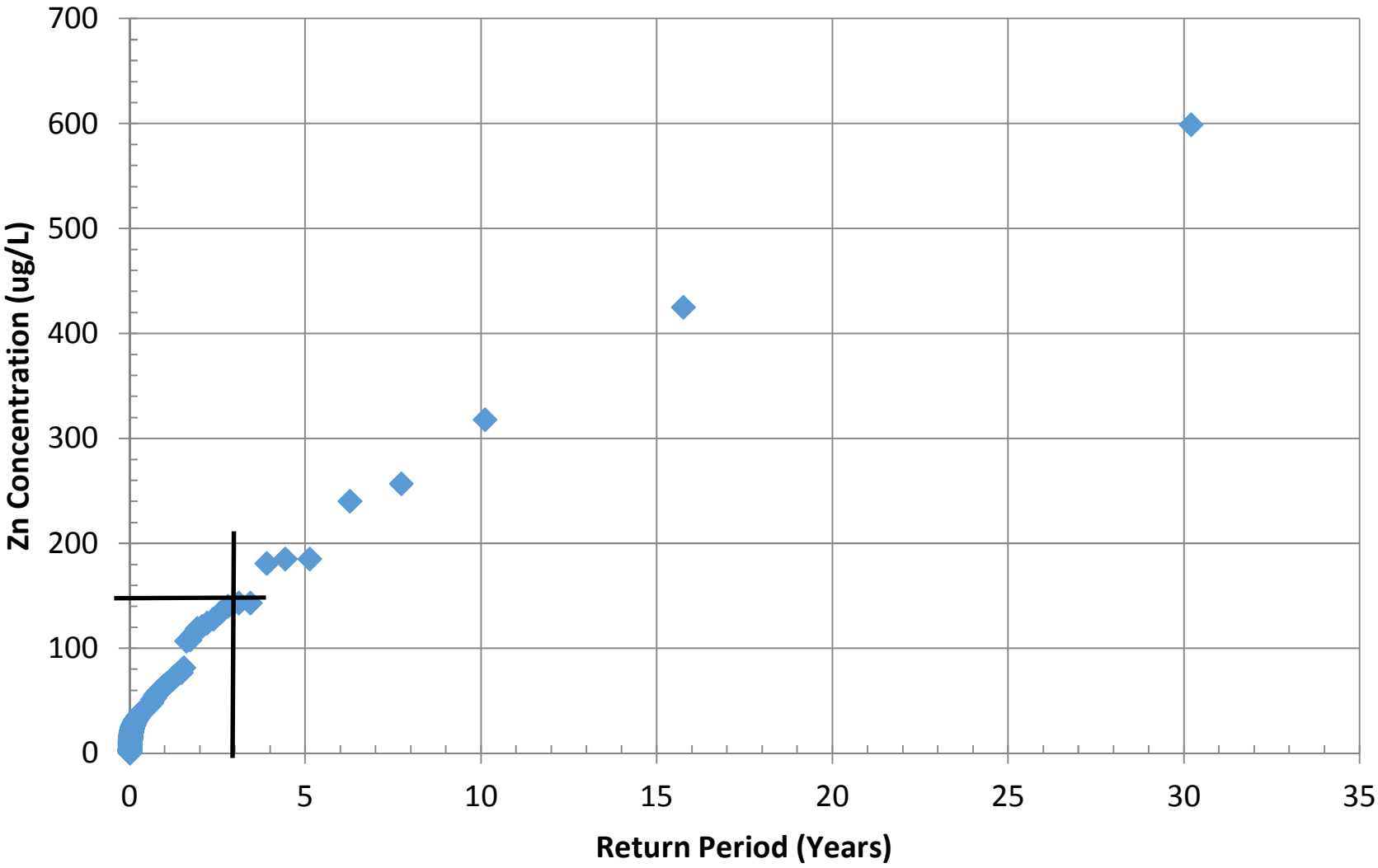
SELDM Predicted Proposed Build Comparison
Downstream Lead Concentration:
HRDB Runoff (ADT >50k, Log10 Transformed)
MWRD (Belmont Ave) Upstream



SELDM Predicted Existing Downstream Zinc Concentration:

HRDB Runoff (ADT >50k, Log10 Transformed)

MWRD (Belmont Ave) Upstream

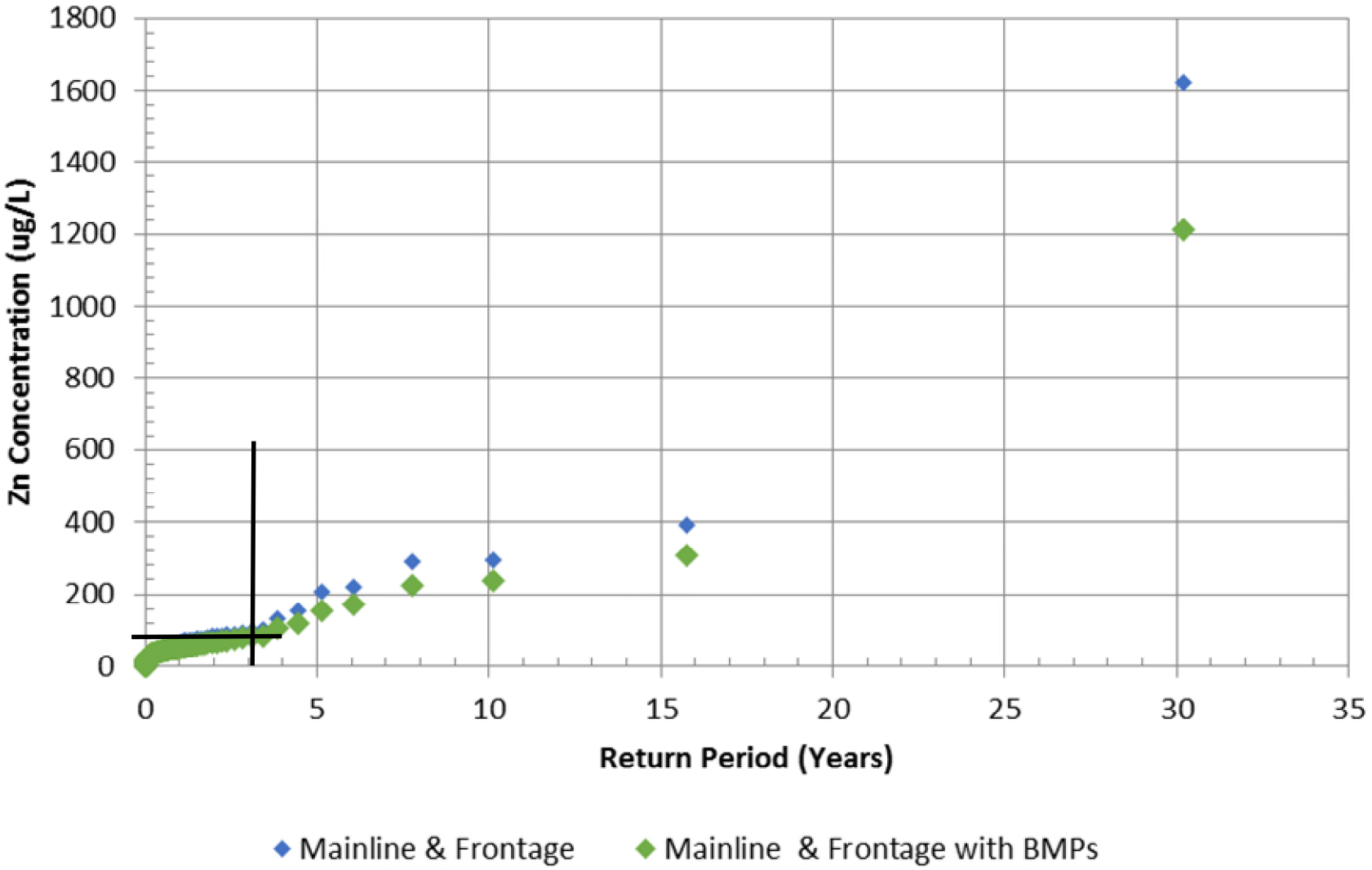


SELDM Predicted Proposed Build Comparison

Downstream Zinc Concentration:

HRDB Runoff (ADT >50k, Log10 Transformed)

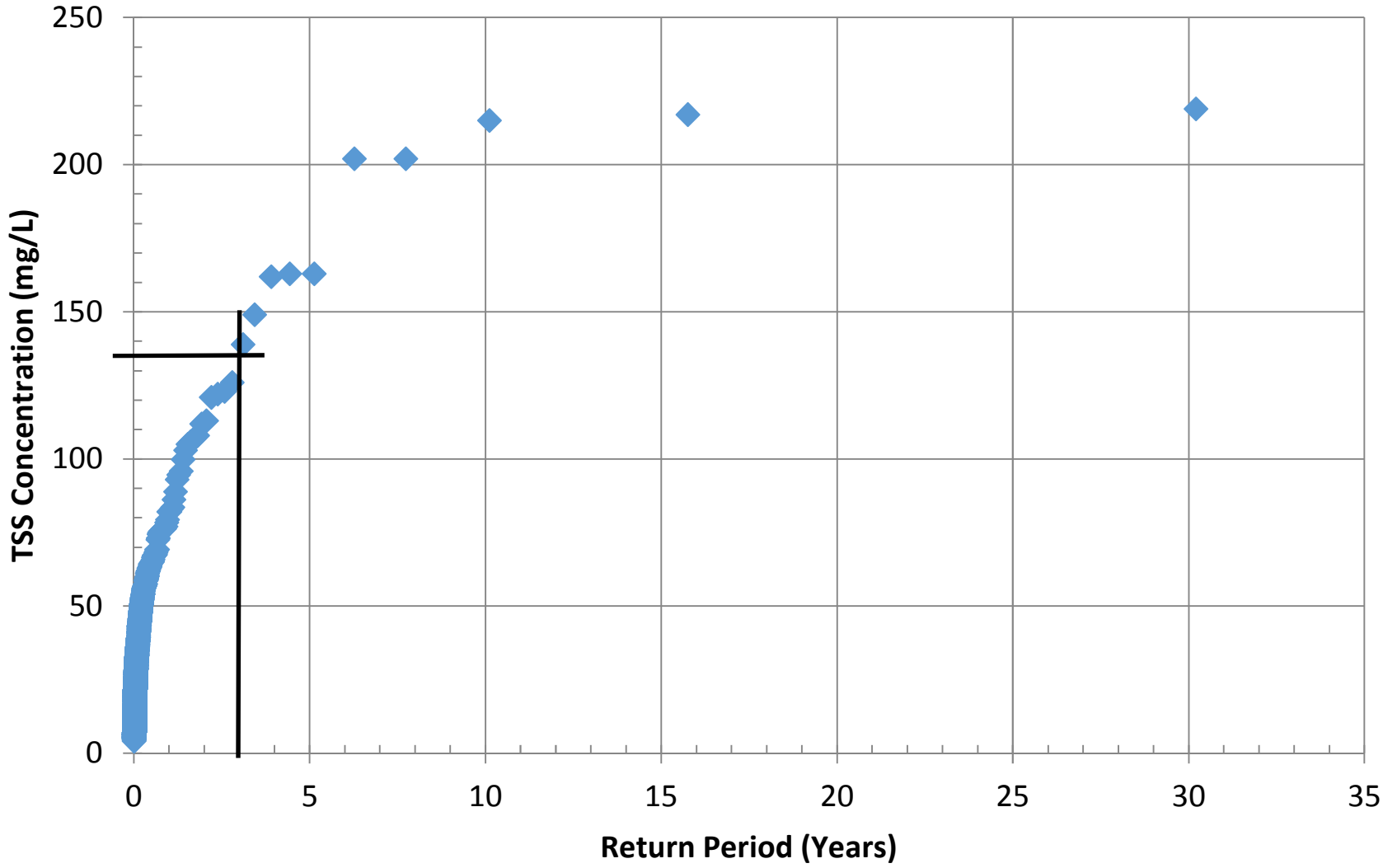
MWRD (Belmont Ave) Upstream



SELDM Predicted Existing Downstream TSS Concentration:

HRDB Runoff (ADT >100k)

MWRD (Belmont Ave) Upstream

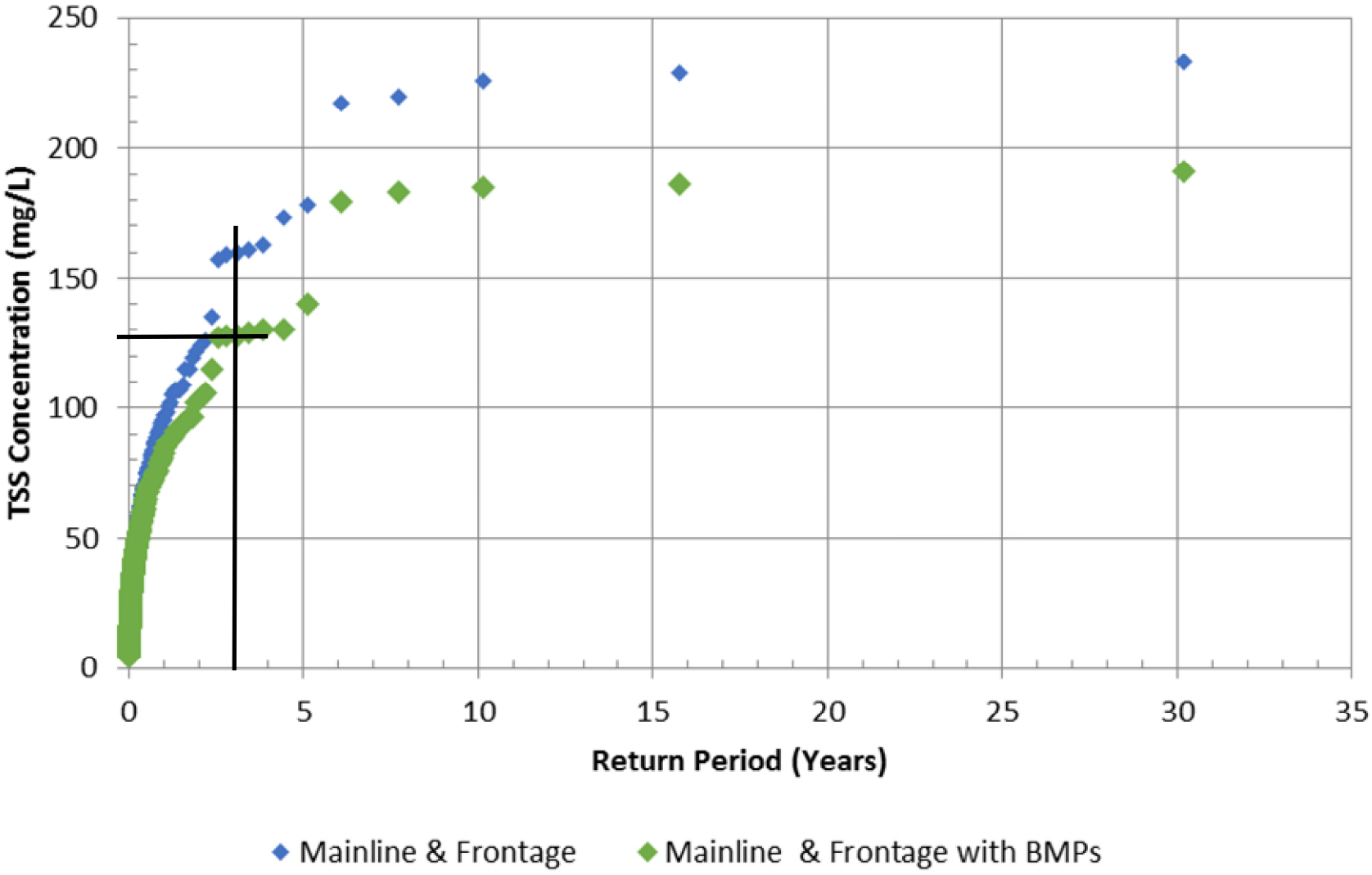


SELDM Predicted Proposed Build Comparison

Downstream TSS Concentration:

HRDB Runoff (ADT >100k)

MWRD (Belmont Ave) Upstream



Developed land is the dominant land use within the watersheds. Additional information regarding land use is provided in Section 3.1, Social/Economic Characteristics. Studies have shown that the biological quality of streams may be impacted if the percentage of urban land use within a watershed exceeds between 10 and 30 percent (Midwest Biodiversity Institute, 2008). The total area of developed land in the sub-watersheds varies from 76 to 91 percent.

Summary of Land Use by Watershed

Land Use	Watershed [a]									
	Addison Creek		Upper Des Plaines River [b]		Lower Des Plaines River (Main Stem)		Salt Creek		South Branch of the Chicago River [c]	
	acres	%	acres	%	acres	%	acres	%	acres	%
Agricultural	1	0	90,553	29.3	46	0	1,159	1.2	0	0
Commercial	1,130	7	13,852	4.5	1,962	7	9,325	10.0	5,914	10
Industrial	2,481	16	14,824	4.8	3,399	12	6,501	7.0	7,539	13
Institutional	1,631	11	9,168	3.0	2,521	9	3,404	3.6	3,991	7
Open Space	1,033	7	23,929 [e]	7.8	3,888	13	13,763	14.7	2,632	4
Residential	7,210	47	88,341	28.6	12,850	45	46,698	50.0	28,972	49
Transportation	1,684	11	14,091	4.6	3,263	11	3,840	4.1	5,875	10
Vacant/ Wetlands/ Construction	238	2	44,810[d]	14.5	614	2	8,773	9.4	3,348	6
Water	70	0	6,830	2.2	297	1	0	0.0	424	1
Total Watershed Area	15,478	100	308,899	100 [f]	28,842	100	93,464	100	58,696	100

Source: CMAP, 2005.

Note: Land use acreages are from CMAP and may vary from data provided by other sources found in other tables within this document. Numbers in table have been rounded. Percentages may exceed 100.

a Includes the 12-digit HUC sub-watersheds where the project corridor is located. 12-digit HUC sub-watersheds obtained from the USGS National Hydrography Dataset (NHD). For additional information refer to: http://nhd.usgs.gov/data.html

b Land use represents Upper Des Plaines River Watershed. For additional information refer to: http://lowerdesplaines.org/upper/upmaps/LargeDetailedMap.pdf

c Storm water from I-290 discharges to this waterway through a storm water collection system.

d Includes private, vacant, wetlands, forested, and grassland areas for Upper Des Plaines River Watershed.

e Includes outdoor recreation and open space land use for Upper Des Plaines River Watershed.

f Total land use is 100% (308,899) when including 2,501 acres (0.81%) for communication/utilities land use.

Physical Characteristics of Project Corridor Streams

Stream	Approximate Upstream Drainage Area (sq. mi) [a]	Flow Characteristics [a]	Substrate Type [a]	Stream Width (ft) [a]	Water Depth (ft) [a]	Riparian Vegetation [a]
Salt Creek	102.8	Lotic, Perennial	Silt and gravel	90	2-6	Trees and Herbaceous
Addison Creek	17.1	Lotic, Perennial	Silt	50	1-2	Trees and Herbaceous
Des Plaines River	480	Lotic, Perennial	Silt, loam, and gravel	110	3-6	Trees and Herbaceous
South Branch of the Chicago River	226 [b]	Lotic, Perennial	Silt and muck	165	10-26	Sparse vegetation

Source: Parsons Brinckerhoff, 2014; CBBEL, 2014; USGS, 2014; Huff & Huff, 2014;

[a] Obtained from the Huff & Huff, Inc. (2014) field visit, aerial imagery, WindyCityFishing.com, and Parsons Brinckerhoff Hydraulic Report for Addison Creek and the Des Plaines River.

[b] Upstream drainage area for the South Branch of the Chicago River has been modified by the presence of a highly developed urban sewer system. Source: Horton, 1914.

Biological Characteristics of Project Corridor Streams

Stream	Biological Stream Rating[d]	Number of Fish Species	Dominant Fish Species	Intolerant Fish Species	Number of Mussel Species[f]	Intolerant Mussel Species[g]
Salt Creek[a]	B – Diversity D - Integrity	29	bluntnose minnow, while sucker, gizzard shad, bluegill	2	3	0
Addison Creek[b]	E – Diversity E - Integrity	5	fathead minnows	0	16	2
Des Plaines River[c]	B – Diversity C - Integrity	62	sand shiner, spotfin shiner, blackstripe topminnow, green sunfish	1	16	2
South Branch Chicago River [e]	D – Diversity D - Integrity	11[f]	gizzard shad, bluegill, spottail shiner	0	No Data	No Data

Sources:

[a] DuPage River Salt Creek Workgroup (DRSCW, 2007 & 2010).

[b] INHS sampling (Wetzel et al., 2010)

[c] INHS fish collection database (INHS, 2014)

[d] IDNR-Office of Resource Conservation, Biological Stream Ratings. Available at: http://www.dnr.illinois.gov/conservation/BiologicalStreamratings/Pages/default.aspx

[e] Sampling location near Van Buren St., approximately 420 ft downstream of outfall. Source: Fish Surveys in the Lake Michigan Basin 1996-2006: Chicago and Calumet River Sub-basins (Pescitelli and Rung, 2009)

[f] Illinois Natural History Survey Mussel Database

Water Quality Values for Selected Pollutants and Illinois General Use Water Quality Standards

Parameter					South Branch of the Chicago River (HC-01)	
	Salt Creek (GL-09)	Addison Creek (GLA-02)	Des Plaines River (G_39)[a]	General Use Water Quality Standard [b]	Sample Results	Chicago Area Waterway System Aquatic Life Use [b]
pH (s.u.)	7.3-8.2	6.76-8.85	6.85-8.69	6.5-9.0	7.25-7.33	6.5-9.0
Dissolved Oxygen (mg/L) [c]	5.82 (August 2013)	5.74/ June 2004 [c] 5.61/ August 2010 [c]	6.56/ June 2010 [c] 3.53/ August 2005 [c]	5.0 mg/L minimum (March-July) 3.5 mg/L minimum (August-February)	No data	5.0 mg/L minimum (March-July) 3.5 mg/L at any time and 4.0 mg/L daily minimum averaged over 7 days (August-February)
Chloride (mg/L)	100-867[g]	69 - 831 [d]	86 - 621 [e]	500	43-525[h]	500 mg/L (May-November)[i]
Dissolved Copper (mg/L)	0.003-0.009	0.001 - 0.018	0.0012 - 0.009	0.021 - 0.070 acute	0.0012 – 0.0046	0.034-acute
Dissolved Lead (mg/L)	<0.001-0.003	0.003 - 0.052	0.0001 - 0.007	0.097 - 0.368 acute	No data	0.166-acute
Dissolved Zinc (mg/L)	0.009-0.038	0.005 - 0.036	0.0043 - 0.038	0.145 - 424 acute	0.0092 – 0.017	0.221-acute
Total Dissolved Solids (mg/L)	No data	1,813 (1)	No data	No standard	No data	1,500 (December-April)[i]
Water Temperature (ºC) [f]	No data in March 33/ August 2007	9.1/ March 2009 28.8/ June 2005	8.6/ March 2009 28.4/ June 2005	16 maximum (December – March) 32maximum (April – November)	17.7-23.33	16 maximum (December – March) 32 maximum (April – November)
Hardness (mg/L)	250	126 – 446	190 – 405	No standard	205	No standard

Source: IEPA data obtained from the EPA STORET database, 2012; DRSCW, 2010-for Salt Creek data (River Mile 10.5); Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

Notes: mg/L = milligrams per liter, ºC = degrees Celsius, s.u. = standard unit. ND – Not Detected, Shaded are sample result(s) exceed(s) the General Use Water Quality Standard

Measured levels of parameters in this table generally are the range of all STORET data, unless otherwise noted.

a. STORET data is not available for G_32 of Des Plaines River, G_39, immediately downstream of G_32 is reported.

b. General Use Water Quality Standards are provided (from Illinois Administrative Code, Title 35, Part 302), unless otherwise noted. The dissolved metal standard is calculated based on equations in Section 302, Water Quality Standards. Refer to the Illinois Administrative Code for additional information.

c. Measurement represents the minimum DO concentration from all sampling events. The month and year of the lowest measurement was taken is provided.

d. A total of eight samples exceed the General Use Water Quality Standards.

e. A total of two STORET samples exceed the General use Water Quality Standards.

MWRDGC data from 2005 to 2012 reported 5 of 87 samples above 500 mg/L at Roosevelt Rd site.

f. Measurement represents the maximum temperature from all sampling events. The month and year of the highest measurement was taken is provided.

g. IEPA reported a maximum chloride concentration of 867 mg/L on March 11, 1999 at the Salt Creek Station (USGS 05531500); six miles downstream from project corridor (IEPA, 2004). MWRDGC data reported 5 of 89 samples above 500 mg/L at Wolf Rd.

h MWRDGC reported a chloride concentration of 525 mg/L in February 2010. Only 2 of 82 samples exceeded 500 mg/L from January 2005 to July 2012.

i After July 1, 2018, the water quality standard in effect for chlorides would be 500 mg/L and the Total Dissolved Solids water quality standard will be repealed.