

PAPILLION CREEK WATERSHED MANAGEMENT PLAN

MARCH 2014 UPDATE



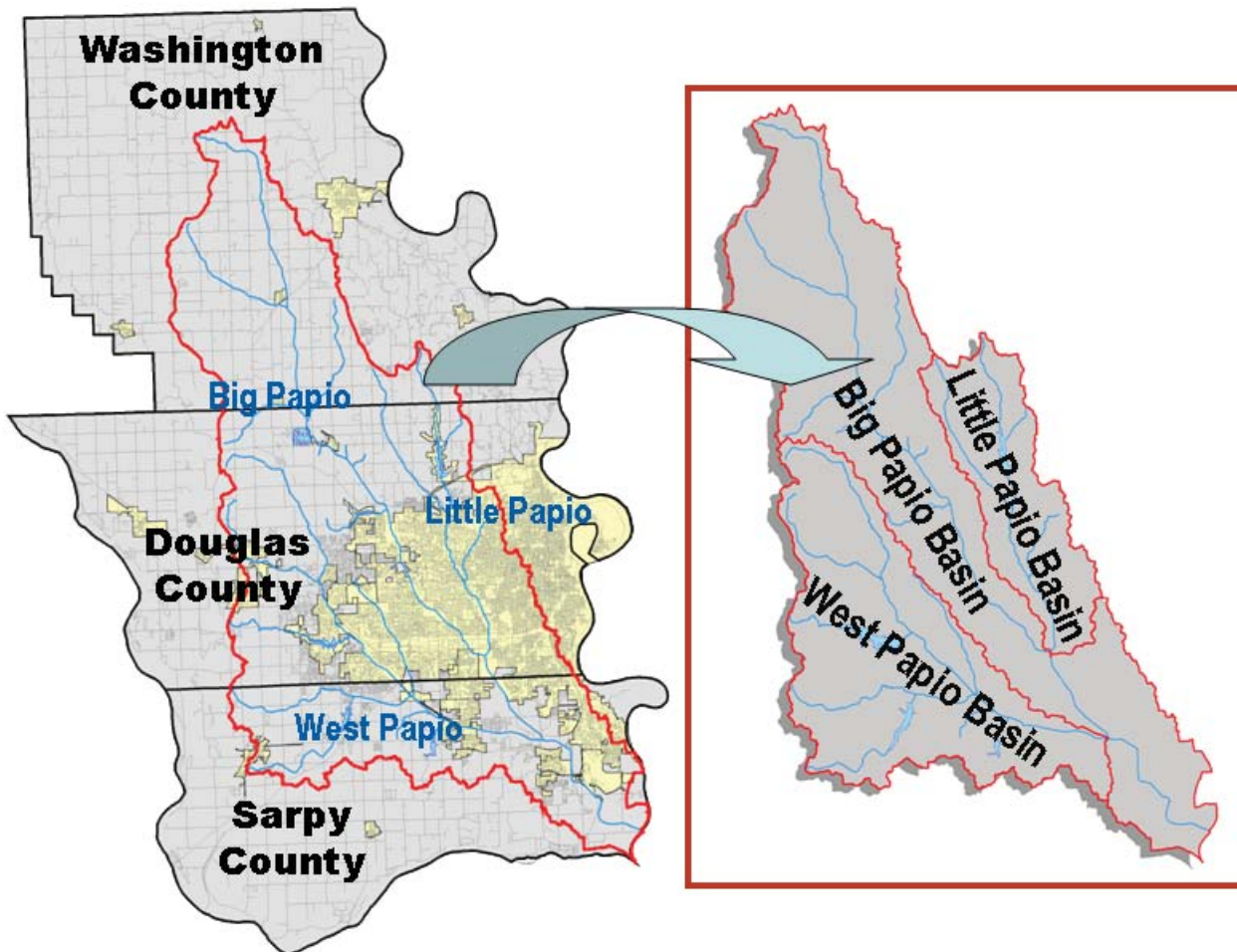
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Executive Summary

E.1 Background and Purpose

Improved stormwater management within the Papillion Creek Watershed (Watershed) has been the on-going objective of the Papillion Creek Watershed Partnership (PCWP) since its formation in August 2001. The Watershed covers approximately 402 square miles of drainage area extending from northern Washington County southward through Douglas and Sarpy Counties and ultimately discharges to the Missouri River south of Bellevue – see Figure E-1. PCWP members presently consist of the cities of Bellevue, Boys Town, Gretna, La Vista, Omaha, Papillion, and Ralston; Sarpy County; and the Papio-Missouri River Natural Resources District (P-MRNRD).

Figure E-1 Papillion Creek Watershed



It is the desire of the PCWP to review and update the Watershed Fees framework and rates, the Watershed Management Plan, and the Implementation Plan with respect to availability of needed funds and rate of development within the Watershed every 3 to 5 years. This 2014 Update represents the first effort to update the implementation plan. The 2014 Update is intended to provide interim progress updates for the various management practices. Specifically, the financial needs for the entire list of remaining structural projects were evaluated so that the PCWP could reach consensus for the necessary long-term and near-term strategies, including defining the Program structural projects for the next 2014 to 2018 planning period.

E.2 2014 Review and Update

The following text summarizes the general efforts and findings from the 2014 Update:

Water Quality Evaluation: The Nebraska Department of Environmental Quality (NDEQ) updated its various water quality impairment listings in 2012 for area lakes and stream segments. There are a number of new water body impairment listings, including nutrients (Total Nitrogen and Total Phosphorus) and Chlorophyll “a” in four of the existing area lakes. Additional details are covered in this 2014 Update and in Appendix A.

Peak Flow Reduction Evaluation: No additional technical analyses were conducted for the 2014 Update; however, a summary of interim activities within the Watershed was provided:

- The U.S. Army Corps of Engineers (USACE) updated the hydrologic analyses for the Papillion Creek Watershed.
- The National Oceanic and Atmospheric Administration (NOAA) derived new precipitation data that included some statistical increases. In particular, the 100-year, 24-hour precipitation increased from 6.7 inches to 7.0 inches

Status of 2009-2013 Watershed Implementation Plan: Projects identified in the 2009 Watershed Management Plan as Program Projects are listed in Table E-1. The Papio-Missouri River NRD (P-MRNRD) constructs the projects on behalf of the PCWP. Table E-1 provides an updated current completion status and cost obligations of the 2009-2013 Program Projects. The currently estimated completion costs of the structures are nearly \$40 million which is less than estimated in the 2009 Plan. This was primarily due to reconfiguration of the water quality basins upstream of WP-5 and DS 15A.

Proposed Watershed Management Plan: The Watershed Management Plan Update deals primarily with the continuation of how to implement the remaining water quality and structural flood control projects. Table E-2 shows the proposed list of remaining structural projects, along with updated estimated capital costs. The project sequencing for some water quality basins has changed to reflect recent changes in development interest, management priorities, and financial constraints. Figure E-2 shows the locations of the remaining structural projects.

Financial modeling was conducted for eight project funding scenarios. Each modeling scenario identified the number of remaining structural projects that could likely be completed within the next 35-year planning period from 2014 to 2049. The following components provided inputs to the financial modeling scenarios:

- Updated land use maps to help establish spatial relationships of existing and future development relative to the approximate timing of remaining structural projects.
- Updated population and land use projections. Progressive land consumption from development forms the basis for Watershed Management Fee (Watershed Fee) revenue

Table E- 1 Status of 2009 Program Projects for Years 2011 to 2013

Structure Name	Approx. Location & Planning Jurisdiction	Drainage Area (acres)	Estimated Project Funding Sources (Millions of \$)				Current Status
			Bonding	General Fund	Watershed Fees	Total Est, Project Cost	
WP-5 and Associated Water Quality Basins [1]	126th & Cornhusker Road; Papillion	3,310	\$18.5	\$17.4	\$0	\$35.9	Under Construction; Est. June 2014 Completion
DS 15A and Associated Water Quality Basin [2]	168th & Fort Streets; Omaha	7,100	\$42.6	\$1.2	\$0	\$43.8	Design In Progress; Est. Fall 2014 Construction Start and 2015 Completion.
WQ-Zorinsky 1	Upstream of Zorinsky Lake; Omaha	1,660	\$1.5	\$1.3	\$1.4	\$4.2	Design Complete; Est. Spring 2014 Construction Start and Completion in 2014
WQ-CL-6	Upstream of Cunningham Lake; Omaha	510					Deferred.
Totals:			\$62.6	\$19.9	\$1.4	\$83.9	

Notes:

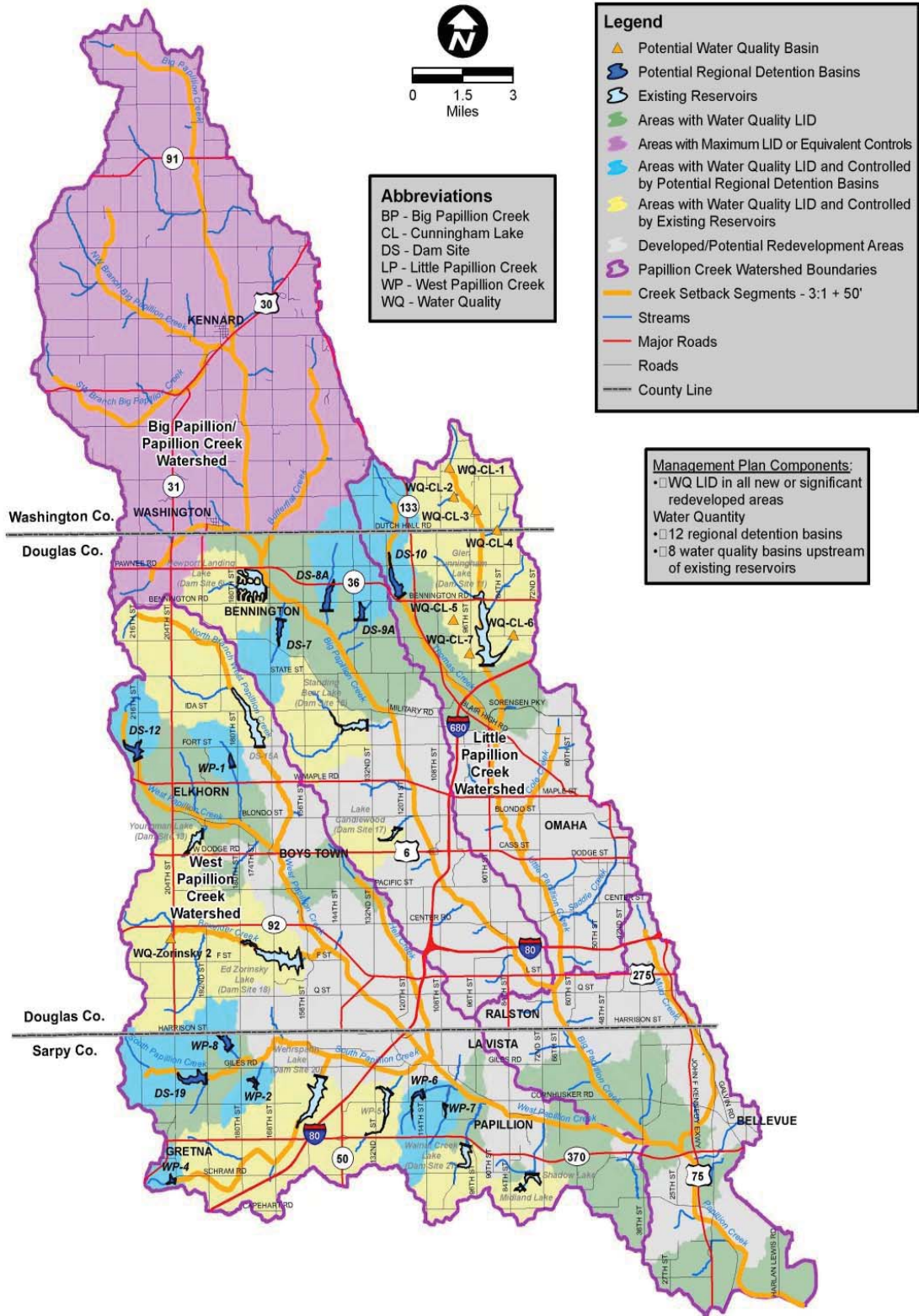
- [1] Original single basin concept revised to two basins.
- [2] Original two basin concept revised to form a single basin.



Table E-2 Summary of Estimated Capital Costs for Remaining Projects

Structure Name	Stream Reach	Approx. Location/Jurisdiction	Drainage Area (Acres)	Est. Project Costs, 2013 Basis	
				Est. Normal Pool Area (Acres)	Total Est. Project Capital Costs, \$ Millions
WP-6	Trib. to Unnamed West Papillion Trib.	114th & Cornhusker Road; Sarpy Co.	1,260	32	\$11.6
WP-7	Trib. to Unnamed West Papillion Trib.	108th & Cornhusker Road; Sarpy Co.	450	12	\$6.4
WP-4	Trib. to South Papillion	204th & Schram Road; Gretna	563	16	\$9.9
DS 19	South Papillion Creek	192nd & Giles Road; Sarpy Co.	2,750	100	\$23.7
WP-8	Trib. to South Papillion	180th & Harrison St.; Douglas & Sarpy Co.	1,470	45	\$11.0
WP-2	Trib. to South Papillion	180th & Giles Road; Sarpy Co.	679	21	\$9.9
WP-1	Trib. to West Papillion	180th & Fort St., Omaha	864	24	\$13.7
DS 12	West Papillion Creek	216th & Fort Streets; Douglas Co. & Omaha	1,670	70	\$20.7
DS 10	Thomas Creek	120th & Bennington Road; Omaha	2,950	97	\$23.2
DS 7	Trib to Big Papillion	168th & Bennington Road, Bennington & Omaha	1,600	47	\$13.8
DS 9A	Trib to Big Papillion	132nd & Bennington Road, Omaha	1,280	38	\$10.5
DS 8A	Trib to Big Papillion	144th St. & Bennington Road, Bennington	1,850	75	\$15.6
Regional Detention Subtotal					\$169.9
WQ-CL-6	Upstr. Existing Cunningham Lake	Omaha	510		\$9.5
WQ-Zorinsky 2	Upstr. Existing Zorinsky Lake	Omaha	1,000		\$9.9
WQ-CL-5	Upstr. Existing Cunningham Lake	Omaha	470		\$9.1
WQ-CL-7	Upstr. Existing Cunningham Lake	Omaha	200		\$7.0
WQ-CL-4	Upstr. Existing Cunningham Lake	Omaha & Washington Co.	915		\$14.2
WQ-CL-2	Upstr. Existing Cunningham Lake	Washington Co.	845		\$13.7
WQ-CL-3	Upstr. Existing Cunningham Lake	Washington Co.	790		\$13.3
WQ-CL-1	Upstr. Existing Cunningham Lake	Washington Co.	740		\$13.3
Water Quality Basins Subtotal					\$ 89.9
Total Regional Detention and Water Quality Basins					\$ 259.8

Figure E-2 2014 Watershed Management Plan Update for Full Build-Out Conditions



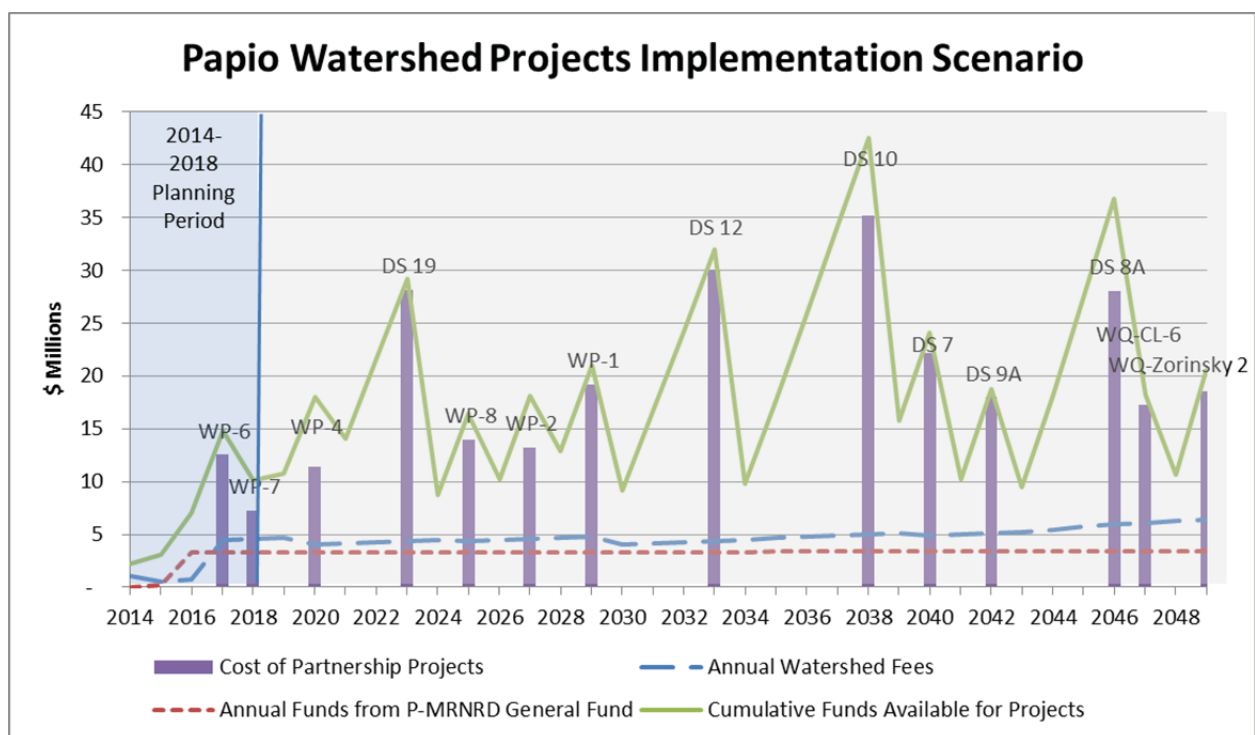
stream projections. Watershed Fees are assessed to developers and home builders based on projected capital costs for structural projects, projected land consumption, and the underlying intent to maintain a ratio of 1/3 private to 2/3 public financing for the overall structural program projects as per Root Policy Group #6 in Appendix C.

- The Papio-Missouri River Natural Resources District (P-MRNRD) Long-Range Implementation Plan (LRIP). This document formed the basis for probable available General Fund allocations for structural projects.
- Annual bond repayment obligations. Current P-MRNRD bond obligations are approximately \$5 million per year for three existing bonds totaling approximately \$71.5 million that will expire in 2032, 2033, and 2034 respectively. Approximately \$10 million in remaining bonding capacity exists and was also considered.
- The Program Project planning period was changed by the PCWP from 3 years to 5 years; the latter of which will now result in a 2014 to 2018 time frame.

2014-2018 Implementation Plan: The Implementation Plan addresses proposed Program Projects and funding needs for the 2014 to 2018 planning period as follows:

- Financial and administrative needs to implement the proposed Program Projects were identified.
- A number of scenarios were studied to help identify a reasonable revenue generation strategy to fund the Program Projects. Figure E-3 depicts Project Funding Scenario 1A as a reasonable baseline means for project financing using pay-as-you-go (P-A-Y-G) General Fund allocations at the existing P-MRNRD mill levy, along with the proposed Watershed Fee Schedule. Under this funding strategy, all twelve (12) of the remaining regional detention basin projects could potentially be implemented, along with two (2) of the eight (8) remaining water quality basin projects.

Figure E-3 Scenario 1A: P-A-Y-G with Existing Mill Levy and Dedicated General Fund Allocation per LRIP, Begin 2016



- Table E-3 identifies the two structural projects that were selected by the PCWP for the 2014 to 2018 Implementation Plan and their projected costs.

Table E-3 Watershed Management Plan Program Projects for Years 2014 to 2018

Structure	Approx. Location & Planning Jurisdiction	Drainage Area (acres)	Est. Project Capital Costs, 2014 Basis, \$ Millions
WP- 6	114 th & Cornhusker Road; Sarpy County	1,260	\$11.6
WP- 7	108 th & Cornhusker Road; Sarpy County	450	\$6.4
		Total	\$18.0

Note: The abbreviation “WP” = West Papillion Creek Watershed.

- Table E-4 contains the schedule of Watershed Fees selected by PCWP for the 2014 to 2018 planning period.

Table E-4 Schedule of Watershed Fees for Years 2014 to 2018

Fee Category	Current Developer Fee Amounts	2014	2015	2016	2017	2018
Single Family Residential (also includes low-density multi-family up to 4-plexes)	\$750 per lot (same as per Housing Unit or per Dwelling Unit)	\$823	\$843	\$864	\$886	\$908
High-Density Multi-Family Residential (beyond 4-plexes)	\$3,300 per Gross Developable Acre	\$3,619	\$3,710	\$3,803	\$3,898	\$3,995
Commercial/Industrial	\$4,000 per Gross Developable Acre	\$4,387	\$4,497	\$4,609	\$4,724	\$4,842

Note: The annual increase for 2015 to 2018 is 2.5 percent per year.

- Figure E-4 represents the Implementation Plan that depicting the locations for the proposed two Program Projects for the 2014 to 2018 planning period.

Figure E-4 Papillion Creek Watershed Implementation Plan (Years 2014 to 2018)

