Executive Summary:

Office of Management and Budget Fact Sheet

S-1.0 Title of Proposed Action

Supplemental Watershed Plan No. 14 and Environmental Assessment for Mill Ditch Improvements, American Fork-Dry Creek Watershed

S-2.0 County, State

Utah County, Utah

S-3.0 Congressional District

Third Congressional District

S-4.0 Sponsoring Local Organization

City of Pleasant Grove

S-5.0 Authority

This Plan-EA has been prepared under the authority of United States Department of Agriculture Natural Resources Conservation Service (NRCS) Watershed Rehabilitation Amendments, which authorize funding and technical assistance. The original watershed work plan was prepared and works of improvement have been installed under the authority of the Watershed Protection and Flood Prevention Act of 1954 (Public Law 83-566) as amended. The purposes for which the project is planned is irrigation water conservation as a part of the Agricultural Water Management section of Title 390.

S-6.0 Cooperating Agency

There are no cooperating agencies.

S-7.0 Purpose and Need for Action

The purpose of the project is to provide more efficient delivery of the full interest in the water rights of the irrigation company to the end user without interruption and to address safety and operational issues by improving the irrigation system, including the diversion structure on the American Fork River. The project is needed to conserve irrigation water lost to seepage and evaporation and to improve safety and reduce potential flooding issues due to open, unlined irrigation ditches and aging infrastructure.

In 2014, the City measured the flows entering and leaving the Upper Mill Ditch on a weekly basis through the irrigation season and determined there were significant seepage and evaporation losses. Approximately 3,885 acre-feet entered the ditch and approximately 1,671 acre-feet was lost to seepage and evaporation (43%). It is conservatively estimated that approximately 1,000 acre-feet (26%) could be saved from seepage and evaporation through piping of the Upper Mill Ditch and 200 ac-ft. from piping of the Meredith Ditch.

Other needs include safety concerns with the open ditch and issues with the diversion structure on the American Fork River. The American Fork Diversion Structure was built in 1920 and consists of a concrete structure on the American Fork River. The diversion structure conveys flows into the Mill Ditch, as well as several other ditches. It operates by hand-operated mechanical means and is in need of operational and technological upgrades to improve water usage, labor efficiency, and safety. Further, the diversion structure is nearly 100 years old and suffers from age-related deficiencies, such as degraded concrete, failing controls, leakage, etc. Not replacing the structure will lead to eventual failure, flooding risks, and disruption of irrigation service to a majority of the residents in northern Utah County. The current ditches are subject to the safety concerns of an open ditch, plugging and potential flooding from debris, and high leakage and evaporation losses. The current ditches require regular maintenance to make sure they are free from obstructions.

S-8.0 Description of the Preferred Alternative

The Preferred Alternative consists of piping approximately 6,000 feet of the Mill and Meredith Ditches along existing alignments and replacing the aging diversion structure on the American Fork River. This alternative would be constructed in three phases):

- Phase I- piping the Mill Ditch (currently an unlined open channel)
- Phase II – piping the Meredith Ditch (currently a concrete-lined channel)
- Phase III – replacing the American Fork Diversion Structure

S-9.0 Resource Information

Table S-1 lists the relevant resource information for Mill Ditch.

TABLE S-1. EXISTING RESOURCE INFORMATION

Resource	Description
Latitude/Longitude	40°25’57.66”/111°45’21.40” (American Fork Diversion Structure)
Hydrologic Unit Numbers	16020201
Climate	Summer High: July - 91° F; Winter Low: January – 20° F.
Topography	The project area is located at the mouth of American Fork Canyon and is relatively flat, with a steep slope along the eastern edge of the project area.
Annual Precipitation/Snowfall	17 inches rain/ 55 inches of snow
Watershed Area	185.5 square miles
Mill Ditch	1.1 mile (5,808 feet)
Meredith Ditch	0.5 miles (2,708 feet)
Land Uses	Golf course, Residential, Utility line (ditch)
Land Ownership	Public, Private
Population (Cedar Hills)*	9,796

Resource	Description
Demographics (Cedar Hills)*	White: 95.2% Black or African American: 0.4% American Indian/Alaskan Native: 0.3% Asian: 1.0% Native Hawaiian/Other Pacific Islander: 0.6% Hispanic of any race: 4%

**Based on U.S. Census 2010 data*

S-10.0 Alternative Plans Considered

Alternative plans considered included:

- No Action Alternative
- Rehabilitate Diversion Structure
- Replace Diversion Structure and Install Pipe in Existing Alignment
- Replace Diversion Structure and Install Pipe in New Alignment Through Golf Course
- Replace Diversion Structure and Install Pipe in New Alignment Along the Highland Trail

Two alternatives were analyzed in full in the Plan-EA, the No-Action Alternative and the Replace Diversion Structure and Install Pipe in Existing Alignment (Preferred Alternative).

The Replace Diversion Structure and Install Pipe in Existing Alignment Alternative is also the NED Alternative.

S-11.0 Project Costs and Funding Source

The breakdown of the estimated installation costs for the Replace Diversion Structure and Install Pipe in Existing Alignment Alternative is summarized below in Table S-2. NRCS design engineering, construction management, and NRCS incurred administration costs are not cost-shared by the sponsor. Any costs incurred for administration by the sponsor would not be cost-shared by NRCS. Real property rights, natural resource rights, relocation payments, and road and utility modifications have not been included in the Table, as there are no anticipated costs associated with these components based on the project alternative.

TABLE S-2. ESTIMATED COSTS

Item	PI 83-566 Funds		Other Funds		Total	
Construction	$2,962,900	75%	$987,600	25%	$3,950,500	100%
Engineering	$515,300	100%	$0	0%	$515,300	100%
Project Administration	$0	0%	$34,300	100%	$34,300	100%
Total	$3,478,200	77.3%	$1,021,900	22.7%	$4,500,100	100%

S-12.0 Project Benefits

The Preferred Alternative would result in $295,800 in damage reduction benefits due to the water conservation that would come from eliminating the loss due to leakage and evaporation through piping the Mill Ditch and the Meredith Ditch.

S-13.0 Net Economic Benefits

The estimated annual project economic benefits for the Replace Diversion Structure and Install Pipe in Existing Alignment Alternative are summarized in Table S-3. The Replace Diversion Structure and Install Pipe in Existing Alignment Alternative is the NED Alternative for the project per Sections 505.2 and 505.35.B (1) (iv) of the National Watershed Program Manual (NWPM).

TABLE S-3. ESTIMATED AVERAGE ANNUAL WATERSHED PROTECTION DAMAGE REDUCTION BENEFITS

Item	Damage Reduction Benefit, Average Annual		Total
	Agricultural-related	Nonagricultural-related	
Offsite/Public			
Water Conservation	$316,300	$--	$316,300

Price Base 2018; Prepared March 2018
Note: Agriculture-related damage includes damage to rural communities

S-14.0 Period of Analysis

The standard period of analysis under PL 83-566 is a minimum of 50 years and a maximum of 100 years. The Mill Ditch Improvements were analyzed for a period of 51 years, based upon an expected 50-year life span for the proposed Mill Ditch improvements.

S-15.0 Project Life

The expected life span for the proposed Mill Ditch improvements is 50 years.

S-16.0 Environmental Impacts

Table S-4 lists the resources of concern and impacts identified as associated with the Mill Ditch Improvements. Resources that would not be impacted by the project are not listed in Table S-4.

TABLE S-4. SUMMARY OF RESOURCE CONCERNS

Resource of Concern	Summary of Concern	Summary of Effects
Soils		
Soils and Geologic Characteristics	Potential for impacts to steep slopes adjacent to the irrigation canals in the project area.	No impacts to soil composition or other geologic characteristics are anticipated. In relation to the steep slopes present in some areas, the pipe could be installed under the existing ditch for short sections eliminating the need of excavating through steep slopes in order to maintain slope stability.

Resource of Concern	Summary of Concern	Summary of Effects
Upland Erosion	Potential for impacts to steep slopes adjacent to the irrigation canals in the project area.	The project would not have any impacts on upland erosion. The stability of the steep slopes of the neighboring terrace would be maintained, with the pipeline potentially being installed under the existing ditch for short sections eliminating the need of excavating through steep slopes in order to maintain slope stability.
Stream Bank Erosion and Sedimentation	Stream bank erosion concerns and sedimentation	Best Management Practices (BMPs) will be installed during construction to prevent and control soil erosion along both the canals and the American Fork River. Post-construction, the Mill Ditch/Meredith Ditch would be piped and would not therefore result in further stream bank erosion. The new diversion structure would function in a similar manner as the existing structure and no additional stream bank erosion issues are anticipated.
Water Resources		
Surface Water Quality	Potential for impacts to American Fork River during construction.	BMPs would be incorporated into the project to protect surface water quality during construction.
Waters of the U.S	Stream Alteration Permit	The project would require a Stream Alteration permit for impacts to the American Fork River for the replacement of the diversion structure.
Groundwater	Potential for impacts to groundwater supply	No groundwater resources would be extracted or consumptively used as part of this project; however, the piping of the irrigation canal may impact existing groundwater resources.
Floodplain Management	Impacts to American Fork River floodway	Replacement of the diversion structure would have temporary impacts on the American Fork River floodway. It would not alter the long-term capacity of the floodplain.
Air Quality		
Air Quality	Impacts to air quality from construction equipment emissions	Construction activities would result in temporary impacts to air quality in the project area.
Vegetation		
Vegetation Communities/ Habitat	Impacts to vegetation in the project area	The Preferred Alternative would have a minor impact on existing vegetation communities and habitat due to temporary construction activities and to the removal of vegetation along the banks of the irrigation canals (estimated at 4.13 acres)

Resource of Concern	Summary of Concern	Summary of Effects
Special Status Plant Species	Potential for impacts to federally listed species	The project would have no effect on federally listed plant species and no impact on state sensitive plants.
Invasive Species	Potential for introduction or spread of invasive species	Due to construction activities, there is the potential to spread invasive species. BMPs would be included to prevent the introduction or spread of invasive species during construction.
Wildlife Communities		
Fish/Essential Fish Habitat	Impacts to fish in the American Fork River	The project would have temporary impact on fish species in the American Fork River due to construction activities related to the diversion structure. There is no essential fish habitat in the project area.
Special Status Wildlife Species	Potential for impacts to federally listed wildlife species and/or Birds of Conservation Concern	The project would have no effect on federally listed wildlife species and no impact on State sensitive species. There may be a temporary impact to Birds of Conservation Concern during construction.
Human Environment		
Cultural and Historic Resources	Impact to cultural resources	The project would have an adverse impact on cultural resources in the project area; namely, the Pleasant Grove Main Ditch (e.g., replacement of the American Fork Diversion Structure).
Recreation	Construction impacts to trails in the project area	The project would not have adverse impacts on recreational resources. There may be temporary impacts to trails in the project area during construction.
Scenic Beauty and Visual Resources	Changes in visual resources in the project area	Temporary impacts to visual resources would occur from construction of project components. During operation of the new facility, there may be indirect impacts to vegetation near the Mill Ditch due to a minor loss in groundwater.
Public Health and Safety	Improvements to public safety	During construction, all applicable federal and state safety regulations would be followed by construction workers. No effects on public health and safety are anticipated from any of the proposed construction activities. Further, public health and safety conditions would be improved due to the improved operation of the diversion structure limiting downstream flooding, reducing potential structure failures, eliminating an open ditch (less risk to children).

Resource of Concern	Summary of Concern	Summary of Effects
Socioeconomics	Funding for proposed project	The proposed project involves an expenditure of public funds and an evaluation of the effects of providing NRCS funding is included.

S-17.0 Major Conclusions

The Preferred Alternative for the project is the Replace Diversion Structure and Install Pipe in Existing Alignment Alternative and is based on the ability of the elements of the alternative to meet the purpose and need for the project and provide the most beneficial impacts to environmental and social resources, as detailed in Chapter 5 of this Plan-EA.

S-18.0 Areas of Controversy and Issues to be Resolved

There are no anticipated areas of controversy or issues to be resolved.

S-19.0 Evidence of Unusual Congressional or Local Interest

There is no evidence of unusual congressional or local interest.

S-20.0 In Compliance

This report is in compliance with executive orders, public laws, and other statutes governing the formulation of water resource projects.