

ENVIRONMENT COMMITTEE AGENDA

June 18, 2015 – North Conference Room

21630 11th Avenue South – Des Moines 50319

6:00P – 6:50P

1. Approve minutes of 5-21-2015 meeting

2. SWM CIP

(Information Item – 50 min)

Staff will discuss the proposed projects and schedule for the 2016-2011 SWM CIP.

MINUTES - ENVIRONMENTAL COUNCIL COMMITTEE MEETING 5.21.2015

The meeting was called to order @ 6:00 PM, Thursday, May 21, 2015, in the North Conference room @ 21630 11th Avenue South, Des Moines with the following in attendance:

Council Members

Dave Kaplan, Chair
Melissa Musser
Vic Pennington

City Staff

Tony Piasecki, City Manager
Loren Reinhold, SWM Utility Manager
Denise Lathrop, Com Dev Manager
Peggy Volin, Admin Asst II

AGENDA:

1. Approve minutes of 4. 9.2015 meeting
2. Dept of Ecology: Guidelines on Wetland & Frequently Flooded Areas
3. FEMA Flood Plain Management Update
4. Follow-up on Lakehaven & Southwest Suburban Comprehensive Plan Comments

MEETING:

1. Approve minutes of the April 9, 2015 meeting: Unanimously approved.
2. Department of Ecology - Guidelines on Wetland & Frequently Flooded Areas: Community Development Manager Denise Lathrop provided the Committee with an overview of recent updates to the Washington Department of Ecology wetland classification and rating system and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) and designations and discussed how these changes affect the application of Des Moines Critical Area regulation of that area codified in Chapter 16.10 DMMC.
3. FEMA Flood Plain Management Update: SWM Utility Manager Loren Reinhold briefed the Committee on the Scope of Work with Parametrix to evaluate the flood management alternatives for complying with the recent Biological Opinion from the National Marine Fisheries Service for protecting listed species and their habitat as related to flood plains and associated riparian habitat zones. Duration of the project is expected to be 2 months. A report and checklist of requirements should be ready for review at the July Committee meeting.
4. Follow-up on Lakehaven & Southwest Suburban Comprehensive Plan Comments: SWM Utility Manager Loren Reinhold reviewed the response letters received from both Lakehaven Utility and Southwest Suburban Sewer District regarding the City's comments to their respective water and sewer comprehensive plans. Issues related to the plans have been adequately addressed and final plans will be brought forth to Council for adoption later this year.

Meeting Adjourned @ 6:40 pm

Submitted by: Peggy Volin, Admin Asst II

SWM CIP

06/10/2015

		2015	2016		2017		2018		2019		2020		2021	2022		2023		2024					
Beginning Fund		\$	908,420	\$	1,484,522	\$	717,518	\$	325,199	\$	946,339	\$	807,864	\$	607,695	\$	404,859	\$	223,548	\$	913,326		
Revenues																							
	Interest	\$	3,200	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
	Hook-up	\$	420,973	\$	111,490	\$	115,409	\$	119,466	\$	123,665	\$	128,012	\$	132,512	\$	137,169	\$	141,991	\$	146,982		
	Transfer	\$	758,450	\$	602,675	\$	701,305	\$	859,474	\$	1,000,726	\$	1,099,878	\$	1,175,194	\$	1,109,492	\$	1,176,840	\$	1,208,522		
Project Revenues																							
	KC Flood Reduction grant			\$	200,000																		
	KC Opportunity Grant			\$	196,181																		
	Normandy Park ILA - 1st Ave Pond					\$	29,800	\$	204,750														
Total Revenues		\$	2,091,043	\$	2,594,868	\$	1,534,232	\$	1,333,939	\$	2,275,480	\$	2,035,754	\$	1,915,401	\$	1,651,520	\$	1,542,379	\$	2,268,830		
Expenditures																							
	Capital Reserve Fund	\$	(350,000)																	\$	(350,000)		
CIP-5	24th Avenue Pipeline			\$	(268,000)															\$	(268,000)		
CIP-3	Lower Massey Creek	\$	(162,996)	\$	(1,286,000)															\$	(1,448,996)		
CIP-4	KDM Culvert	\$	(93,525)	\$	(323,350)	\$	(1,160,033)													\$	(1,576,908)		
CIP-9	Pipe Replacement					\$	(49,000)	\$	(328,000)	\$	(328,000)	\$	(328,000)	\$	(328,000)	\$	(279,000)			\$	(1,640,000)		
CIP-7	1st Avenue Pond							\$	(59,600)	\$	(324,500)									\$	(384,100)		
CIP-16	5th Avenue S./212th Upgrade									\$	(815,116)									\$	(815,116)		
CIP-30	N. Fork McSorley Diversion									\$	(432,363)									\$	(432,363)		
CIP-39	6th Avenue/239th Pipe Replace									\$	(190,376)									\$	(190,376)		
CIP-36	14th Avenue (268th-272nd)									\$	(477,320)									\$	(477,320)		
CIP-17	216th Pl/MVD Pipe Upgrade											\$	(308,424)							\$	(308,424)		
CIP-25A	KDM/16th Avenue Pipe Replace											\$	(271,145)							\$	(271,145)		
CIP-18	DMMD - 208th to 212th											\$	(602,973)							\$	(602,973)		
CIP-40	8th Avenue (264th to 265th)													\$	(270,326)					\$	(270,326)		
CIP-25B	KDM/16th Avenue Pipe Replace													\$	(878,646)					\$	(878,646)		
CIP-26	232nd Street (10th to 14th)															\$	(629,053)			\$	(629,053)		
CIP-23	24th Ave (223rd to 224th)																	\$	(286,417)	\$	(286,417)		
CIP-34	258th (13th Pl to 16th Ave)																		\$	(445,711)	\$	(445,711)	
CIP-37	6th Pl/287th Pipe Replace																			\$	(647,559)	\$	(647,559)
CIP-14	1st Pl (209 to 210th)																			\$	(275,646)	\$	(275,646)
Total Expenditures		\$	(606,521)	\$	(1,877,350)	\$	(1,209,033)	\$	(387,600)	\$	(1,467,616)	\$	(1,428,059)	\$	(1,510,542)	\$	(1,427,972)	\$	(629,053)	\$	(1,655,333)		
Ending balance		\$	1,484,522	\$	717,518	\$	325,199	\$	946,339	\$	807,864	\$	607,695	\$	404,859	\$	223,548	\$	913,326	\$	613,497		

CITY OF DES MOINES
2016-2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

24th Avenue Pipeline Replacement/Upgrade	451,815
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CIP Category: Surface Water Mgmt
 SWM CIP-5
 Managing Department: PBPW

Summary Project Description:
Replacement of existing 12-inch storm drainage system with approximately 500 feet of 36-inch pipe and 3 manhole structures.

Justification/Benefits: During major storms, the drainage system along the east side of 24th Avenue between S. 226th and S. 227th overflows to the pipe system on the west side. These overflows bypass the trunk system that conveys flows to the City Park detention facility and flood properties south of 227th Street south of Pacific Middle School. This project replaces the existing 12-inch pipe system with a new 36-inch trunk system, as recommended in the 1992 Massey Creek Basin Plan.

PROJECT SCOPE	
Expenditures	Total Budget
Design	45
Land & Right of Way	-
Construction	190
Contingency	33
Total Expenditures	268

Funding Sources	Total Budget
Surface Water Utility	268
Total Funding	268

Project to Date 12/31/14	ANNUAL ALLOCATION									
	Scheduled Year	2015	Plan Year	2016	Plan Year	2017	Plan Year	2018	Plan Year	2019
				45						
					190					
					33					
					268					

Project to Date 12/31/14	Scheduled Year	2015	Plan Year	2016	Plan Year	2017	Plan Year	2018	Plan Year	2019	Plan Year	2020	Plan Year	2021
					268									
					268									

OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

ANNUAL OPERATING IMPACT									
	2015	2016	2017	2018	2019	2020	2021		

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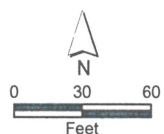
24th Ave Pipeline Replace/Upgrade				Project #	451.819,040	Summary Project Description:									
TOTAL PROJECT SCOPE					PROJECT ALLOCATIONS BY YEAR										
Expenditures	1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13	2014	Project to Date 12/31/14	Project To Date 04/30/2015	2015 Year to Date 04/30/2015	2015 Remaining	Estimated Year End 2015	Planned Year 2016	Planned Year 2017	Planned Year 2018		
Design															
External Engineering		-	-				-		-						
Internal Engineering/Project Mgmt	15,000	30,400	45,400				-		-	-	45,400				
Surveying Services		-	-				-		-						
Other Professional Services	29,000		-				-		-						
Permits		-	-				-		-						
Other Misc (Advertise, Postage, Etc.)		-	-				-		-						
PropROW/Easements															
Construction															
External Engineering			-				-		-						
Internal Engr- Proj Mgmt/ Inspect	24,000	700	24,700				-		-		24,700				
Construction Contract 1	160,100	4,800	164,900				-		-		164,900				
Other															
Contingencies	32,000	1,000	33,000			-	-		-		33,000				
Total Project Expense Budget:											268,000				
Funding Sources	1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13	2014 Actual	Project to Date 12/31/14	Project to Date 04/30/2015	2015 YTD 04/30/2015	2015 Remaining	Scheduled Year 2015	Scheduled Year 2016	Scheduled Year 2017	Scheduled Year 2018		
SWM CIP		7,900	268,000			-	-		-		268,000				
Total Project Revenue Budget:											268,000				
Committed Cash:															

Committed Cash:



Description: Replace the existing 12-inch storm drain with approximately 500 feet of 36-inch pipe and 3 catch basins.
Estimated Cost (\$): 260,100
Scoring Criteria: \$, M/I, CMP, PE/PI, REF

Parametrix



- Discharge Point
- Control Structure
- Catchment
- WQ Facility
- Open Channel
- Storm Main

Capital Project and Rank

- High
- Medium
- Low
- Proposed Drain Pipe
- Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

Capital Project 5.
24th Avenue Pipeline Replacement

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

Lower Massey Creek Channel Modifications	451,821
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CIP Category: Surface Water Mgmt
 SWM CIP-3
 Managing Department: BPBW

<i>Summary Project Description:</i>	
This project involves widening the Massey Creek channel between 10th Avenue South and the Taco Time property east of Marine View Drive, berming the north side of the creek, constructing a sheepile floodwall on the south side of the creek, installing a small pump station, installing native plantings along the stream, removing invasive species, and installing stream fish habitat features such as woody debris, stream boulders and bank logs.	

Justification/Benefits: The purpose of the improvements is to enhance habitat along this portion of Massey Creek, improve flood capacity of the channel, and reduce intersection flooding at Kent-Des Moines Road and Marine View Drive. Land for this project was purchased in 1998. This project is identified in the 1992 Massey Creek Basin Plan and 1994 Lower Massey Creek Flood Alternative Analysis.

<i>PROJECT SCOPE</i>	
<i>Expenditures</i>	<i>Total Budget</i>
Design	373
Land & Right of Way	-
Construction	989
Contingency	347
Total Expenditures	1,709

<i>Funding Sources</i>	<i>Total Budget</i>
Surface Water Utility	1,313
King County Flood Reduction Grant	200
King County Regional Opportunity Grant	196
Total Funding	1,709

<i>Project to Date</i> <i>12/31/14</i>	<i>Scheduled Year</i> <i>2015</i>	<i>ANNUAL ALLOCATION</i>					
		<i>Plan Year</i> <i>2016</i>	<i>Plan Year</i> <i>2017</i>	<i>Plan Year</i> <i>2018</i>	<i>Plan Year</i> <i>2019</i>	<i>Plan Year</i> <i>2020</i>	<i>Plan Year</i> <i>2021</i>
260	113						
		989					
	50	297					
260	163	1,286	-	-	-	-	-

<i>Project to Date</i> <i>12/31/14</i>	<i>Scheduled Year</i> <i>2015</i>	<i>Plan Year</i> <i>2016</i>	<i>Plan Year</i> <i>2017</i>	<i>Plan Year</i> <i>2018</i>	<i>Plan Year</i> <i>2019</i>	<i>Plan Year</i> <i>2020</i>	<i>Plan Year</i> <i>2021</i>
		890					
260	163	200					
		196					
260	163	1,286	-	-	-	-	-

<i>OPERATING IMPACT</i>	
<i>Operating Impact</i>	<i>6 Year Total</i>
Revenue	-
Expenses	-
Net Impact	-

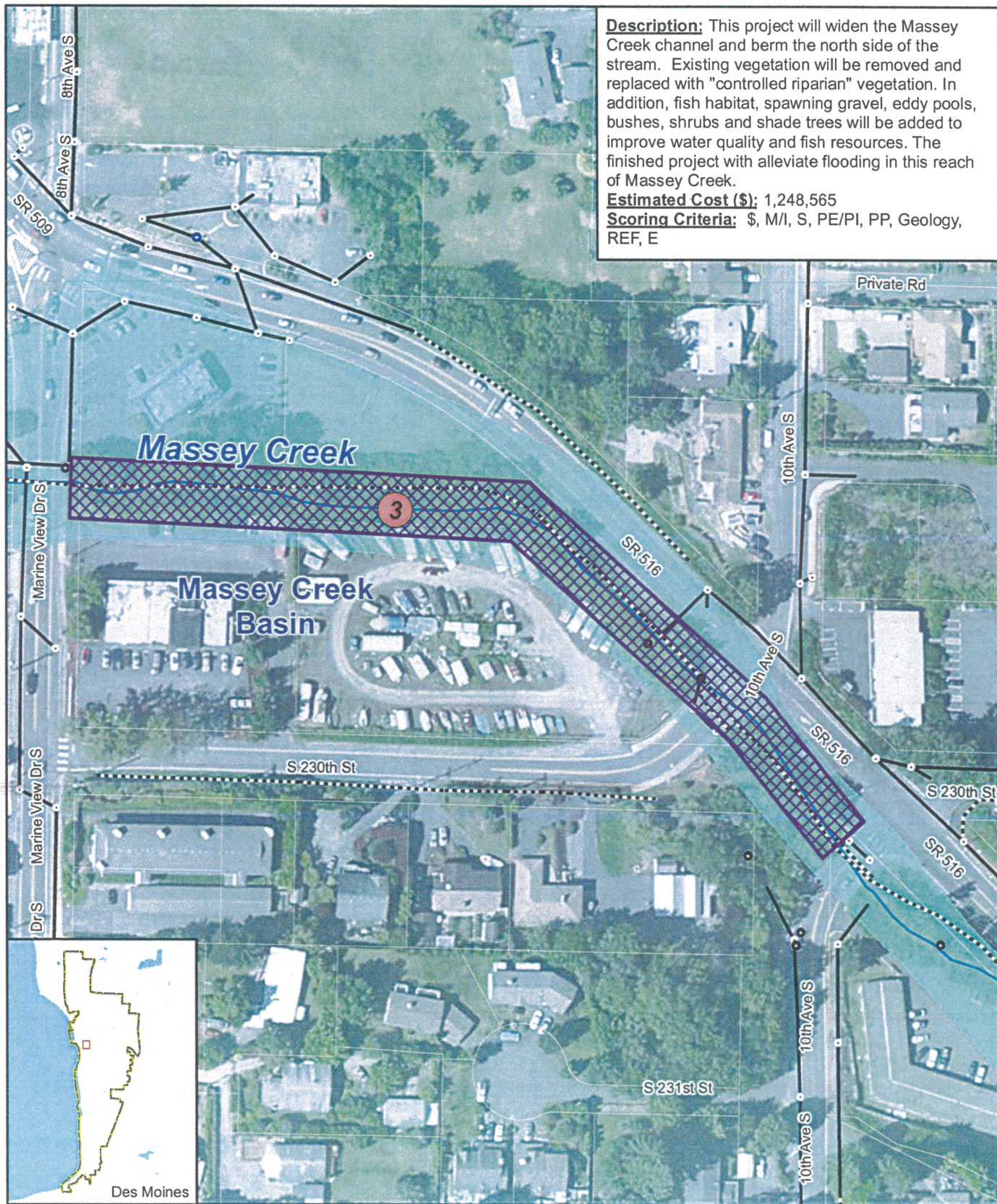
ANNUAL OPERATING IMPACT							
	2015	2016	2017	2018	2019	2020	2021
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

#REF!

L Massey Creek		Project #	451.821.040	Summary Project Description:									
TOTAL PROJECT SCOPE				PROJECT ALLOCATIONS BY YEAR									
Expenditures	1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13	2014	Project to Date 12/31/14	Project To Date 04/30/2015	2015 Year to Date 04/30/2015	2015 Remaining	Estimated Year End 2015	Planned Year 2016	Planned Year 2017	Planned Year 2018
Design													
External Engineering		349,319	349,319	147,379	93,944	241,323	283,319	41,996	66,000	107,996			
Internal Engineering/Project Mgmt		8,356	8,356	3,356		3,356	3,356	-	5,000	5,000			
Surveying Services		-	-			-	-	-	-	-			
Other Professional Services		2,998	2,998	1,676	1,322	2,998	2,998	-	-	-			
Permits		10,784	10,784		10,784	10,784	10,784	-	-	-			
Other Misc (Advertise, Postage, Etc.)		-	-			-	-	-	-	-			
Prop ROW Easements													
Other Miscellaneous		1,061	1,061		1,061	1,061	1,061	-	-	-			
Construction													
External Engineering		125,000	125,000			-	-	-	-	-	125,000		
Internal Eng-Proj Mgmt/Inspect		30,900	30,900			-	-	-	-	-	30,900		
Construction Contract 1		833,400	833,400			-	-	-	-	-	833,400		
Const Contract 1 - Sales Tax		-	-			-	-	-	-	-	-		
Other						-	-	-	-	-	-		
Contingencies		346,700	346,700			-	-	-	50,000	50,000	296,700		
Total Project Expense Budget:		1,708,518	1,708,518	152,411	107,111	259,522	301,518	41,996	121,000	162,996	1,286,000	-	-

Funding Sources	1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13	2014 Actual	Project to Date 12/31/14	Project to Date 04/30/2015	2015 YTD 04/30/2015	2015 Remaining	Scheduled Year 2015	Scheduled Year 2016	Scheduled Year 2017	Scheduled Year 2018
SWM CIP		1,312,337	1,312,337	152,411	107,111	259,522	301,518	41,996	121,000	162,996	889,819		
King County Flood Reduction Grant (Construction)		200,000	200,000			-	-	-	-	-	200,000		
King County Flood Control Fund (Construction)		196,181	196,181			-	-	-	-	-	196,181		
Total Project Revenue Budget:		1,708,518	1,708,518	152,411	107,111	259,522	301,518	41,996	121,000	162,996	1,286,000	-	-

Committed Cash:

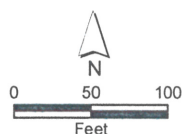


Description: This project will widen the Massey Creek channel and berm the north side of the stream. Existing vegetation will be removed and replaced with "controlled riparian" vegetation. In addition, fish habitat, spawning gravel, eddy pools, bushes, shrubs and shade trees will be added to improve water quality and fish resources. The finished project will alleviate flooding in this reach of Massey Creek.

Estimated Cost (\$): 1,248,565

Scoring Criteria: \$, M/I, S, PE/PI, PP, Geology, REF, E

Parametrix



- Discharge Point
- Control Structure
- Catchment
- WQ Facility
- Open Channel
- Storm Main
- Capital Project and Rank
 - High
 - Medium
 - Low
 - Proposed Stream Improvement
 - Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

Capital Project 3. Lower Massey Creek Channel Modifications

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

Barnes Crk/Kent-Des Moines Rd Culvert	451.804
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CIP Category: Surface Water Mgmt
 SWM CIP-4
 Managing Department: PBPW

Summary Project Description:	
Project improvements will include the installation of 80 to 100 feet of 48-inch or 60-inch diameter culvert or possibly the construction of a box culvert, depending on the method of construction and current fisheries requirements. Due to the depth of culvert and the high traffic of Kent-Des Moines Road, use of boring or other trench-less technology will be explored. The dramatic elevation change from upstream to downstream and the need to moderate velocity for fish passage may require that a special energy dissipater and/or fish ladder be installed at the culvert outlet.	

Justification/Benefits: This culvert replacement is needed to convey peak predicted flows without flooding Kent-Des Moines Road. At this point a new 42- to 48-inch reinforced concrete pipe culvert is planned to replace the existing undersized culvert. However, the new pipe size will need to be designed to meet current Hydraulic Code to allow both high- and low-flow fish passage. An energy dissipater will be included at the downstream end of the culvert (with a fish ladder). This project was identified in the Lower Massey Creek Basin Plan and Alternative Analysis. The timing of this project will be based on the outcome of a culvert survey made in 2015 to determine the condition of the culvert.

PROJECT SCOPE	
Expenditures	Total Budget
Design	325
Land & Right of Way	-
Construction	934
Contingency	335
Total Expenditures	1,594

Funding Sources	Total Budget
Surface Water Utility	1,594
Total Funding	1,594

OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

ANNUAL ALLOCATION									
Project to Date	Scheduled Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year
12/31/14	2015	2016	2017	2018	2019	2020	2021		
17	85	223		-					
			934						
	9	100	226	-					
17	94	323	1,160	-	-	-	-	-	-

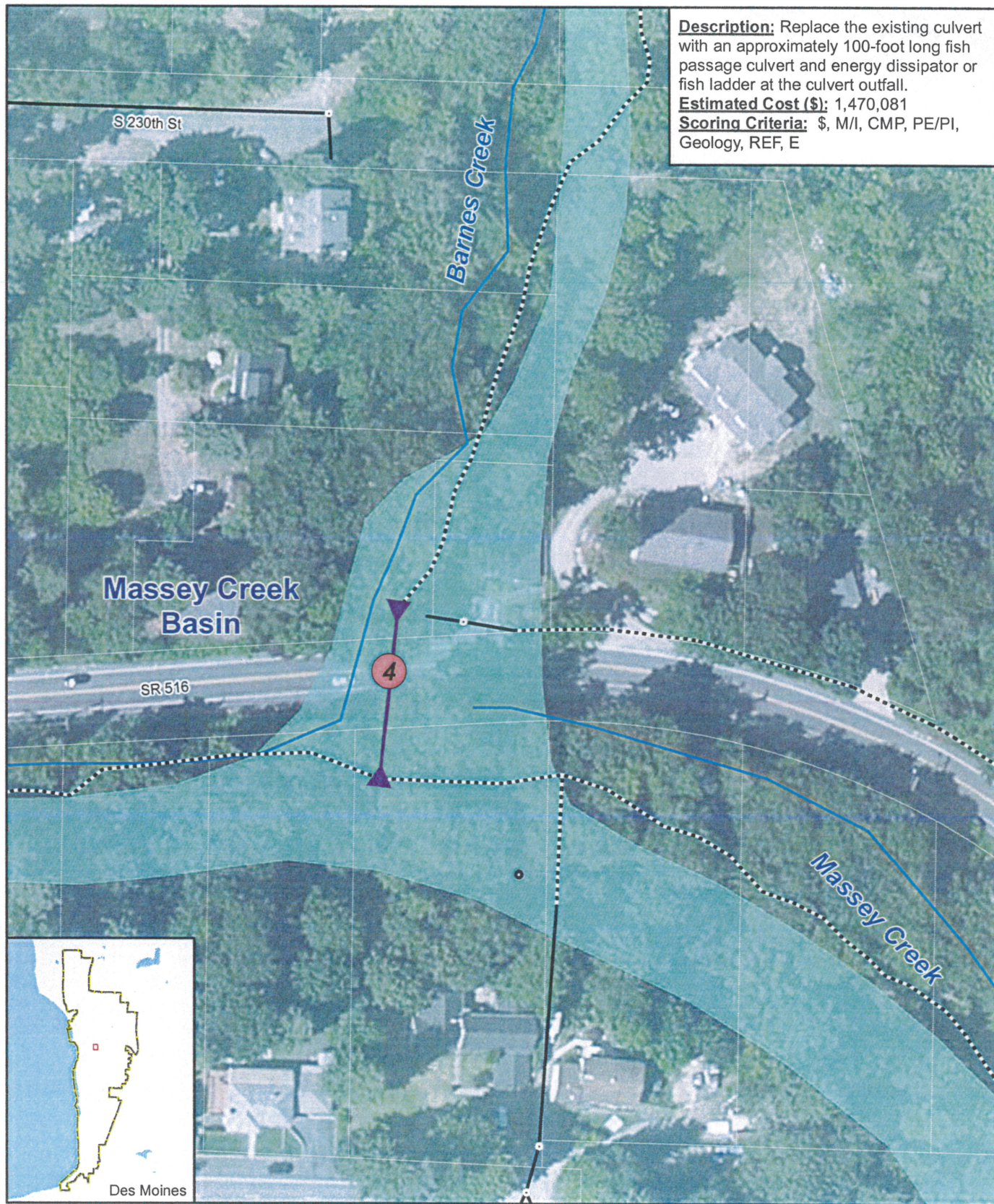
Project to Date	Scheduled Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year
12/31/14	2015	2016	2017	2018	2019	2020	2021		
17	94	323	1,160						
17	94	323	1,160	-	-	-	-	-	-

ANNUAL OPERATING IMPACT					
	2015	2016	2017	2018	2019
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

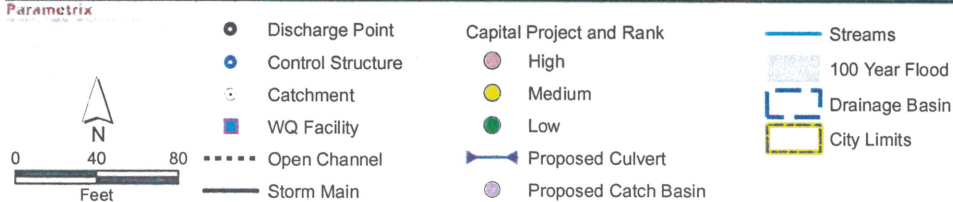
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Barnes Creek/KDM Culvert Replacement				Project #	451.804.040	Summary Project Description:												
TOTAL PROJECT SCOPE						PROJECT ALLOCATIONS BY YEAR												
Expenditures		1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13		2014	Project to Date 12/31/14	Project To Date 04/30/2015	2015 Year to Date 04/30/2015	2015 Remaining	Estimated Year End 2015	Planned Year 2016	Planned Year 2017	Planned Year 2018			
Design																		
External Engineering		196,128	(16,128)	180,000									180,000					
Internal Engineering/Project Mgmt		62,807	(21,679)	41,128	16,128			16,128	16,128		10,000	10,000	15,000					
Surveying Services			-	-				-	-		-							
Other Professional Services			1,301	1,301	807	494		1,301	1,301		-		25,000					
Permits		25,000	-	25,000				-	-		-							
Other Misc (Advertise, Postage, Etc.)			-	-				-	-		-							
Prop/ROW/Easements								-	-		-							
Construction								-	-		-							
External Engineering/Inspect		135,000	-	135,000				-	-		-			135,000				
Internal Engr-Proj Mgmt/Inspect		10,000	25,000	35,000				-	-		-			35,000				
Construction Contract 1		752,500	-	752,500				-	-		-			752,500				
Const Contract 1 - Sales Tax				-				-	-		-							
Other								-	-		-							
Interfund Financial Services		52,807	(36,699)	16,108				-	-		1,025	1,025	3,350	11,733				
Individual Items < \$5,000			-	-				-	-		-							
Non-Capitalizable Services (Alternative Analysis)		102,000	(27,000)	75,000				-	-		75,000	75,000						
Individual Assets > \$5,000 - Equipment			-	-				-	-		-							
Contingencies		339,300	277,882	617,182	283,882			283,882	283,882		7,500	7,500	100,000	225,800				
Total Project Expense Budget:		1,612,735	202,677	1,878,219	300,817	494		301,311	301,311	-	93,525	93,525	323,350	1,160,033	-			
		62,807			ties													
Funding Sources		1/1/15 Current CIP Budget	2015 CIP Supplemental Request	2015 Revised CIP Budget Estimate	Project to Date 12/31/13	2014 Actual	Project to Date 12/31/14	Project to Date 04/30/2015	2015 YTD 04/30/2015	2015 Remaining	Scheduled Year 2015	Scheduled Year 2016	Scheduled Year 2017	Scheduled Year 2018				
SWM Rates		1,612,735	265,484	1,878,219	300,817	494	301,311	301,311	-	93,525	93,525	323,350	1,160,033					
Total Project Revenue Budget:		1,612,735	265,484	1,878,219	300,817	494	301,311	301,311	-	93,525	93,525	323,350	1,160,033	-				
					ties													
					Committed Cash:													

Committed Cash:



Description: Replace the existing culvert with an approximately 100-foot long fish passage culvert and energy dissipator or fish ladder at the culvert outfall.
Estimated Cost (\$): 1,470,081
Scoring Criteria: \$, M/I, CMP, PE/PI, Geology, REF, E



Capital Project 4.
 Barnes Creek/Kent Des Moines
 Road Culvert Replacement

City of Des Moines
 Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

Pipeline Replacement Program	451,826
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CIP Category: Surface Water Mgmt
 SWM CIP-9
 Managing Department: PBPW

Summary Project Description:	
Replacement of existing pipes based on customer request and video based condition assessment.	

Justification/Benefits: A video assessment of existing storm drain pipes is scheduled to begin in 2015. From the assessment a prioritized list of pipes that need to be replaced will be developed along with estimated costs.

PROJECT SCOPE	
Expenditures	Total Budget
Design	190
Land & Right of Way	-
Construction	920
Contingency	251
Total Expenditures	1,361

Funding Sources	Total Budget
Surface Water Utility	1,361
Total Funding	1,361

OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

ANNUAL ALLOCATION									
Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
			38	38	38	38	38		38
				230	230	230	230		230
			11	60	60	60	60		60
			49	328	328	328	328		328

Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
			49	328	328	328	328		328
			49	328	328	328	328		328

ANNUAL OPERATING IMPACT					
	2015	2016	2017	2018	2019
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

#REF!

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

1st Ave Pond Expansion	451.823
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CIP Category: Surface Water Mgmt
 SWM CIP-7
 Managing Department: PBPW

Summary Project Description:
Expand existing pond at 1st Ave and 4th Ave S, North Hill Area by 1.9 acre feet.

Justification/Benefits: The existing 199th trunk line was reviewed for capacity in the Normandy Park Comprehensive Plan - Normandy Creek/Upper Basin. The trunk line was found to be undersized (for most storms) for 200 feet, aged for the remaining sections and does not meet current design standards. The increased size will alleviate local flooding that occurs in the upper basin of Normandy Creek. In order to provide mitigation for downstream impacts, the 1st Avenue Pond that is currently owned by Normandy Park will need to be expanded. An interlocal agreement will need to be made with Normandy Park for the expansion project as well as for the long-term maintenance of the facility. Roughly 50% of the basin area is within Des Moines city limits. The cost for the land (\$42,500 purchased in 2000) has been deducted from Des Moines' share of the cost.

PROJECT SCOPE	
Expenditures	Total Budget
Design	47
Land & Right of Way	-
Construction	259
Contingency	79
Total Expenditures	385

Funding Sources	Total Budget
Surface Water Utility	150
Local Grants (County, etc.)	235
Total Funding	385

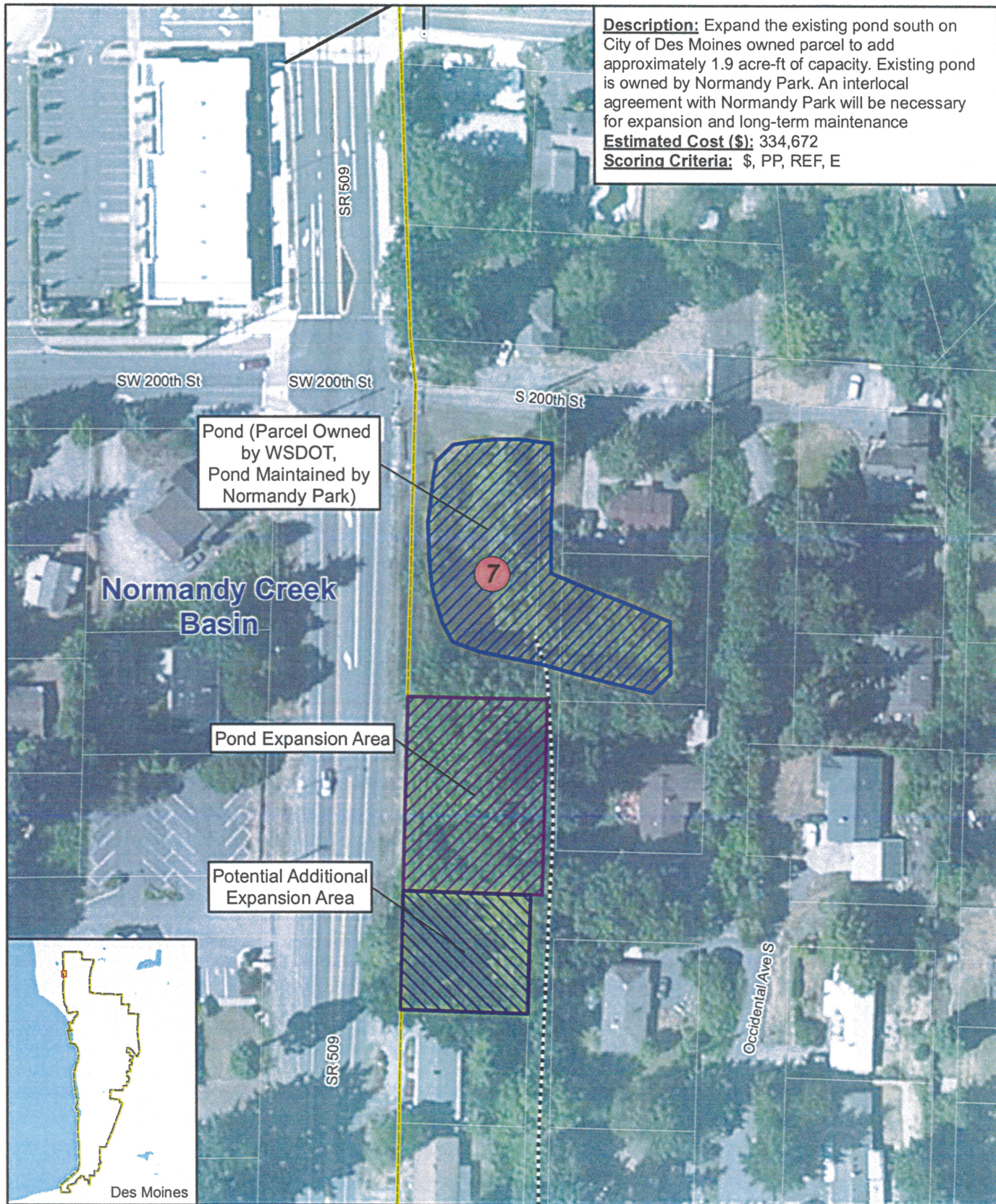
OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

ANNUAL ALLOCATION									
Project to Date 12/31/14	Scheduled Year	2015	2016	2017	2018	2019	2020	2021	
					47				
						259			
					13	66			
					60	325			

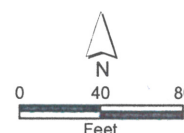
Project to Date 12/31/14	Scheduled Year	2015	2016	2017	2018	2019	2020	2021	
					30	120			
					30	205			
					60	325			

ANNUAL OPERATING IMPACT					
	2015	2016	2017	2018	2019
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

#REF!



Parametrix
10000 15th Avenue, Des Moines, IA 50319



- Discharge Point
- Control Structure
- Catchment
- WQ Facility
- Open Channel
- Storm Main

Capital Project and Rank

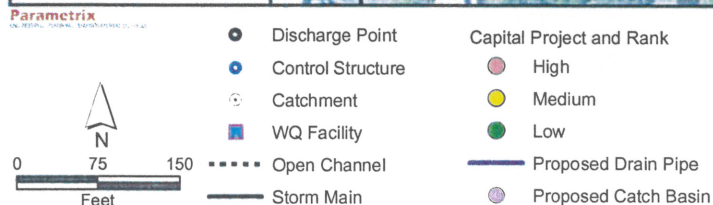
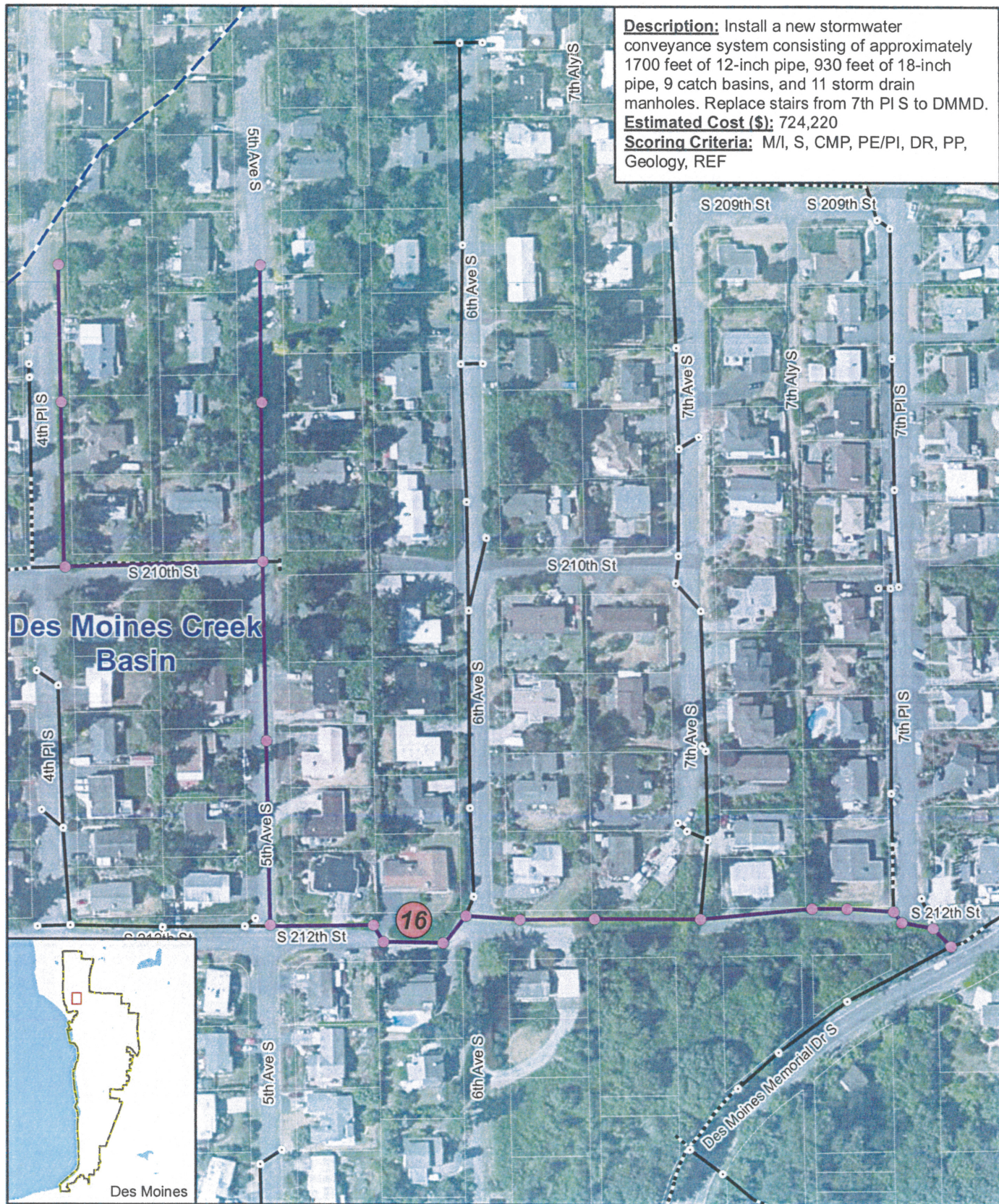
- High
- Medium
- Low
- Existing Pond Area
- Proposed Pond Expansion
- Potential Expansion Area
- Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

Capital Project 7. 1st Avenue Pond Expansion

City of Des Moines
Surface Water Comprehensive Plan

#REF!



Capital Project 16. 5th Avenue South/212th Street Pipe Upgrade

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

N. Fork McSorely Ck Diversion	451.XXX
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CIP Category: Surface Water Mgmt
 SWM CIP-30
 Managing Department: BPW

Summary Project Description:									
This project proposes to install a diversion structure on 20th Ave. S. between S. 244th Pl. and 245th Pl. From the diversion structure a new 24-in storm bypass pipe will be installed on the west side of 20th Avenue, turn west and follow the south side of 245th Pl and then to McSorley Creek. This project also includes pavement restoration, replacement of curb and gutter and minimal dredging of McSorely Creek and bank stabilization near the discharge point of the bypass pipe.									

Justification/Benefits: When the Des Moines Trace Subdivision was developed in the early 1980's a segment of the north fork of McSorely Creek was relocated to a narrow rock lined channel within a 15-foot wide drainage easement along the north side of the subdivision (lots 14 through 25). Over time this channel has filled in with sediment and is overgrown with canary reed grass causing the channel to overtop and flood both the subdivision lots and the adjacent properties to the north. This project will provide a flow diversion whereby normal flows will continue into the creek section but high flows are bypassed to a lower point in the channel. As part of this project, the channel section across lots 17-25 will be dredged. This is a high-priority project (CIP-30) identified in the 2015 SWM Comprehensive Plan.

PROJECT SCOPE		
Expenditures	Total	Budget
Design		85
Land & Right of Way		-
Construction		281
Contingency		66
Total Expenditures	432	432

ANNUAL ALLOCATION									
Project to Date	Scheduled Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year
12/31/14	2015	2016	2017	2018	2019	2020	2021		
	-	-	-	-	-	-	85		
							281		
							66		
							432		

Funding Sources	Total	Budget
Surface Water Utility		432
Total Funding	432	432

Project to Date	Scheduled Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year	Plan Year
12/31/14	2015	2016	2017	2018	2019	2020	2021		
	-	-	-	-	-	-	432		

OPERATING IMPACT				
Operating Impact	6 Year Total			
Revenue				
Expenses				
Net Impact	-	-	-	-

ANNUAL OPERATING IMPACT									
	2015	2016	2017	2018	2019	2020	2021		
	-	-	-	-	-	-	-		
	-	-	-	-	-	-	-		
	-	-	-	-	-	-	-		

#REF!

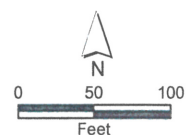
Description: Install diversion structure on the west end of the North Fork McSorley Creek culvert on 20th Ave S, between S 244th PI and S 245th PI. From diversion structure, a new 24-inch high flow bypass pipeline will be installed on the W side of 20th Ave S, turn W and follow the S side of S 245th PI. This bywill discharge to the creek west of the S 245th PI cul-de-sac.

Estimated Cost (\$): 372,960

Scoring Criteria: \$, M/I, S, CMP, PE/PI, PP, REF, E



Parametrix
a harsco company



- Discharge Point
- Control Structure
- Catchment
- WQ Facility
- Open Channel
- Storm Main

Capital Project and Rank

- High
- Medium
- Low
- Proposed Drain Pipe
- Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

Capital Project 30.
North Fork McSorley Creek
Diversion Project

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

6th Ave/239th Pipe Replacement	451,xxx
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CIP Category: Surface Water Mgmt
 SWM CIP-39
 Managing Department: BPBW

Summary Project Description:	
This project proposes to replace the existing 8-inch drainage system on the west side of 6th Ave S. and connect to the drainage system on 239th Street. This project will also install a new 18-inch HDPE storm drain outfall from 239th St. to Puget Sound. The stairway above the outfall pipe may be replaced as part of this project, as part of an LID.	

Justification/Benefits: During major storms the drainage system within 6th Avenue S. is overcome and overflows into the properties on the west side of the street. In addition, the outfall pipe from S. 239th is comprised of coated corrugated steel pipe that has separated in the lower section of the pipe that leads over the bank to the Sound. This project proposes to upgrade the 8-inch pipe on 6th Avenue to standard 12-inch and replace the corrugated steel outfall pipe with HDPE pipe. This project also proposes to replace the stairway that is located above the outfall pipe (as part of an LID). This is a high-priority project (CIP-39) listed in the 2015 SWM Comprehensive Plan.

PROJECT SCOPE	
Expenditures	Total Budget
Design	38
Land & Right of Way	-
Construction	124
Contingency	29
Total Expenditures	191

ANNUAL ALLOCATION									
Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
-	-	-	-	-	-	-	38		
							124		
							29		
-	-	-	-	-	-	-	191		

Funding Sources	Total Budget
Surface Water Utility	191
Total Funding	191

Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
	-	-	-	-	-	-	191		
-	-	-	-	-	-	-	191		

OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

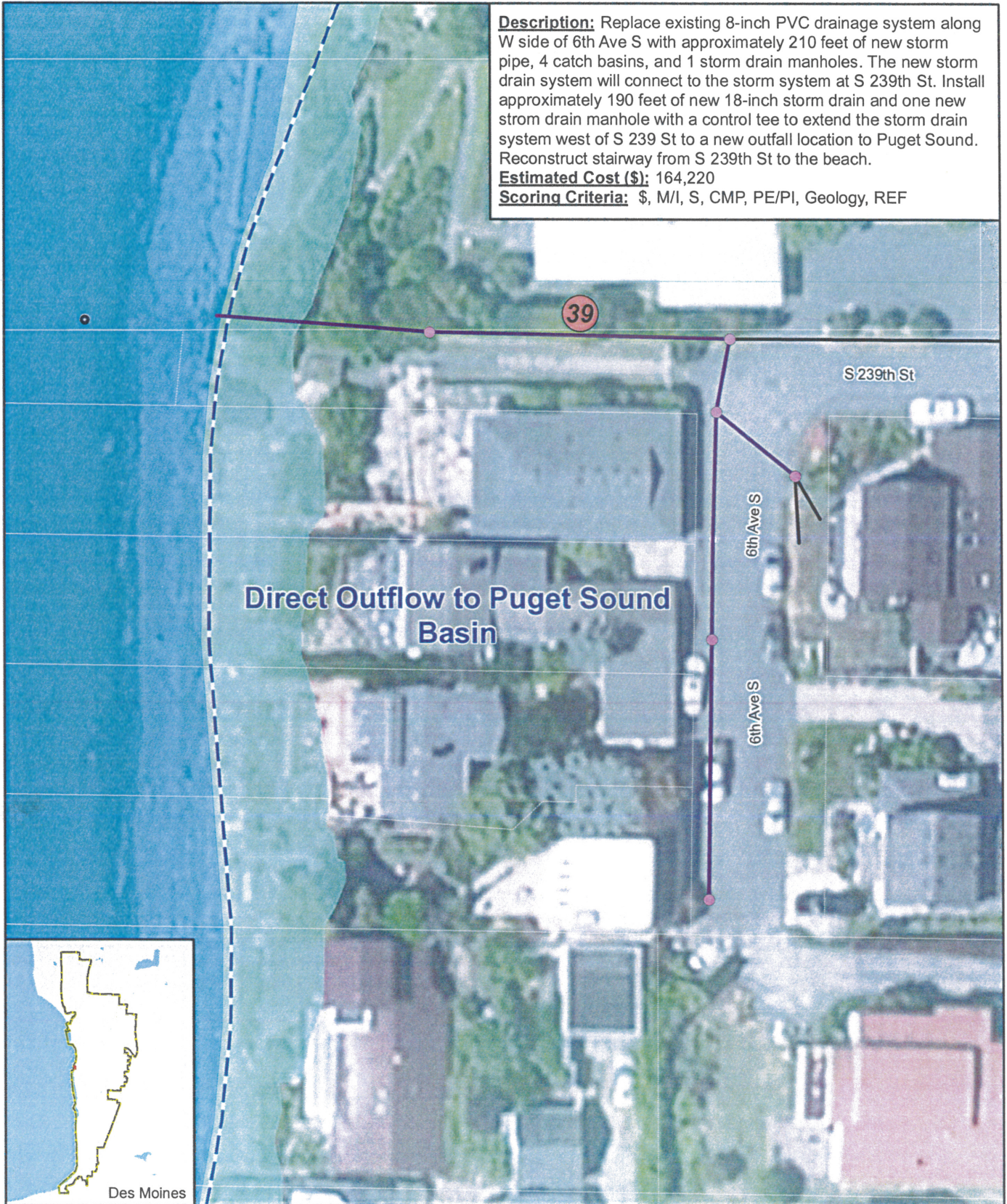
ANNUAL OPERATING IMPACT						
	2015	2016	2017	2018	2019	2020
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

#REF!

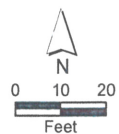
Description: Replace existing 8-inch PVC drainage system along W side of 6th Ave S with approximately 210 feet of new storm pipe, 4 catch basins, and 1 storm drain manholes. The new storm drain system will connect to the storm system at S 239th St. Install approximately 190 feet of new 18-inch storm drain and one new storm drain manhole with a control tee to extend the storm drain system west of S 239 St to a new outfall location to Puget Sound. Reconstruct stairway from S 239th St to the beach.

Estimated Cost (\$): 164,220

Scoring Criteria: \$, M/I, S, CMP, PE/PI, Geology, REF



Parametrix
DES MOINES, IOWA 50319-1000



- Discharge Point
- Control Structure
- Catchment
- WQ Facility
- Open Channel
- Storm Main

- Capital Project and Rank
- High
- Medium
- Low
- Proposed Drain Pipe
- Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

Capital Project 39. 6th Avenue/239th St. Pipe Replacement

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

14th Ave (268th to 272nd) Pipe Upgrade 451,xxx

CIP Category: Surface Water Mgmt
 SWM CIP-36
 Managing Department: BPW

Summary Project Description:

This project proposes to upgrade the ditch and driveway culvert system along the west side of 14th Avenue with a new storm pipe as well as replace the existing culverts below 272nd Street and 268th Street. This project includes 900 linear of 36-inch diameter pipe, 6 manhole structures, an outfall dissipator, and minimal road restoration.

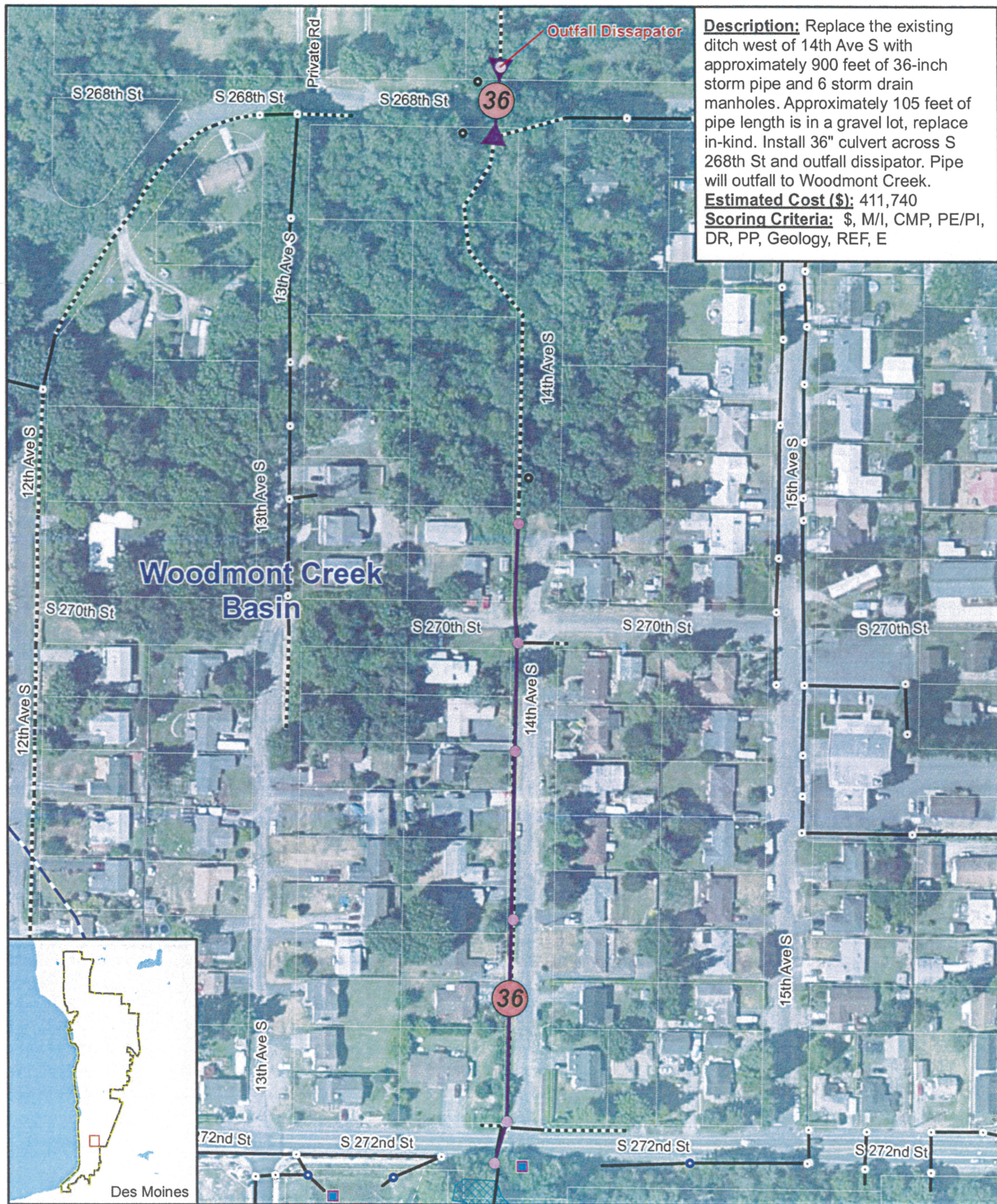
Justification/Benefits: The culvert below 272nd Street is not sufficiently sized and is too shallow. During major storms the pipe system leading from the Redondo Rivera subdivision (south of 272nd) backs up creating significant flooding within the subdivision particularly in the vicinity of 275th Place and 15th Place. North of 272nd St., the drainage system on 14th Avenue is comprised of a shallow ditch system with driveway culverts that are easily blocked exacerbating the problem south of 272nd Street. There is also significant erosion due to a drop of grade at the downstream end of the culvert at S. 268th Street. This project proposes to replace the culverts at 272nd Street and 268th Street and install a new 36-inch pipe system on the west side of 14th Avenue from 272nd Street to 270th Street. This project is a high-priority project (CIP-36) listed in the 2015 SWM Comprehensive Plan

PROJECT SCOPE		ANNUAL ALLOCATION									
Expenditures	Total Budget	Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
Design	94	-	-	-	-	-	-	-	94		
Land & Right of Way	-										
Construction	310								310		
Contingency	74								74		
Total Expenditures	478								478		

Funding Sources		Project to Date 12/31/14	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021		
Surface Water Utility	478								478		
Total Funding	478								478		

OPERATING IMPACT		ANNUAL OPERATING IMPACT									
Operating Impact	6 Year Total	2015	2016	2017	2018	2019	2020	2021			
Revenue	-								-		
Expenses	-								-		
Net Impact	-								-		

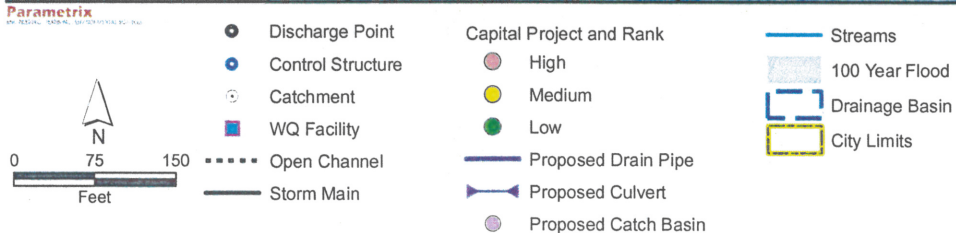
#REF!



Description: Replace the existing ditch west of 14th Ave S with approximately 900 feet of 36-inch storm pipe and 6 storm drain manholes. Approximately 105 feet of pipe length is in a gravel lot, replace in-kind. Install 36" culvert across S 268th St and outfall dissipator. Pipe will outfall to Woodmont Creek.

Estimated Cost (\$): 411,740

Scoring Criteria: \$, M/I, CMP, PE/PI, DR, PP, Geology, REF, E



Capital Project 36.
14th Avenue (268th to 272nd)
Pipe Upgrade

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

216th Pl./ Marine View Dr. Pipe Upgrade **451,xxx**

CIP Category: Surface Water Mgmt
 SWM CIP-17
 Managing Department: BPBW

Summary Project Description:

This project proposes to upgrade the ditch along Des Moines Memorial Drive with 300 linear feet of new 18-inch diameter pipe and connecting to 170 linear feet of new larger 24-inch diameter storm system crossing the intersection of MVD (216th Place). The project also proposes to pipe the ditches on the west side of 6th Avenue connecting to the new pipe system on DMMD.

Justification/Benefits: Previous upgrades have occurred within the storm system downstream of the project and west of the project along 216th Place. This project proposes to upsize the 18-inch crossing at Marine View Drive to 24-inch as well as pipe the ditch along Des Moines Memorial Drive. Along the storm segment below MVD near the border of Normandy Park and Des Moines is a buried inaccessible structure that may become blocked with debris and cause backup and flooding of the intersection and overflow to areas of recent landslide activity. This project will be coordinated with the City of Normandy Park (cost share for the portion of project within Normandy Park not shown). This is a high-priority project (CIP-17) listed in the 2015 SWM Comprehensive Plan.

PROJECT SCOPE	
Expenditures	Total Budget
Design	61
Land & Right of Way	-
Construction	200
Contingency	48
Total Expenditures	309

Funding Sources	Total Budget
Surface Water Utility	309
Total Funding	309

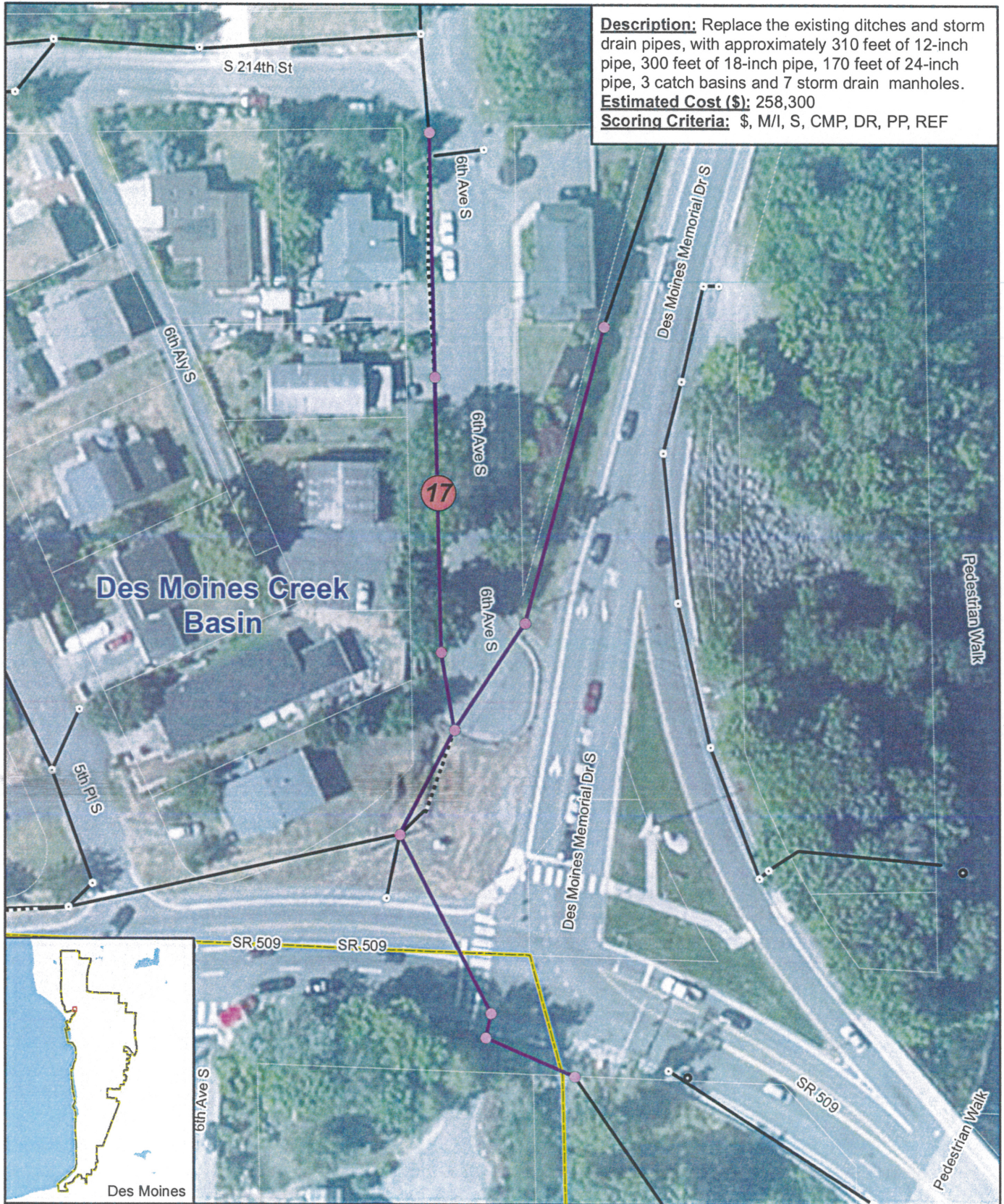
Project to Date 12/31/14	ANNUAL ALLOCATION											
	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021					
-	-	-	-	-	-	-	61					
							200					
							48					
-	-	-	-	-	-	-	309					

Project to Date 12/31/14	ANNUAL ALLOCATION											
	Scheduled Year 2015	Plan Year 2016	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020	Plan Year 2021					
-	-	-	-	-	-	-	309					
-	-	-	-	-	-	-	309					

OPERATING IMPACT	
Operating Impact	6 Year Total
Revenue	-
Expenses	-
Net Impact	-

ANNUAL OPERATING IMPACT						
	2015	2016	2017	2018	2019	2020
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

#REF!



Description: Replace the existing ditches and storm drain pipes, with approximately 310 feet of 12-inch pipe, 300 feet of 18-inch pipe, 170 feet of 24-inch pipe, 3 catch basins and 7 storm drain manholes.

Estimated Cost (\$): 258,300

Scoring Criteria: \$, M/I, S, CMP, DR, PP, REF

- Legend:**
- Discharge Point
 - Control Structure
 - Catchment
 - WQ Facility
 - Open Channel
 - Storm Main
- Capital Project and Rank**
- High
 - Medium
 - Low
 - Proposed Drain Pipe
 - Proposed Catch Basin

- Streams
- 100 Year Flood
- Drainage Basin
- City Limits

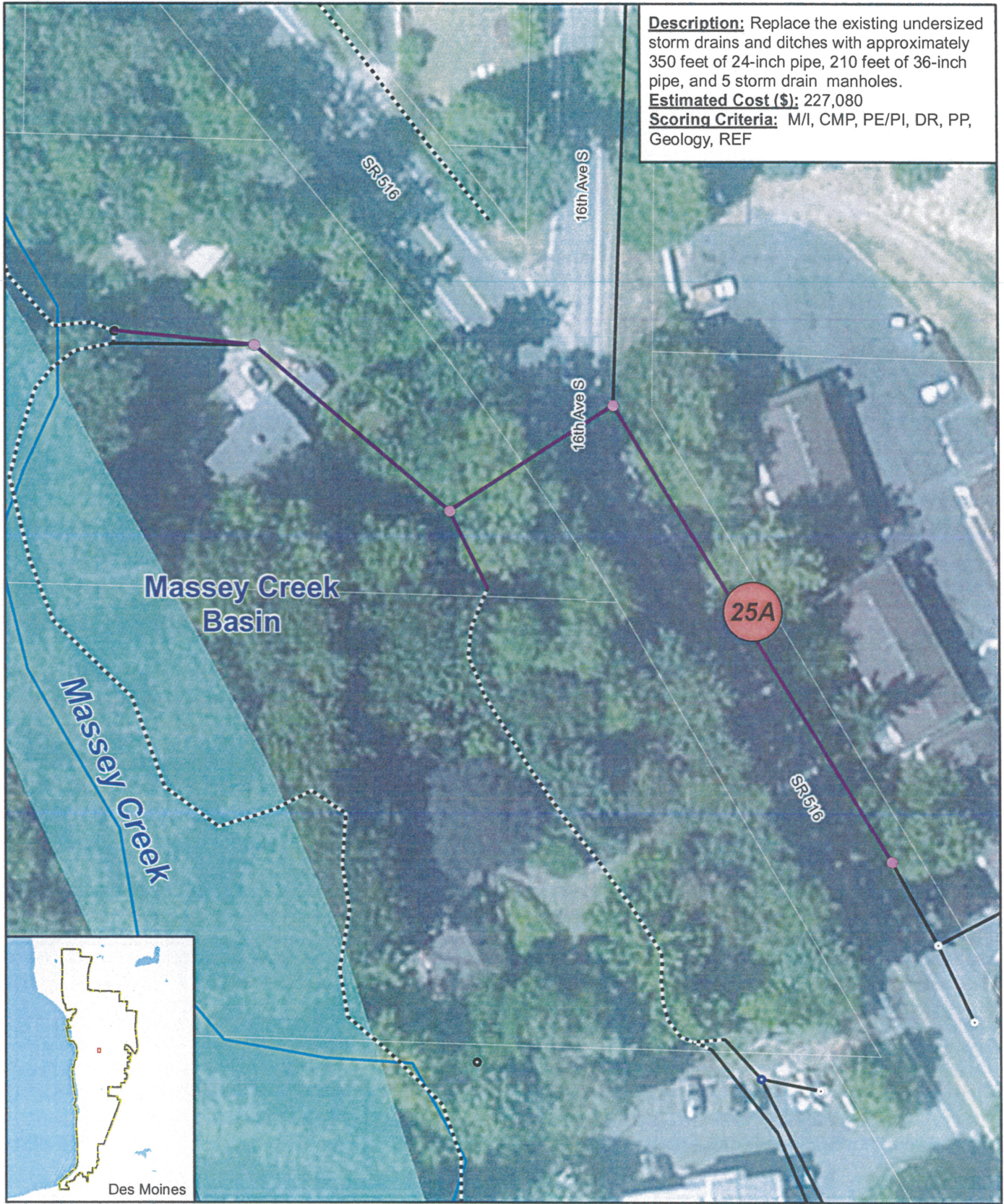
Capital Project 17. 216th Place/Marine View Drive Pipe Upgrade

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016 -2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

KDM /16th Avenue Pipe Replacement		451,xxx
CIP Category: Surface Water Mgmt SWM CIP-25A		
Managing Department: BPBW		
Summary Project Description:		Replace approximately 300 feet of existing roadside ditch (east of 16th Avenue) along KDM Road with 24-inch storm pipe and connect to existing 18-inch culvert crossing KDM Rd at 16th Avenue. Install 50 feet new 24-inch storm drain southwest of KDM Road connecting to existing 18-inch culvert crossing and replace 350 feet of existing 24-inch corrugated metal pipe with larger 36-inch pipe downstream of the culvert crossing.
Justification/Benefits:		During major storm events the capacity of the existing drainage system along Kent-Des Moines Road and the highway crossing will be exceeded causing runoff to overflow across KDM and flood the property downstream. In addition, the system on that property (located within a public drainage easement) that intercepts flows is also insufficiently sized and is prone to overtopping. This project proposes to replace the undersized pipes with 24-inch and 36-inch diameter pipes. This is a high-priority project (CIP-25A) listed in the 2015 SWM Comprehensive Plan and to be coordinated with projects CIP-4 and CIP-25B that would take a portion of the flows west to a new outfall pipe at Barnes Creek (rather than upsizing the 18-inch corrugated aluminum crossing below KDM Road.)
PROJECT SCOPE		ANNUAL ALLOCATION
Expenditures	Total Budget	
Design	54	
Land & Right of Way	-	
Construction	176	
Contingency	42	
Total Expenditures	272	272
Funding Sources	Total Budget	
Surface Water Utility	272	
Total Funding	272	272
OPERATING IMPACT		ANNUAL OPERATING IMPACT
Operating Impact	6 Year Total	
Revenue	-	
Expenses	-	
Net Impact	-	-

#REF!



Description: Replace the existing undersized storm drains and ditches with approximately 350 feet of 24-inch pipe, 210 feet of 36-inch pipe, and 5 storm drain manholes.
Estimated Cost (\$): 227,080
Scoring Criteria: M/I, CMP, PE/PI, DR, PP, Geology, REF

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> ● Discharge Point ● Control Structure ○ Catchment ■ WQ Facility --- Open Channel — Storm Main | <p>Capital Project and Rank</p> <ul style="list-style-type: none"> ● High ● Medium ● Low — Proposed Drain Pipe ● Proposed Catch Basin | <ul style="list-style-type: none"> — Streams 100 Year Flood — Drainage Basin City Limits |
|--|--|--|

Capital Project 25A.
KDM/16th Avenue Pipe Replacement Project

City of Des Moines
Surface Water Comprehensive Plan

CITY OF DES MOINES
2016-2021 CAPITAL IMPROVEMENT PLAN
 (Amount in Thousands)

DMMD 208th to 212th Pipe Project	451,xxx
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CIP Category: Surface Water Mgmt
 SWM CIP-18
 Managing Department: PBPW

<i>Summary Project Description:</i>
Replace approximately 1500 feet of existing roadside ditch and corrugated metal pipe along the west side of Des Moines Memorial Drive from 208th Street to 212th Street. Includes installation of 14 manhole structures and minimal road restoration.

Justification/Benefits: The ditch and culvert system along the west side of Des Moines Memorial Drive is insufficient to convey a 25-year storm causing water to pool in the south bound lane of Des Moines Memorial Drive. This project proposes to replace the existing corrugated metal pipe and ditch system with approximately 1500 feet of new 18-inch pipe that would connect to the pipe replacement work made on Des Moines Memorial Drive in 2014. This project is a high priority project (CIP-18) listed in the 2015 SWM Comprehensive Plan.

<i>PROJECT SCOPE</i>	
<i>Expenditures</i>	<i>Total Budget</i>
Design	119
Land & Right of Way	-
Construction	391
Contingency	93
Total Expenditures	603

<i>Funding Sources</i>	<i>Total Budget</i>
Surface Water Utility	603
Total Funding	603

<i>Project to Date</i> 12/31/14	<i>ANNUAL ALLOCATION</i>							
	<i>Scheduled Year</i> 2015	<i>Plan Year</i> 2016	<i>Plan Year</i> 2017	<i>Plan Year</i> 2018	<i>Plan Year</i> 2019	<i>Plan Year</i> 2020	<i>Plan Year</i> 2021	
-	-	-	-	-	-	-	-	119
								391
								93
								603

<i>Project to Date</i> 12/31/14	<i>Scheduled Year</i> 2015	<i>Plan Year</i> 2016	<i>Plan Year</i> 2017	<i>Plan Year</i> 2018	<i>Plan Year</i> 2019	<i>Plan Year</i> 2020	<i>Plan Year</i> 2021	
-	-	-	-	-	-	-	-	603
								603

<i>OPERATING IMPACT</i>	
<i>Operating Impact</i>	<i>6 Year Total</i>
Revenue	-
Expenses	-
Net Impact	-

<i>ANNUAL OPERATING IMPACT</i>							
	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

#REF!

