



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN



(Version 2.08; Released April 2018)

FOR NCDOT PROJECTS

WBS Element: TIP No.: I-5507 County(ies): Mecklenburg Page 1 of 4

General Project Information

WBS Element:		TIP Number: I-5507		Project Type: Roadway Widening		Date: 6/7/2019	
NCDOT Contact:		Contractor / Designer:		Blythe Construction/WSP (Karl Dauber)			
	Address:	1020 Birch Ridge Drive Raleigh, NC 27610			Address:	1001 Morehead Square Drive Suite 610 Charlotte, NC 28203	
	Phone:	(919) 707-6614			Phone:	(704) 342-5403	
	Email:	mcwatson@ncdot.gov			Email:	Karl.Dauber@wsp.com	
City/Town:		Charlotte		County(ies):		Mecklenburg	
River Basin(s):		Catawba	Yadkin-Pee Dee	CAMA County?		No	
Wetlands within Project Limits?		Yes					

Project Description

Project Length (lin. miles or feet):		17.5 miles		Surrounding Land Use:		Urban (residential and commercial)	
Proposed Project				Existing Site			
Project Built-Upon Area (ac.)		436.7 ac.		425.6 ac.			
Typical Cross Section Description:		There are several cross sections for this project in the typicals provided with the Redline Drainage Plans. Essentially, the project adds toll lanes in the median. In some cases a ditch section is revised to provide pavement. In other cases a large paved median is reduced to account for this new traffic pattern.				There are 2 existing cross section on 485. - 3 lanes each direction with a paved median from 77- to Johnston Road. - Then as you travel east its 2 lanes either direction with a variable width grassed median to US-74.	
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 1592 Year: 2040		Existing: 1186		Year: 2015	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		<p>The NCDOT is widening a section of I-485 that lies within the municipal boundaries of the Cities of Charlotte and Matthews. The Design-Build Project I-5507 / R-0211EC / U-4714AB will provide an eastbound and westbound Express Lane within the I-485 median from I-77 to US 74 (Independence Boulevard), a distance of approximately 16.6 miles. The project will also provide an I-485 / Weddington Road interchange, and modify the I-485 / East Johns Street - Old Monroe Road interchange</p> <p>Impacts for R-0211EC (sheets 60, 61) Weddington Road Interchange and U-4714AB (Sheets 64,65 and 77) John Street interchange are in separate SMPs.</p> <p>Construction will unavoidably impact several streams and wetlands. Where practicable, 2:1 slopes will be used to minimize impacts. Where culverts are being extended in jurisdictional streams rip rap for stabilization is being installed on banks only.</p> <p>Best Management Practices: *1 Energy Dissipation Basin and Pre Formed Scour holes at flatter outfall locations. *Promotion of sheet flow and infiltration with grassed shoulders except where shoulder berm gutter was required. *Drainage systems outlet to rip rap pads or riprap lined ditches. *Removal of exiting road fill under bridges will improve conveyance and reduce velocities in bridge opening. *Riprap on embankments was used to prevent erosion where ditches enter streams.</p>					

Waterbody Information

Surface Water Body (1):		Sugar Creek		NCDWR Stream Index No.:		11-137		
NCDWR Surface Water Classification for Water Body				Primary Classification:		Class C		
				Supplemental Classification:				
Other Stream Classification:		None						
Impairments:		mercury (Hg)		turbidity		fecal coliform		
Aquatic T&E Species?		Comments:						
NRTR Stream ID:		SCC, S11				Buffer Rules in Effect:		N/A
Project Includes Bridge Spanning Water Body?		Yes		Deck Drains Discharge Over Buffer?		No		
Deck Drains Discharge Over Water Body?		No		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
		(If yes, provide justification in the General Project Narrative)						



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Additional Waterbody Information

Surface Water Body (2):	McMullen Creek		NCDWR Stream Index No.:	11-137-9-5	
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C			
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	mercury (Hg)	turbidity	fecal coliform		
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	S4,S6		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (3):	McAlpine Creek		NCDWR Stream Index No.:	11-137-9	
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C			
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	fecal coliform		turbidity		
Aquatic T&E Species?	No Comments:				
NRTR Stream ID:	S3,S2,S1,SB		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (4):	Four Mile Creek		NCDWR Stream Index No.:	11-137-9-4	
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C			
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	Comments:				
NRTR Stream ID:	SD, SE, SF, SG, SSC, SAJ, SM, SBG, SSH, SBD, SAI, SAH, SAR, SV, SAE		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (5):	Kings Branch		NCDWR Stream Index No.:	11-137-6	
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C			
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No Comments:				
NRTR Stream ID:	S12,SNH		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				



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Additional Waterbody Information

Surface Water Body (6):	Flat Branch		NCDWR Stream Index No.:	11-138-3-2	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SAO,SSB, SSA		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (7):	Six Mile Creek		NCDWR Stream Index No.:	11-138-3	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:				
Other Stream Classification:					
Impairments:	None		Fish Community (Nar, AL, FW)		
Aquatic T&E Species?		Comments:			
NRTR Stream ID:	(SAN, SAM, SAL, SBH)		Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (8):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (9):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:			Buffer Rules in Effect:		
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				



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Preformed Scour Holes and Energy Dissipators

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
31	-Y2 RPD- 14+50 LT		PSH	Class 'B'	1.9	Pipe	18	1.7	12.3	No
38	-L-489+50 LT		Riprap Energy Dissipator Basin	Class I	179.2	Culvert	6'X5' RCBC	294.0	6.0	No

Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.