



WORK SESSION AGENDA

NOTICE IS HEREBY GIVEN THAT THE CENTERVILLE CITY COUNCIL WILL HOLD ITS WORK SESSION MEETING AT 5:30 PM ON SEPTEMBER 15, 2026 AT CENTERVILLE CITY HALL, 250 NORTH MAIN STREET, CENTERVILLE, UTAH.

Centerville City Council meetings are open to the public, unless otherwise closed for reasons allowed by law. Centerville City Council meetings may be conducted via electronic means pursuant to Utah Code § 52-4-207. In compliance with the Americans with Disabilities Act, individuals needing special accommodations due to a disability may contact the City Recorder at (801) 295-3477, at least 24 hours in advance of the meeting. The Mayor and Council reserve the right to modify the sequence of agenda items in order to facilitate special needs or provide greater efficiency.

The full agenda packet and backup materials can be found on the Centerville City website at:

<https://centervilleutah.gov/129/Agendas-Minutes>

A. ROLL CALL

B. BUSINESS ITEMS

Business action or discussion items to be considered.

1. Discussion - Drainage Capital Project Plan

Drainage Capital Projects Plan

2. Discussion - Church Well

Discuss Church Well Fill Station operations, including the Source Protection Plan, winter operations, operating costs, inappropriate use, and well expectations

C. CLOSED SESSION

The City Council may vote to discuss matters in a closed session for reasons allowed by law, including, but not limited to, the provisions of Utah Code § 52-4-205 of the Open and Public Meetings Act, and for attorney-client matters that are privileged pursuant to Utah Code § 78B-1-137.

D. ADJOURNMENT

CERTIFICATE OF POSTING

I hereby certify that this notice and agenda was posted at Centerville City Hall, published on the Utah Public Notice Website, and provided to a newspaper or media correspondent in accordance with the requirements of the Utah Open and Public Meetings Act, including, but not limited to, provisions of Utah Code § 52-4-202.

**Jennifer Robison
Centerville City Recorder**

CENTERVILLE
CITY COUNCIL

Staff Report
9/15/2026

Item No. 1.

Title: Discussion - Drainage Capital Project Plan

Initiated By: Nate Plaizier, Finance Director

Staff Representative: Mike Carlson, Public Works Director, Dave Walker, Public Works Deputy Director, Kevin Campbell, City Engineer

SUBJECT:

Drainage Capital Projects Plan

RECOMMENDATION:

BACKGROUND:

The City has previously entered into an agreement with Waterworth to assist with continuous utility rate management. A key part of the rate study is the Capital Facilities Plan. Once the Capital Facilities Plan is accepted, Waterworth will be able to perform a rate analysis.

A Capital Facilities Plan is a planning document that presents suggestions for system growth as development proceeds and summarizes the results of system analyses. The Capital Facilities Plan (Plan) analyzes current issues and flaws in the system and provides cost estimates for fixing them. Additionally, the effects of growth are taken into account when recommending effective system expansion or enhancement to meet future demands.

Modeling was used to assess the storm drain system of Centerville City for transmission capacity, storage capacity, and overall system efficiency. This approach allowed for the identification of numerous necessary stormwater projects within the current system to address any shortcomings. The projected expansion of the flood area will call for upgraded transmission systems and more storage space.

A full list of recommended projects is found in Section 5 of this Plan. This list of projects is a summary of deficiencies and potential problems in the existing storm drain system and future deficiencies based on projected growth and development. The project list also includes replacement projects for aging infrastructure.

Project costs were separated into three funding categories for projects that are needed to resolve existing deficiencies and/or storm drain issues and for projects that serve large regions of Centerville City which accommodate demands imposed by future development. The costs for the projects will be funded by Centerville City with some projects having funding contributions from Davis County or from the Developer of the project. Included are cost summaries for the above described City's Storm Drain Projects (Table 1.1) and Subdrain Projects (Table 1.2). Cost estimates of individual projects can be found in Section 6.

Please see attached document for the complete Capital Facilities Plan that was first presented to City Council

in the September 19, 2023 Work Session. Since that time, some projects on the list have been completed, or are planned to be completed in conjunction with the I-15 widening project. Recently, Staff has reevaluated the projects list and cost estimates. The reevaluated list is also attached.

Previous discussions of the Drainage Capital Facilities Plan and Drainage Utility Fee have been held at the following meetings:

- 9/19/23 Work Session
- 2/6/24 Work Session
- 6/4/24 Work Session
- 6/18/24 Council Meeting
- 10/1/24 Council Meeting
- 1/21/25 Council Meeting
- 3/18/25 Council Meeting

ATTACHMENTS:

1. Centerville City - SD Capital Facilities Plan_2023
2. Storm Drain Sub-Drain Cost Summary 6-10-2026



CENTERVILLE CITY – STORM DRAIN & SUBDRAIN CAPITAL FACILITIES PLAN

August 2023

**Prepared by: ESI Engineering, Inc. - Kevin Campbell, PE
Centerville City Engineer**

Kyle Kump, EIT

Brian Naylor, EIT

Preston Brown, Designer

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Appendix C	Storm Drain Project Cost Estimates
Appendix D	Subdrain Project Cost Estimates

LIST OF ACRONYMS AND ABBREVIATIONS

Ac-ft	acre-feet
cfs	cubic feet per second
CN	curve number
ERU	Equivalent Residential Unit
GOMB	Governor's Office of Management and Budget
LID	Low Impact Development
LOS	Level of Service
MS4s	Municipal Separate Storm Sewer Systems
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
O&M	Operation and Maintenance
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
SCS	Soil Conservation Service
s.f.	square feet
sq. mi.	square miles
SWMP	Stormwater Management Plan
UAC	Utah Administrative Code
USDA	United States Department of Agriculture

1.0 EXECUTIVE SUMMARY

A Capital Facilities Plan is a planning document that presents suggestions for system growth as development proceeds and summarizes the results of system analyses. The Capital Facilities Plan (Plan) analyzes current issues and flaws in the system and provides cost estimates for fixing them. Additionally, the effects of growth are taken into account when recommending effective system expansion or enhancement to meet future demands.

Modeling was used to assess the storm drain system of Centerville City for transmission capacity, storage capacity, and overall system efficiency. This approach allowed for the identification of numerous necessary stormwater projects within the current system to address any shortcomings. The projected expansion of the flood area will call for upgraded transmission systems and more storage space.

A full list of recommended projects is found in Section 5 of this Plan. This list of projects is a summary of deficiencies and potential problems in the existing storm drain system and future deficiencies based on projected growth and development. The project list also includes replacement projects for aging infrastructure.

Project costs were separated into three funding categories for projects that are needed to resolve existing deficiencies and/or storm drain issues and for projects that serve large regions of Centerville City which accommodate demands imposed by future development. The costs for the projects will be funded by Centerville City with some projects having funding contributions from Davis County or from the Developer of the project. Below is a cost breakdown of these costs as described above for the City's Storm Drain Projects (Table 1.1) and Subdrain Projects (Table 1.2):

Table 1.1 – Storm Drain Projects Cost Summary

Cost Breakdown			
Estimated Total Storm Drain Project Costs	Centerville City Cost	Davis County Cost	Developer's Cost
\$30,156,546	\$26,533,280	\$3,623,266	\$0

Table 1.2 – Subdrain Projects Cost Summary

Cost Breakdown			
Estimated Total Sub-Drain Project Costs	Centerville City Cost	Davis County Cost	Developer's Cost
\$8,308,684	\$8,308,684	\$0	\$0

2.0 INTRODUCTION

2.1 City Characteristics

Centerville City, Utah is located in south Davis County. Centerville City (City) was established in 1847 and incorporated as a city in 1915. The City is surrounded by Farmington City to the north, Bountiful City to the south, the Wasatch Mountain Range to the east, West Bountiful to the southwest, and the Great Salt Lake to the west. The total land area of the City is 5.98 square miles. The main thoroughfares through the city are Interstate 15, Legacy Parkway, Parrish Lane (SR105), and Main Street (SR106). The City's population was 16,884 according to the 2020 census. Estimates are showing the population of the City in 2030 may be over 21,000.

Land use is a mix of residential, commercial, industrial, agricultural, and public facilities. The City's vision for future land use in the undeveloped northwesterly portion of the City (land area between Legacy Parkway and the Nature Conservancy) is slated for a Shorelands Commerce Park with the intent of creating a job center for the City.

2.2 Background

The most current investigation into the storm drain system in Centerville City was carried out by ESI Engineering, Inc. Information for this Plan was gathered from previous reports and plans, Centerville City personnel, State records, and other sources. This Plan independently analyzes and reviews the City's storm drain system and identifies projects necessary to update and/or repair infrastructure based on known needs and to plan for the future growth of the City. This Plan also evaluates projects based on the infrastructure's condition and its importance to the overall storm drain system. Additional information is provided which will be necessary to complete an Impact Fee Facility Plan. The Impact Fee Facility Plan will be completed separately and is not included in this Plan.

2.3 Study Area

The Study Area for this Plan includes all areas within the current city boundary. Centerville City's storm drain system currently serves all areas within the city boundaries. This Plan analyzes the potential future growth within the City boundaries only. The Study Area is approximately 5.98 square miles.

It is understood that the service boundary and/or the proposed land uses may change depending on future and ongoing land developments. These factors may require periodic adjustments to this Plan and the recommended storm drain capital facilities projects.

The storm drain service areas within the city limits are shown in [Appendix A](#).

3.0 ERUs AND GROWTH ESTIMATES

3.1 Equivalent Residential Units

Stormwater runoff varies from property to property throughout a City's storm drain system. This variety is due to the differences in the hardness of the surfaces between properties in a development. A fundamental unit of runoff can be developed for comparative purposes in order to reduce the complexity of examining every property throughout the study area. This basic unit is called an Equivalent Residential Unit, or ERU. For this report, an ERU quantifies the stormwater impact of a typical detached single-family residence. This is the most common type of development within the City. The ERU is utilized to calculate the effects of various development types and to assess the system using a single equating unit of measurement.

3.1.1 Residential ERUs

For the purposes of this study, one ERU is defined as having an area of a directly connected hard surface measuring 3,243 square feet (1 ERU = 3,243 sf). This statistic was generated using the average of samples collected from homes on lots that were about 1/4 acre in size. This includes a proportional portion of all the paved roads in the research region as well as a typical home's driveway. The rooftops of the homes were not included because rainwater from a roof is normally dumped onto pervious surfaces by a rain gutter system. The area was determined using the formulas below for a standard 1/4-acre lot:

$$[85 \text{ ft frontage} \times (41 \text{ ft curb to curb} / 2)] + 1500 \text{ sf driveway} = 3,243 \text{ sf}$$

The defined ERU can be used to calculate the impact of various types of development within the system, as shown in Table 3.1.

Table 3.1 – ERUs for Various Property Types

Zone	Lot Size	ERUs
Rural Residential	1 Acre	1.12
Semi-Rural Residential	1/2 Acre	1.56
Low-Density Residential	1/3 Acre	1.77
Medium-Density Residential	1/4 Acre	1.15
High-Density Residential	>1/4 Acre	0.95
Other (Commercial, Institutional, Industrial, etc.)	Varies	Calculated based upon the square footage of directly- connected impervious cover.

Properties with large amounts of hard surfacing may have the impact of many single-residence homes. The impact of such properties would therefore be calculated as many ERUs. Commercial lots often have 2 – 3 times the hard surface that similarly-sized residential lots have. As a result, commercial sites generally have higher impact fees than residential sites of similar size.

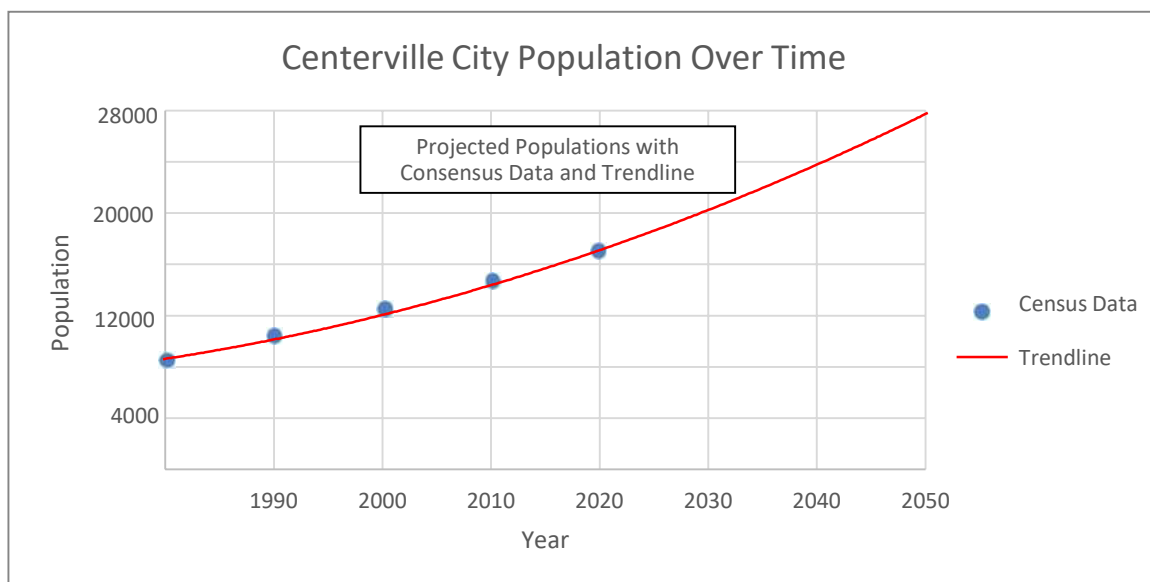
3.2 Growth Estimates

3.2.1 Population Projections

Current population information has been estimated from official US Census Bureau data. From 2010 to 2020 the yearly population growth rate of Centerville averaged 1.5%. Based upon recent development within the City, it is believed that the yearly growth rate will increase in the coming years and is estimated to continue at 1.5% for the purposes of this Plan.

Utilizing historical population data and computationally estimating a curve to best suit the data is a technique to anticipate expected population growth. The population of the City can then be estimated by projecting this curve line into the future. The results of this strategy are displayed in Figure 3.1:

Figure 3.1 – Historic and Projected Population



The projected populations from the regression equation were compared to the populations provided by the Governor's Office of Management and Budget (GOMB) and a constant growth rate of 1.5% per year of the trendline. Table 3.2 below shows these comparisons.

Table 3.2 – Population Projections

Year	GOMB	Regression Equation	Constant Growth Rate (1.5%)
2020	18,484	16,750	16,884*
2030	21,000	20,025	19,417
2040	25,323	23,850	22,330
2050	26,496	27,800	25,680

*Actual data

3.2.2 ERU Projections

The population growth does not directly correlate with the total projected ERUs because a significant portion of Centerville City is anticipated to be developed into commercial properties; however, the growth rate can be applied to the current number of ERUs to project the future ERUs contributing to the storm drain system. The expected expansion of ERUs was calculated to follow the same growth pattern as the population.

The ERU concept can also be applied to undeveloped land in order to estimate the amount of future stormwater runoff in areas of growth or redevelopment. Table 3.3 gives a breakdown of population projection and projected residential versus non-residential ERUs.

Table 3.3 – Population and ERU Projections

Year	Population Projection	Projected Residential ERUs	Projected Non-Residential ERUs	Projected Total ERUs
2010	15,335*	2,456*	ND	ND
2020	16,884*	3,483	1,507	4,990
2030	21,000	4,248	2,022	6,270
2040	25,323	7,264	2,455	9,719
2050	26,496	7,962	2,823	10,785

*Actual data

ND – Data not available

Centerville City's storm drain system served approximately 4,990 ERUs in 2020. Based upon plans for land zoning and current undeveloped areas, approximately 5,795 additional ERUs could be added in the future over the next 30 years.

For a typical city residential development is expected to closely follow the growth rate of the population, however, non-residential development may have a very different correlation. Due to a large percentage of future ERUs belonging to non-residential development, buildout projections for future developments will likely not represent actual growth rates accurately. Due to a variety of potential changes in the economy and growth rate of the City, it is recommended that this plan be reviewed approximately every five (5) to ten (10) years depending upon actual growth.

4.0 HYDROLOGY

4.1 Introduction

The study of water's presence, distribution, movement, and characteristics is known as hydrology. A crucial component of a storm drain capital facilities plan is estimating the amount of runoff generated by different development types depending on a variety of factors. In other words, knowledge of the site's hydrology is necessary to accurately estimate the volume and flow of water inside a study region for storm drain systems. The slope of a site, the soil composition, the type of land used, and other factors unique to the area of interest are all elements that influence the hydrology of a city.

4.2 Method for Identifying Runoff and Calculating Flows

The 'Rational Method' has been used to estimate the maximum rate of stormwater runoff for a given rainfall intensity over a specific watershed or drainage area. The Rational formula is commonly used for small urban watersheds and takes into account the type of development on which rain falls. Three types of development were considered in the stormwater runoff calculations: business, residential, and park or open space. These developments have been designed to handle minor events, such as the 10-year storm (a storm with a ten percent probability of occurrence in any given year), and then rely on the streets and main drainage channels to handle the more severe events. Davis County utilizes the 100-year event (an event with a one percent probability of occurrence in any given year) for their jurisdictional stream channels that transverse Centerville City. Therefore, where a designated stream channel exists in a particular drainage area the 100-year event has been employed. Rainfall intensity was referenced from Centerville City rainfall data for the 10-year and 100-year return periods. This rainfall data has been included in [Appendix B](#).

Each drainage area collects stormwater and in general, conveys the water west. Drainage area maps with corresponding drainage systems are located in [Appendix A](#). Drainage Areas 1 through 13 convey water to Frontage Road and I-15. Drainage areas 14 through 22 convey water to Legacy Parkway or a corridor referred to as the former D&RG right-of-way (now owned by UTA) and the Sheep Road. These conveyance points or drainage area boundaries (i.e. I-15 or D&RG) have culvert systems that control the quantity of stormwater flow. The flow capacity of the existing culvert system was determined at each conveyance outfall. If the culvert was known to be a concrete pipe, the capacity was estimated through the use of Culvert Capacity Charts in the Concrete Pipe Design Manual by the American Concrete Pipe Association. If the pipe was of another material, such as corrugated metal, then Manning's equation was used to estimate the capacity. With the estimated capacity for each drainage area discharge culvert and the calculated volume of accumulated stormwater for a design rainfall event, an iterative process determined the quantity of storage or detention required per area. Where drainage areas carry Davis County stream channels, the 100-year flow at the mouth of the canyon, as referenced from the 1979 FEMA report by Gingery Associates, Inc. (Gingery), was included in addition to the area calculation. A table summarizing the Gingery information is found in [Exhibit 1](#).

The required storage calculated was then compared to existing detention in the areas to determine whether additional detention would be needed, as the land develops, or if culvert systems at area

boundaries would need to be upgraded. It should be noted that the runoff rates for all areas were calculated based on the land being completely developed at the present zoning status. Detention in the City is recommended, even in the lower areas west of I-15, for the benefit of stormwater pollution prevention in downstream waters, such as Farmington Bay.

4.3 Existing Level of Service

Minimum design standards have been established to determine an effective level of service for the community. In general City Drainage systems are designed to handle the 10-year storm event, while the County Drainage systems (stream channels) are designed to handle the 100-year storm event. This is the basic level of service that is being provided to the residents at this time. While there are still some areas of the City that are located within the 100-year flood plain, most of the flood plains are limited to undeveloped areas in the City.

The goal in the management of stormwater is to help reduce the risk of flood and improve water quality. A sustainable water management program relies on both City and Developer to manage stormwater runoff. In designing the majority of the City systems for the 10-year storm there will likely be minor inconvenience and damage that may occur during these events, but in no case should there be flooding that causes major structural damage, destruction to public facilities, or loss of life.

4.4 Minimum Culvert Sizes for New Development

For new drainage systems installed in City Streets, the minimum standard pipe size is 15" in diameter. Minimum culvert size required to be installed for new development east of I-15 is 24" in diameter and the minimum culvert size required to be installed for new development west of I-15 is 36" diameter due to the flat grades of the land and drainage ditches in these areas. Reinforced concrete pipe is typically required to be installed in the City right-of-way.

It is not the City's intent to have the ditches west of I-15 and Legacy Parkway piped in as a part of future development. The City would prefer to have culverts at road crossings with improved ditches to carry stream and storm drainage flows.

4.5 Retention Requirements for New Development

The General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) UPDES Permit No. UTR090000 was updated in February 2020 with new storm water retention requirements. Effective July 1, 2020, Permit Part 4.2.5.1.2 requires new development projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, to manage rainfall on-site and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 80th percentile rainfall event.

Redevelopment projects that increase impervious area by more than 10% and disturb more than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, must also manage rainfall on-site and avoid off-site discharge of the net increase in volume associated with precipitation from all rainfall events less than or equal to the 80th percentile rainfall event. This permit requirement will be met by implementing Low Impact Development (LID)

methods that are designed, built, and maintained to infiltrate, evapotranspire, capture, and utilize rainwater and/or stormwater.

4.6 80th Percentile Rainfall Depth

The 80th percentile rainfall depth represents the depth of rainfall which is not exceeded in 80 percent of all runoff producing rainfall events within the time period analyzed. In other words, 80 percent of the rainfall storm events that produce runoff will be less than or equal to this depth. The majority of Utah MS4s have an 80th percentile rainfall depth of between 0.4 - 0.6 inches. The rainfall depth corresponds directly to rainfall volume (not the same as runoff volume) when applied over an area. For example, an 80th percentile rainfall depth of 0.65 inches applied over a 10-acre site equates to approximately 0.5 acre-feet or 875 cubic yards (Utah Division of Water – Fact Sheet, DWQ Guidance for Calculation of 80th Percentile Storm Event).

5.0 STORM DRAIN SYSTEM

5.1 Existing Storm Drain System

There are currently twenty-two (22) drainage areas that Centerville City (City) has been divided into. The Frontage Road/ I-15/ UTA UPRR corridor bisects the City's drainage areas separating them into "east" and "west" drainage areas. Over the past 40-plus years substantial improvements have been made to the storm drain systems located in the City's region including a multitude of culverts running under the corridor.

Regional detention areas have been developed for the City along the Frontage Road in order to minimize storm drain pipe sizing needed to run underneath the corridor.

The City has been in continued cooperation with Davis County, UDOT, and other entities in completing storm drain projects to adequately convey storm water underneath the Frontage Road and I-15 freeway.

Open channel ditches make up some of the City's storm drain system, these channels and the other storm drain systems need to be maintained frequently to replace any worn-out linings and to remove trash and overgrown vegetation. It is advised that frequent examination and maintenance of these regions be carried out in order to lessen the need for significant rehabilitation projects.

The Existing Storm Drain System for Centerville City is shown in [Appendix A](#).

5.2 Storm Drain Goals and Standards

Storm drain systems and infrastructure should be designed and implemented so that the existing hydrology imitates pre-development conditions, meaning the amount of runoff from a new development should be the same quantity of runoff that came about before the development was built-up. This is required by the General Permit issued to the City by the State Division of Water Quality.

The use of detention ponds is a method of reducing the peak flows due to stormwater runoff. Typically, the City allows detention ponds to maintain a discharge rate of 0.1 cfs/acre served. While this standard addresses the rate at which stormwater can leave detention basins, it does not address the quantity of stormwater which may leave a site. Instead of reducing the volume of water that may leave a detention basin, the City has extended the amount of time in which it may leave. This allows more water, by volume, to leave a site than before development. In order to fully match pre-development conditions, stormwater that was previously absorbed should be retained onsite. The State Division of Water Quality has set a date by which these standards must be implemented as stated in Section 4.2.5.3.4 of the November 30, 2016, Storm Water General Permit:

“By March 1, 2020, new development or redevelopment projects... must manage rainfall onsite, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 80th percentile rainfall event.”

To accomplish this goal, infiltration basins, evaporation ponds, rainwater harvesting, and other rainwater reuse methods must be implemented to keep stormwater onsite. This requires development construction standards to change in order to store and treat stormwater onsite. In some cases, the implementation of this goal will be difficult, if not impossible. For these situations, the General Permit also states:

“If meeting this retention standard is technically infeasible, a rationale shall be provided on a case-by-case basis for the use of alternative design criteria. The project must document and quantify that infiltration, evapotranspiration, and rainwater harvesting have been used to the maximum extent technically feasible and that full employment of these control are infeasible due to site constraints.”

Retaining stormwater onsite in detention basins is a typical practice that the public and residents sometimes have apprehensions about. Due to the determination that these storms, frequently occur for two or more days onsite retention would be overloaded, causing all runoff beyond the pond capacity to proceed to the storm drain system for transmission. Without detention facilities, this runoff may overwhelm the storm drain system and flood areas downstream. Therefore, while it is intended that much of the runoff in typical rain events will be captured onsite, detention facilities and piping downstream are necessary to keep the City’s storm drain system operating as intended.

5.3 Projects

Table 5.1 is a list of projects for the City that will help correct current issues in the storm drain system and to meet both present and future demands that the system needs to accommodate. These improvements have been grouped by year and prioritized based on criticality to service the public and infrastructure condition.

Table 5.1 – Storm Drain Capital Improvement Projects

Year Group	Project Year	Project Location/ Description
1	2024	- Deuel Creek Box Culvert 400 West to Frontage Road - Peachtree - 1375 North to Main Street - Briarwood Drive - Bonita Way to 400 East
	2025	- Deuel Creek Box Culvert Main Street to 400 West - Nola Drive & 1375 North - 1675 North to 1350 North - Centerville Jr. High (South Property Line) - 300 East to Main Street or Combine with Rivera SD system
	2026	- I-15 975 North - New 48" Culvert - I-15 Parrish Lane (400 North) – Replace 36" CMP w/ New 36" Culvert
	2027	- I-15 (C112) 2075 North (Lexington Park) - Replace 24" CMP w/ New 36" Culvert - I-15 Frontage Rd & 500 South Replace 24" CMP w/ New 36" Culvert
	2028	- I-15 650 South – Replace 24" CMP w/ New 36" Culvert - I-15 Parrish Creek – Replace 42" CMP w/ New 48"
2	2029	- Parrish Lane - 100 East to Canyon Point - I-15 (P106) North Property Line of Community Park - New 36" Culvert
	2030	- Windsor Lane, Williams Lane, & 300 West Storm Drain - I-15 750 North - Replace 24" CMP w/ New 36" Culvert
	2031	700 North & Pheasant Way - London Road to Bonita Way - I-15 Parrish Lane (400 North) - Replace 24" CMP along East Side of I-15 & 800 West Crossing to Parrish Lane
	2032	- Nola Drive - 1200 North to 1350 North - I-15 100 South - Replace 24" CMP w/ New 36" Culvert
	2033	- I-15 Frontage Road - 200 South Replace CMP Culvert - Barnard Street Overflow Storm Drain - Main Street to Oakridge Drive
3	2034	- I-15 625 North - Replace 30" CMP w/ New 36" Culvert 725 North 1250 West & 600 North 1250 West - Inlet Box Replacement
	2035	- Parrish Creek 950 West to 1250 West - Channel Improvements - Public Works Dry Beds
	2036	- Rick's Creek Culvert at 575 West (Parallel w/ New 36" Elliptical) - Island View - 550 South to 650 South
	2037	500 South - UPRR / UTA - Replace 24" CMP w/ New 36" Culvert - Carrington Lane - Main Street to Ricks Creek Reservoir

	2038	650 North - 1000 West to 1250 West - Replace 30" CMP w/ 42" RCP - Parrish Lane - Crossing at 800 West (7-11 to Carls Jr.) - Replace 36" CMP
4	2039	400 South - 400 East to 700 East 780 South - 50 West to Pitford Drive
	2040	- Hillside Property Drainage Project 200 South - 600 East to 500 East - Replace CMP
	2041	700 South - 475 East to 700 East 600 North - 1250 West to Legacy Parkway
	2042	400 North - 1550 West to 1300 West 1250 West - Crossing at 75 North
	2043	70 West - 115 N to Center Street 550 South - Pitford Drive to 400 West - Pipe Lining Project
5	2044	1275 North - 1250 West to 1300 West - Aspen Way & Poplar Circle - 400 East to 610 East
	2045	- Willow Valley Drive to Frontage Road Swale - Pipe (3) 15" System - Main Street - 1600 North to Smoot Park
	2046	1825 North - Main Street to 300 East 1975 North - Main Street to 150 East
	2047	- Future 1250 West Extension - Rick's Creek 12' x 5' Box Culvert - Future 1250 West Extension - 1875 North (Villa de France) - 36" RCP Culvert
	2048	- D&RG Rick's Creek - 72" x 48" Elliptical RCP Culvert - D&RG 2075 North - 36" Culvert
6	2049	1275 N - replace ADS with RCP 71" x 47" CMP Culvert at Legacy Trail and Sheep Road at 1000 North
	2050	- Sheep Road 2075 North - 36" Culvert - Sheep Road Rick's Creek - 71" x 47" Elliptical RCP Culvert

Table 5.2 is a list of projects for the City that will help correct current issues in the subdrain system and to meet both present and future demands that the system needs to accommodate. These improvements have been grouped by year and prioritized based on criticality to service the public and infrastructure condition.

Table 5.2 – Subdrain Capital Improvement Projects

Year Group	Project Year	Project Location/ Description
1	2024	• Pitford - 550 South to Tobe
	2025	• N/A
	2026	• Ariane Way - 450 West to 650 West
	2027	• Parrish Lane - 100 East to Main Street
	2028	• N/A
2	2029	• 1850 North - 100 West to 400 West
	2030	• 1500 North Cul-de-sac on 400 West
	2031	• 1600 North (Rick's Creek Way) - 100 West to 200 West
	2032	• 1650 North (Milky Way) - 100 West to 200 West
	2033	• 1800 North - 300 West to 400 West
3	2034	• Lewis & Clark Drive - Fremont Cir to Jim Bridger Dr / Frontage Rd Crossing
	2035	• N/A
	2036	• 700 S. - 300 E. to 400 E., 600 S. - 300 E. to 400 E., 300 E. - 600 S. to 725 S.
	2037	• Tobe Drive - 350 West to 400 West
	2038	• N/A
4	2039	• Mountain View Drive & Creek View Drive
	2040	• N/A
	2041	• Canyon Breeze Drive
	2042	• N/A
	2043	• 400 West - 1500 North to 1375 North
5	2044	• 100 West Cul-de-sac on 1450 North
	2045	• 850 South / 780 South - 150 West (Slip-Line)
	2046	• Lund Lane - 700 West to 200 West
	2047	• Freedom Hills Park SE Corner - Sub-drain & Duncan Spring
	2048	• 2100 North - 400 West to Churchill Drive (in back yards of 2115 North & 2101 North)
6	2049	• 150 West - 845 South to 780 South
	2050	• 2075 North / 725 West

5.4 Summary and Conclusions

The existing and planned storm drain systems have been assessed to identify what system improvements and upgrades are required, as described in the preceding sections. These upgrades have been grouped by year and ranked in order of importance and according to where future development is anticipated to have the biggest impact on the storm drain system. Table 6.1 has an itemized cost estimate for each project.

The lists and projects detailed in this Plan are not intended to be an all-inclusive list of storm drain projects that will be needed to be completed in the City as build-out is reached. The intent of the lists is to include storm drain projects that will accomplish the following objectives:

- Increase existing storm drain system sizes for maintenance purposes and /or for proper design flows.
- Construct new improvements at proper sizes to carry design flows.
- Serve as a Storm Drain Master Plan when development occurs.

6.0 STORM DRAIN SYSTEM PROJECTS AND COST ESTIMATES

6.1 Storm Drain Projects and Cost Estimates

As detailed in the previous sections, the existing and future storm drain systems have been analyzed to determine needed system improvements. While a few of these projects will be driven by development, others are necessary to provide better efficiency and reliability of the system. A summarized list of the projects for the years 2024 through 2039 and their associated costs is shown in Table 6.1.

Table 6.1 – Storm Drain Projects Cost Summary

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2024	Deuel Creek Box Culvert 400 West to Frontage Road	\$1,321,094	\$430,469	\$890,625	\$0
2024	Peachtree - 1375 North to Main Street	\$645,830	\$645,830	\$0	\$0
2024	Briarwood Drive - Bonita Way to 400 East	\$341,185	\$341,185	\$0	\$0
2025	Deuel Creek Box Culvert Main Street to 400 West	\$1,582,000	\$395,500	\$1,186,500	\$0
2025	Nola Drive & 1375 North - 1675 North to 1350 North	\$268,236	\$268,236	\$0	\$0
2025	Centerville Jr. High (South Property Line) - 300 East to Main Street or Combine with Rivera SD system	\$877,830	\$877,830	\$0	\$0
2026	I-15 975 North - New 48" Culvert	\$542,450	\$135,612	\$406,838	\$0
2026	I-15 Parrish Lane (400 North) – Replace 36" CMP w/ New 36" Culvert	\$1,394,683	\$1,394,683	\$0	\$0
2027	I-15 (C112) 2075 North (Lexington Park) - Replace 24" CMP w/ New 36" Culvert	\$949,750	\$949,750	\$0	\$0
2027	I-15 Frontage Rd & 500 South Replace 24" CMP w/ New 36" Culvert	\$688,750	\$688,750	\$0	\$0
2028	I-15 650 South – Replace 24" CMP w/ New 36" Culvert	\$688,750	\$688,750	\$0	\$0
2028	I-15 Parrish Creek – Replace 42" CMP w/ New 48"	\$743,000	\$185,750	\$557,250	\$0

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2029	Parrish Lane - 100 East to Canyon Point	\$451,675	\$451,675	\$0	\$0
2029	I-15 (P106) North Property Line of Community Park - New 36" Culvert	\$978,750	\$978,750	\$0	\$0
2030	Windsor Lane, Williams Lane, & 300 West Storm Drain	\$473,280	\$473,280	\$0	\$0
2030	I-15 750 North - Replace 24" CMP w/ New 36" Culvert	\$703,250	\$703,250	\$0	\$0
2031	700 North & Pheasant Way - London Road to Bonita Way	\$392,515	\$392,515	\$0	\$0
2031	I-15 Parrish Lane (400 North) - Replace 24" CMP along East Side of I-15 & 800 West Crossing to Parrish Lane	\$726,958	\$726,958	\$0	\$0
2032	Nola Drive - 1200 North to 1350 North	\$181,468	\$181,468	\$0	\$0
2032	I-15 100 South - Replace 24" CMP w/ New 36" Culvert	\$1,075,900	\$1,075,900	\$0	\$0
2033	I-15 Frontage Road - 200 South Replace CMP Culvert	\$151,670	\$151,670	\$0	\$0
2033	Barnard Street Overflow Storm Drain - Main Street to Oakridge Drive	\$1,560,200	\$1,560,200	\$0	\$0
2034	I-15 625 North - Replace 30" CMP w/ New 36" Culvert	\$1,069,375	\$1,069,375	\$0	\$0
2034	725 North 1250 West & 600 North 1250 West - Inlet Box Replacement	\$266,945	\$266,945	\$0	\$0
2035	Parrish Creek 950 West to 1250 West - Channel Improvements	\$552,850	\$138,212	\$414,638	\$0
2035	Public Works Dry Beds	\$171,100	\$171,100	\$0	\$0
2036	Rick's Creek Culvert at 575 West (Parallel w/ New 36" Elliptical)	\$70,720	\$17,680	\$53,040	\$0
2036	Island View - 550 South to 650 South	\$188,573	\$188,573	\$0	\$0

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2037	500 South - UPRR / UTA - Replace 24" CMP w/ New 36" Culvert	\$469,800	\$469,800	\$0	\$0
2037	Carrington Lane - Main Street to Ricks Creek Reservoir	\$445,078	\$445,078	\$0	\$0
2038	650 North - 1000 West to 1250 West - Replace 30" CMP w/ 42" RCP	\$881,600	\$881,600	\$0	\$0
2038	Parrish Lane - Crossing at 800 West (7-11 to Carls Jr.) - Replace 36" CMP	\$187,485	\$187,485	\$0	\$0
2039	400 South - 400 East to 700 East	\$247,878	\$247,878	\$0	\$0
2039	780 South - 50 West to Pitford Drive	\$422,313	\$422,313	\$0	\$0
2040	Hillside Property Drainage Project	\$2,216,325	\$2,216,325	\$0	\$0
2040	200 South - 600 East to 500 East - Replace CMP	\$177,770	\$177,770	\$0	\$0
2041	700 South - 475 East to 700 East	\$422,313	\$422,313	\$0	\$0
2041	600 North - 1250 West to Legacy Parkway	\$385,120	\$385,120	\$0	\$0
2042	400 North - 1550 West to 1300 West	\$452,400	\$452,400	\$0	\$0
2042	1250 West - Crossing at 75 North	\$109,062	\$109,062	\$0	\$0
2043	70 West - 115 N to Center Street	\$485,243	\$485,243	\$0	\$0
2043	550 South - Pitford Drive to 400 West - Pipe Lining Project	\$287,100	\$287,100	\$0	\$0
2044	1275 North - 1250 West to 1300 West	\$582,900	\$582,900	\$0	\$0
2044	Aspen Way & Poplar Circle - 400 East to 610 East	\$295,583	\$295,583	\$0	\$0
2045	Willow Valley Drive to Frontage Road Swale - Pipe (3) 15" System	\$760,743	\$760,743	\$0	\$0

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2045	Main Street - 1600 North to Smoot Park	\$169,179	\$169,179	\$0	\$0
2046	1825 North - Main Street to 300 East	\$561,875	\$561,875	\$0	\$0
2046	1975 North - Main Street to 150 East	\$328,425	\$328,425	\$0	\$0
2047	Future 1250 West Extension - Rick's Creek 12' x 5' Box Culvert	\$241,788	\$241,788	\$0	\$0
2047	Future 1250 West Extension - 1875 North (Villa de France) - 36" RCP Culvert	\$107,663	\$107,663	\$0	\$0
2048	D&RG Rick's Creek - 72" x 48" Elliptical RCP Culvert	\$152,500	\$38,125	\$114,375	\$0
2048	D&RG 2075 North - 36" Culvert	\$114,913	\$114,913	\$0	\$0
2049	1275 N - replace ADS with RCP	\$95,787	\$95,787	\$0	\$0
2049	71" x 47" CMP Culvert at Legacy Trail and Sheep Road at 1000 North	\$217,863	\$217,863	\$0	\$0
2050	Sheep Road 2075 North - 36" Culvert	\$119,263	\$119,263	\$0	\$0
2050	Sheep Road Rick's Creek - 71" x 47" Elliptical RCP Culvert	\$159,790	\$159,790	\$0	\$0
TOTAL		\$30,156,546	\$26,533,280	\$3,623,266	\$0

6.2 Subdrain Projects and Cost Estimates

A summarized list of the projects for the years 2024 through 2044 and their associated costs is shown in Table 6.2.

Table 6.2 – Subdrain Projects Cost Summary

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2024	Pitford - 550 South to Tobe	\$250,705	\$250,705	\$0	\$0
2025	N/A	\$0	\$0	\$0	\$0
2026	Ariane Way - 450 West to 650 West	\$690,389	\$690,389	\$0	\$0
2027	Parrish Lane - 100 East to Main Street	\$257,216	\$257,216	\$0	\$0
2028	N/A	\$0	\$0	\$0	\$0
2029	1850 North - 100 West to 400 West	\$581,102	\$581,102	\$0	\$0
2030	1500 North Cul-de-sac on 400 West	\$181,410	\$181,410	\$0	\$0
2031	1600 North (Rick's Creek Way) - 100 West to 200 West	\$501,541	\$501,541	\$0	\$0
2032	1650 North (Milky Way) - 100 West to 200 West	\$531,708	\$531,708	\$0	\$0
2033	1800 North - 300 West to 400 West	\$225,932	\$225,932	\$0	\$0
2034	Lewis & Clark Drive - Fremont Cir to Jim Bridger Dr / Frontage Rd Crossing	\$150,771	\$150,771	\$0	\$0
2035	N/A	\$734,660	\$734,660	\$0	\$0
2036	700 S. - 300 E. to 400 E., 600 S. - 300 E. to 400 E., 300 E. - 600 S. to 725 S.	\$501,570	\$501,570	\$0	\$0
2037	Tobe Drive - 350 West to 400 West	\$365,284	\$365,284	\$0	\$0
2038	N/A	\$0	\$0	\$0	\$0
2039	Mountain View Drive & Creek View Drive	\$532,629	\$532,629	\$0	\$0

Project Year	Project Description	Total Estimated Cost	Cost Breakdown		
			Centerville City Cost	Davis County Cost	Developer's Cost
2040	N/A	\$0	\$0	\$0	\$0
2041	Canyon Breeze Drive	\$554,952	\$554,952	\$0	\$0
2042	N/A	\$0	\$0	\$0	\$0
2043	400 West - 1500 North to 1375 North	\$568,444	\$568,444	\$0	\$0
2044	100 West Cul-de-sac on 1450 North	\$197,766	\$197,766	\$0	\$0
2045	850 South / 780 South - 150 West (Slip-Line)	\$197,200	\$197,200	\$0	\$0
2046	Lund Lane - 700 West to 200 West	\$328,570	\$328,570	\$0	\$0
2047	Freedom Hills Park SE Corner - Sub-drain & Duncan Spring	\$125,556	\$125,556	\$0	\$0
2048	2100 North - 400 West to Churchill Drive (in back yards of 2115 North & 2101 North)	\$249,400	\$249,400	\$0	\$0
2049	150 West - 845 South to 780 South	\$148,379	\$148,379	\$0	\$0
2050	2075 North / 725 West	\$433,500	\$433,500	\$0	\$0
TOTAL		\$8,308,684	\$8,308,684	\$0	\$0

See [Appendix C](#) - Storm Drain Project Itemized Cost Estimates.

See [Appendix D](#) - Subdrain Project Itemized Cost Estimates.

7.0 GLOSSARY OF TERMS

10-YEAR STORM: The storm event capable of producing rainfall expected to be equaled or exceeded on the average of once in 10 years. The storm event which has a 10% chance of being equaled or exceeded in any given year.

100-YEAR STORM: The storm event capable of producing rainfall expected to be equaled or exceeded on the average of once in 100 years. The storm event which has a 1% chance of being equaled or exceeded in any given year.

BEST MANAGEMENT PRACTICES (BMPs): BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the waters of the State. BMPs also include treatment, requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage and good housekeeping solutions that include the proper handling, storage, and disposal of toxic materials to prevent stormwater pollution.

CATCH BASIN: A curbside opening that collects stormwater from streets and serves as an entry point to the storm drain system.

DESIGN RAINSTORM: A rainfall event, defined by storm frequency and storm duration, that is used to design drainage structures or conveyance systems.

DETENTION BASIN: An impoundment structure designed to reduce peak runoff flow rates by retaining a portion of the runoff during periods of peak flow and then releasing the runoff at lower flow rates.

FLOOD CONTROL CHANNEL: The open portions (often concrete-lined) of the storm drain system.

GUTTER: The edge of a street (below the curb) designed to drain water runoff from streets, driveways, and parking lots into catch basins.

INITIAL STORM DRAINAGE SYSTEM: The drainage system which provides conveyance for the storm runoff from minor storm events. The initial drainage system should be designed to reduce street maintenance, control nuisance flooding, help create an orderly urban system, and provide convenience to residents, while still meeting the criteria of the EPA's Storm Water Phase II mandate.

MAJOR STORM DRAINAGE SYSTEM: The drainage system which provides protection from flooding of homes during a major storm event.

MINOR STORM EVENT: A storm event that is less than or equal to the 10-year storm.

MAJOR STORM EVENT: Generally accepted as the 100-year storm. Typically homes should be protected from flooding in storm events up to a 100-year event.

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4): MS4 refers to a collection of structures designed to gather stormwater and discharge it into local streams and rivers.

RETENTION BASIN: An impoundment structure designed to contain all of the runoff from a design storm event. Retention basins usually contain the runoff until it evaporates or infiltrates into the ground.

STORM DURATION: The length of time that defines the rainfall depth or intensity for a given frequency.

STORM FREQUENCY: A measure of the relative risk that the precipitation depth for a particular design storm will be equaled or exceeded in any given year. This risk is usually expressed in years.

STORM WATER: Rain runoff, snowmelt runoff, and other surface runoff and drainage that enters the storm drain system and empties into lakes, rivers, or streams.

WATERSHED: A watershed is land that collects water and drains it into a river system or lake.

8.0 REFERENCES AND WORKS CITED

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‘Estimated Flood Frequency Discharges at Interstate 15 for Major Channels in Davis County.’ Table 2 from report by CH2M Hill, 1997.

Davis County and Vicinity USGS Gage Records. Table 3.1 of report.

Utah Division of Water – Fact Sheet, DWQ Guidance for Calculation of 80th Percentile Storm Event

Exhibits

(Pages 22-1 through 22-4)

GINGER 1979

STREAM NAME	AFFECTED COMMUNITIES	LOCATION	IDENTIFICATION NUMBER	DRAINAGE AREA (sq. mi.)	DISCHARGES (cfs)			
					10-Yr.	50-Yr.	100-Yr.	500-Yr.
Tributary #1	North Salt Lake	Canyon Mouth	1	0.75			25	
Tributary #2	North Salt Lake	Canyon Mouth	2	1.2			40	
Tributary #3	North Salt Lake	Canyon Mouth	3	1.3			45	
Hooper Canyon	North Salt Lake	Orchard Drive Canyon Mouth	4	1.4	50	120	160	320
			5	1.0	16	25	33	67
North Canyon	North Salt Lake	Orchard Drive Canyon Mouth	6	3.1	60	170	250	550
			7	2.7	40	70	110	225
Mill Creek	West Bountiful	D&RGW Railroad	8	10.9	220	300	310	310
Barton Creek	West Bountiful	D&RGW Railroad	9	7.4	100	230	250	260
Stone Creek	West Bountiful	D&RGW Railroad	10	6.4	50	230	575	1450
Deuel Creek	West Bountiful	D&RGW Railroad Canyon Mouth	11	3.4	135	280	360	600
	Centerville		12	3.1	35	65	110	300
Parrish Creek	Centerville	D&RGW Railroad Canyon Mouth	13	3.3	50	140	220	550
			14	2.1	30	50	70	200
Barnard Creek	Centerville	D&RGW Railroad Canyon Mouth	15	2.0	70	155	220	500
			16	1.4	20	35	50	130
Ricks Creek	Centerville	D&RGW Railroad Canyon Mouth	17	3.1	110	230	300	520
			18	2.5	45	95	150	400
Unnamed Creek	Davis County	D&RGW Railroad Canyon Mouth	19	1.4	20	70	110	270
			20	0.78	10	20	28	50

CH2M HILL 1997

TABLE 2
Estimated Flood Frequency Discharges at Interstate 15 for Major Stream Channels in Davis County

Natural Channel	10-year Summer Cloudburst (cfs)	25-year Summer Cloudburst (cfs)	100-year Clear Sky Snowmelt (cfs)	100-year Clear Sky Snowmelt with 10-year Spring Cloudburst (for information only) (cfs)
Barton Creek	455	855	373	458
Stone Creek	656	1308	361	485
Deuel Creek	210	410	259	300
Barton, Stone, and Deuel Creek	1080	2015	993	1211
Parrish Creek	184	312	167	207
Barnard Creek	212	407	113	154
Parrish and Barnard Creek	338	662	280	351
Ricks Creek	289	533	194	253
Davis Creek	21	80	127	132
Steed Creek	95	196	211	232
Farmington Creek	Note A	Note A	826	Note A
Rudd Creek	Note A	Note A	58	Note A
Farmington and Rudd Creek	209	441	876	932
Shepard Creek	469	989	190	289
South Fork Holmes Creek	209	432	226	271

Note A - Combines with another drainage before reaching I-15.

Table 3.1
Davis County and Vicinity USGS Gage Records

STATION		AREA	2-YR	10-YR	100-YR	FEMA SNOW 100-YEAR	2Y/ SQ M	10Y/ SQ M	100Y/ SQ M
10143500	CENTERVILLE CREEK NEAR CENTERVILLE	3.15	16	50	200	64	5	16	63
10172500	CITY CREEK NEAR SALT LAKE CITY	19.2	58	125	294	333	3	7	15
10172000	EMIGRATION CREEK NEAR SALT LAKE CITY	18.4	23	64	206	320	1	3	11
10142000	FARMINGTON CREEK NEAR FARMINGTON	10.0	137	332	600	184	14	33	60
10141500	HOLMES CREEK NEAR KAYSVILLE	2.49	20	60	200	52	8	24	80
10141400	HOWARD SLOUGH AT HOOPER	20.6	162	274	493	355	8	13	24
10145000	MILL CREEK AT BOUNTIFUL	8.79	38	120	435	163	4	14	49
10143000	PARRISH CREEK NEAR CENTERVILLE	2.08	16	40	150	44	8	19	72
10172200	RED BUTTE CREEK NEAR SALT LAKE CITY	7.25	14	54	254	137	2	7	35
10142500	RICKS CREEK NEAR CENTERVILLE	2.35	21	55	180	49	9	23	77
10144000	STONE CREEK NEAR BOUNTIFUL	4.48	38	100	370	88	8	22	83
10141393	STORM DRAIN AT SUNSET	0.80	23	96	467	N/A	29	120	584
10145126	STORM DRAIN TO MILL CREEK, BOUNTIFUL	0.87	25	71	232	N/A	29	82	267
10145125	STORM DRAIN E OF ORCH DR, BOUNTIFUL	1.50	35	102	334	N/A	23	68	223

4. PRECIPITATION RUNOFF ANALYSIS CRITERIA

4.1 Introduction

The COE computer program, HEC-1, is used for the calculation of flow hydrographs. Use of HEC-1 with a consistent unit graph for all hydrologic calculations will provide compatible results between the calculated peak flows from smaller developments and the larger watershed master plan in which they are located.

In order to minimize the potential for entering inappropriate or inconsistent input data and to aid the user in developing an error-free HEC-1 input file, the HEC-1 preprocessor, DCPRE, is provided. DCPRE uses HEC-1 compatible methods to generate, combine, and route hydrographs. The DCPRE program can be used for the analysis of existing drainage areas as well as design of drainage systems.

**Culverts at Frontage Road, I-15, UTA, UPRR & Legacy Hwy.
in Centerville City**

#	Description - North/South Location	Frontage Road	I-15	UTA	UPRR	Legacy Hwy.	DRG / UTA Trail	Sheep Road	Comments
1	800 South (Air Products - South Pl.)	42" RCP	42" RCP	-	-	DSB Culvert	DSB	N/A	Drains into Stone Barton Canal east of UTA
2	600 South (Air Products - North Pl.)	18" to 24" type unknown	18" to 24" type unknown	-	-	DSB Culvert	DSB	N/A	This culvert has been identified at the Stone Barton Canal but not on east side of F.R.
3	450 South (Tri-City)	24" CMP	24" CMP	New 24" RCP	24" RCP	DSB	DSB	N/A	Drains into D.C. Channel west of UPRR. Culvert needs to be found on east side of F.R.
4	Deuel Creek (400 South)	54" RCP & 6' x 4' Box Culvert	54" RCP & 6' x 4' Box Culvert	New 10' x 3' Box Culvert & 54" RCP	10' x 2' Bridge & 54" RCP	DSB	DSB	N/A	Drains into new Deuel Creek Channel west of UPRR and then to DSB
5	UDOT system at south PL of Land Rover	unknown	18" CMP	-	-	-	-	-	Drains into Syro Steel system beneath UTA / UPRR
6	Lone Star - Syro Steel	24" CMP - needs upsized	24" CMP - needs upsized	New 36" SSP	New 36" SSP	48"	48"	2 - 36"	Proposed upsized of culvert at F.R. - I-15 to 36" RCP - this drainage ends up behind Legacy Hwy
7	36" System along north side of Parrish Lane	36" RCP	36" CMP - needs replaced	36" CMP - needs replaced	36" CMP - needs replaced	48"	48" RCP	36" RCP - 500' north	the new 48" system was installed at DRG by City
8	McDonald's north PL	24" CMP - needs upsized	30" CMP - needs replaced	New 42" SSP	New 42" SSP	48"	2 - 48" CMP at 725 N.	4 - 36" CMP at 725 N.	System through Jett Taylor's and along 650 North needs to be upsized and replaced
9	Creekview Drive	24" CMP - needs replaced	24" CMP - needs replaced	-	-	-	-	-	combines with McDonald's system east of UTA
10	Parrish Creek	New 48" RCP	42" CMP - needs replaced	New 36" RCP	36" RCP	54"	Goes to 725 N. systems	Goes to 725 N. systems	if this system overflows west of F.R. it would go to McDonald's system
11	Chase Lane Overflow	54" RCP	54" RCP	54" RCP & New 54" SSP	54" RCP & New 54" SSP	New 22' x 4' Box Culvert - verify	72' x 44' CMP Need new large culvert	36" ADS Need new large culvert	restriction at F.R. - I-15, and 950 West compared to UTA, UPRR & Legacy Hwy. - also need new system at DRG and Sheep Road
12	Barnard Creek	New 36" RCP	15" to 24" CMP	New 30" SSP	New 30" SSP	42"	36" CMP	2 - 36" ADS	24" system beneath UDOT shed properly needs upsized to 36" and possibly no easement
13	Community Park South	42" CMP	42" CMP	New 42" SSP	New 42" SSP	42"	36" CMP	2 - 36" ADS	additional culvert needed at DRG
14	Community Park North	24" CMP	24" CMP	24" CMP	24" CMP	42" (combined with 14)	18" CMP	36" ADS	drains into diagonal ditch
15	Sub-drain Station	18" CMP or RCP?	18" CMP or RCP?	24" CMP	24" CMP	42" (combined with 14)	-	-	Drains into diagonal ditch - outlet grade is too low
16	Ricks Creek	New 10' x 3' Box Culvert	42" CMP - needs upsized	New 2 - 48" SSP	New 2 - 48" SSP	5' x 12' Box Culvert - verify	72' x 44' CMP & 36" CMP	3 - 36" CMP	additional culverts needed at DRG and Sheep Road
17	Villa de France	24" CMP - needs replaced	24" CMP - needs replaced	24" RCP	24" RCP	24" ADS - verify	-	-	combines with Lexington drainage west of UPRR
18	Lexington Park	24" CMP - needs replace	24" CMP - needs replaced	New 24" SSP	New 24" SSP	24" ADS - verify	24" RCP - needs upsized	12" CMP - needs upsized	need new 36" systems at DRG and Sheep Road
19	Abe Miller & South PL of Woods	24" CMP	24" CMP	-	-	-	-	-	both systems overflow east of UTA and go to Lexington system or sub beneath UTA/UPRR
20	Lund Lane	24" CMP - needs upsized	24" CMP - needs upsized	24" RCP - needs upsized	12" CMP - needs upsized	36" ADS	-	-	Flows into Farmington and crosses DRG and Sheep Road in Davis Creek system

36" SSP 36" SSP 36" SSP 36" SSP 36" SSP
Centerville City - Storm Drain Master Plan Update 2013
ESI Engineering, Inc

Appendix A

Centerville City Storm Drain Area Maps

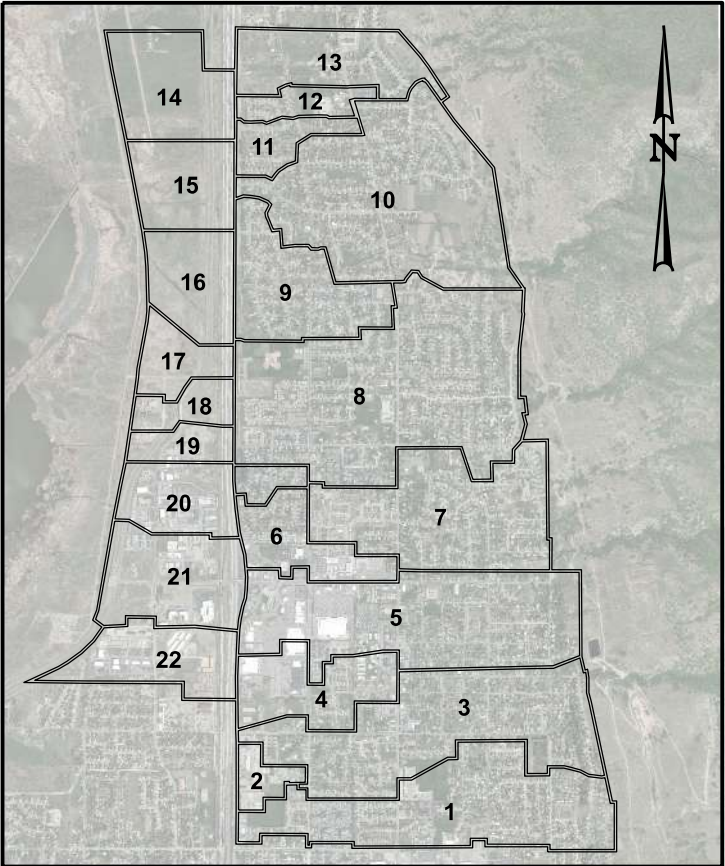
PIPE SIZE (IN INCHES)

	COUNTY
	PRIVATE
	STATE
	4
	6
	8
	10
	12
	15
	18
	21
	24
	30
	36
	42
	48
	54
	60
	72

DRAINAGE AREA STATISTICS

DRAINAGE AREA 1 = 239.1 AC
DRAINAGE AREA 2 = 27.0 AC
DRAINAGE AREA 3 = 267.9 AC
DRAINAGE AREA 4 = 97.6 AC
DRAINAGE AREA 5 = 283.4 AC
DRAINAGE AREA 6 = 76.9 AC
DRAINAGE AREA 7 = 240.6 AC
DRAINAGE AREA 8 = 419.6 AC
DRAINAGE AREA 9 = 132.5 AC
DRAINAGE AREA 10 = 333.7 AC
DRAINAGE AREA 11 = 42.6 AC
DRAINAGE AREA 12 = 35.4 AC
DRAINAGE AREA 13 = 108.0 AC
DRAINAGE AREA 14 = 112.7 AC
DRAINAGE AREA 15 = 85.7 AC
DRAINAGE AREA 16 = 85.1 AC
DRAINAGE AREA 17 = 49.7 AC
DRAINAGE AREA 18 = 37.8 AC
DRAINAGE AREA 19 = 35.2 AC
DRAINAGE AREA 20 = 77.4 AC
DRAINAGE AREA 21 = 124.3 AC
DRAINAGE AREA 22 = 96.5 AC

CITY AERIAL



INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	LEGEND & SHEET INDEX
2	OVERALL STORM DRAIN MASTER PLAN & DRAINAGE AREAS
3	STORM DRAINAGE AREAS 1 & 2
4	STORM DRAINAGE AREAS 3 & 4
5	STORM DRAINAGE AREA 5
6	STORM DRAINAGE AREAS 6 & 7
7	STORM DRAINAGE AREA 8
8	STORM DRAINAGE AREA 9
9	STORM DRAINAGE AREA 10
10	STORM DRAINAGE AREAS 11, 12, & 13
11	STORM DRAINAGE AREAS 14 & 15
12	STORM DRAINAGE AREAS 16 & 17
13	STORM DRAINAGE AREAS 18, 19, & 20
14	STORM DRAINAGE AREAS 21 & 22
15	OVERALL SUB-SURFACE MASTER PLAN & DRAINAGE AREAS
16	SUB-DRAIN DRAINAGE AREA 1
17	SUB-DRAIN DRAINAGE AREA 2
18	SUB-DRAIN DRAINAGE AREA 3

SURFACE FEATURES

	BOX CULVERT
	DETENTION AREA
	DRAINAGE AREA
1	DRAINAGE AREA ZONE
	OPEN WATERWAY

ABBREVIATIONS

CMP	CORRUGATED METAL PIPE
DC	DAVIS COUNTY
HDPE	HIGH DENSITY POLYETHYLENE
PVC	POLY VINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SH	SHEET NUMBER
SLPC	SMOOTH LINED PIPE CULVERT

REVISION	DATE	BY	DESCRIPTION	DESIGN
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				PSB
				KLC
				DATE 06/05/2023

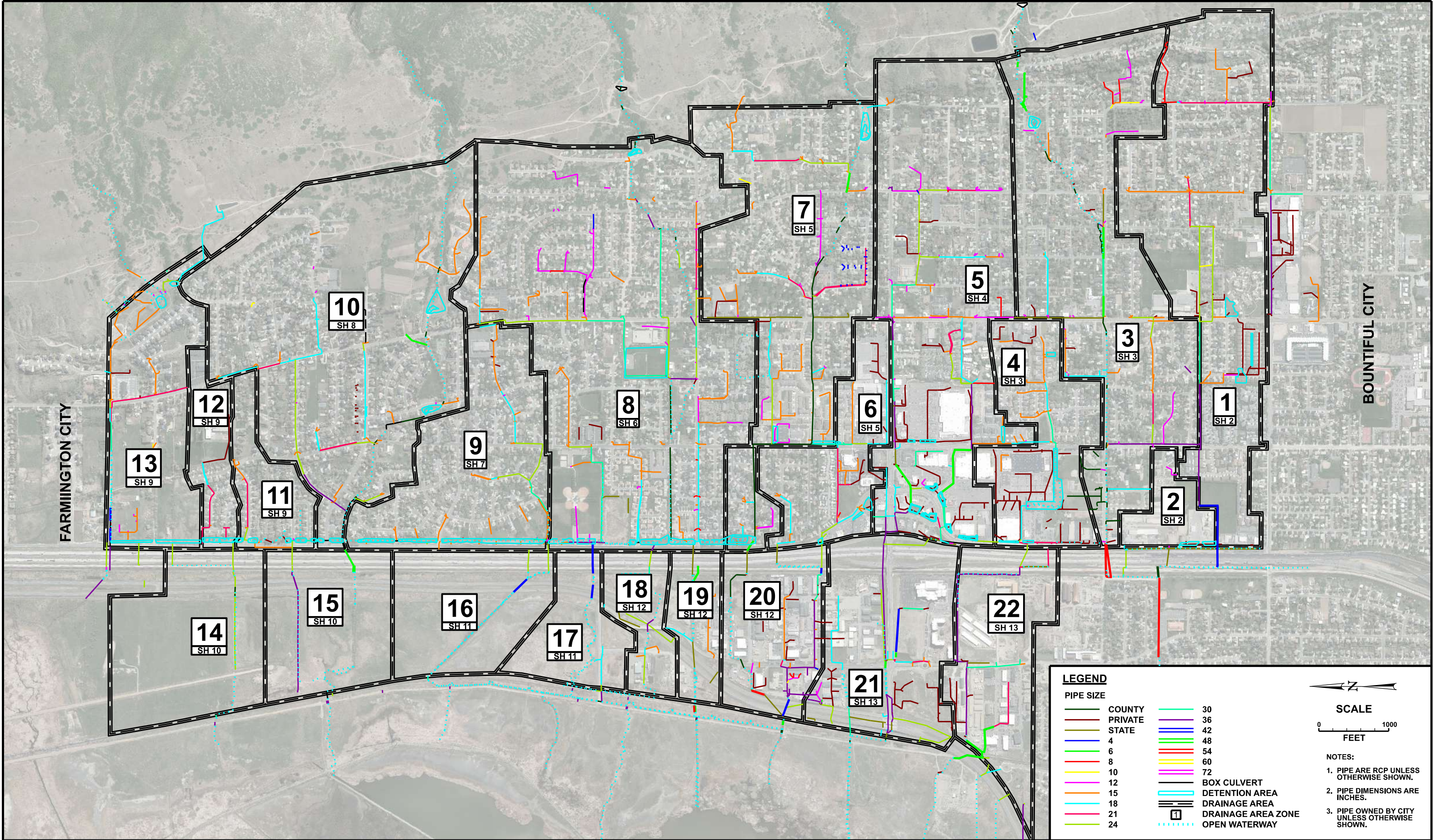
LEGEND & SHEET INDEX

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



ESI ENGINEERING
CIVIL - STRUCTURAL - LAND SURVEY
4141 WEST 2100 SOUTH, SUITE 100
WEST VALLEY, UTAH 84120
TEL: (801) 263-1752

SHEET	1
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	20-131



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				06/05/2023

OVERALL STORM DRAIN MASTER PLAN
& DRAINAGE AREAS

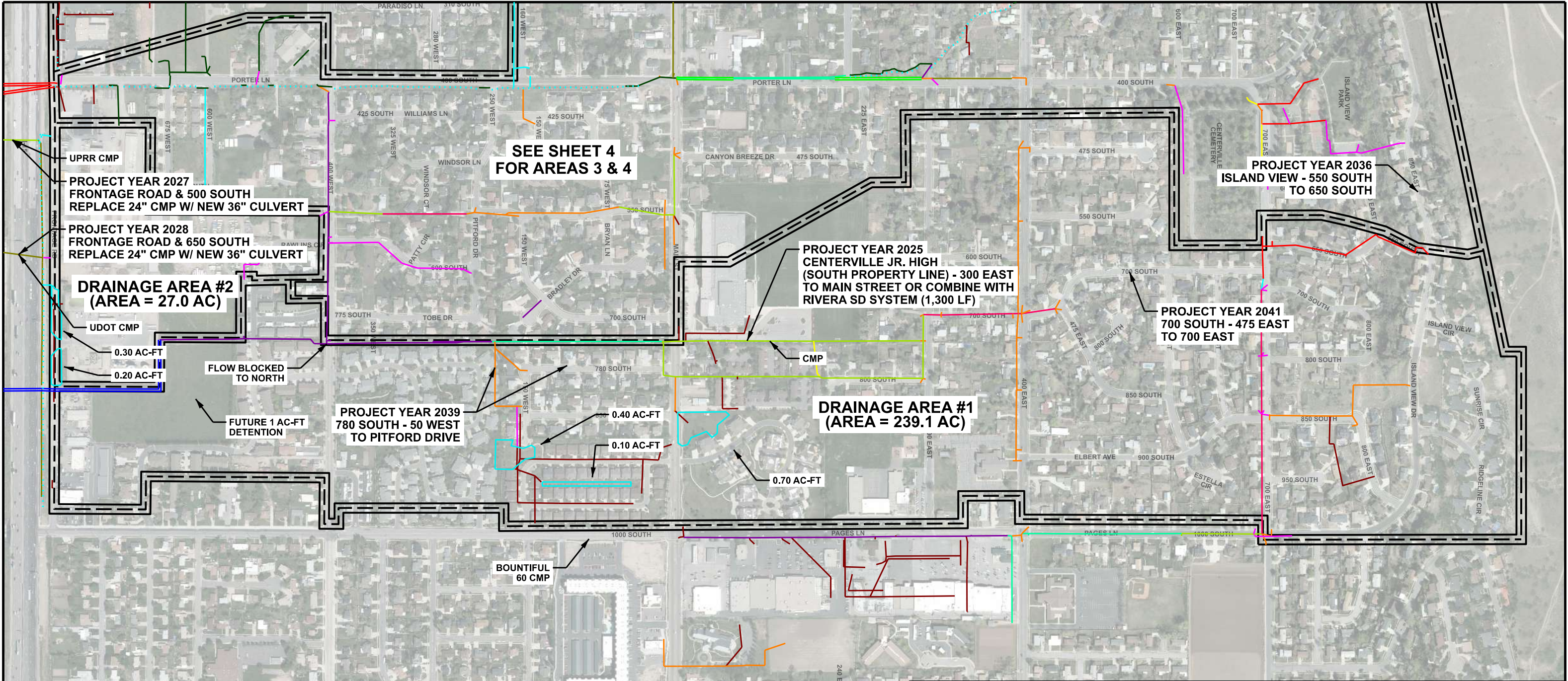
CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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SHEET 2
OF 18

PROJECT NO.
20-131



LEGEND

PIPE SIZE	
COUNTY	42
PRIVATE	48
STATE	54
4	60
6	72
8	BOX CULVERT
10	DETENTION AREA
12	DRAINAGE AREA
15	OPEN WATERWAY
18	CMP CORRUGATED METAL PIPE
21	DC DAVIS COUNTY
24	HDPE HIGH DENSITY POLYETHYLENE
30	PVC POLY VINYL CHLORIDE
36	RCP REINFORCED CONCRETE PIPE
	SLPC SMOOTH LINED PIPE CULVERT

KEY MAP

SCALE

0 500 FEET

NOTES:

- PIPE ARE RCP UNLESS OTHERWISE SHOWN.
- PIPE DIMENSIONS ARE INCHES.
- PIPE OWNED BY CITY UNLESS OTHERWISE SHOWN.

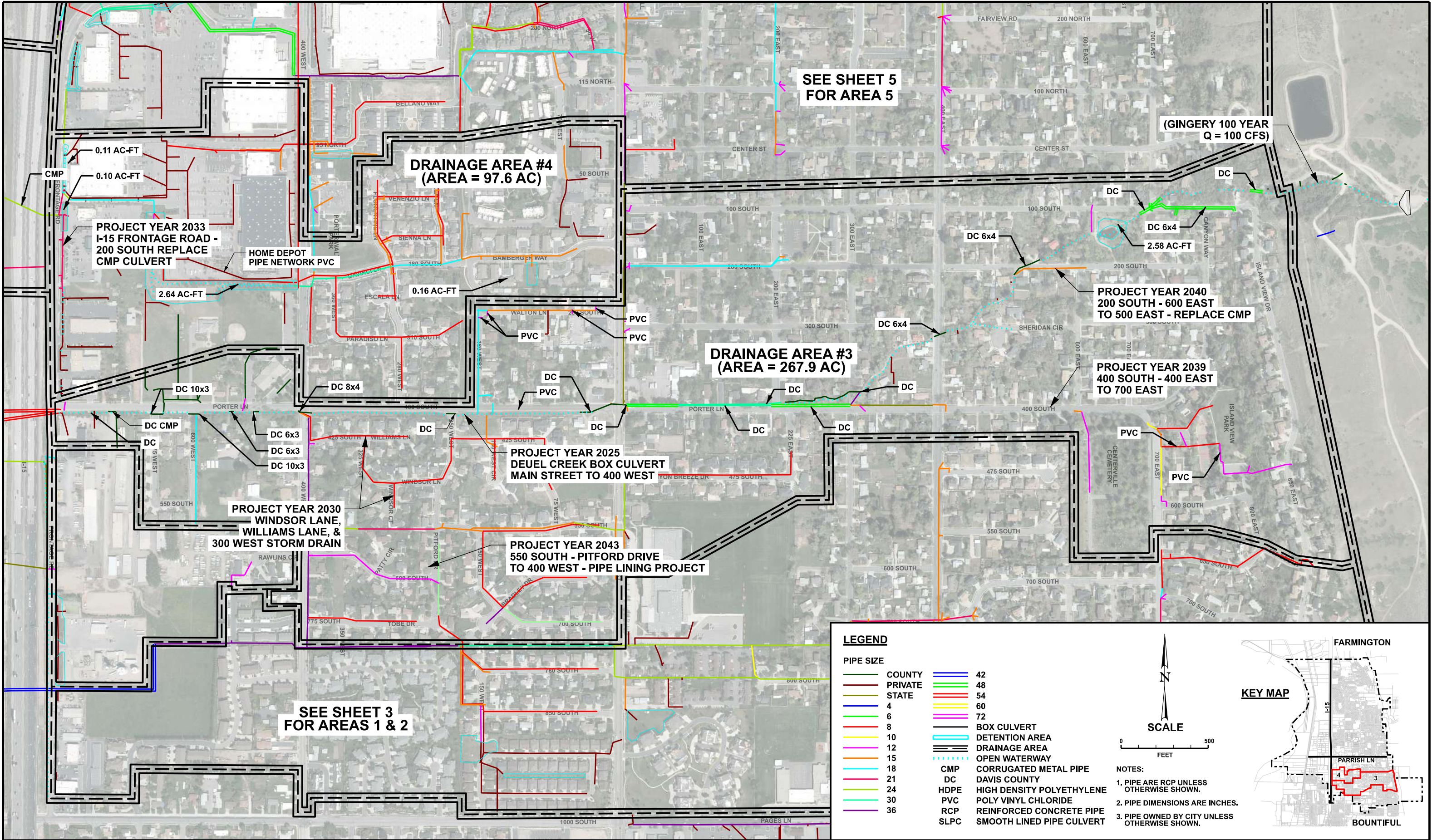
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				PSB
				KLC
				DATE 06/05/2023

STORM DRAINAGE AREAS 1 & 2

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STORM DRAIN MASTER PLAN**

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OF 18
PROJECT NO. 20-131



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				KLC
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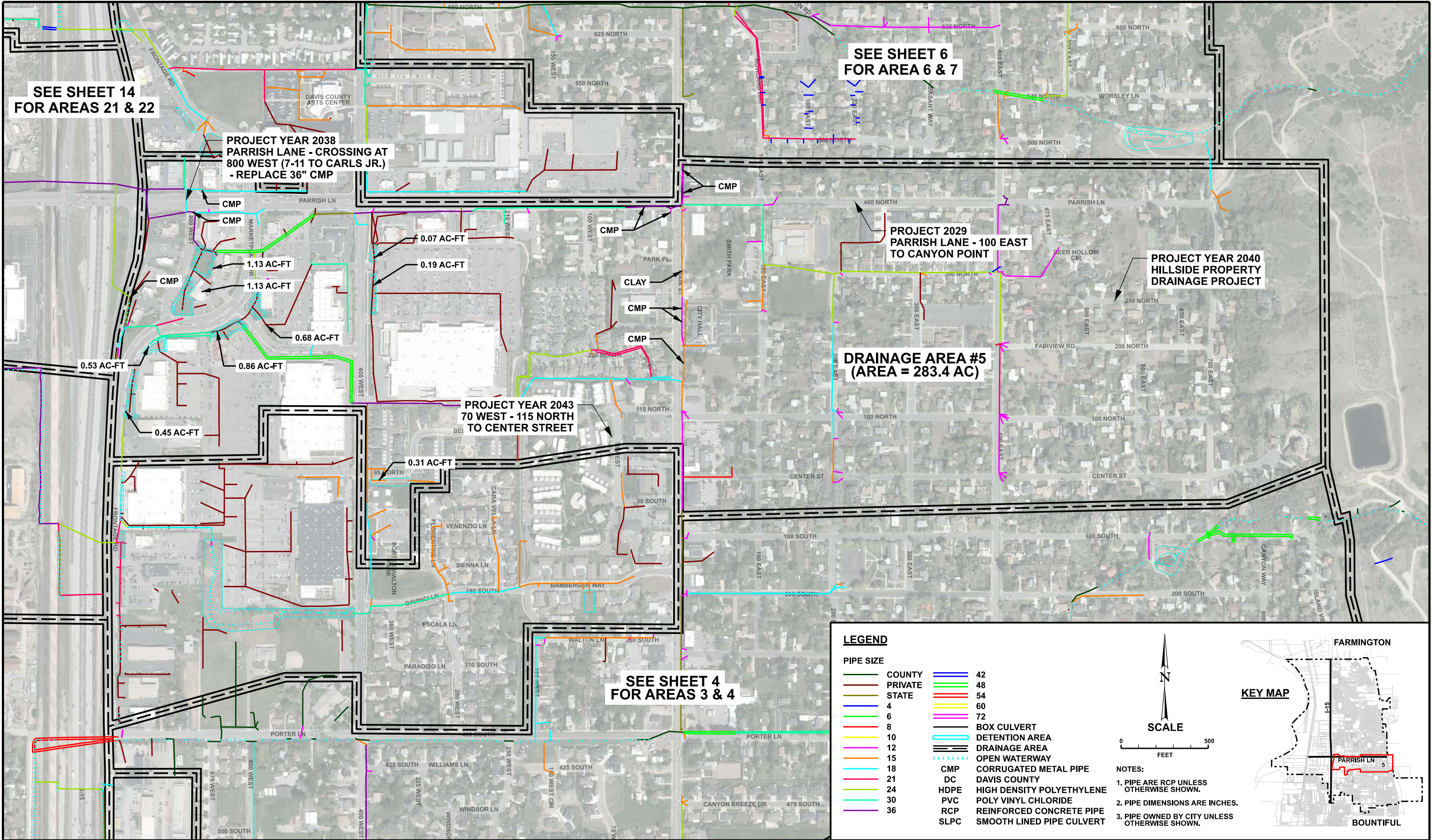
STORM DRAINAGE AREAS 3 & 4

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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OF 18
PROJECT NO.
20-131



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DATE	06/05/2023

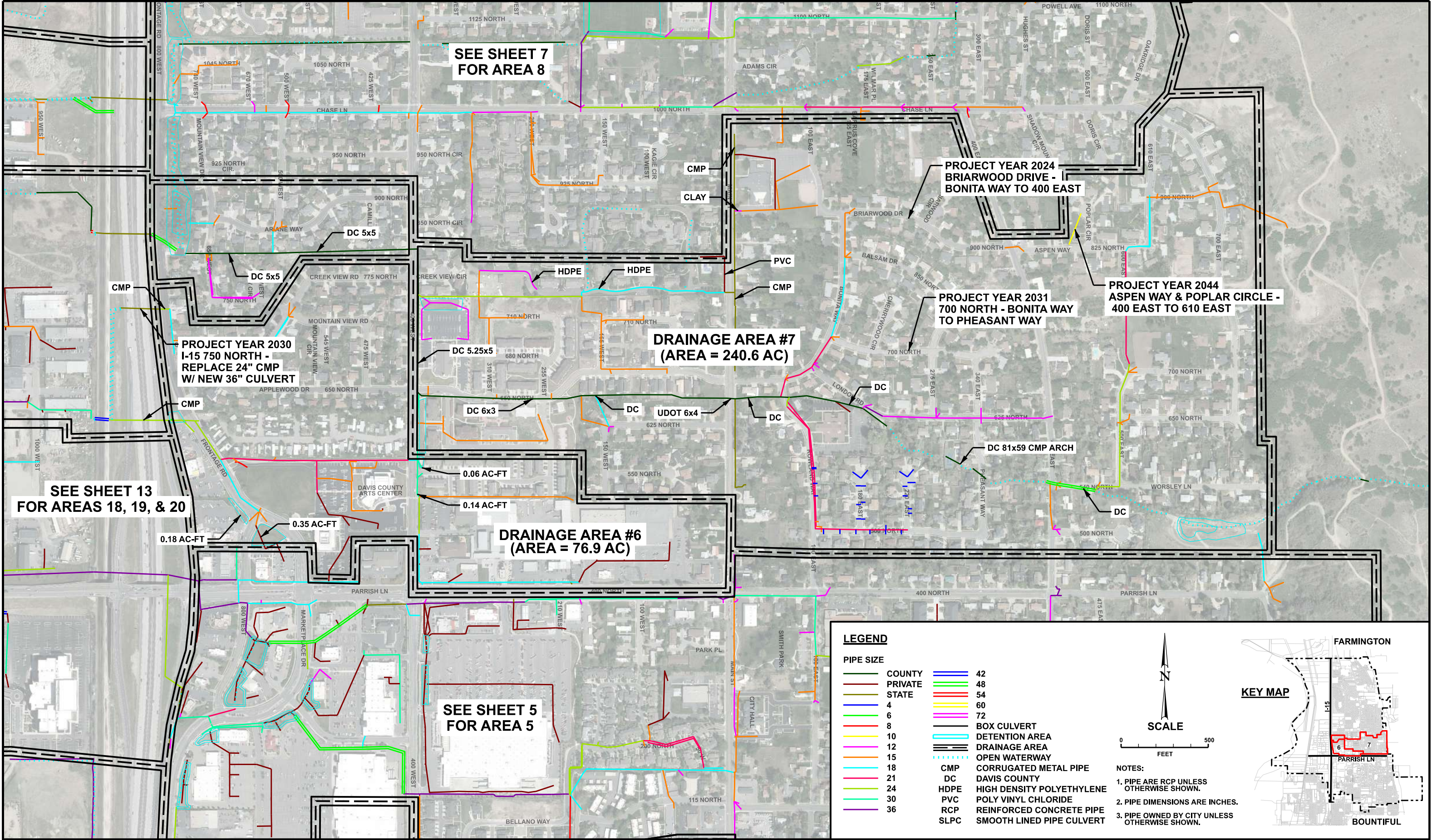
STORM DRAINAGE AREA 5

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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STORM DRAINAGE AREAS 6 & 7

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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SHEET 6 OF 18

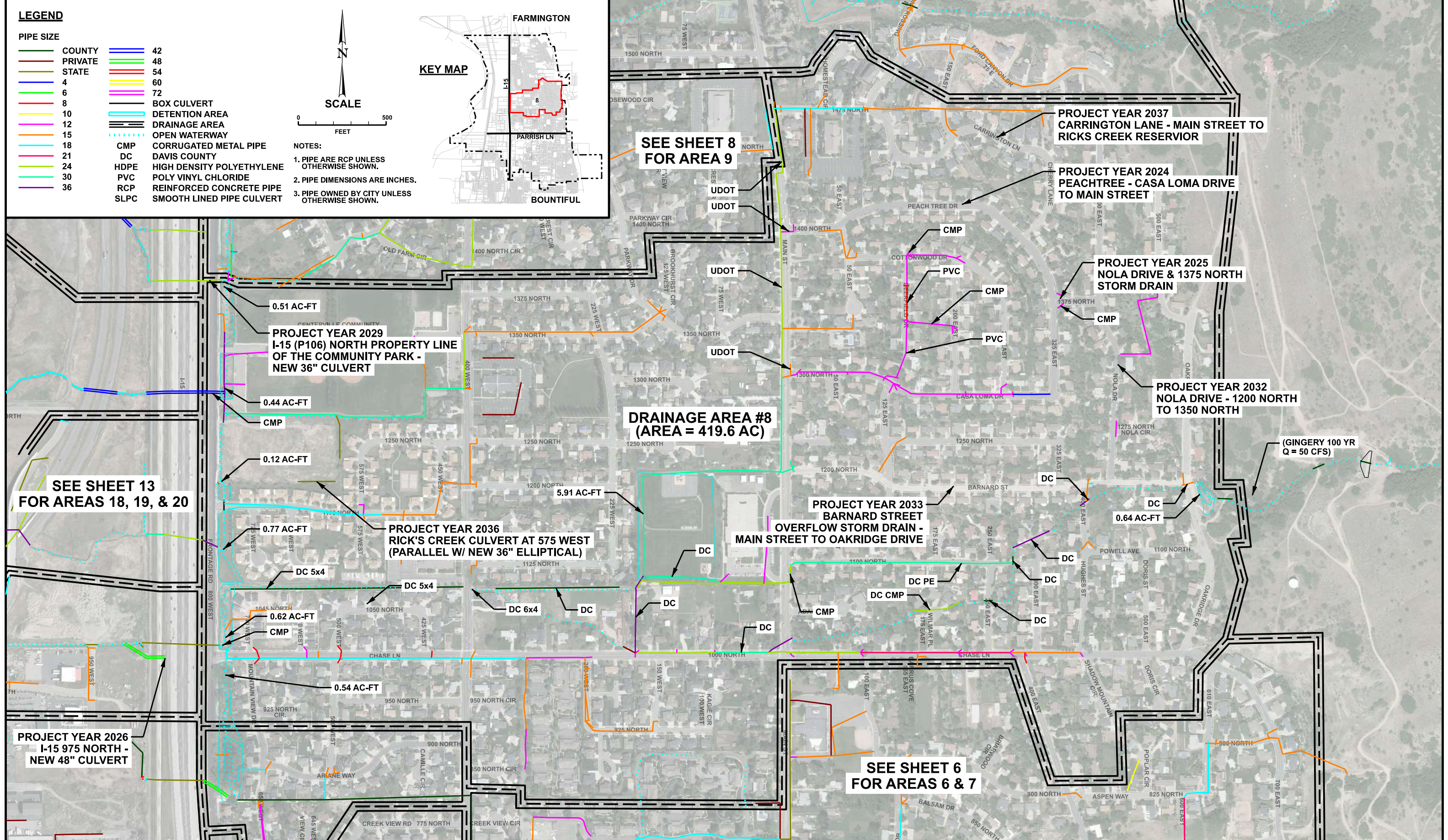
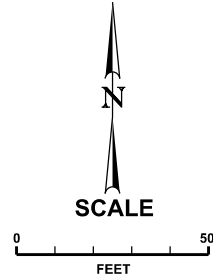
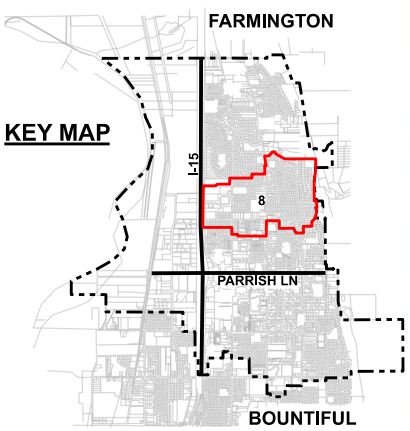
PROJECT NO. 20-131

LEGEND

PIPE SIZE

COUNTY	42
PRIVATE	48
STATE	54
4	60
6	72
8	BOX CULVERT
10	DETENTION AREA
12	DRAINAGE AREA
15	OPEN WATERWAY
18	CMP CORRUGATED METAL PIPE
21	DC DAVIS COUNTY
24	HDPE HIGH DENSITY POLYETHYLENE
30	PVC POLY VINYL CHLORIDE
36	RCP REINFORCED CONCRETE PIPE
	SLPC SMOOTH LINED PIPE CULVERT

- NOTES:
1. PIPE ARE RCP UNLESS OTHERWISE SHOWN.
 2. PIPE DIMENSIONS ARE INCHES.
 3. PIPE OWNED BY CITY UNLESS OTHERWISE SHOWN.



REVISION	DATE	BY	DESCRIPTION

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DRAWN	PSB
CHECKED	KLC
DATE	06/05/2023

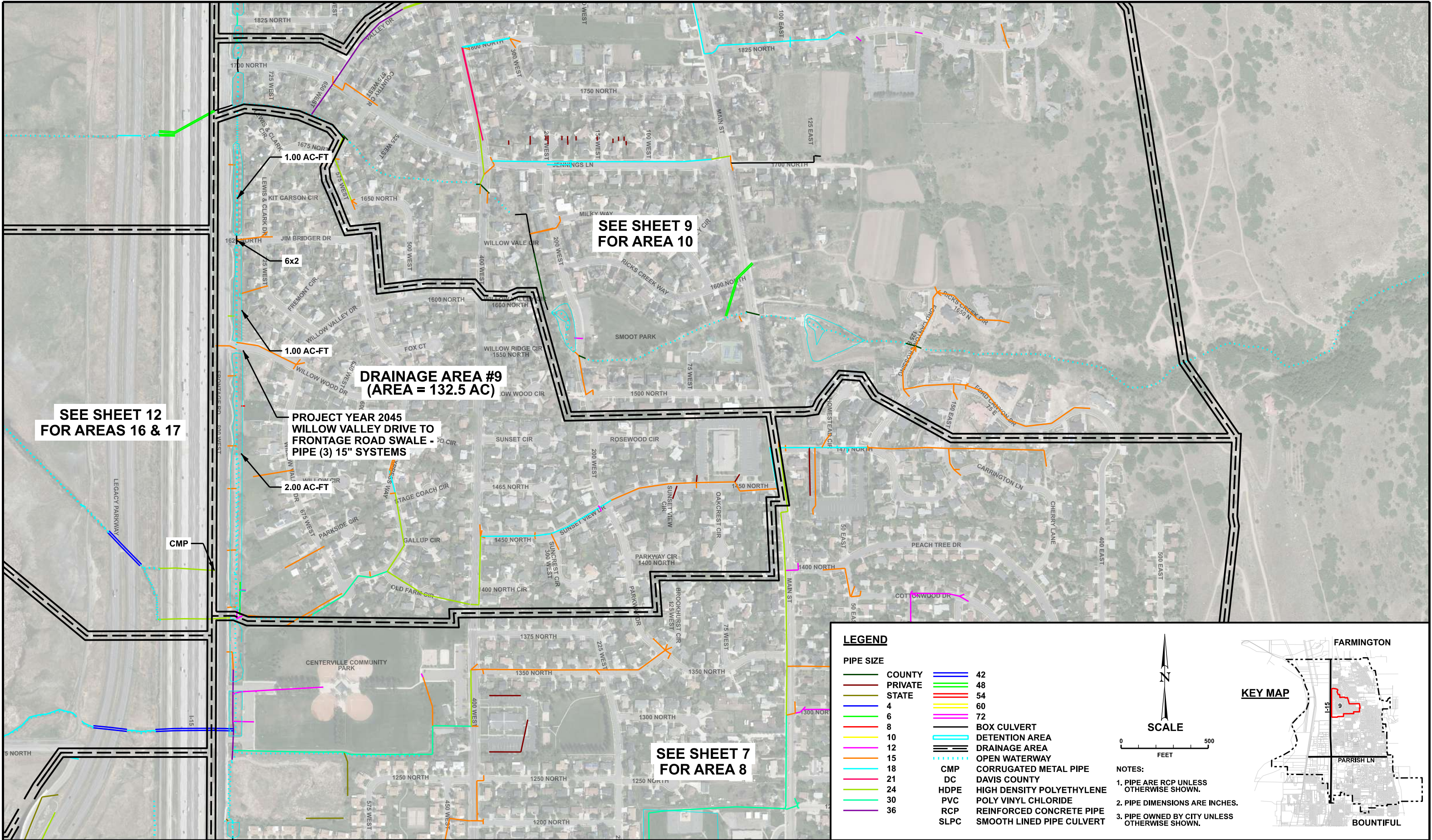
STORM DRAINAGE AREA 8

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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STORM DRAINAGE AREA 9

CENTERVILLE CITY

STORM DRAIN MASTER PLAN



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WEST VALLEY, UTAH 84120

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SHEET 8

OF 18

PROJECT NO.

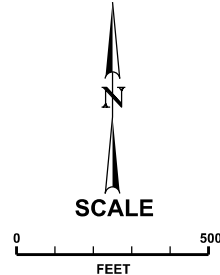
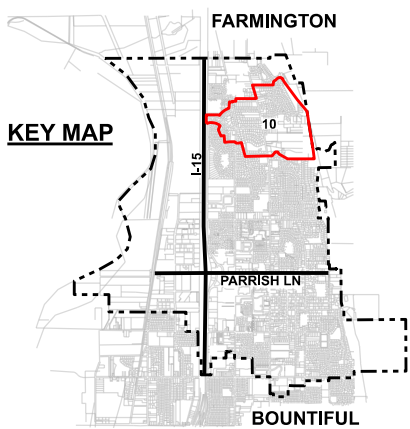
20-131

LEGEND

PIPE SIZE

COUNTY	42
PRIVATE	48
STATE	54
4	60
6	72
8	BOX CULVERT
10	DETENTION AREA
12	DRAINAGE AREA
15	OPEN WATERWAY
18	CMP CORRUGATED METAL PIPE
21	DC DAVIS COUNTY
24	HDPE HIGH DENSITY POLYETHYLENE
30	PVC POLY VINYL CHLORIDE
36	RCP REINFORCED CONCRETE PIPE
	SLPC SMOOTH LINED PIPE CULVERT

- NOTES:
1. PIPE ARE RCP UNLESS OTHERWISE SHOWN.
 2. PIPE DIMENSIONS ARE INCHES.
 3. PIPE OWNED BY CITY UNLESS OTHERWISE SHOWN.



SEE SHEET 10
FOR AREAS 11, 12 & 13

PROJECT YEAR 2046
1975 NORTH - MAIN STREET
TO 150 EAST

PROJECT YEAR 2046
1825 NORTH - MAIN STREET
TO 300 EAST

PROJECT YEAR 2045
MAIN STREET - 1600 NORTH
TO SMOOT PARK

(GINGERY 100 YR
Q = 150 CFS)

SEE SHEET 9
FOR AREA 10

DRAINAGE AREA #10
(AREA = 333.7 AC)

SEE SHEET 8
FOR AREA 9

0.14 AC-FT

0.38 AC-FT

DC 10x3

UDOT

CMP

UDOT

UDOT

UDOT

CMP

DC CMP
81x59 ARCH

DC CMP
CONCRETE
LINED BOTTOM

1.16 AC-FT

DC CMP

CMP

DC 72 CMP

6.68 AC-FT

REVISION	DATE	BY	DESCRIPTION

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DATE	06/05/2023

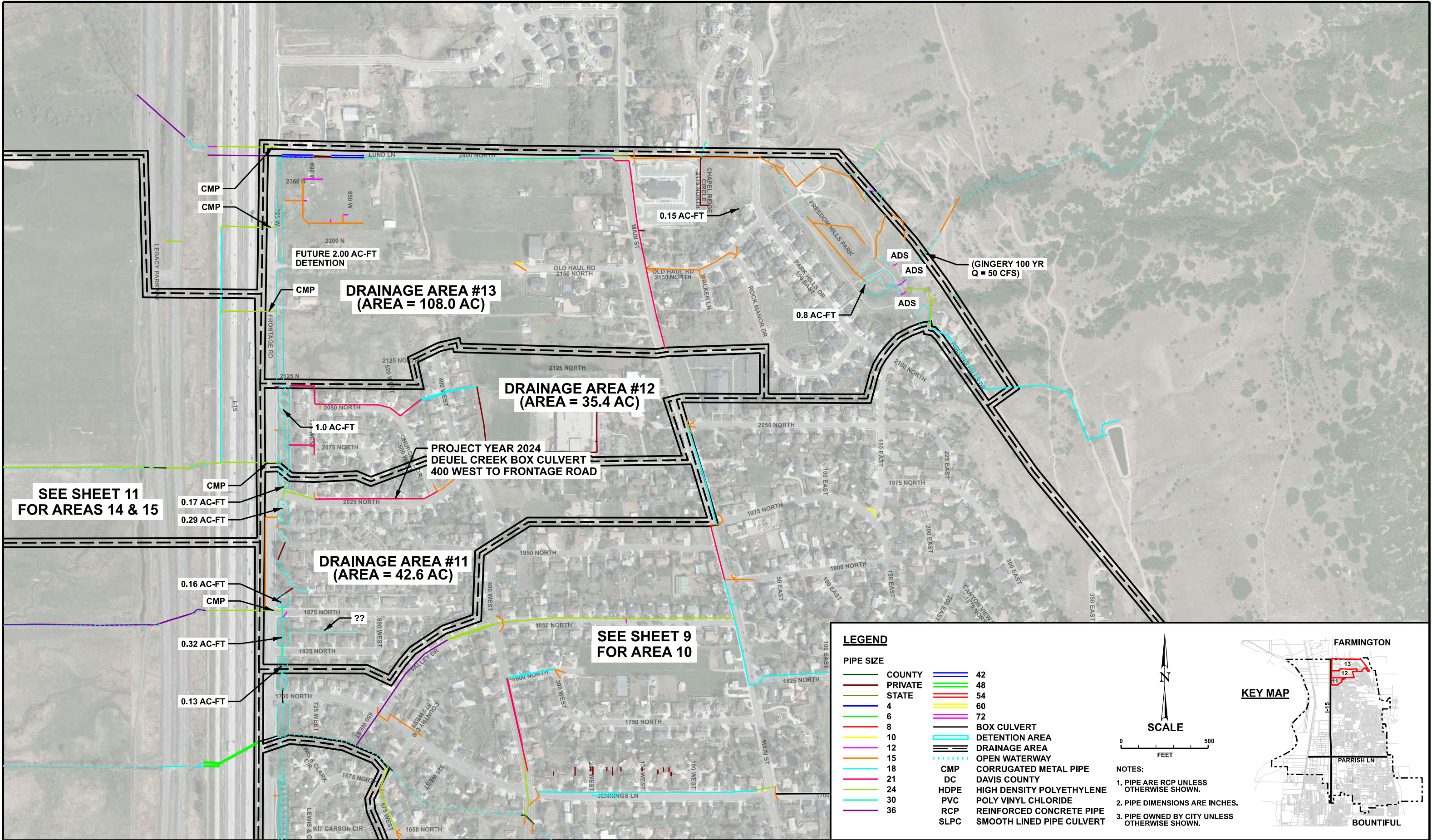
STORM DRAINAGE AREA 10

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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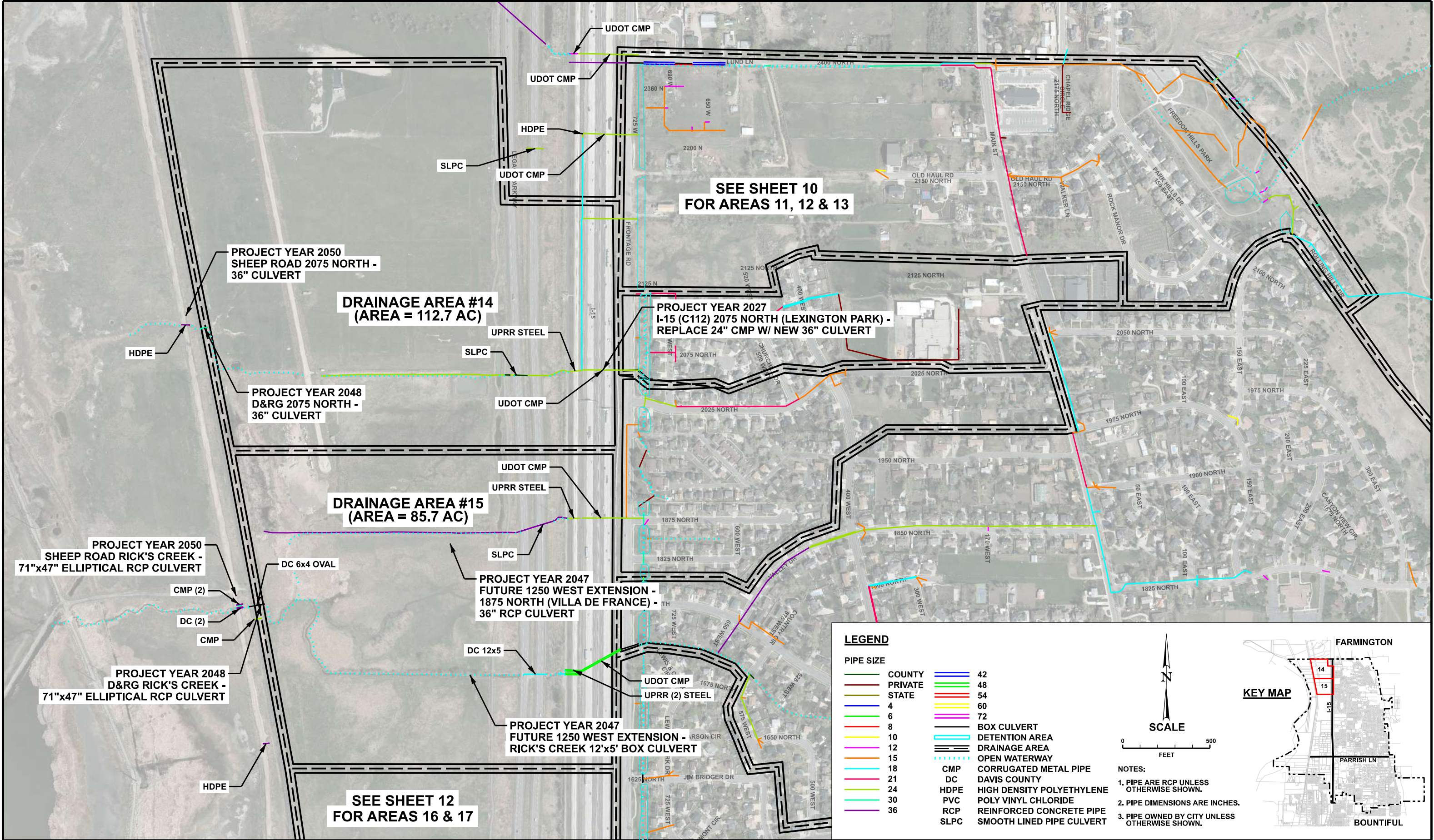
STORM DRAINAGE AREAS 11, 12, & 13

**CENTERVILLE CITY
STORM DRAIN MASTER PLAN**



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OF	18
PROJECT NO.	20-131

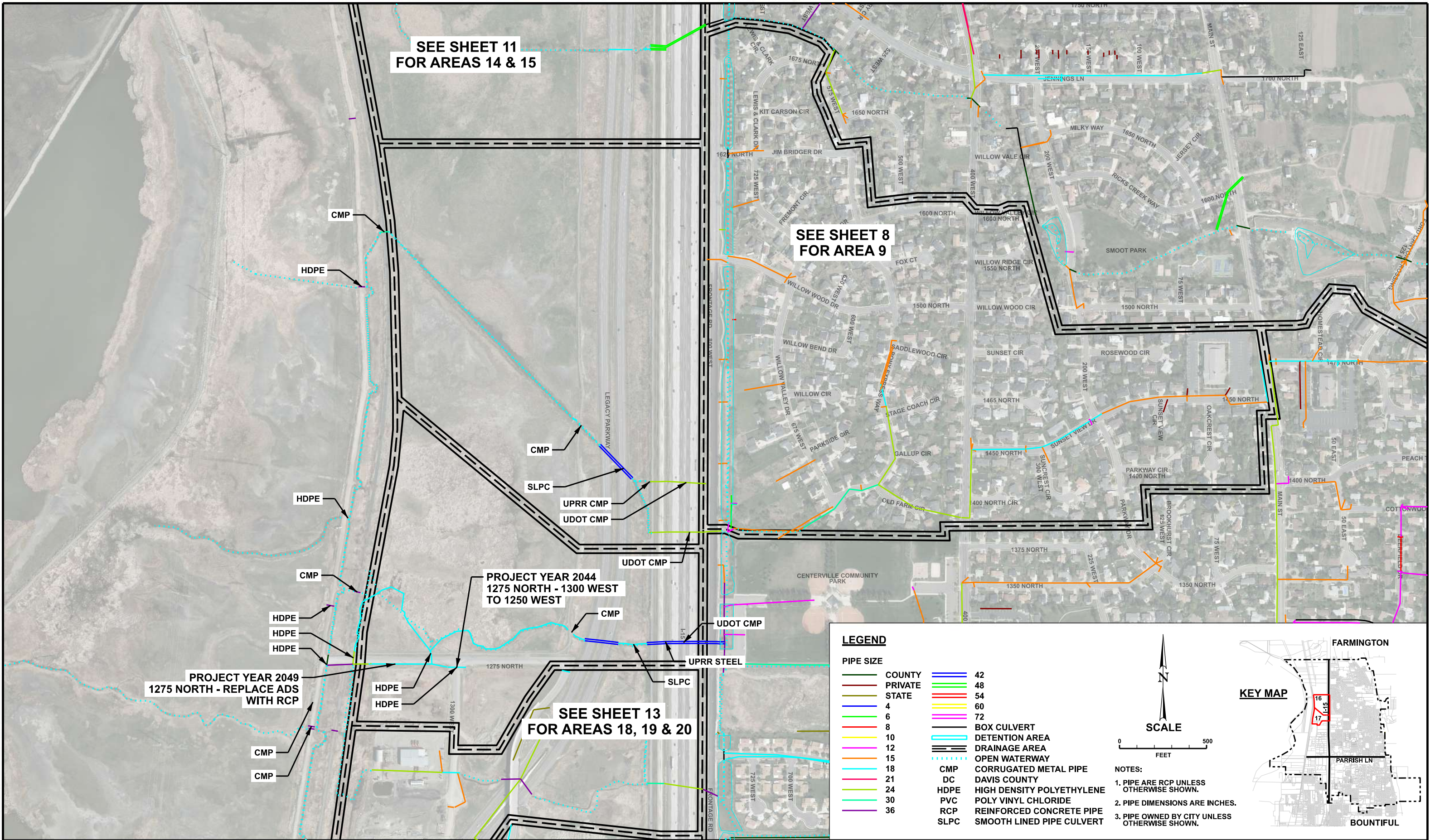


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				KLC
				DATE
				06/05/2023

STORM DRAINAGE AREAS 14 & 15	
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CENTERVILLE CITY	
STORM DRAIN MASTER PLAN	

	ESI ENGINEERING		SHEET 11
	CIVIL - STRUCTURAL - LAND SURVEY		OF 18
	4141 WEST 2100 SOUTH, SUITE 100 WEST VALLEY, UTAH 84120 TEL: (801) 263-1752		PROJECT NO. 20-131



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DATE	06/05/2023

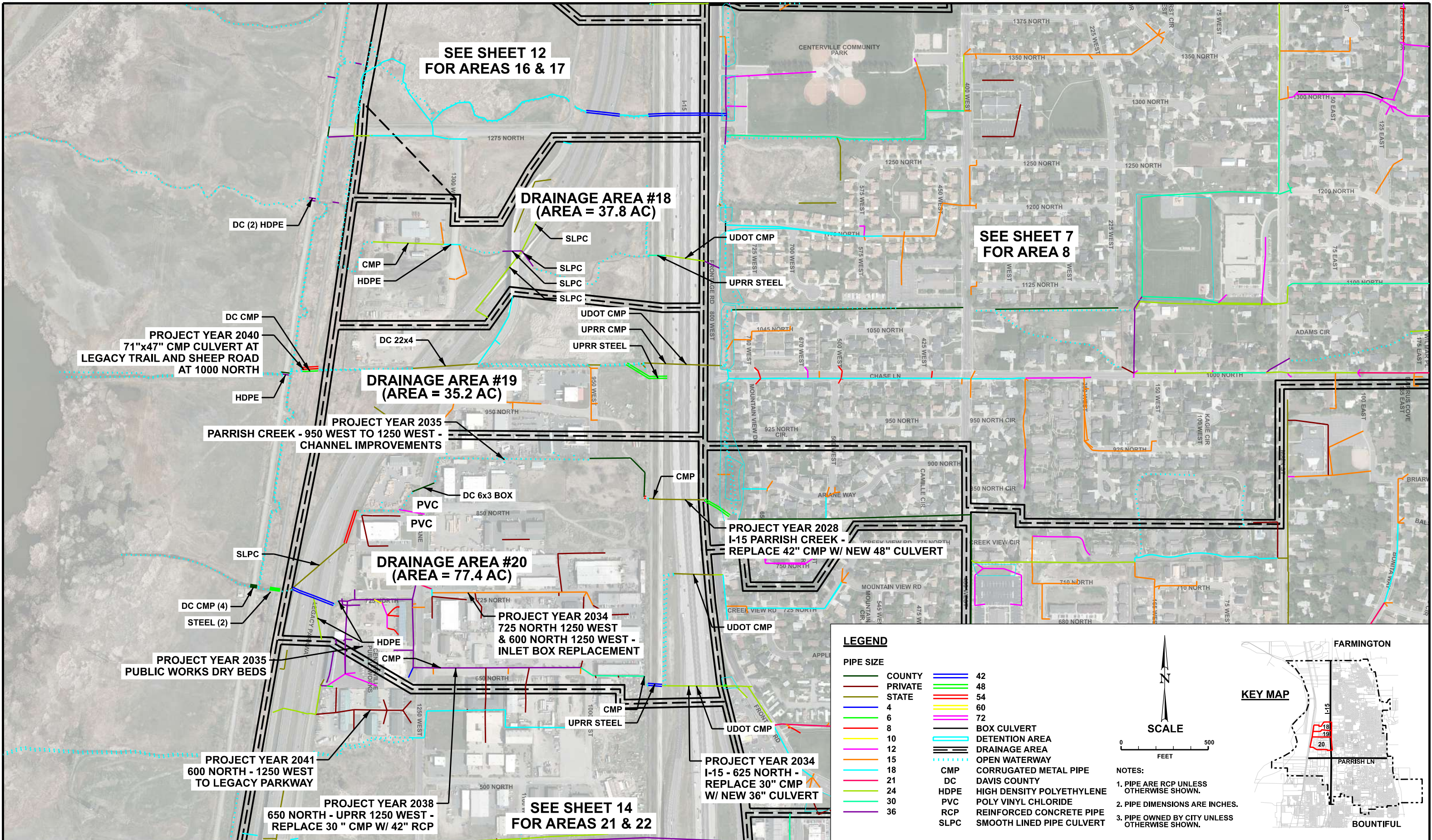
STORM DRAINAGE AREAS 16 & 17

**CENTERVILLE CITY
STORM DRAIN MASTER PLAN**



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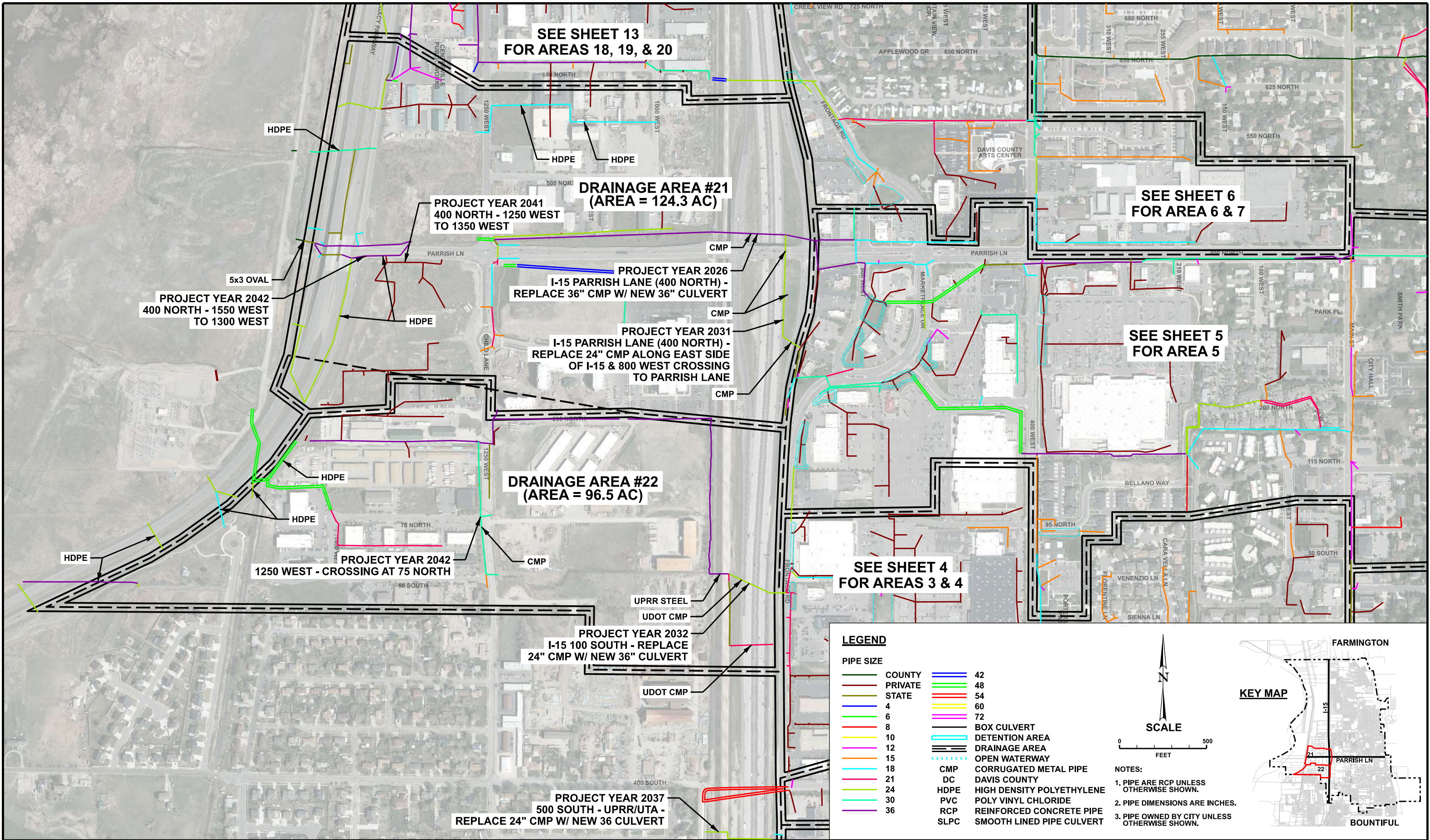
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DESIGN	PSB
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CHECKED	KLC
DATE	06/05/2023

STORM DRAINAGE AREAS 18, 19, & 20

CENTERVILLE CITY STORM DRAIN MASTER PLAN

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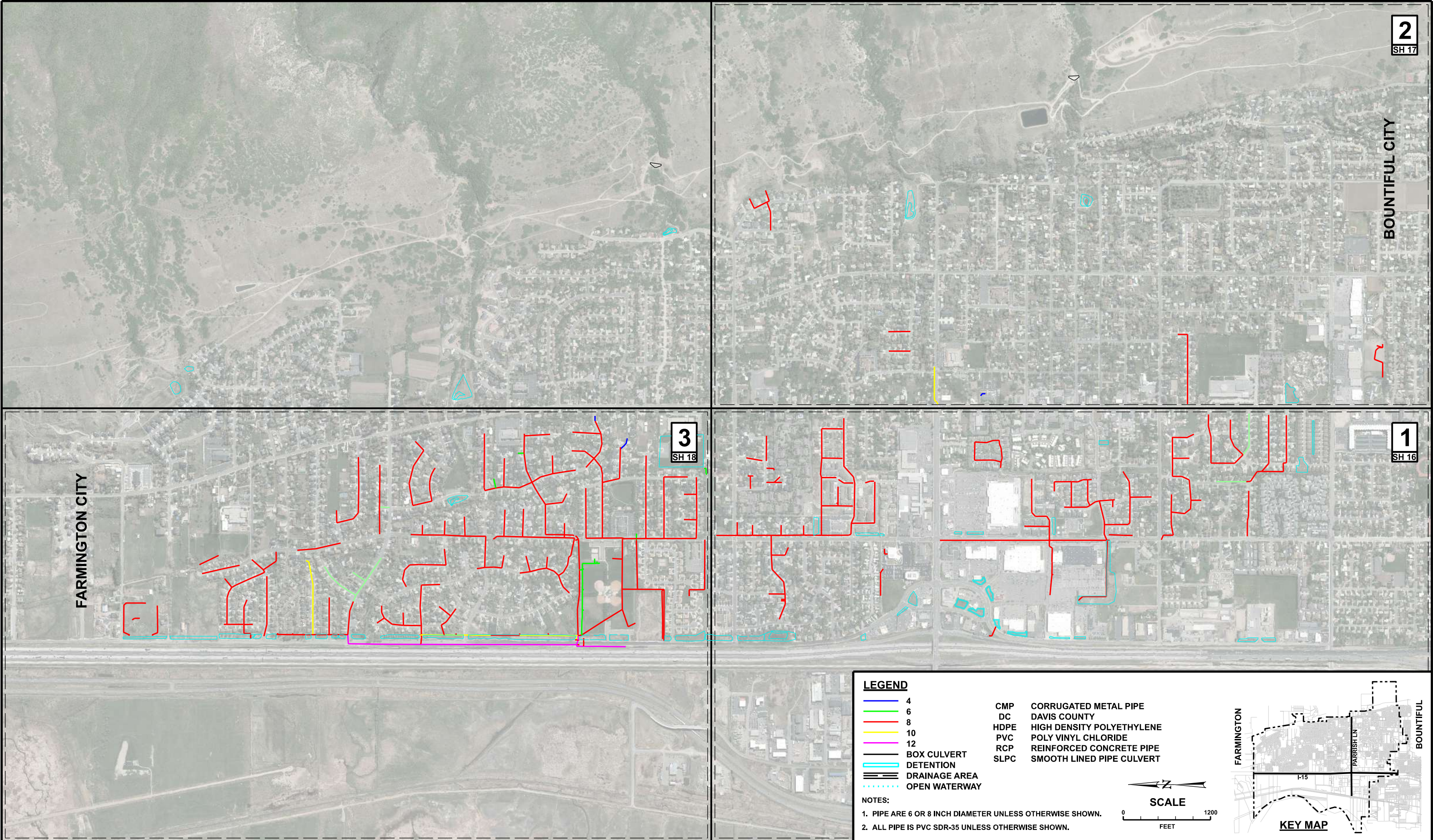


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				PSB
				KLC
				DATE
				06/05/2023

STORM DRAINAGE AREAS 21 & 22	
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CENTERVILLE CITY STORM DRAIN MASTER PLAN	
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	SHEET	14
	OF	18
	PROJECT NO.	20-131



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				KLC
				DATE
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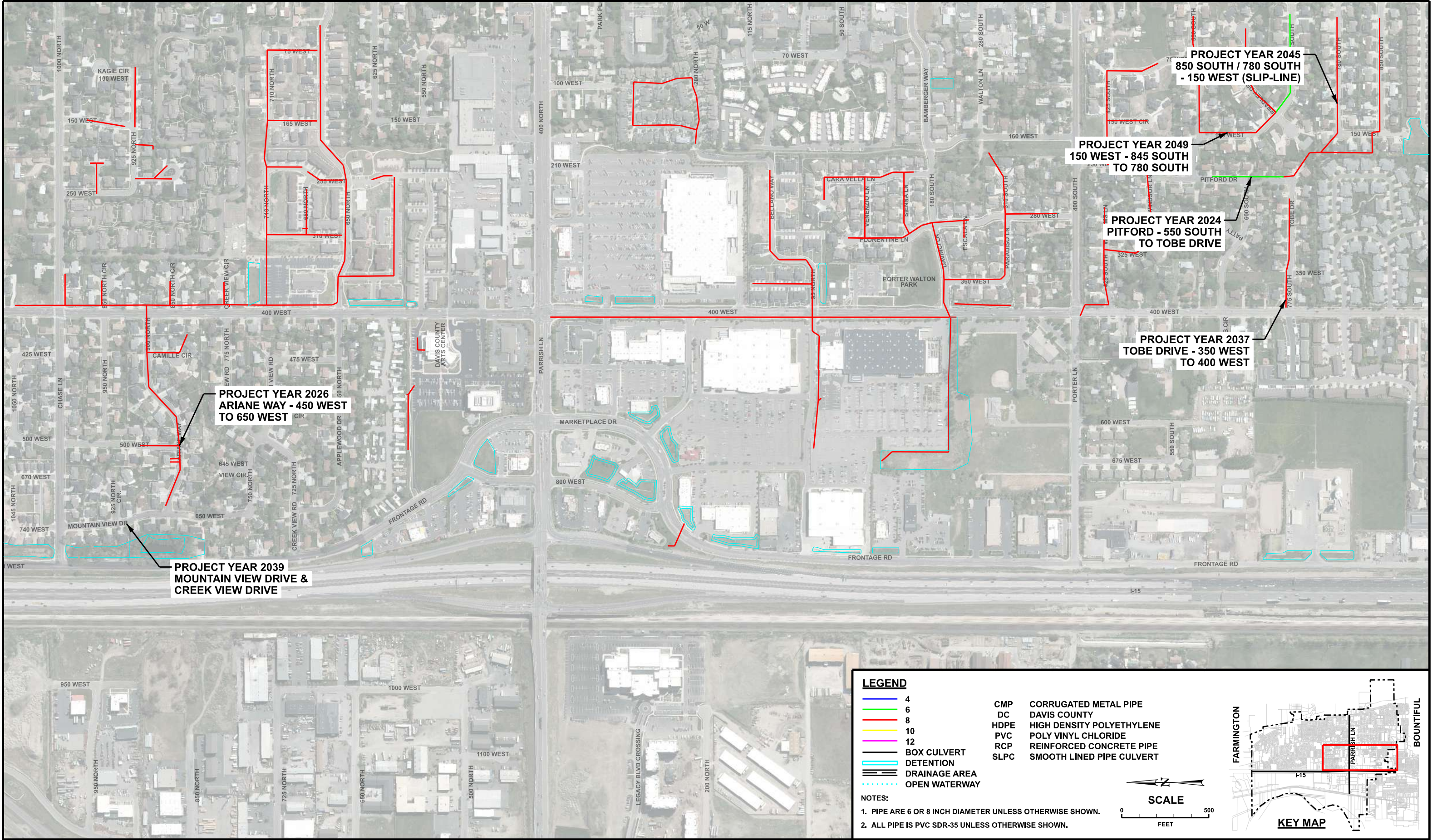
OVERALL SUB-SURFACE
MASTER PLAN & DRAINAGE AREAS

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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				KLC
				DATE
				06/05/2023

SUB-DRAIN DRAINAGE AREA 1

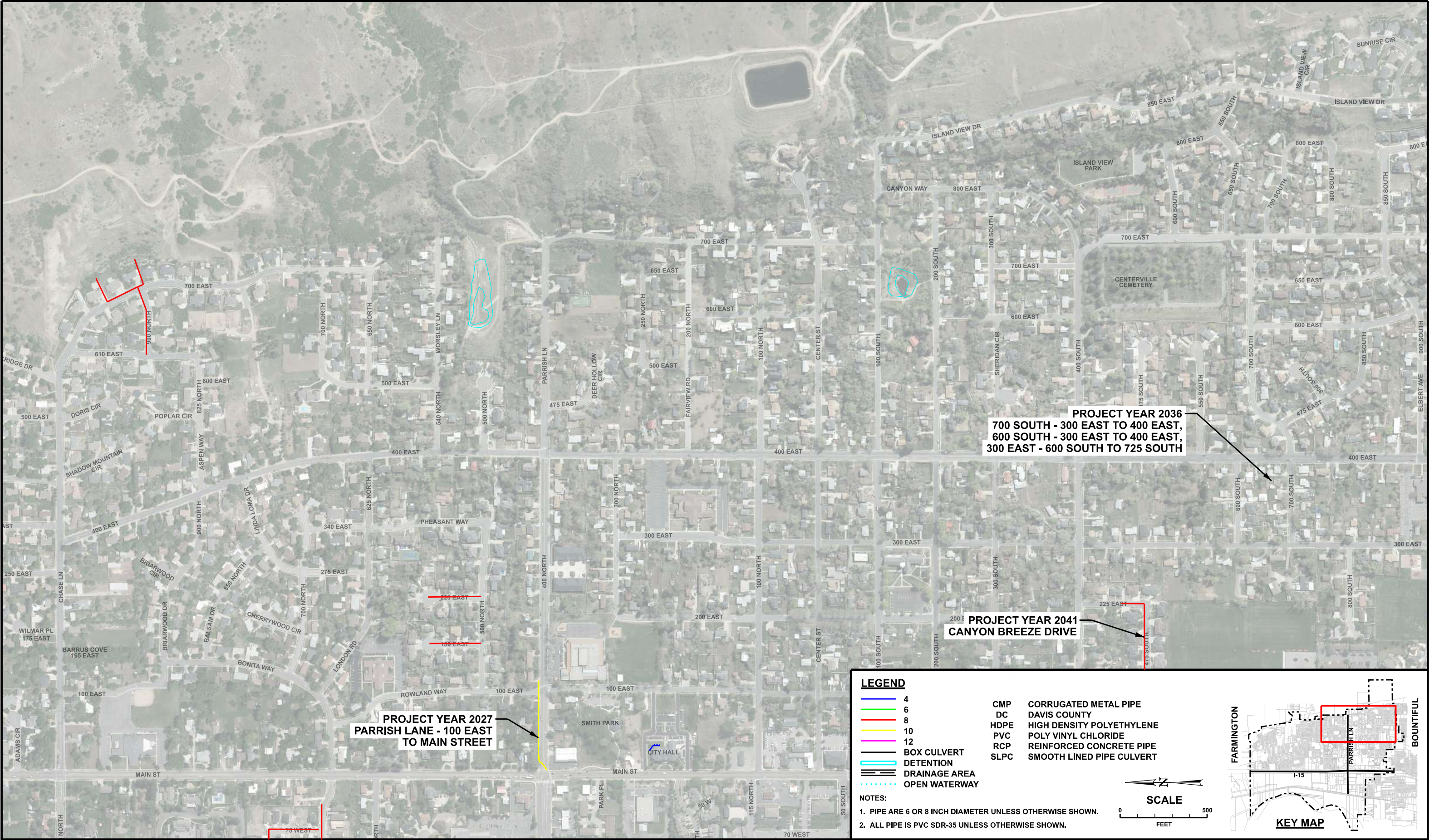
**CENTERVILLE CITY
STORM DRAIN MASTER PLAN**



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SHEET 16
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PROJECT NO.
20-131



LEGEND

4	CMP	CORRUGATED METAL PIPE
6	DC	DAVIS COUNTY
8	HDPE	HIGH DENSITY POLYETHYLENE
10	PVC	POLY VINYL CHLORIDE
12	RCP	REINFORCED CONCRETE PIPE
	SLPC	SMOOTH LINED PIPE CULVERT
		BOX CULVERT
		DETENTION
		DRAINAGE AREA
		OPEN WATERWAY

NOTES:

- PIPE ARE 6 OR 8 INCH DIAMETER UNLESS OTHERWISE SHOWN.
- ALL PIPE IS PVC SDR-35 UNLESS OTHERWISE SHOWN.

SCALE

0 500 FEET

KEY MAP

REVISION	DATE	BY	DESCRIPTION

DESIGN	PSB
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DATE	06/05/2023

SUB-DRAIN DRAINAGE AREA 2

**CENTERVILLE CITY
STORM DRAIN MASTER PLAN**

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SHEET 17
OF 18
PROJECT NO. 20-131

PROJECT YEAR 2047
FREEDOM HILLS PARK
SOUTH EAST CORNER
SUB-DRAIN & DUNCAN SPRING

PROJECT YEAR 2031
1600 NORTH (RICKS CREEK WAY) -
100 WEST TO 200 WEST

PROJECT YEAR 2032
1650 NORTH (MILKY WAY) -
100 WEST TO 200 WEST

PROJECT YEAR 2044
100 WEST CUL-DE-SAC
ON 1450 NORTH

PROJECT YEAR 2029
1850 NORTH - 100 WEST
TO 400 WEST

PROJECT YEAR 2030
1500 NORTH CUL-DE-SAC
ON 400 WEST

PROJECT YEAR 2033
1800 NORTH - 300 WEST
TO 400 WEST

PROJECT YEAR 2043
400 WEST - 1500 NORTH
TO 1375 NORTH

PROJECT YEAR 2046
LUND LANE - 700 WEST
TO 200 WEST

PROJECT YEAR 2048
2100 NORTH - 400 WEST
TO CHURCHILL DRIVE
(IN BACKYARDS OF 2115 NORTH
& 2101 NORTH)

PROJECT YEAR 2050
2075 NORTH / 725 WEST

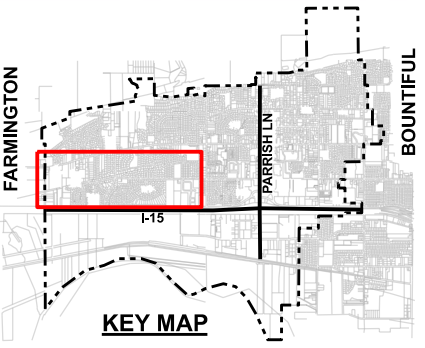
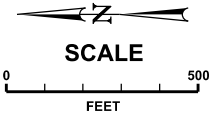
PROJECT YEAR 2034
LEWIS & CLARK DRIVE -
FREMONT CIRCLE TO JIM BRIDGER DRIVE
/FRONTAGE ROAD CROSSING

LEGEND

- | | | |
|---------------|------|---------------------------|
| 4 | CMP | CORRUGATED METAL PIPE |
| 6 | DC | DAVIS COUNTY |
| 8 | HDPE | HIGH DENSITY POLYETHYLENE |
| 10 | PVC | POLY VINYL CHLORIDE |
| 12 | RCP | REINFORCED CONCRETE PIPE |
| BOX CULVERT | SLPC | SMOOTH LINED PIPE CULVERT |
| DETENTION | | |
| DRAINAGE AREA | | |
| OPEN WATERWAY | | |

NOTES:

- PIPE ARE 6 OR 8 INCH DIAMETER UNLESS OTHERWISE SHOWN.
- ALL PIPE IS PVC SDR-35 UNLESS OTHERWISE SHOWN.



REVISION	DATE	BY	DESCRIPTION	DESIGN
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				PSB
				KLC
				DATE
				06/05/2023

SUB-DRAIN DRAINAGE AREA 3

CENTERVILLE CITY
STORM DRAIN MASTER PLAN



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SHEET 18
OF 18
PROJECT NO.
20-131

Appendix B

Centerville City NOAA Rainfall Data



NOAA Atlas 14, Volume 1, Version 5
Location name: Centerville, Utah, USA*
Latitude: 40.9202°, Longitude: -111.879°
Elevation: 4290 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

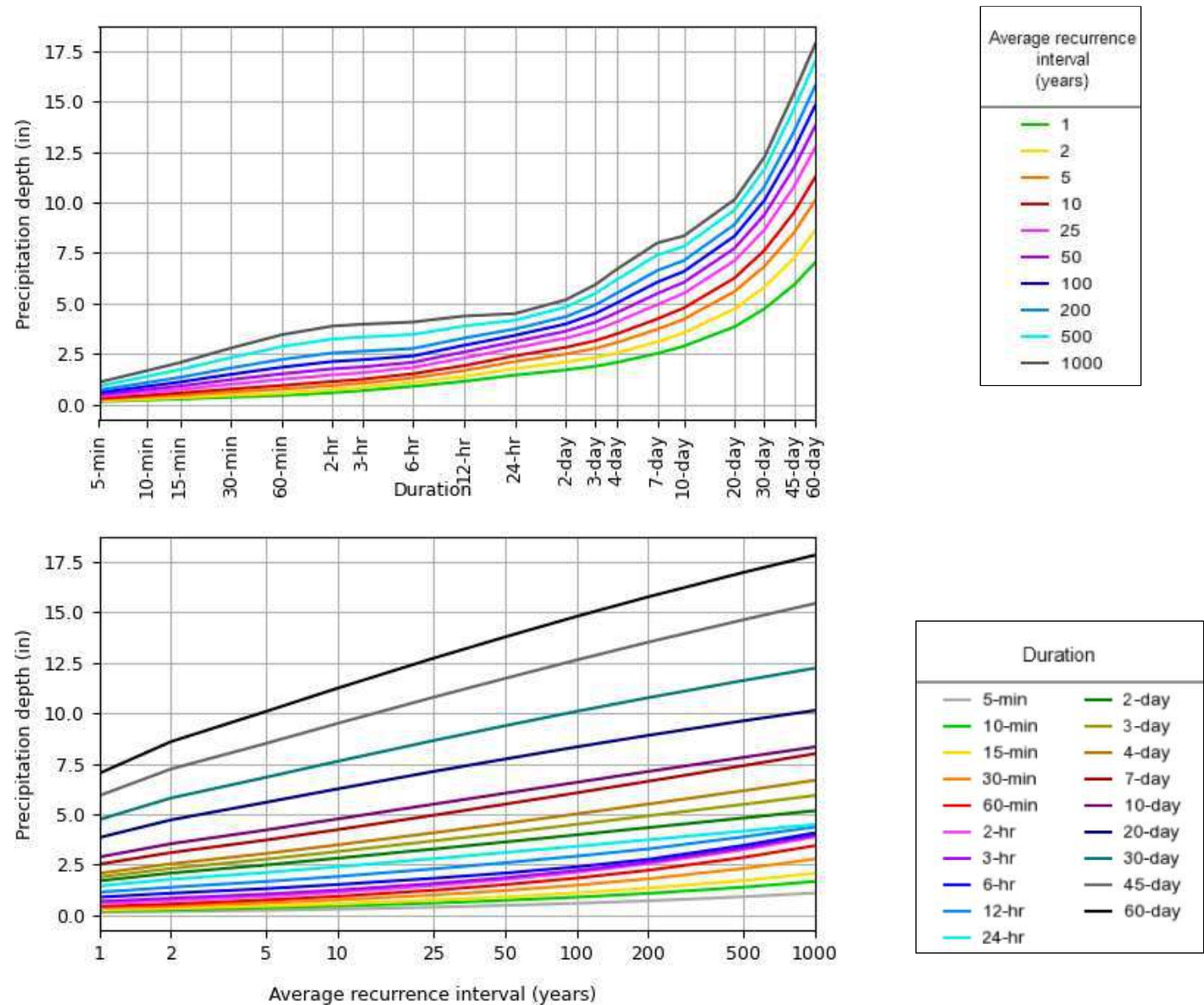
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.138 (0.119-0.162)	0.174 (0.152-0.206)	0.238 (0.205-0.280)	0.296 (0.252-0.350)	0.390 (0.324-0.465)	0.479 (0.386-0.576)	0.583 (0.454-0.708)	0.707 (0.529-0.875)	0.907 (0.644-1.16)	1.09 (0.741-1.43)
10-min	0.210 (0.182-0.247)	0.265 (0.230-0.313)	0.362 (0.312-0.427)	0.450 (0.384-0.532)	0.594 (0.494-0.707)	0.729 (0.588-0.876)	0.887 (0.692-1.08)	1.08 (0.806-1.33)	1.38 (0.980-1.76)	1.66 (1.13-2.17)
15-min	0.260 (0.225-0.307)	0.329 (0.285-0.388)	0.449 (0.387-0.529)	0.558 (0.476-0.660)	0.736 (0.612-0.877)	0.903 (0.728-1.09)	1.10 (0.857-1.34)	1.33 (0.999-1.65)	1.71 (1.22-2.18)	2.06 (1.40-2.70)
30-min	0.351 (0.304-0.413)	0.443 (0.384-0.523)	0.605 (0.521-0.712)	0.751 (0.640-0.888)	0.992 (0.824-1.18)	1.22 (0.981-1.46)	1.48 (1.16-1.80)	1.79 (1.34-2.22)	2.30 (1.64-2.94)	2.78 (1.88-3.63)
60-min	0.434 (0.376-0.511)	0.548 (0.476-0.647)	0.748 (0.645-0.881)	0.930 (0.793-1.10)	1.23 (1.02-1.46)	1.51 (1.21-1.81)	1.83 (1.43-2.22)	2.22 (1.66-2.75)	2.85 (2.02-3.63)	3.44 (2.33-4.49)
2-hr	0.574 (0.509-0.660)	0.716 (0.636-0.826)	0.927 (0.816-1.07)	1.13 (0.981-1.30)	1.45 (1.24-1.70)	1.75 (1.45-2.06)	2.12 (1.69-2.52)	2.54 (1.96-3.10)	3.23 (2.35-4.05)	3.87 (2.69-4.98)
3-hr	0.675 (0.607-0.763)	0.833 (0.749-0.943)	1.04 (0.927-1.18)	1.24 (1.09-1.40)	1.56 (1.35-1.78)	1.85 (1.56-2.14)	2.20 (1.82-2.58)	2.63 (2.10-3.14)	3.32 (2.53-4.08)	3.96 (2.89-5.00)
6-hr	0.887 (0.813-0.973)	1.08 (0.994-1.19)	1.31 (1.19-1.44)	1.51 (1.37-1.67)	1.82 (1.62-2.02)	2.08 (1.83-2.32)	2.39 (2.06-2.71)	2.76 (2.32-3.18)	3.45 (2.81-4.12)	4.07 (3.23-5.05)
12-hr	1.13 (1.03-1.24)	1.38 (1.26-1.52)	1.66 (1.52-1.84)	1.91 (1.73-2.11)	2.28 (2.04-2.54)	2.59 (2.28-2.90)	2.92 (2.53-3.31)	3.28 (2.78-3.77)	3.87 (3.19-4.56)	4.37 (3.51-5.25)
24-hr	1.44 (1.33-1.57)	1.77 (1.63-1.93)	2.11 (1.94-2.29)	2.40 (2.20-2.60)	2.79 (2.55-3.03)	3.10 (2.82-3.36)	3.41 (3.09-3.71)	3.73 (3.37-4.06)	4.16 (3.72-4.60)	4.49 (3.99-5.30)
2-day	1.70 (1.57-1.85)	2.08 (1.92-2.26)	2.48 (2.29-2.70)	2.82 (2.60-3.06)	3.27 (3.00-3.55)	3.62 (3.31-3.93)	3.97 (3.62-4.33)	4.33 (3.92-4.73)	4.81 (4.32-5.27)	5.17 (4.61-5.69)
3-day	1.88 (1.73-2.05)	2.31 (2.13-2.52)	2.77 (2.55-3.02)	3.15 (2.89-3.43)	3.67 (3.36-4.00)	4.08 (3.71-4.44)	4.49 (4.07-4.90)	4.92 (4.43-5.38)	5.48 (4.90-6.03)	5.92 (5.25-6.54)
4-day	2.07 (1.90-2.26)	2.54 (2.33-2.77)	3.05 (2.80-3.33)	3.48 (3.19-3.80)	4.07 (3.72-4.44)	4.53 (4.12-4.95)	5.01 (4.53-5.48)	5.50 (4.94-6.04)	6.16 (5.48-6.79)	6.68 (5.89-7.39)
7-day	2.52 (2.33-2.73)	3.10 (2.86-3.36)	3.72 (3.43-4.03)	4.23 (3.90-4.59)	4.94 (4.53-5.36)	5.49 (5.01-5.97)	6.05 (5.49-6.60)	6.63 (5.98-7.24)	7.40 (6.62-8.13)	8.00 (7.10-8.84)
10-day	2.87 (2.66-3.11)	3.53 (3.27-3.82)	4.21 (3.89-4.55)	4.76 (4.40-5.14)	5.49 (5.04-5.93)	6.03 (5.52-6.52)	6.57 (5.99-7.12)	7.11 (6.45-7.72)	7.81 (7.04-8.52)	8.33 (7.46-9.11)
20-day	3.84 (3.54-4.15)	4.72 (4.36-5.10)	5.58 (5.16-6.04)	6.25 (5.77-6.76)	7.11 (6.54-7.68)	7.73 (7.10-8.36)	8.33 (7.63-9.03)	8.90 (8.13-9.66)	9.62 (8.75-10.5)	10.1 (9.18-11.1)
30-day	4.73 (4.40-5.07)	5.80 (5.39-6.23)	6.82 (6.34-7.33)	7.62 (7.07-8.18)	8.64 (8.00-9.28)	9.37 (8.66-10.1)	10.1 (9.30-10.9)	10.8 (9.89-11.6)	11.6 (10.6-12.6)	12.2 (11.1-13.3)
45-day	5.91 (5.49-6.35)	7.24 (6.72-7.79)	8.50 (7.89-9.16)	9.50 (8.80-10.2)	10.8 (9.97-11.6)	11.7 (10.8-12.6)	12.6 (11.6-13.6)	13.5 (12.4-14.6)	14.6 (13.4-15.8)	15.4 (14.0-16.8)
60-day	7.02 (6.50-7.54)	8.59 (7.97-9.26)	10.1 (9.35-10.9)	11.2 (10.4-12.1)	12.7 (11.8-13.7)	13.8 (12.7-14.8)	14.8 (13.6-16.0)	15.8 (14.5-17.0)	17.0 (15.5-18.4)	17.8 (16.2-19.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
 Please refer to NOAA Atlas 14 document for more information.

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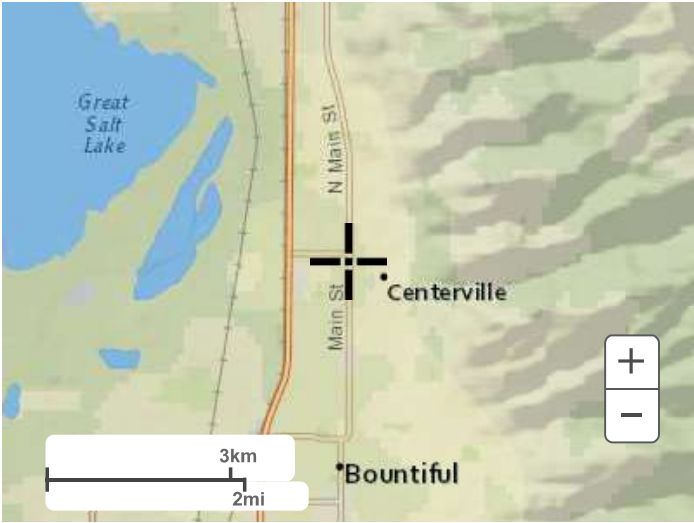
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 40.9202°, Longitude: -111.8790°



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Maps & aerials
Small scale terrain



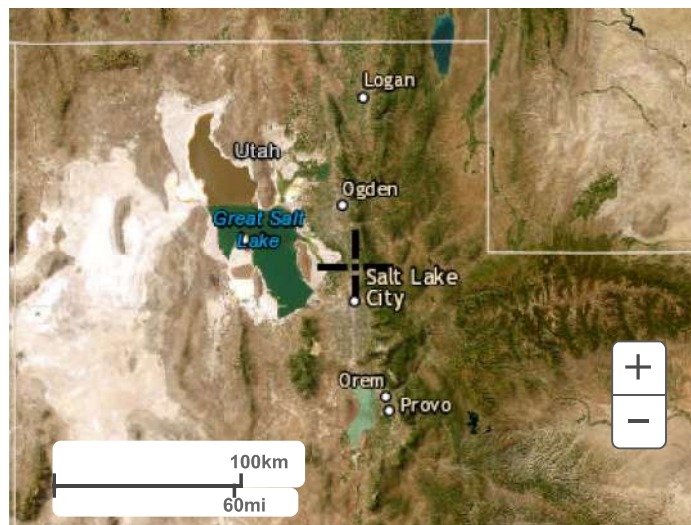
Large scale terrain



Large scale map



Large scale aerial



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Questions?: HDSC.Questions@noaa.gov

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Appendix C

Storm Drain Project Cost Estimates

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				24 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2024 - Deuel Creek Box Culvert 400 West to Frontage Road							
1	Provide & install new 3' x 10' box culvert storm drain		1,100	LF	\$800.00		\$880,000.00
2	Pothole existing utility for new alignment		1	Lump Sum	\$1,000.00		\$1,000.00
3	Excavate and haul away native material		150	CY	\$20.00		\$3,000.00
4	Import gravel bedding		2,500	TN	\$25.00		\$62,500.00
5	Import granular barrow (including compaction)		7,000	TN	\$25.00		\$175,000.00
6	Import untreated base course (including compaction)		1,200	TN	\$30.00		\$36,000.00
7	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-7)						\$1,187,500.00
	Davis County's Cost		75%				\$890,625.00
	Centerville City's Cost		25%				\$296,875.00
8	Contingency		25%				\$74,218.75
9	Design Engineering and Survey		10%				\$29,687.50
10	Construction Management and Staking		10%				\$29,687.50
	Total Construction Project (Items 1-10)						\$430,468.75

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				24 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2024 - Peachtree Drive - Casa Loma Drive to Main Steet							
1	Install new 12" PVC storm drain w/ seperation fabric	2,400	LF	\$65.00	\$156,000.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	10	EA	\$4,500.00	\$45,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	14	EA	\$3,500.00	\$49,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$6,000.00	\$36,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	120	LF	\$20.00	\$2,400.00		
7	Remove and haul away excisting storm drain structures	6	EA	\$1,000.00	\$6,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	175	CY	\$20.00	\$3,500.00		
11	Excavate and haul away native material	1,500	CY	\$20.00	\$30,000.00		
12	Import gravel bedding	820	TN	\$25.00	\$20,500.00		
13	Import granular barrow (including compaction)	1,600	TN	\$25.00	\$40,000.00		
14	Import untreated base course (including compaction)	600	TN	\$30.00	\$18,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)				\$445,400.00		
16	Contingency	25%			\$111,350.00		
17	Design Engineering and Survey	10%			\$44,540.00		
18	Construction Management and Staking	10%			\$44,540.00		
	Total Construction Project (Items 1-18)		\$645,830.00				

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				24 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2024 - Briarwood Drive - Bonita Way to 400 East							
1	Install new 12" PVC storm drain w/ seperation fabric		1,200	LF	\$65.00		\$78,000.00
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)		5	EA	\$4,500.00		\$22,500.00
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)		5	EA	\$3,500.00		\$17,500.00
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)		3	EA	\$6,000.00		\$18,000.00
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)		2	EA	\$1,000.00		\$2,000.00
6	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
7	Remove and replace concrete (including saw-cutting)		1	Lump Sum	\$5,000.00		\$5,000.00
8	Pulverize and haul away asphalt (including saw-cutting)		90	CY	\$20.00		\$1,800.00
9	Excavate and haul away native material		800	CY	\$20.00		\$16,000.00
10	Import gravel bedding		400	TN	\$25.00		\$10,000.00
11	Import granular barrow (including compaction)		900	TN	\$25.00		\$22,500.00
12	Import untreated base course (including compaction)		300	TN	\$30.00		\$9,000.00
13	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-13)						\$235,300.00
14	Contingency		25%			\$58,825.00	
15	Design Engineering and Survey		10%			\$23,530.00	
16	Construction Management and Staking		10%			\$23,530.00	
	Total Construction Project (Items 1-16)						\$341,185.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				25 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2025 - Deuel Creek Box Culvert Main Street to 400 West							
1	Provide & install new 3' x 10' box culvert storm drain		1,500	LF	\$800.00		\$1,200,000.00
2	Pothole existing utility for new alignment		1	Lump Sum	\$1,000.00		\$1,000.00
3	Excavate and haul away native material		150	CY	\$20.00		\$3,000.00
4	Import gravel bedding		3,000	TN	\$25.00		\$75,000.00
5	Import granular barrow (including compaction)		9,000	TN	\$25.00		\$225,000.00
6	Import untreated base course (including compaction)		1,600	TN	\$30.00		\$48,000.00
7	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-7)						\$1,582,000.00
	Davis County's Cost		75%				\$1,186,500.00
	Centerville City's Cost		25%				\$395,500.00
8	Contingency		25%				\$98,875.00
9	Design Engineering and Survey		10%				\$39,550.00
10	Construction Management and Staking		10%				\$39,550.00
	Total Construction Project (Items 1-10)						\$573,475.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				25 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2025 - Nola Drive & 1375 North - 1675 North to 1350 North							
1	Install new 12" PVC storm drain w/ seperation fabric	800	LF	\$65.00	\$52,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$4,500.00	\$13,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	60	LF	\$20.00	\$1,200.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	72	CY	\$20.00	\$1,440.00		
11	Excavate and haul away native material	480	CY	\$20.00	\$9,600.00		
12	Import gravel bedding	300	TN	\$25.00	\$7,500.00		
13	Import granular barrow (including compaction)	550	TN	\$25.00	\$13,750.00		
14	Import untreated base course (including compaction)	200	TN	\$30.00	\$6,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$184,990.00	
16	Contingency	25%			\$46,247.50		
17	Design Engineering and Survey	10%			\$18,499.00		
18	Construction Management and Staking	10%			\$18,499.00		
	Total Construction Project (Items 1-18)					\$268,235.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project: Drainage Master Plan		Sheet No.	
		Storm Drain Projects		1 of 1	
		Owner: Centerville City			
		Estimated by:			
		Checked by:			
Conceptual Estimate					
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2025 - Centerville Jr. High (South Property Line) - 300 East to Main Street or Combine with Rivera SD system					
1	Install new 24" RPC storm drain w/ seperation fabric	1,500	LF	\$240.00	\$360,000.00
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	4	EA	\$5,000.00	\$20,000.00
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	4	EA	\$3,500.00	\$14,000.00
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00
6	Remove and haul away excisting storm drain pipe	1,500	LF	\$20.00	\$30,000.00
7	Remove and haul away excisting storm drain structures	6	EA	\$1,000.00	\$6,000.00
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00
10	Pulverize and haul away asphalt (including saw-cutting)	20	CY	\$20.00	\$400.00
11	Excavate and haul away native material	1,800	CY	\$20.00	\$36,000.00
12	Import gravel bedding	900	TN	\$25.00	\$22,500.00
13	Import granular barrow (including compaction)	2,000	TN	\$25.00	\$50,000.00
14	Import untreated base course (including compaction)	50	TN	\$30.00	\$1,500.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	30	TN	\$200.00	\$6,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-16)				\$605,400.00
17	Contingency	25%			\$151,350.00
18	Design Engineering and Survey	10%			\$60,540.00
19	Construction Management and Staking	10%			\$60,540.00
	Total Construction Project (Items 1-19)				\$877,830.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project: Drainage Master Plan		Sheet No. 1 of 1	
		Storm Drain Projects			
		Owner: Centerville City			
		Estimated by:			
Checked by:					
Conceptual Estimate					
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2026 - I-15 975 North - New 48" Culvert					
1	Bore 48" steel casing under I-15, UTA & UPRR	260	LF	\$1,400.00	\$364,000.00
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00
3	Install new 48" RPC storm drain w/ seperation fabric	180	LF	\$280.00	\$50,400.00
4	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	4	EA	\$5,000.00	\$20,000.00
5	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$3,500.00	\$7,000.00
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00
9	Pulverize and haul away asphalt (including saw-cutting)	40	CY	\$20.00	\$800.00
10	Excavate and haul away native material	400	CY	\$20.00	\$8,000.00
11	Import gravel bedding	350	TN	\$25.00	\$8,750.00
12	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00
13	Import untreated base course (including compaction)	100	TN	\$30.00	\$3,000.00
14	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	90	TN	\$200.00	\$18,000.00
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-15)				\$542,450.00
	Davis County's Cost	75%			\$406,837.50
	Centerville City's Cost	25%			\$135,612.50
16	Contingency	25%			\$33,903.13
17	Design Engineering and Survey	10%			\$13,561.25
18	Construction Management and Staking	10%			\$13,561.25
	Total Construction Project (Items 1-18)				\$196,638.13

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				26 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2026 - I-15 Parrish Lane (400 North) - Replace 36" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15	600	LF	\$1,200.00	\$720,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Fill abandoned CMP with grout	160	CY	\$250.00	\$40,000.00		
4	Install new 24" RPC storm drain w/ seperation fabric	120	LF	\$240.00	\$28,800.00		
5	Provide & Install 60" storm drain manhole (incudes manhole lid and ring, grout and collars)	4	EA	\$5,000.00	\$20,000.00		
6	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
7	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00		
8	Remove and haul away excisting storm drain pipe	300	LF	\$20.00	\$6,000.00		
9	Remove and haul away excisting storm drain structures	10	EA	\$1,000.00	\$10,000.00		
10	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
11	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
12	Pulverize and haul away asphalt (including saw-cutting)	80	CY	\$20.00	\$1,600.00		
13	Excavate and haul away native material	150	CY	\$20.00	\$3,000.00		
14	Import gravel bedding	100	TN	\$25.00	\$2,500.00		
15	Import granular barrow (including compaction)	150	TN	\$25.00	\$3,750.00		
16	Import untreated base course (including compaction)	40	TN	\$30.00	\$1,200.00		
17	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	40	TN	\$200.00	\$8,000.00		
18	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
19	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$40,000.00	\$40,000.00		
	Subtotal (Items 1-19)					\$961,850.00	
20	Contingency	25%			\$240,462.50		
21	Design Engineering and Survey	10%			\$96,185.00		

22	Construction Management and Staking	10%		\$96,185.00
	Total Construction Project (Items 1-22)			\$1,394,682.50

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				27 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2027 - I-15 (C112) 2075 North (Lexington Park)- Replace 24" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15, UTA & UPRR	450	LF	\$1,200.00	\$540,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	40	CY	\$250.00	\$10,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$655,000.00	
11	Contingency	25%			\$163,750.00		
12	Design Engineering and Survey	10%			\$65,500.00		
13	Construction Management and Staking	10%			\$65,500.00		
	Total Construction Project (Items 1-13)					\$949,750.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				27 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2027 - I-15 Frontage Rd & 500 South Replace 24" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15	300	LF	\$1,200.00	\$360,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	40	CY	\$250.00	\$10,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$475,000.00	
11	Contingency	25%			\$118,750.00		
12	Design Engineering and Survey	10%			\$47,500.00		
13	Construction Management and Staking	10%			\$47,500.00		
	Total Construction Project (Items 1-13)					\$688,750.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				28 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2028 - I-15 650 South - Replace 24" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15	300	LF	\$1,200.00	\$360,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	40	CY	\$250.00	\$10,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$475,000.00	
11	Contingency	25%			\$118,750.00		
12	Design Engineering and Survey	10%			\$47,500.00		
13	Construction Management and Staking	10%			\$47,500.00		
	Total Construction Project (Items 1-13)					\$688,750.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				28 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2028 - I-15 Parrish Creek - Replace 42" CMP w/ New 48"							
1	Bore 48" steel casing under I-15, UTA & UPRR	420	LF	\$1,400.00	\$588,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	200	CY	\$250.00	\$50,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$743,000.00	
	Davis County's Cost	75%			\$557,250.00		
	Centerville City's Cost	25%			\$185,750.00		
11	Contingency	25%			\$46,437.50		
12	Design Engineering and Survey	10%			\$18,575.00		
13	Construction Management and Staking	10%			\$18,575.00		
	Total Construction Project (Items 1-13)				\$269,337.50		

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				29 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2029 - Parrish Lane - 100 East to Canyon Point							
1	Install new 12" PVC storm drain w/ seperation fabric		1,600	LF	\$65.00		\$104,000.00
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)		3	EA	\$4,500.00		\$13,500.00
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)		1	EA	\$5,000.00		\$5,000.00
4	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)		12	EA	\$3,500.00		\$42,000.00
5	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)		4	EA	\$6,000.00		\$24,000.00
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)		2	EA	\$1,000.00		\$2,000.00
7	Remove and haul away excisting storm drain structures		2	EA	\$1,000.00		\$2,000.00
8	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
9	Remove and replace concrete (including saw-cutting)		1	Lump Sum	\$5,000.00		\$5,000.00
10	Pulverize and haul away asphalt (including saw-cutting)		200	CY	\$20.00		\$4,000.00
11	Excavate and haul away native material		1,000	CY	\$20.00		\$20,000.00
12	Import gravel bedding		600	TN	\$25.00		\$15,000.00
13	Import granular barrow (including compaction)		1,200	TN	\$25.00		\$30,000.00
14	Import untreated base course (including compaction)		400	TN	\$30.00		\$12,000.00
15	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-15)						\$311,500.00
16	Contingency		25%			\$77,875.00	
17	Design Engineering and Survey		10%			\$31,150.00	
18	Construction Management and Staking		10%			\$31,150.00	
	Total Construction Project (Items 1-18)						\$451,675.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				29 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2029 - I-15 (P106) North Property Line of Community Park - New 36" Culvert							
1	Bore 36" steel casing under I-15, UTA & UPRR	450	LF	\$1,200.00	\$540,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	120	CY	\$250.00	\$30,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$675,000.00	
11	Contingency	25%			\$168,750.00		
12	Design Engineering and Survey	10%			\$67,500.00		
13	Construction Management and Staking	10%			\$67,500.00		
	Total Construction Project (Items 1-13)					\$978,750.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				30 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2030 - Windsor Lane, Williams Lane, & 300 West Storm Drain							
1	Install new 12" PVC storm drain w/ seperation fabric	1,200	LF	\$65.00	\$78,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	7	EA	\$4,500.00	\$31,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	12	EA	\$3,500.00	\$42,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	4	EA	\$6,000.00	\$24,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
7	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
8	Pulverize and haul away asphalt (including saw-cutting)	95	CY	\$20.00	\$1,900.00		
9	Excavate and haul away native material	800	CY	\$20.00	\$16,000.00		
10	Import gravel bedding	500	TN	\$25.00	\$12,500.00		
11	Import granular barrow (including compaction)	900	TN	\$25.00	\$22,500.00		
12	Import untreated base course (including compaction)	300	TN	\$30.00	\$9,000.00		
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	250	TN	\$200.00	\$50,000.00		
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-14)					\$326,400.00	
15	Contingency	25%			\$81,600.00		
16	Design Engineering and Survey	10%			\$32,640.00		
17	Construction Management and Staking	10%			\$32,640.00		
	Total Construction Project (Items 1-17)					\$473,280.00	

**ESI Engineering, Inc.**

4141 West 2100 South, Suite 100

West Valley, Utah 84120

Phone (801) 263-1752

Consulting Engineers & Land SurveyorsProject: Drainage Master Plan
Storm Drain ProjectsOwner: **Centerville City**

Estimated by:

Checked by:

Sheet No.

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Project No.

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Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2030 - I-15 750 North - Replace 24" CMP w/ New 36" Culvert					
1	Bore 36" steel casing under I-15	300	LF	\$1,200.00	\$360,000.00
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00
5	Fill abandoned CMP with grout	80	CY	\$250.00	\$20,000.00
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
7	Remove and haul away existing storm drain structures	4	EA	\$1,000.00	\$4,000.00
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-10)					\$485,000.00
11	Contingency	25%			\$121,250.00
12	Design Engineering and Survey	10%			\$48,500.00
13	Construction Management and Staking	10%			\$48,500.00
Total Construction Project (Items 1-13)					\$703,250.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				31 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2031 - 700 North & Phasant Way - London Road to Bonita Way							
1	Install new 12" PVC storm drain w/ seperation fabric	1,400	LF	\$65.00	\$91,000.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$4,500.00	\$9,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	10	EA	\$3,500.00	\$35,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	4	EA	\$6,000.00	\$24,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	60	LF	\$20.00	\$1,200.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	125	CY	\$20.00	\$2,500.00		
11	Excavate and haul away native material	900	CY	\$20.00	\$18,000.00		
12	Import gravel bedding	500	TN	\$25.00	\$12,500.00		
13	Import granular barrow (including compaction)	1,000	TN	\$25.00	\$25,000.00		
14	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$270,700.00	
16	Contingency	25%			\$67,675.00		
17	Design Engineering and Survey	10%			\$27,070.00		
18	Construction Management and Staking	10%			\$27,070.00		
	Total Construction Project (Items 1-18)					\$392,515.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				31 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2031 - I-15 Parrish Lane (400 North) - Replace 24" CMP along East Side of I-15 & 800 West Crossing to Parrish Lane							
1	Bore 24" steel casing under I-15	115	LF	\$1,000.00	\$115,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Fill abandoned CMP with grout	160	CY	\$250.00	\$40,000.00		
4	Install new 24" RPC storm drain w/ seperation fabric	530	LF	\$240.00	\$127,200.00		
5	Provide & Install 60" storm drain manhole (incudes manhole lid and ring, grout and collars)	4	EA	\$5,000.00	\$20,000.00		
6	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
7	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00		
8	Remove and haul away excisting storm drain pipe	500	LF	\$20.00	\$10,000.00		
9	Remove and haul away excisting storm drain structures	8	EA	\$1,000.00	\$8,000.00		
10	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
11	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
12	Pulverize and haul away asphalt (including saw-cutting)	70	CY	\$20.00	\$1,400.00		
13	Excavate and haul away native material	600	CY	\$20.00	\$12,000.00		
14	Import gravel bedding	500	TN	\$25.00	\$12,500.00		
15	Import granular barrow (including compaction)	550	TN	\$25.00	\$13,750.00		
16	Import untreated base course (including compaction)	150	TN	\$30.00	\$4,500.00		
17	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	100	TN	\$200.00	\$20,000.00		
18	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
19	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$40,000.00	\$40,000.00		
	Subtotal (Items 1-19)					\$501,350.00	
20	Contingency	25%			\$125,337.50		
21	Design Engineering and Survey	10%			\$50,135.00		

22	Construction Management and Staking	10%		\$50,135.00
	Total Construction Project (Items 1-22)			\$726,957.50

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				32 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2032 - Nola Drive - 1200 North to 1350 North							
1	Install new 12" PVC storm drain w/ seperation fabric	350	LF	\$65.00	\$22,750.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$4,500.00	\$9,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	40	LF	\$20.00	\$800.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	30	CY	\$20.00	\$600.00		
11	Excavate and haul away native material	250	CY	\$20.00	\$5,000.00		
12	Import gravel bedding	150	TN	\$25.00	\$3,750.00		
13	Import granular barrow (including compaction)	250	TN	\$25.00	\$6,250.00		
14	Import untreated base course (including compaction)	100	TN	\$30.00	\$3,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$125,150.00	
16	Contingency	25%			\$31,287.50		
17	Design Engineering and Survey	10%			\$12,515.00		
18	Construction Management and Staking	10%			\$12,515.00		
	Total Construction Project (Items 1-18)					\$181,467.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				32 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2032 - I-15 100 South - Replace 24" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15	520	LF	\$1,200.00	\$624,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	60	CY	\$250.00	\$15,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$742,000.00	
11	Contingency	25%			\$185,500.00		
12	Design Engineering and Survey	10%			\$74,200.00		
13	Construction Management and Staking	10%			\$74,200.00		
	Total Construction Project (Items 1-13)					\$1,075,900.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				33 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2033 - I-15 Frontage Road - 200 South Replace CMP Culvert							
1	Install new 36" RPC storm drain w/ seperation fabric	100	LF	\$260.00	\$26,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$3,500.00	\$7,000.00		
4	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
5	Remove and haul away excisting storm drain pipe	100	LF	\$20.00	\$2,000.00		
6	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
9	Pulverize and haul away asphalt (including saw-cutting)	20	CY	\$20.00	\$400.00		
10	Excavate and haul away native material	150	CY	\$20.00	\$3,000.00		
11	Import gravel bedding	110	TN	\$25.00	\$2,750.00		
12	Import granular barrow (including compaction)	90	TN	\$25.00	\$2,250.00		
13	Import untreated base course (including compaction)	40	TN	\$30.00	\$1,200.00		
14	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	40	TN	\$200.00	\$8,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$104,600.00	
16	Contingency	25%			\$26,150.00		
17	Design Engineering and Survey	10%			\$10,460.00		
18	Construction Management and Staking	10%			\$10,460.00		
	Total Construction Project (Items 1-18)					\$151,670.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				33 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2033 - Barnard Street Overflow Storm Drain - Main Street to Oakridge Drive							
1	Install new 24" RCP storm drain w/ seperation fabric	2,600	LF	\$240.00	\$624,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	18	EA	\$3,500.00	\$63,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$6,000.00	\$36,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00		
6	Remove and haul away excisting storm drain pipe	100	LF	\$20.00	\$2,000.00		
7	Remove and haul away excisting storm drain structures	12	EA	\$1,000.00	\$12,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away concrete roadway (including saw-cutting)	500	CY	\$20.00	\$10,000.00		
11	Excavate and haul away native material	3,500	CY	\$20.00	\$70,000.00		
12	Import gravel bedding	2,200	TN	\$25.00	\$55,000.00		
13	Import granular barrow (including compaction)	3,800	TN	\$25.00	\$95,000.00		
14	Import untreated base course (including compaction)	900	TN	\$30.00	\$27,000.00		
15	UDOT Permits, Fees, etc.	1	Lump Sum	\$5,000.00	\$5,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$1,076,000.00	
17	Contingency	25%			\$269,000.00		
18	Design Engineering and Survey	10%			\$107,600.00		
19	Construction Management and Staking	10%			\$107,600.00		
	Total Construction Project (Items 1-19)					\$1,560,200.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				34 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2034 - I-15 625 North - Replace 30" CMP w/ New 36" Culvert							
1	Bore 36" steel casing under I-15	500	LF	\$1,200.00	\$600,000.00		
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00		
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
5	Fill abandoned CMP with grout	130	CY	\$250.00	\$32,500.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00		
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00		
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-10)					\$737,500.00	
11	Contingency	25%			\$184,375.00		
12	Design Engineering and Survey	10%			\$73,750.00		
13	Construction Management and Staking	10%			\$73,750.00		
	Total Construction Project (Items 1-13)					\$1,069,375.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				34 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2034 - 725 North 1250 West & 600 North 1250 West - Inlet Box Replacement							
1	Install new 36" RCP storm drain w/ seperation fabric	140	LF	\$260.00	\$36,400.00		
2	Install new 24" RCP storm drain w/ seperation fabric	65	LF	\$240.00	\$15,600.00		
3	Provide & Install 60" storm drain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
4	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
5	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00		
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00		
7	Remove and haul away excisting storm drain pipe	200	LF	\$20.00	\$4,000.00		
8	Remove and haul away excisting storm drain structures	8	EA	\$1,000.00	\$8,000.00		
9	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
10	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
11	Pulverize and haul away asphalt (including saw-cutting)	30	CY	\$20.00	\$600.00		
12	Excavate and haul away native material	300	CY	\$20.00	\$6,000.00		
13	Import gravel bedding	200	TN	\$25.00	\$5,000.00		
14	Import granular barrow (including compaction)	250	TN	\$25.00	\$6,250.00		
15	Import untreated base course (including compaction)	75	TN	\$30.00	\$2,250.00		
16	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	50	TN	\$200.00	\$10,000.00		
17	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-17)					\$184,100.00	
18	Contingency	25%			\$46,025.00		
19	Design Engineering and Survey	10%			\$18,410.00		
20	Construction Management and Staking	10%			\$18,410.00		

	Total Construction Project (Items 1-20)		\$266,945.00
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 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				35 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2035 - Parrish Creek 950 West to 1250 West - Channel Improvements							
1	Install new 48" RPC storm drain w/ seperation fabric	1,510	LF	\$280.00	\$422,800.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	6	EA	\$5,000.00	\$30,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$3,500.00	\$7,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
7	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
8	Pulverize and haul away asphalt (including saw-cutting)	40	CY	\$20.00	\$800.00		
9	Excavate and haul away native material	400	CY	\$20.00	\$8,000.00		
10	Import gravel bedding	350	TN	\$25.00	\$8,750.00		
11	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
12	Import untreated base course (including compaction)	100	TN	\$30.00	\$3,000.00		
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	90	TN	\$200.00	\$18,000.00		
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-14)				\$552,850.00		
	Davis County's Cost	75%			\$414,637.50		
	Centerville City's Cost	25%			\$138,212.50		
15	Contingency	25%			\$34,553.13		
16	Design Engineering and Survey	10%			\$13,821.25		
17	Construction Management and Staking	10%			\$13,821.25		
	Total Construction Project (Items 1-17)				\$200,408.13		

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project: Drainage Master Plan		Sheet No.	
		Storm Drain Projects		1 of 1	
		Owner: Centerville City			
		Estimated by:			
		Checked by:		Project No.	
				35 - ###	
Conceptual Estimate					
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2035 - Public Works Dry Beds					
1	Concrete dry bed construction	1	Lump Sum	\$75,000.00	\$75,000.00
2	Clearing & Grubbing	1	Lump Sum	\$10,000.00	\$10,000.00
3	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
4	Mobilization and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-4)				\$118,000.00
5	Contingency	25%			\$29,500.00
6	Design Engineering and Survey	10%			\$11,800.00
7	Construction Management and Staking	10%			\$11,800.00
	Total Construction Project (Items 1-7)				\$171,100.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				36 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2036 - Rick's Creek Culvert at 575 West (Parallel w/ New 36" Elliptical)							
1	Install new 36" RCP storm drain w/ seperation fabric	50	LF	\$260.00	\$13,000.00		
2	Provide & Install inlet/outlet structure	2	EA	\$5,000.00	\$10,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
4	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
5	Pulverize and haul away asphalt (including saw-cutting)	6	CY	\$20.00	\$120.00		
6	Excavate and haul away native material	100	CY	\$20.00	\$2,000.00		
7	Import gravel bedding	60	TN	\$25.00	\$1,500.00		
8	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
9	Import untreated base course (including compaction)	20	TN	\$30.00	\$600.00		
10	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	15	TN	\$200.00	\$3,000.00		
11	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-11)					\$70,720.00	
	Davis County's Cost	75%			\$53,040.00		
	Centerville City's Cost	25%			\$17,680.00		
12	Contingency	25%			\$4,420.00		
13	Design Engineering and Survey	10%			\$1,768.00		
14	Construction Management and Staking	10%			\$1,768.00		
	Total Construction Project (Items 1-14)				\$25,636.00		

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				36 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2036 - Island View - 550 South to 650 South							
1	Install new 12" PVC storm drain w/ seperation fabric	600	LF	\$65.00	\$39,000.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	1	EA	\$4,500.00	\$4,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	1	EA	\$3,500.00	\$3,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	20	LF	\$20.00	\$400.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	45	CY	\$20.00	\$900.00		
11	Excavate and haul away native material	400	CY	\$20.00	\$8,000.00		
12	Import gravel bedding	250	TN	\$25.00	\$6,250.00		
13	Import granular barrow (including compaction)	400	TN	\$25.00	\$10,000.00		
14	Import untreated base course (including compaction)	150	TN	\$30.00	\$4,500.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)				\$130,050.00		
16	Contingency	25%			\$32,512.50		
17	Design Engineering and Survey	10%			\$13,005.00		
18	Construction Management and Staking	10%			\$13,005.00		
	Total Construction Project (Items 1-18)					\$188,572.50	



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
West Valley, Utah 84120
Phone (801) 263-1752

Consulting Engineers & Land Surveyors

Project: Drainage Master Plan
Storm Drain Projects

Owner: **Centerville City**

Estimated by:

Checked by:

Sheet No.
1 of 1

Project No.
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Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2037 - 500 South - UPRR / UTA - Replace 24" CMP w/ New 36" Culvert					
1	Bore 36" steel casing under I-15	180	LF	\$1,200.00	\$216,000.00
2	Bore pit and acceptance pit excavation and backfill	1	Lump Sum	\$20,000.00	\$20,000.00
3	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00
4	Outlet structure	1	EA	\$5,000.00	\$5,000.00
5	Fill abandoned CMP with grout	40	CY	\$250.00	\$10,000.00
6	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
7	Remove and haul away existing storm drain structures	2	EA	\$1,000.00	\$2,000.00
8	Pothole existing utility for new alignment	1	Lump Sum	\$5,000.00	\$5,000.00
9	UDOT/UTA/UPRR Permits, Fees, Flagging etc.	1	Lump Sum	\$25,000.00	\$25,000.00
10	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-10)					\$324,000.00
11	Contingency	25%			\$81,000.00
12	Design Engineering and Survey	10%			\$32,400.00
13	Construction Management and Staking	10%			\$32,400.00
Total Construction Project (Items 1-13)					\$469,800.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				37 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2037 - Carrington Lane - Main Street to Ricks Creek Reservoir							
1	Install new 12" PVC storm drain w/ seperation fabric	230	LF	\$65.00	\$14,950.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	13	EA	\$4,500.00	\$58,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	14	EA	\$3,500.00	\$49,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	4	EA	\$6,000.00	\$24,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	120	LF	\$20.00	\$2,400.00		
7	Remove and haul away excisting storm drain structures	6	EA	\$1,000.00	\$6,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	180	CY	\$20.00	\$3,600.00		
11	Excavate and haul away native material	1,500	CY	\$20.00	\$30,000.00		
12	Import gravel bedding	820	TN	\$25.00	\$20,500.00		
13	Import granular barrow (including compaction)	1,600	TN	\$25.00	\$40,000.00		
14	Import untreated base course (including compaction)	600	TN	\$30.00	\$18,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$306,950.00	
16	Contingency	25%			\$76,737.50		
17	Design Engineering and Survey	10%			\$30,695.00		
18	Construction Management and Staking	10%			\$30,695.00		
	Total Construction Project (Items 1-18)					\$445,077.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				38 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2038 - 650 North - 1000 West to 1250 West - Replace 30" CMP w/ 42" RCP							
1	Install new 42" RCP storm drain w/ seperation fabric	1,450	LF	\$260.00	\$377,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	4	EA	\$3,500.00	\$14,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$6,000.00	\$36,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	1,100	LF	\$20.00	\$22,000.00		
7	Remove and haul away excisting storm drain structures	10	EA	\$1,000.00	\$10,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00		
11	Excavate and haul away native material	1,600	CY	\$20.00	\$32,000.00		
12	Import gravel bedding	1,200	TN	\$25.00	\$30,000.00		
13	Import granular barrow (including compaction)	1,000	TN	\$25.00	\$25,000.00		
14	Import untreated base course (including compaction)	300	TN	\$30.00	\$9,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$608,000.00	
16	Contingency	25%			\$152,000.00		
17	Design Engineering and Survey	10%			\$60,800.00		
18	Construction Management and Staking	10%			\$60,800.00		
	Total Construction Project (Items 1-18)					\$881,600.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project: Drainage Master Plan Storm Drain Projects		Sheet No. 1 of 1	
		Owner: Centerville City			
		Estimated by:			
		Checked by:			
Conceptual Estimate					
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2038 - Parrish Lane - Crossing at 800 West (7-11 to Carls Jr.) - Replace 36" CMP					
1	Install new 36" RCP storm drain w/ seperation fabric	120	LF	\$240.00	\$28,800.00
2	Provide & Install 60" storm drain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$3,500.00	\$7,000.00
4	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	4	EA	\$1,000.00	\$4,000.00
5	Remove and haul away excisting storm drain pipe	120	LF	\$20.00	\$2,400.00
6	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00
9	Pulverize and haul away asphalt (including saw-cutting)	30	CY	\$20.00	\$600.00
10	Excavate and haul away native material	300	CY	\$20.00	\$6,000.00
11	Import gravel bedding	200	TN	\$25.00	\$5,000.00
12	Import granular barrow (including compaction)	250	TN	\$25.00	\$6,250.00
13	Import untreated base course (including compaction)	75	TN	\$30.00	\$2,250.00
14	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	50	TN	\$200.00	\$10,000.00
15	UDOT Permits, Fees, etc.	1	Lump Sum	\$5,000.00	\$5,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-16)				\$129,300.00
17	Contingency	25%			\$32,325.00
18	Design Engineering and Survey	10%			\$12,930.00
19	Construction Management and Staking	10%			\$12,930.00
	Total Construction Project (Items 1-19)				\$187,485.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				39 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2039 - 400 South - 400 East to 700 East							
1	Install new 12" PVC storm drain w/ seperation fabric	600	LF	\$65.00	\$39,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	7	EA	\$4,500.00	\$31,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	1	EA	\$3,500.00	\$3,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	30	LF	\$20.00	\$600.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	130	CY	\$20.00	\$2,600.00		
11	Excavate and haul away native material	200	CY	\$20.00	\$4,000.00		
12	Import gravel bedding	250	TN	\$25.00	\$6,250.00		
13	Import granular barrow (including compaction)	400	TN	\$25.00	\$10,000.00		
14	Import untreated base course (including compaction)	150	TN	\$30.00	\$4,500.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	75	TN	\$200.00	\$15,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$170,950.00	
17	Contingency	25%			\$42,737.50		
18	Design Engineering and Survey	10%			\$17,095.00		
19	Construction Management and Staking	10%			\$17,095.00		
	Total Construction Project (Items 1-19)					\$247,877.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				39 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2039 - 780 South - 50 West to Pitford Drive							
1	Install new 12" PVC storm drain w/ seperation fabric	1,500	LF	\$65.00	\$97,500.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	7	EA	\$4,500.00	\$31,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	10	EA	\$3,500.00	\$35,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
7	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
8	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00		
9	Excavate and haul away native material	900	CY	\$20.00	\$18,000.00		
10	Import gravel bedding	550	TN	\$25.00	\$13,750.00		
11	Import granular barrow (including compaction)	1,000	TN	\$25.00	\$25,000.00		
12	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00		
13	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-13)					\$291,250.00	
14	Contingency	25%			\$72,812.50		
15	Design Engineering and Survey	10%			\$29,125.00		
16	Construction Management and Staking	10%			\$29,125.00		
	Total Construction Project (Items 1-16)					\$422,312.50	



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
West Valley, Utah 84120
Phone (801) 263-1752

Consulting Engineers & Land Surveyors

Project: Drainage Master Plan
Storm Drain Projects

Owner: **Centerville City**

Estimated by:

Checked by:

Sheet No.
1 of 1

Project No.

40 - ###

Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2040 - Hillside Property Drainage Project					
1	Install new 18" RCP storm drain w/ seperation fabric	3,900	LF	\$160.00	\$624,000.00
2	Provide & Install 60" storm drain manhole w/grated lid (includes manhole lid and ring, grout and collars)	15	EA	\$5,000.00	\$75,000.00
3	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$6,000.00	\$36,000.00
4	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
6	Install new concrete curb & gutter	1,700	LF	\$65.00	\$110,500.00
7	Excavate and haul away native material	5,200	CY	\$20.00	\$104,000.00
8	Import gravel bedding	2,700	TN	\$25.00	\$67,500.00
9	Import granular barrow (including compaction)	6,700	TN	\$25.00	\$167,500.00
10	Import untreated base course (including compaction)	3,000	TN	\$30.00	\$90,000.00
11	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	1,100	TN	\$200.00	\$220,000.00
12	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-12)				\$1,528,500.00
13	Contingency	25%			\$382,125.00
14	Design Engineering and Survey	10%			\$152,850.00
15	Construction Management and Staking	10%			\$152,850.00
	Total Construction Project (Items 1-15)				\$2,216,325.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				40 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2040 - 200 South - 600 East to 500 East - Replace CMP							
1	Install new 12" PVC storm drain w/ seperation fabric	400	LF	\$65.00	\$26,000.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	1	EA	\$4,500.00	\$4,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$3,500.00	\$10,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	400	LF	\$20.00	\$8,000.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	30	CY	\$20.00	\$600.00		
11	Excavate and haul away native material	250	CY	\$20.00	\$5,000.00		
12	Import gravel bedding	150	TN	\$25.00	\$3,750.00		
13	Import granular barrow (including compaction)	250	TN	\$25.00	\$6,250.00		
14	Import untreated base course (including compaction)	100	TN	\$30.00	\$3,000.00		
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-15)					\$122,600.00	
16	Contingency	25%			\$30,650.00		
17	Design Engineering and Survey	10%			\$12,260.00		
18	Construction Management and Staking	10%			\$12,260.00		
	Total Construction Project (Items 1-18)						\$177,770.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				41 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2041 - 700 South - 475 East to 700 East							
1	Install new 12" PVC storm drain w/ seperation fabric		1,500	LF	\$65.00		\$97,500.00
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)		7	EA	\$4,500.00		\$31,500.00
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)		10	EA	\$3,500.00		\$35,000.00
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)		3	EA	\$6,000.00		\$18,000.00
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)		1	EA	\$1,000.00		\$1,000.00
6	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
7	Remove and replace concrete (including saw-cutting)		1	Lump Sum	\$5,000.00		\$5,000.00
8	Pulverize and haul away asphalt (including saw-cutting)		150	CY	\$20.00		\$3,000.00
9	Excavate and haul away native material		900	CY	\$20.00		\$18,000.00
10	Import gravel bedding		550	TN	\$25.00		\$13,750.00
11	Import granular barrow (including compaction)		1,000	TN	\$25.00		\$25,000.00
12	Import untreated base course (including compaction)		350	TN	\$30.00		\$10,500.00
13	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-13)						\$291,250.00
14	Contingency		25%			\$72,812.50	
15	Design Engineering and Survey		10%			\$29,125.00	
16	Construction Management and Staking		10%			\$29,125.00	
	Total Construction Project (Items 1-16)						\$422,312.50

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				41 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2041 - 600 North - 1250 West to Legacy Parkway							
1	Install new 36" RCP storm drain w/ seperation fabric		620	LF	\$260.00		\$161,200.00
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)		4	EA	\$5,000.00		\$20,000.00
3	Tie-in to existing storm drain system (includes coring existing manhole & new collars)		2	EA	\$1,000.00		\$2,000.00
4	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
5	Remove and replace concrete (including saw-cutting)		1	Lump Sum	\$5,000.00		\$5,000.00
6	Excavate and haul away native material		700	CY	\$20.00		\$14,000.00
7	Import gravel bedding		500	TN	\$25.00		\$12,500.00
8	Import granular barrow (including compaction)		500	TN	\$25.00		\$12,500.00
9	Import untreated base course (including compaction)		180	TN	\$30.00		\$5,400.00
10	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-10)						\$265,600.00
11	Contingency		25%			\$66,400.00	
12	Design Engineering and Survey		10%			\$26,560.00	
13	Construction Management and Staking		10%			\$26,560.00	
	Total Construction Project (Items 1-13)						\$385,120.00

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				42 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2042 - 400 North - 1550 West to 1300 West							
1	Install new 36" RPC storm drain w/ seperation fabric	650	LF	\$260.00	\$169,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	6	EA	\$3,500.00	\$21,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	350	LF	\$20.00	\$7,000.00		
7	Remove and haul away excisting storm drain structures	7	EA	\$1,000.00	\$7,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Excavate and haul away native material	750	CY	\$20.00	\$15,000.00		
11	Import gravel bedding	500	TN	\$25.00	\$12,500.00		
12	Import granular barrow (including compaction)	500	TN	\$25.00	\$12,500.00		
13	Import untreated base course (including compaction)	200	TN	\$30.00	\$6,000.00		
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-14)				\$312,000.00		
15	Contingency	25%			\$78,000.00		
16	Design Engineering and Survey	10%			\$31,200.00		
17	Construction Management and Staking	10%			\$31,200.00		
	Total Construction Project (Items 1-17)					\$452,400.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				42 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2042 -1250 West - Crossing at 75 North							
1	Install new 24" RPC storm drain w/ seperation fabric	60	LF	\$240.00	\$14,400.00		
2	Provide & Install 60" storm drain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
3	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
4	Remove and haul away excisting storm drain pipe	60	LF	\$20.00	\$1,200.00		
5	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
6	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
7	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
8	Pulverize and haul away asphalt (including saw-cutting)	7	CY	\$20.00	\$140.00		
9	Excavate and haul away native material	75	CY	\$20.00	\$1,500.00		
10	Import gravel bedding	45	TN	\$25.00	\$1,125.00		
11	Import granular barrow (including compaction)	50	TN	\$25.00	\$1,250.00		
12	Import untreated base course (including compaction)	20	TN	\$30.00	\$600.00		
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	15	TN	\$200.00	\$3,000.00		
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-14)					\$75,215.00	
15	Contingency	25%			\$18,803.75		
16	Design Engineering and Survey	10%			\$7,521.50		
17	Construction Management and Staking	10%			\$7,521.50		
	Total Construction Project (Items 1-17)					\$109,061.75	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				43 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2043 - 70 West - 115 N to Center Street							
1	Install new 15" RPC storm drain w/ seperation fabric	800	LF	\$180.00	\$144,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	3	EA	\$5,000.00	\$15,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$3,500.00	\$7,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	5	EA	\$6,000.00	\$30,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	750	LF	\$20.00	\$15,000.00		
7	Remove and haul away excisting storm drain structures	9	EA	\$1,000.00	\$9,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	70	CY	\$20.00	\$1,400.00		
11	Excavate and haul away native material	600	CY	\$20.00	\$12,000.00		
12	Import gravel bedding	350	TN	\$25.00	\$8,750.00		
13	Import granular barrow (including compaction)	700	TN	\$25.00	\$17,500.00		
14	Import untreated base course (including compaction)	200	TN	\$30.00	\$6,000.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	150	TN	\$200.00	\$30,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$334,650.00	
17	Contingency	25%			\$83,662.50		
18	Design Engineering and Survey	10%			\$33,465.00		
19	Construction Management and Staking	10%			\$33,465.00		
	Total Construction Project (Items 1-19)					\$485,242.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				43 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE	AMOUNT	
Project Year 2043 - 550 South - Pitford Drive to 400 West - Pipe Lining Project							
1	Line 3 sections of 24" CMP		650	LF	\$220.00	\$143,000.00	
2	Mobilization, demobilization, bonds, permits, and Fees		1	Lump Sum	\$5,000.00	\$5,000.00	
3	Traffic control/barricading		1	Lump Sum	\$50,000.00	\$50,000.00	
	Subtotal (Items 1-3)					\$198,000.00	
4	Contingency		25%			\$49,500.00	
5	Design Engineering and Survey		10%			\$19,800.00	
6	Construction Management and Staking		10%			\$19,800.00	
	Total Construction Project (Items 1-6)					\$287,100.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				44 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2044 - 1275 North - 1250 West to 1300 West							
1	Install new 24" RPC storm drain w/ seperation fabric	1,000	LF	\$240.00	\$240,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	4	EA	\$5,000.00	\$20,000.00		
3	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
4	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
5	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
6	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
7	Excavate and haul away native material	1,400	CY	\$20.00	\$28,000.00		
8	Import gravel bedding	900	TN	\$25.00	\$22,500.00		
9	Import granular barrow (including compaction)	1,500	TN	\$25.00	\$37,500.00		
10	Import untreated base course (including compaction)	400	TN	\$30.00	\$12,000.00		
11	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-11)					\$402,000.00	
12	Contingency	25%			\$100,500.00		
13	Design Engineering and Survey	10%			\$40,200.00		
14	Construction Management and Staking	10%			\$40,200.00		
	Total Construction Project (Items 1-14)					\$582,900.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				44 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2044 - Aspen Way & Poplar Circle - 400 East to 610 East							
1	Install new 12" PVC storm drain w/ seperation fabric		1,000	LF	\$65.00		\$65,000.00
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)		3	EA	\$4,500.00		\$13,500.00
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)		5	EA	\$3,500.00		\$17,500.00
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)		3	EA	\$6,000.00		\$18,000.00
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)		3	EA	\$1,000.00		\$3,000.00
6	Remove and haul away excisting storm drain pipe		30	LF	\$20.00		\$600.00
7	Remove and haul away excisting storm drain structures		1	EA	\$1,000.00		\$1,000.00
8	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
9	Remove and replace concrete (including saw-cutting)		1	Lump Sum	\$5,000.00		\$5,000.00
10	Pulverize and haul away asphalt (including saw-cutting)		75	CY	\$20.00		\$1,500.00
11	Excavate and haul away native material		600	CY	\$20.00		\$12,000.00
12	Import gravel bedding		350	TN	\$25.00		\$8,750.00
13	Import granular barrow (including compaction)		700	TN	\$25.00		\$17,500.00
14	Import untreated base course (including compaction)		250	TN	\$30.00		\$7,500.00
15	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-15)						\$203,850.00
16	Contingency		25%				\$50,962.50
17	Design Engineering and Survey		10%				\$20,385.00
18	Construction Management and Staking		10%				\$20,385.00
	Total Construction Project (Items 1-18)						\$295,582.50

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				45 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2045 - Willow Valley Drive to Frontage Road Swale - Pipe (3) 15" System							
1	Install new 15" RCP storm drain w/ seperation fabric	1,600	LF	\$180.00	\$288,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$4,500.00	\$9,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$3,500.00	\$10,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
6	Remove and haul away excisting storm drain pipe	100	LF	\$20.00	\$2,000.00		
7	Remove and haul away excisting storm drain structures	5	EA	\$1,000.00	\$5,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	120	CY	\$20.00	\$2,400.00		
11	Excavate and haul away native material	1,200	CY	\$20.00	\$24,000.00		
12	Import gravel bedding	650	TN	\$25.00	\$16,250.00		
13	Import granular barrow (including compaction)	1,500	TN	\$25.00	\$37,500.00		
14	Import untreated base course (including compaction)	400	TN	\$30.00	\$12,000.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	300	TN	\$200.00	\$60,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$524,650.00	
17	Contingency	25%			\$131,162.50		
18	Design Engineering and Survey	10%			\$52,465.00		
19	Construction Management and Staking	10%			\$52,465.00		
	Total Construction Project (Items 1-19)					\$760,742.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2045 - Main Street - 1600 North to Smoot Park							
1	Install new 12" PVC storm drain w/ seperation fabric	325	LF	\$65.00	\$21,125.00		
2	Provide & Install 48" storm drain manhole (incudes manhole lid and ring, grout and collars)	1	EA	\$4,500.00	\$4,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	1	EA	\$3,500.00	\$3,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	2	EA	\$6,000.00	\$12,000.00		
5	Provide & Install inlet/outlet structure	1	EA	\$5,000.00	\$5,000.00		
6	Remove and haul away excisting storm drain pipe	325	LF	\$20.00	\$6,500.00		
7	Remove and haul away excisting storm drain structures	2	EA	\$1,000.00	\$2,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	40	CY	\$20.00	\$800.00		
11	Excavate and haul away native material	250	CY	\$20.00	\$5,000.00		
12	Import gravel bedding	120	TN	\$25.00	\$3,000.00		
13	Import granular barrow (including compaction)	320	TN	\$25.00	\$8,000.00		
14	Import untreated base course (including compaction)	75	TN	\$30.00	\$2,250.00		
15	UDOT permits, fees ect.	1	Lump Sum	\$5,000.00	\$5,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$116,675.00	
17	Contingency	25%			\$29,168.75		
18	Design Engineering and Survey	10%			\$11,667.50		
19	Construction Management and Staking	10%			\$11,667.50		
	Total Construction Project (Items 1-19)					\$169,178.75	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2046 - 1825 North - Main Street to 300 East							
1	Install new 12" PVC storm drain w/ seperation fabric	2,000	LF	\$65.00	\$130,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	14	EA	\$3,500.00	\$49,000.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	5	EA	\$6,000.00	\$30,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	150	LF	\$20.00	\$3,000.00		
7	Remove and haul away excisting storm drain structures	8	EA	\$1,000.00	\$8,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	175	CY	\$20.00	\$3,500.00		
11	Excavate and haul away native material	1,200	CY	\$20.00	\$24,000.00		
12	Import gravel bedding	600	TN	\$25.00	\$15,000.00		
13	Import granular barrow (including compaction)	1,200	TN	\$25.00	\$30,000.00		
14	Import untreated base course (including compaction)	500	TN	\$30.00	\$15,000.00		
15	UDOT permits, fees ect.	1	Lump Sum	\$5,000.00	\$5,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$387,500.00	
17	Contingency	25%			\$96,875.00		
18	Design Engineering and Survey	10%			\$38,750.00		
19	Construction Management and Staking	10%			\$38,750.00		
	Total Construction Project (Items 1-19)					\$561,875.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2046 - 1975 North - Main Street to 150 East							
1	Install new 12" PVC storm drain w/ seperation fabric	1,000	LF	\$65.00	\$65,000.00		
2	Provide & Install 48" storm drain manhole (includes manhole lid and ring, grout and collars)	5	EA	\$4,500.00	\$22,500.00		
3	Provide & Install storm drain inlet boxes and grates (including removal of existing, coring, collars, grouting and curb & gutter)	7	EA	\$3,500.00	\$24,500.00		
4	Provide & Install combo box (including manhole lid and ring, inlet grate, removal of existing, coring, collars, grouting and curb & gutter)	3	EA	\$6,000.00	\$18,000.00		
5	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
6	Remove and haul away excisting storm drain pipe	120	LF	\$20.00	\$2,400.00		
7	Remove and haul away excisting storm drain structures	4	EA	\$1,000.00	\$4,000.00		
8	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
9	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
10	Pulverize and haul away asphalt (including saw-cutting)	80	CY	\$20.00	\$1,600.00		
11	Excavate and haul away native material	600	CY	\$20.00	\$12,000.00		
12	Import gravel bedding	350	TN	\$25.00	\$8,750.00		
13	Import granular barrow (including compaction)	650	TN	\$25.00	\$16,250.00		
14	Import untreated base course (including compaction)	250	TN	\$30.00	\$7,500.00		
15	UDOT permits, fees ect.	1	Lump Sum	\$5,000.00	\$5,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$226,500.00	
17	Contingency	25%			\$56,625.00		
18	Design Engineering and Survey	10%			\$22,650.00		
19	Construction Management and Staking	10%			\$22,650.00		
	Total Construction Project (Items 1-19)					\$328,425.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				47 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2047 - Future 1250 West Extension - Rick's Creek 12' x 5' Box Culvert							
1	Install new 12' x 5' box culvert	100	LF	\$1,000.00	\$100,000.00		
2	Install inlet and outlet headwall structures	2	EA	\$10,000.00	\$20,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	500	CY	\$20.00	\$10,000.00		
5	Import gravel bedding	100	TN	\$25.00	\$2,500.00		
6	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
7	Import untreated base course (including compaction)	25	TN	\$30.00	\$750.00		
8	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-8)					\$166,750.00	
9	Contingency	25%			\$41,687.50		
10	Design Engineering and Survey	10%			\$16,675.00		
11	Construction Management and Staking	10%			\$16,675.00		
	Total Construction Project (Items 1-11)					\$241,787.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2047 - Future 1250 West Extension - 1875 North (Villa de France) - 36" RCP Culvert							
1	Install new 36" RCP storm drain w/ seperation fabric	100	LF	\$260.00	\$26,000.00		
2	Install inlet and outlet structures	2	EA	\$1,000.00	\$2,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	500	CY	\$20.00	\$10,000.00		
5	Import gravel bedding	80	TN	\$25.00	\$2,000.00		
6	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
7	Import untreated base course (including compaction)	25	TN	\$30.00	\$750.00		
8	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-8)					\$74,250.00	
9	Contingency	25%			\$18,562.50		
10	Design Engineering and Survey	10%			\$7,425.00		
11	Construction Management and Staking	10%			\$7,425.00		
	Total Construction Project (Items 1-11)					\$107,662.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2048 - D&RG Rick's Creek - 72" x 48" Elliptical RCP Culvert							
1	Install new 72" x 48" Elliptical RCP culvert storm drain w/ seperation fabric	100	LF	\$1,000.00	\$100,000.00		
2	Install inlet and outlet structures	2	EA	\$1,000.00	\$2,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	250	CY	\$20.00	\$5,000.00		
5	Import gravel bedding	175	TN	\$25.00	\$4,375.00		
6	Import granular barrow (including compaction)	175	TN	\$25.00	\$4,375.00		
7	Import untreated base course (including compaction)	25	TN	\$30.00	\$750.00		
8	UTA permits, fees ect.	1	Lump Sum	\$5,000.00	\$5,000.00		
9	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-9)					\$152,500.00	
	Davis County's Cost	75%			\$114,375.00		
	Centerville City's Cost	25%			\$38,125.00		
10	Contingency	25%			\$9,531.25		
11	Design Engineering and Survey	10%			\$3,812.50		

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				48 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2048 - D&RG 2075 North - 36" Culvert							
1	Install new 36" RCP storm drain w/ seperation fabric	100	LF	\$260.00	\$26,000.00		
2	Install inlet and outlet structures	2	EA	\$1,000.00	\$2,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	500	CY	\$20.00	\$10,000.00		
5	Import gravel bedding	80	TN	\$25.00	\$2,000.00		
6	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
7	Import untreated base course (including compaction)	25	TN	\$30.00	\$750.00		
8	UTA permits, fees ect.	1	Lump Sum	\$5,000.00	\$5,000.00		
9	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-9)					\$79,250.00	
10	Contingency	25%			\$19,812.50		
11	Design Engineering and Survey	10%			\$7,925.00		
12	Construction Management and Staking	10%			\$7,925.00		
	Total Construction Project (Items 1-12)					\$114,912.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				49 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2049 - 1275 N - replace ADS with RCP							
1	Install new 24" RCP storm drain w/ seperation fabric	50	LF	\$240.00	\$12,000.00		
2	Provide & Install 60" storm drain manhole (includes manhole lid and ring, grout and collars)	2	EA	\$5,000.00	\$10,000.00		
3	Tie-in to existing storm drain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
4	Remove and haul away excisting storm drain pipe	50	LF	\$20.00	\$1,000.00		
5	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
6	Remove and replace concrete (including saw-cutting)	1	Lump Sum	\$5,000.00	\$5,000.00		
7	Pulverize and haul away asphalt (including saw-cutting)	10	CY	\$20.00	\$200.00		
8	Excavate and haul away native material	50	CY	\$20.00	\$1,000.00		
9	Import gravel bedding	25	TN	\$25.00	\$625.00		
10	Import granular barrow (including compaction)	35	TN	\$25.00	\$875.00		
11	Import untreated base course (including compaction)	12	TN	\$30.00	\$360.00		
12	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-12)					\$66,060.00	
13	Contingency	25%			\$16,515.00		
14	Design Engineering and Survey	10%			\$6,606.00		
15	Construction Management and Staking	10%			\$6,606.00		
	Total Construction Project (Items 1-15)					\$95,787.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				49 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2049 - 71" x 47" CMP Culvert at Legacy Trail and Sheep Road at 1000 North							
1	Install new 72" x 48" Elliptical RCP culvert storm drain w/ seperation fabric under Legacy Trail	100	LF	\$1,000.00	\$100,000.00		
2	Install inlet and outlet structures	2	EA	\$2,500.00	\$5,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	200	CY	\$20.00	\$4,000.00		
5	Import gravel bedding	200	TN	\$25.00	\$5,000.00		
6	Import granular barrow (including compaction)	150	TN	\$25.00	\$3,750.00		
7	Import untreated base course (including compaction)	50	TN	\$30.00	\$1,500.00		
8	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-8)					\$150,250.00	
9	Contingency	25%			\$37,562.50		
10	Design Engineering and Survey	10%			\$15,025.00		
11	Construction Management and Staking	10%			\$15,025.00		
	Total Construction Project (Items 1-11)					\$217,862.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				50 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2050 - Sheep Road 2075 North - 36" Culvert							
1	Install new 36" RCP storm drain w/ seperation fabric	100	LF	\$260.00	\$26,000.00		
2	Install inlet and outlet structures	2	EA	\$5,000.00	\$10,000.00		
3	Pothole existing utility for new alignment	1	Lump Sum	\$1,000.00	\$1,000.00		
4	Excavate and haul away native material	500	CY	\$20.00	\$10,000.00		
5	Import gravel bedding	80	TN	\$25.00	\$2,000.00		
6	Import granular barrow (including compaction)	100	TN	\$25.00	\$2,500.00		
7	Import untreated base course (including compaction)	25	TN	\$30.00	\$750.00		
8	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-8)					\$82,250.00	
9	Contingency	25%			\$20,562.50		
10	Design Engineering and Survey	10%			\$8,225.00		
11	Construction Management and Staking	10%			\$8,225.00		
	Total Construction Project (Items 1-11)					\$119,262.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				50 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2050 - Sheep Road Rick's Creek - 71" x 47" Elliptical RCP Culvert							
1	Install new 72" x 48" Elliptical RCP culvert storm drain w/ seperation fabric under Sheep Road		65	LF	\$1,000.00		\$65,000.00
2	Install inlet and outlet structures		2	EA	\$2,500.00		\$5,000.00
3	Pothole existing utility for new alignment		1	Lump Sum	\$1,000.00		\$1,000.00
4	Excavate and haul away native material		150	CY	\$20.00		\$3,000.00
5	Import gravel bedding		100	TN	\$25.00		\$2,500.00
6	Import granular barrow (including compaction)		100	TN	\$25.00		\$2,500.00
7	Import untreated base course (including compaction)		40	TN	\$30.00		\$1,200.00
8	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-8)						\$110,200.00
9	Contingency		25%			\$27,550.00	
10	Design Engineering and Survey		10%			\$11,020.00	
11	Construction Management and Staking		10%			\$11,020.00	
	Total Construction Project (Items 1-11)						\$159,790.00

Appendix D

Subdrain Project Cost Estimates

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				24 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2024 - Pitford - 550 South to Tobe							
1	Install new 8" PVC subdrain w/ seperation fabric	470	LF	\$55.00	\$25,850.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	250	LF	\$45.00	\$11,250.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	3	EA	\$4,500.00	\$13,500.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
5	Remove and haul away excisting subdrain pipe	470	LF	\$20.00	\$9,400.00		
6	Remove and haul away excisting subdrain structures	4	EA	\$1,000.00	\$4,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	100	LF	\$65.00	\$6,500.00		
9	Remove and replace sidewalk (including saw-cut)	160	SF	\$20.00	\$3,200.00		
10	Pulverize and haul away asphalt (including saw-cutting)	60	CY	\$20.00	\$1,200.00		
11	Excavate and haul away native material	750	CY	\$20.00	\$15,000.00		
12	Import gravel bedding	200	TN	\$25.00	\$5,000.00		
13	Import granular barrow (including compaction)	700	TN	\$25.00	\$17,500.00		
14	Import untreated base course (including compaction)	150	TN	\$30.00	\$4,500.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	110	TN	\$200.00	\$22,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$172,900.00	
17	Contingency	25%			\$43,225.00		
18	Design Engineering and Survey	10%			\$17,290.00		
19	Construction Management and Staking	10%			\$17,290.00		
	Total Construction Project (Items 1-19)					\$250,705.00	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				26 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2026 - Ariane Way - 450 West to 650 West							
1	Install new 8" PVC subdrain w/ seperation fabric	1,600	LF	\$55.00	\$88,000.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	550	LF	\$45.00	\$24,750.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	9	EA	\$4,500.00	\$40,500.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
5	Remove and haul away excisting subdrain pipe	1,600	LF	\$20.00	\$32,000.00		
6	Remove and haul away excisting subdrain structures	10	EA	\$1,000.00	\$10,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	290	LF	\$65.00	\$18,850.00		
9	Remove and replace sidewalk (including saw-cut)	464	SF	\$20.00	\$9,280.00		
10	Pulverize and haul away asphalt (including saw-cutting)	200	CY	\$20.00	\$4,000.00		
11	Excavate and haul away native material	2,500	CY	\$20.00	\$50,000.00		
12	Import gravel bedding	550	TN	\$25.00	\$13,750.00		
13	Import granular barrow (including compaction)	2,300	TN	\$25.00	\$57,500.00		
14	Import untreated base course (including compaction)	450	TN	\$30.00	\$13,500.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	400	TN	\$200.00	\$80,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$476,130.00	
17	Contingency	25%			\$119,032.50		
18	Design Engineering and Survey	10%			\$47,613.00		
19	Construction Management and Staking	10%			\$47,613.00		
	Total Construction Project (Items 1-19)					\$690,388.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				27 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2027 - Parrish Lane - 100 East to Main Street							
1	Install new 8" PVC subdrain w/ seperation fabric	450	LF	\$55.00	\$24,750.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	220	LF	\$45.00	\$9,900.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	3	EA	\$4,500.00	\$13,500.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
5	Remove and haul away excisting subdrain pipe	450	LF	\$20.00	\$9,000.00		
6	Remove and haul away excisting subdrain structures	2	EA	\$1,000.00	\$2,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	70	LF	\$65.00	\$4,550.00		
9	Remove and replace sidewalk (including saw-cut)	112	SF	\$20.00	\$2,240.00		
10	Pulverize and haul away asphalt (including saw-cutting)	60	CY	\$20.00	\$1,200.00		
11	Excavate and haul away native material	700	CY	\$20.00	\$14,000.00		
12	Import gravel bedding	150	TN	\$25.00	\$3,750.00		
13	Import granular barrow (including compaction)	1,200	TN	\$25.00	\$30,000.00		
14	Import untreated base course (including compaction)	150	TN	\$30.00	\$4,500.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	120	TN	\$200.00	\$24,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$177,390.00	
17	Contingency	25%			\$44,347.50		
18	Design Engineering and Survey	10%			\$17,739.00		
19	Construction Management and Staking	10%			\$17,739.00		
	Total Construction Project (Items 1-19)					\$257,215.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				29 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE	AMOUNT	
Project Year 2029 - 1850 North - 100 West to 400 West							
1	Install new 8" PVC subdrain w/ seperation fabric		1,400	LF	\$55.00	\$77,000.00	
2	Install new 4" PVC subdrain lateral w/ seperation fabric		780	LF	\$45.00	\$35,100.00	
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)		7	EA	\$4,500.00	\$31,500.00	
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)		1	EA	\$1,000.00	\$1,000.00	
5	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00	\$3,000.00	
6	Remove and replace curb and gutter (including saw-cut)		280	LF	\$65.00	\$18,200.00	
7	Remove and replace sidewalk (including saw-cut)		448	SF	\$20.00	\$8,960.00	
8	Pulverize and haul away asphalt (including saw-cutting)		200	CY	\$20.00	\$4,000.00	
9	Excavate and haul away native material		2,300	CY	\$20.00	\$46,000.00	
10	Import gravel bedding		500	TN	\$25.00	\$12,500.00	
11	Import granular barrow (including compaction)		2,000	TN	\$25.00	\$50,000.00	
12	Import untreated base course (including compaction)		450	TN	\$30.00	\$13,500.00	
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)		350	TN	\$200.00	\$70,000.00	
14	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00	\$30,000.00	
	Subtotal (Items 1-14)					\$400,760.00	
15	Contingency		25%			\$100,190.00	
16	Design Engineering and Survey		10%			\$40,076.00	
17	Construction Management and Staking		10%			\$40,076.00	
	Total Construction Project (Items 1-17)						\$581,102.00

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				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				30 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2030 - 1500 North Cul-de-sac on 400 West							
1	Install new 8" PVC subdrain w/ seperation fabric		350	LF	\$55.00		\$19,250.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric		150	LF	\$45.00		\$6,750.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)		1	EA	\$4,500.00		\$4,500.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)		1	EA	\$1,000.00		\$1,000.00
5	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
6	Remove and replace curb and gutter (including saw-cut)		80	LF	\$65.00		\$5,200.00
7	Remove and replace sidewalk (including saw-cut)		128	SF	\$20.00		\$2,560.00
8	Pulverize and haul away asphalt (including saw-cutting)		50	CY	\$20.00		\$1,000.00
9	Excavate and haul away native material		600	CY	\$20.00		\$12,000.00
10	Import gravel bedding		150	TN	\$25.00		\$3,750.00
11	Import granular barrow (including compaction)		500	TN	\$25.00		\$12,500.00
12	Import untreated base course (including compaction)		120	TN	\$30.00		\$3,600.00
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)		100	TN	\$200.00		\$20,000.00
14	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-14)						\$125,110.00
15	Contingency		25%				\$31,277.50
16	Design Engineering and Survey		10%				\$12,511.00
17	Construction Management and Staking		10%				\$12,511.00
	Total Construction Project (Items 1-17)						\$181,409.50



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
West Valley, Utah 84120
Phone (801) 263-1752

Consulting Engineers & Land Surveyors

Project: Drainage Master Plan
Storm Drain Projects

Owner: **Centerville City**

Estimated by:

Checked by:

Sheet No.
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Project No.

31 - ###

Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2031 - 1600 North (Rick's Creek Way) - 100 West to 200 West					
1	Install new 8" PVC subdrain w/ seperation fabric	1,200	LF	\$55.00	\$66,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	520	LF	\$45.00	\$23,400.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Remove and haul away excisting subdrain pipe	450	LF	\$20.00	\$9,000.00
6	Remove and haul away excisting subdrain structures	2	EA	\$1,000.00	\$2,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace curb and gutter (including saw-cut)	170	LF	\$65.00	\$11,050.00
9	Remove and replace sidewalk (including saw-cut)	272	SF	\$20.00	\$5,440.00
10	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00
11	Excavate and haul away native material	1,900	CY	\$20.00	\$38,000.00
12	Import gravel bedding	400	TN	\$25.00	\$10,000.00
13	Import granular barrow (including compaction)	1,500	TN	\$25.00	\$37,500.00
14	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	300	TN	\$200.00	\$60,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-16)					\$345,890.00
17	Contingency	25%			\$86,472.50
18	Design Engineering and Survey	10%			\$34,589.00
19	Construction Management and Staking	10%			\$34,589.00
Total Construction Project (Items 1-19)					\$501,540.50



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
West Valley, Utah 84120
Phone (801) 263-1752

Consulting Engineers & Land Surveyors

Project: Drainage Master Plan
Storm Drain Projects
Owner: **Centerville City**

Estimated by:

Checked by:

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Project No.
32 - ###

Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2032 - 1650 North (Milky Way) - 100 West to 200 West					
1	Install new 8" PVC subdrain w/ seperation fabric	1,200	LF	\$55.00	\$66,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	585	LF	\$45.00	\$26,325.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Remove and haul away excisting subdrain pipe	1,000	LF	\$20.00	\$20,000.00
6	Remove and haul away excisting subdrain structures	5	EA	\$1,000.00	\$5,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace curb and gutter (including saw-cut)	210	LF	\$65.00	\$13,650.00
9	Remove and replace sidewalk (including saw-cut)	336	SF	\$20.00	\$6,720.00
10	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00
11	Excavate and haul away native material	1,900	CY	\$20.00	\$38,000.00
12	Import gravel bedding	400	TN	\$25.00	\$10,000.00
13	Import granular barrow (including compaction)	1,500	TN	\$25.00	\$37,500.00
14	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	300	TN	\$200.00	\$60,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-16)					\$366,695.00
17	Contingency	25%			\$91,673.75
18	Design Engineering and Survey	10%			\$36,669.50
19	Construction Management and Staking	10%			\$36,669.50
Total Construction Project (Items 1-19)					\$531,707.75

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
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		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				33 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2033 - 1800 North - 300 West to 400 West							
1	Install new 8" PVC subdrain w/ seperation fabric	450	LF	\$55.00	\$24,750.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	175	LF	\$45.00	\$7,875.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	3	EA	\$4,500.00	\$13,500.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
5	Remove and haul away excisting subdrain pipe	450	LF	\$20.00	\$9,000.00		
6	Remove and haul away excisting subdrain structures	2	EA	\$1,000.00	\$2,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	70	LF	\$65.00	\$4,550.00		
9	Remove and replace sidewalk (including saw-cut)	112	SF	\$20.00	\$2,240.00		
10	Pulverize and haul away asphalt (including saw-cutting)	50	CY	\$20.00	\$1,000.00		
11	Excavate and haul away native material	650	CY	\$20.00	\$13,000.00		
12	Import gravel bedding	200	TN	\$25.00	\$5,000.00		
13	Import granular barrow (including compaction)	600	TN	\$25.00	\$15,000.00		
14	Import untreated base course (including compaction)	130	TN	\$30.00	\$3,900.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	100	TN	\$200.00	\$20,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$155,815.00	
17	Contingency	25%			\$38,953.75		
18	Design Engineering and Survey	10%			\$15,581.50		
19	Construction Management and Staking	10%			\$15,581.50		
	Total Construction Project (Items 1-19)					\$225,931.75	

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		Owner:		Centerville City			
		Estimated by:				Project No.	
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2034 - Lewis & Clark Drive - Fremont Cir to Jim Bridger Dr / Frontage Rd Crossing							
1	Install new 8" PVC subdrain w/ seperation fabric	300	LF	\$55.00	\$16,500.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	60	LF	\$45.00	\$2,700.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$4,500.00	\$9,000.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
5	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
6	Remove and replace curb and gutter (including saw-cut)	40	LF	\$65.00	\$2,600.00		
7	Remove and replace sidewalk (including saw-cut)	64	SF	\$20.00	\$1,280.00		
8	Pulverize and haul away asphalt (including saw-cutting)	35	CY	\$20.00	\$700.00		
9	Excavate and haul away native material	450	CY	\$20.00	\$9,000.00		
10	Import gravel bedding	100	TN	\$25.00	\$2,500.00		
11	Import granular barrow (including compaction)	400	TN	\$25.00	\$10,000.00		
12	Import untreated base course (including compaction)	90	TN	\$30.00	\$2,700.00		
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	60	TN	\$200.00	\$12,000.00		
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-14)					\$103,980.00	
15	Contingency	25%			\$25,995.00		
16	Design Engineering and Survey	10%			\$10,398.00		
17	Construction Management and Staking	10%			\$10,398.00		
	Total Construction Project (Items 1-17)					\$150,771.00	

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Conceptual Estimate					
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2036 - 700 S. - 300 E. to 400 E., 600 S. - 300 E. to 400 E., 300 E. - 600 S. to 725 S.					
1	Install new 8" PVC subdrain w/ seperation fabric	1,200	LF	\$55.00	\$66,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	730	LF	\$45.00	\$32,850.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
6	Remove and replace curb and gutter (including saw-cut)	230	LF	\$65.00	\$14,950.00
7	Remove and replace sidewalk (including saw-cut)	368	SF	\$20.00	\$7,360.00
8	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00
9	Excavate and haul away native material	2,000	CY	\$20.00	\$40,000.00
10	Import gravel bedding	450	TN	\$25.00	\$11,250.00
11	Import granular barrow (including compaction)	1,700	TN	\$25.00	\$42,500.00
12	Import untreated base course (including compaction)	400	TN	\$30.00	\$12,000.00
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	230	TN	\$200.00	\$46,000.00
14	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-14)				\$345,910.00
15	Contingency	25%			\$86,477.50
16	Design Engineering and Survey	10%			\$34,591.00
17	Construction Management and Staking	10%			\$34,591.00
	Total Construction Project (Items 1-17)				\$501,569.50

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		Owner:		Centerville City			
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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2037 - Tobe Drive - 350 West to 400 West							
1	Install new 8" PVC subdrain w/ seperation fabric	750	LF	\$55.00	\$41,250.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	400	LF	\$45.00	\$18,000.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	5	EA	\$4,500.00	\$22,500.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00		
5	Remove and haul away excisting subdrain pipe	750	LF	\$20.00	\$15,000.00		
6	Remove and haul away excisting subdrain structures	5	EA	\$1,000.00	\$5,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	160	LF	\$65.00	\$10,400.00		
9	Remove and replace sidewalk (including saw-cut)	256	SF	\$20.00	\$5,120.00		
10	Pulverize and haul away asphalt (including saw-cutting)	90	CY	\$20.00	\$1,800.00		
11	Excavate and haul away native material	1,200	CY	\$20.00	\$24,000.00		
12	Import gravel bedding	250	TN	\$25.00	\$6,250.00		
13	Import granular barrow (including compaction)	1,000	TN	\$25.00	\$25,000.00		
14	Import untreated base course (including compaction)	220	TN	\$30.00	\$6,600.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	180	TN	\$200.00	\$36,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$251,920.00	
17	Contingency	25%			\$62,980.00		
18	Design Engineering and Survey	10%			\$25,192.00		
19	Construction Management and Staking	10%			\$25,192.00		
	Total Construction Project (Items 1-19)					\$365,284.00	



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
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Consulting Engineers & Land Surveyors

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Project No.
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Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2039 - Mountain View Drive & Creek View Drive					
1	Install new 8" PVC subdrain w/ seperation fabric	1,250	LF	\$55.00	\$68,750.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	690	LF	\$45.00	\$31,050.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	2	EA	\$1,000.00	\$2,000.00
5	Remove and haul away excisting subdrain pipe	500	LF	\$20.00	\$10,000.00
6	Remove and haul away excisting subdrain structures	4	EA	\$1,000.00	\$4,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace curb and gutter (including saw-cut)	290	LF	\$65.00	\$18,850.00
9	Remove and replace sidewalk (including saw-cut)	464	SF	\$20.00	\$9,280.00
10	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00
11	Excavate and haul away native material	1,900	CY	\$20.00	\$38,000.00
12	Import gravel bedding	400	TN	\$25.00	\$10,000.00
13	Import granular barrow (including compaction)	1,500	TN	\$25.00	\$37,500.00
14	Import untreated base course (including compaction)	330	TN	\$30.00	\$9,900.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	280	TN	\$200.00	\$56,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-16)					\$367,330.00
17	Contingency	25%			\$91,832.50
18	Design Engineering and Survey	10%			\$36,733.00
19	Construction Management and Staking	10%			\$36,733.00
Total Construction Project (Items 1-19)					\$532,628.50



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Project No.
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Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2041 - Canyon Breeze Drive					
1	Install new 8" PVC subdrain w/ seperation fabric	1,300	LF	\$55.00	\$71,500.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	655	LF	\$45.00	\$29,475.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	8	EA	\$4,500.00	\$36,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Remove and haul away excisting subdrain pipe	1,100	LF	\$20.00	\$22,000.00
6	Remove and haul away excisting subdrain structures	4	EA	\$1,000.00	\$4,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace curb and gutter (including saw-cut)	250	LF	\$65.00	\$16,250.00
9	Remove and replace sidewalk (including saw-cut)	400	SF	\$20.00	\$8,000.00
10	Pulverize and haul away asphalt (including saw-cutting)	150	CY	\$20.00	\$3,000.00
11	Excavate and haul away native material	1,900	CY	\$20.00	\$38,000.00
12	Import gravel bedding	400	TN	\$25.00	\$10,000.00
13	Import granular barrow (including compaction)	1,600	TN	\$25.00	\$40,000.00
14	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	300	TN	\$200.00	\$60,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-16)					\$382,725.00
17	Contingency	25%			\$95,681.25
18	Design Engineering and Survey	10%			\$38,272.50
19	Construction Management and Staking	10%			\$38,272.50
Total Construction Project (Items 1-19)					\$554,951.25

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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2043 - 400 West - 1500 North to 1375 North							
1	Install new 8" PVC subdrain w/ seperation fabric	1,300	LF	\$55.00	\$71,500.00		
2	Install new 4" PVC subdrain lateral w/ seperation fabric	210	LF	\$45.00	\$9,450.00		
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	10	EA	\$4,500.00	\$45,000.00		
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00		
5	Remove and haul away excisting subdrain pipe	1,200	LF	\$20.00	\$24,000.00		
6	Remove and haul away excisting subdrain structures	10	EA	\$1,000.00	\$10,000.00		
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
8	Remove and replace curb and gutter (including saw-cut)	140	LF	\$65.00	\$9,100.00		
9	Remove and replace sidewalk (including saw-cut)	224	SF	\$20.00	\$4,480.00		
10	Pulverize and haul away asphalt (including saw-cutting)	200	CY	\$20.00	\$4,000.00		
11	Excavate and haul away native material	2,000	CY	\$20.00	\$40,000.00		
12	Import gravel bedding	400	TN	\$25.00	\$10,000.00		
13	Import granular barrow (including compaction)	1,600	TN	\$25.00	\$40,000.00		
14	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00		
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	400	TN	\$200.00	\$80,000.00		
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-16)					\$392,030.00	
17	Contingency	25%			\$98,007.50		
18	Design Engineering and Survey	10%			\$39,203.00		
19	Construction Management and Staking	10%			\$39,203.00		
	Total Construction Project (Items 1-19)					\$568,443.50	

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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2044 - 100 West Cul-de-sac on 1450 North							
1	Install new 8" PVC subdrain w/ seperation fabric		400	LF	\$55.00		\$22,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric		200	LF	\$45.00		\$9,000.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)		2	EA	\$4,500.00		\$9,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)		2	EA	\$1,000.00		\$2,000.00
5	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
6	Remove and replace curb and gutter (including saw-cut)		70	LF	\$65.00		\$4,550.00
7	Remove and replace sidewalk (including saw-cut)		112	SF	\$20.00		\$2,240.00
8	Pulverize and haul away asphalt (including saw-cutting)		50	CY	\$20.00		\$1,000.00
9	Excavate and haul away native material		625	CY	\$20.00		\$12,500.00
10	Import gravel bedding		150	TN	\$25.00		\$3,750.00
11	Import granular barrow (including compaction)		550	TN	\$25.00		\$13,750.00
12	Import untreated base course (including compaction)		120	TN	\$30.00		\$3,600.00
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)		100	TN	\$200.00		\$20,000.00
14	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-14)						\$136,390.00
15	Contingency		25%				\$34,097.50
16	Design Engineering and Survey		10%				\$13,639.00
17	Construction Management and Staking		10%				\$13,639.00
	Total Construction Project (Items 1-17)						\$197,765.50

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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE	AMOUNT	
Project Year 2045 - 850 South / 780 South - 150 West (Slip-Line)							
1	Line 3 sections of 8" CMP		450	LF	\$180.00	\$81,000.00	
2	Mobilization, demobilization, bonds, permits, and Fees		1	Lump Sum	\$5,000.00	\$5,000.00	
3	Traffic control/barricading		1	Lump Sum	\$50,000.00	\$50,000.00	
	Subtotal (Items 1-3)					\$136,000.00	
4	Contingency		25%			\$34,000.00	
5	Design Engineering and Survey		10%			\$13,600.00	
6	Construction Management and Staking		10%			\$13,600.00	
	Total Construction Project (Items 1-6)					\$197,200.00	

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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE		AMOUNT
Project Year 2046 - Lund Lane - 700 West to 200 West							
1	Install new 8" PVC subdrain w/ seperation fabric		1,000	LF	\$55.00		\$55,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric		100	LF	\$45.00		\$4,500.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)		4	EA	\$4,500.00		\$18,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)		1	EA	\$1,000.00		\$1,000.00
5	Pothole existing utility for new alignment		1	Lump Sum	\$3,000.00		\$3,000.00
6	Remove and replace curb and gutter (including saw-cut)		100	LF	\$65.00		\$6,500.00
7	Remove and replace sidewalk (including saw-cut)		160	SF	\$20.00		\$3,200.00
8	Pulverize and haul away asphalt (including saw-cutting)		100	CY	\$20.00		\$2,000.00
9	Excavate and haul away native material		1,200	CY	\$20.00		\$24,000.00
10	Import gravel bedding		300	TN	\$25.00		\$7,500.00
11	Import granular barrow (including compaction)		1,000	TN	\$25.00		\$25,000.00
12	Import untreated base course (including compaction)		230	TN	\$30.00		\$6,900.00
13	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)		200	TN	\$200.00		\$40,000.00
14	Mobilization, Traffic Control, and Restore landscaping		1	Lump Sum	\$30,000.00		\$30,000.00
	Subtotal (Items 1-14)						\$226,600.00
15	Contingency		25%				\$56,650.00
16	Design Engineering and Survey		10%				\$22,660.00
17	Construction Management and Staking		10%				\$22,660.00
	Total Construction Project (Items 1-17)						\$328,570.00

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Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT		
Project Year 2047 - Freedom Hills Park SE Corner - Sub-drain & Duncan Spring							
1	Install new 8" PVC subdrain w/ seperation fabric	250	LF	\$55.00	\$13,750.00		
2	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	3	EA	\$4,500.00	\$13,500.00		
3	Outlet structure	1	EA	\$5,000.00	\$5,000.00		
4	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00		
5	Pulverize and haul away asphalt (including saw-cutting)	2	CY	\$20.00	\$40.00		
6	Excavate and haul away native material	300	CY	\$20.00	\$6,000.00		
7	Import gravel bedding	70	TN	\$25.00	\$1,750.00		
8	Import granular barrow (including compaction)	520	TN	\$25.00	\$13,000.00		
9	Import untreated base course (including compaction)	5	TN	\$30.00	\$150.00		
10	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	2	TN	\$200.00	\$400.00		
11	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00		
	Subtotal (Items 1-11)					\$86,590.00	
12	Contingency	25%			\$21,647.50		
13	Design Engineering and Survey	10%			\$8,659.00		
14	Construction Management and Staking	10%			\$8,659.00		
	Total Construction Project (Items 1-14)					\$125,555.50	

 ESI Engineering, Inc. 4141 West 2100 South, Suite 100 West Valley, Utah 84120 Phone (801) 263-1752 Consulting Engineers & Land Surveyors		Project:		Drainage Master Plan		Sheet No.	
				Storm Drain Projects		1 of 1	
		Owner:		Centerville City			
		Estimated by:				Project No.	
		Checked by:				48 - ###	
Conceptual Estimate							
ITEM NO.	ITEM DESCRIPTION		QUANTITY	UNITS	UNIT PRICE	AMOUNT	
Project Year 2048 - 2100 North - 400 West to Churchill Drive (in back yards of 2115 North & 2101 North)							
1	Line 3 sections of 8" CMP		650	LF	\$180.00	\$117,000.00	
2	Mobilization, demobilization, bonds, permits, and Fees		1	Lump Sum	\$5,000.00	\$5,000.00	
3	Traffic control/barricading		1	Lump Sum	\$50,000.00	\$50,000.00	
	Subtotal (Items 1-3)					\$172,000.00	
4	Contingency		25%			\$43,000.00	
5	Design Engineering and Survey		10%			\$17,200.00	
6	Construction Management and Staking		10%			\$17,200.00	
	Total Construction Project (Items 1-6)					\$249,400.00	

**ESI Engineering, Inc.**

4141 West 2100 South, Suite 100

West Valley, Utah 84120

Phone (801) 263-1752

Consulting Engineers & Land SurveyorsProject: Drainage Master Plan
Storm Drain ProjectsOwner: **Centerville City**

Estimated by:

Checked by:

Sheet No.

1 of 1

Project No.

49 - ###

Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2049 - 150 West - 845 South to 780 South					
1	Install new 8" PVC subdrain w/ seperation fabric	230	LF	\$55.00	\$12,650.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	40	LF	\$45.00	\$1,800.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	2	EA	\$4,500.00	\$9,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	3	EA	\$1,000.00	\$3,000.00
5	Remove and haul away excisting subdrain structures	2	EA	\$1,000.00	\$2,000.00
6	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
7	Remove and replace curb and gutter (including saw-cut)	40	LF	\$65.00	\$2,600.00
8	Remove and replace sidewalk (including saw-cut)	64	SF	\$20.00	\$1,280.00
9	Pulverize and haul away asphalt (including saw-cutting)	25	CY	\$20.00	\$500.00
10	Excavate and haul away native material	325	CY	\$20.00	\$6,500.00
11	Import gravel bedding	80	TN	\$25.00	\$2,000.00
12	Import granular barrow (including compaction)	300	TN	\$25.00	\$7,500.00
13	Import untreated base course (including compaction)	350	TN	\$30.00	\$10,500.00
14	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	50	TN	\$200.00	\$10,000.00
15	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
	Subtotal (Items 1-15)				\$102,330.00
16	Contingency	25%			\$25,582.50
17	Design Engineering and Survey	10%			\$10,233.00
18	Construction Management and Staking	10%			\$10,233.00
	Total Construction Project (Items 1-18)				\$148,378.50



ESI Engineering, Inc.

4141 West 2100 South, Suite 100
West Valley, Utah 84120
Phone (801) 263-1752

Consulting Engineers & Land Surveyors

Project: Drainage Master Plan
Storm Drain Projects
Owner: **Centerville City**

Estimated by:

Checked by:

Sheet No.
1 of 1

Project No.
50 - ###

Conceptual Estimate

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	AMOUNT
Project Year 2050 - 2075 North / 725 West					
1	Install new 8" PVC subdrain w/ seperation fabric	1,000	LF	\$55.00	\$55,000.00
2	Install new 4" PVC subdrain lateral w/ seperation fabric	275	LF	\$45.00	\$12,375.00
3	Provide & Install 48" subdrain manhole (incudes manhole lid and ring, grout and collars)	6	EA	\$4,500.00	\$27,000.00
4	Tie-in to existing subdrain system (includes coring existing manhole & new collars)	1	EA	\$1,000.00	\$1,000.00
5	Remove and haul away excisting subdrain pipe	1,000	LF	\$20.00	\$20,000.00
6	Remove and haul away excisting subdrain structures	7	EA	\$1,000.00	\$7,000.00
7	Pothole existing utility for new alignment	1	Lump Sum	\$3,000.00	\$3,000.00
8	Remove and replace curb and gutter (including saw-cut)	170	LF	\$65.00	\$11,050.00
9	Remove and replace sidewalk (including saw-cut)	272	SF	\$20.00	\$5,440.00
10	Pulverize and haul away asphalt (including saw-cutting)	110	CY	\$20.00	\$2,200.00
11	Excavate and haul away native material	1,500	CY	\$20.00	\$30,000.00
12	Import gravel bedding	320	TN	\$25.00	\$8,000.00
13	Import granular barrow (including compaction)	1,300	TN	\$25.00	\$32,500.00
14	Import untreated base course (including compaction)	280	TN	\$30.00	\$8,400.00
15	Asphalt patching (PG-58-28, DM 1/2", 50 gyrations, 15% max. RAP)	230	TN	\$200.00	\$46,000.00
16	Mobilization, Traffic Control, and Restore landscaping	1	Lump Sum	\$30,000.00	\$30,000.00
Subtotal (Items 1-16)					\$298,965.00
17	Contingency	25%			\$74,741.25
18	Design Engineering and Survey	10%			\$29,896.50
19	Construction Management and Staking	10%			\$29,896.50
Total Construction Project (Items 1-19)					\$433,499.25

STORM DRAIN & SUB-DRAIN COST SUMMARY		Total Estimated Cost	Cost Breakdown			
YEAR	DESCRIPTION		City's Cost	Davis County's Cost	Developer Cost	City Annual Cost
2027	Ariane Way - 450 West to 650 West (SUB-DRAIN PROJECT)	\$714,195	\$714,195	\$0	\$0	\$714,195
2028	1275 North - 1300 West to 1250 West	\$102,393	\$0	\$0	\$102,393	\$701,875
	Public Works Dry Beds	\$200,000	\$200,000	\$0	\$0	
	Pitford - 550 South to Tobe (SUB-DRAIN PROJECT)	\$226,920	\$226,920	\$0	\$0	
	Parrish Lane - 100 East to Main Street (SUB-DRAIN PROJECT)	\$274,955	\$274,955	\$0	\$0	
2029	Centerville Jr. High (South Property Line) - 300 East to Main Street or Combine with Rivera SD system (1,300 LF)	\$527,808	\$527,808	\$0	\$0	\$527,808
2030	650 North - 1000 West to 1250 West - Replace 30" CMP w/ 42" RCP	\$1,003,200	\$1,003,200	\$0	\$0	\$1,003,200
2031	700 North - Bonita Way to 275 East	\$340,510	\$340,510	\$0	\$0	\$653,480
	725 North 1250 West & 600 North 1250 West - Inlet Box Replacement	\$312,970	\$312,970	\$0	\$0	
2032	Nola Drive - 1360 North to Barnard	\$311,483	\$311,483	\$0	\$0	\$539,070
	Island View - 550 South to 650 South	\$227,588	\$227,588	\$0	\$0	
2033	550 South - Pitford Drive to 400 West - Pipe Lining Project	\$356,400	\$356,400	\$0	\$0	\$990,000
	Riviera - 800 North to Main Street - Pipe Lining Project	\$415,800	\$415,800	\$0	\$0	
	1800 North - 300 West to 400 West - Pipe Lining Project (SUB-DRAIN PROJECT)	\$217,800	\$217,800	\$0	\$0	
2034	Peachtree - 50 East to Main Street	\$228,938	\$228,938	\$0	\$0	\$369,399
	780 South - 50 West to Pitford Drive	\$140,461	\$140,461	\$0	\$0	
2035	500 South - UPRR / UTA - Replace 24" CMP w/ New 36" Culvert	\$547,200	\$547,200	\$0	\$0	\$547,200
2036	Aspen Way & Poplar Circle Storm Drain	\$397,508	\$397,508	\$0	\$0	\$636,578
	200 South - 600 East to 500 East - Replace CMP	\$239,070	\$239,070	\$0	\$0	
2037	Carrington Lane - Main Street to Ricks Creek Reservoir - Pipe Lining Project	\$211,200	\$211,200	\$0	\$0	\$639,160
	150 West - 845 South to 780 South - Pipe Lining Project (SUB-DRAIN PROJECT)	\$220,000	\$220,000	\$0	\$0	
	Lewis & Clark Drive - Fremont Cir to Jim Bridger Dr / Frontage Rd Crossing (SUB-DRAIN PROJECT)	\$207,960	\$207,960	\$0	\$0	
2038	1825 North - Main Street to 300 East	\$486,875	\$486,875	\$0	\$0	\$486,875
	D&RG 2075 North - 36" Culvert	\$162,463	\$0	\$0	\$162,463	
2039	Barnard Street Overflow Storm Drain - Main Street to Deerfield Drive	\$704,025	\$704,025	\$0	\$0	\$704,025
2040	700 S. - 300 E. to 400 E., 600 S. - 300 E. to 400 E., 300 E. - 600 S. to 725 S. (SUB-DRAIN PROJECT)	\$743,707	\$743,707	\$0	\$0	\$743,707
2041	2100 North - 400 West to Churchill Drive (in back yards of 2115 North & 2101 North) (SUB-DRAIN PROJECT)	\$387,400	\$387,400	\$0	\$0	\$686,600
	850 South / 780 South - 150 West (Slip-Line) (SUB-DRAIN PROJECT)	\$299,200	\$299,200	\$0	\$0	
2042	Future 1250 West Extension - Rick's Creek 12' x 5' Box Culvert	\$375,188	\$0	\$0	\$375,188	\$613,629
	100 West Cul-de-sac on 1450 North (SUB-DRAIN PROJECT)	\$306,878	\$306,878	\$0	\$0	
2043	Tobe Drive - 350 West to 400 West (SUB-DRAIN PROJECT)	\$306,751	\$306,751	\$0	\$0	
2044	Canyon Breeze Drive (SUB-DRAIN PROJECT)	\$535,213	\$535,213	\$0	\$0	\$535,213
2045	700 South - 475 East to 700 East	\$699,000	\$699,000	\$0	\$0	\$699,000
2046	400 South - 400 East to 700 East	\$418,828	\$418,828	\$0	\$0	\$725,347
	1500 North Cul-de-sac on 400 West (SUB-DRAIN PROJECT)	\$306,520	\$306,520	\$0	\$0	
2047	Nola Drive - 1200 North to 1350 North	\$312,875	\$312,875	\$0	\$0	\$703,575
	Parrish Creek - 950 West to 1250 West - Channel Improvements	\$759,638	\$0	\$414,638	\$345,000	
	400 West - 1500 North to 1375 North (SUB-DRAIN PROJECT)	\$390,700	\$390,700	\$0	\$0	
2048	1850 North - 100 West to 400 West (SUB-DRAIN PROJECT)	\$1,021,938	\$1,021,938	\$0	\$0	\$1,021,938
2049	Main Street - 1600 North to Smoot Park	\$303,355	\$0	\$0	\$303,355	\$1,045,200
	1275 N - replace ADS with RCP	\$1,045,200	\$1,045,200	\$0	\$0	
2050	70 West - 115 N to Center Street	\$886,823	\$886,823	\$0	\$0	\$886,823
2051	1600 North (Rick's Creek Way) - 100 West to 200 West (SUB-DRAIN PROJECT)	\$538,691	\$538,691	\$0	\$0	\$538,691

STORM DRAIN & SUB-DRAIN COST SUMMARY		Total Estimated Cost	Cost Breakdown			
YEAR	DESCRIPTION		City's Cost	Davis County's Cost	Developer Cost	City Annual Cost
2052	Willow Valley Drive to Frontage Road Swale - Pipe (3) 15" System	\$451,550	\$451,550	\$0	\$0	\$451,550
2053	Future 1250 West Extension - 1875 North (Villa de France) - 36" RCP Culvert	\$207,900	\$0	\$0	\$207,900	\$634,200
	1975 North - Main Street to 150 East	\$634,200	\$634,200	\$0	\$0	
2054	2075 North / 725 West (SUB-DRAIN PROJECT)	\$852,050	\$852,050	\$0	\$0	\$852,050
2055	D&RG Rick's Creek - 71" x 47" Elliptical RCP Culvert	\$442,241	\$0	\$331,679	\$110,563	\$0
	Rick's Creek Culvert at 575 West (Parallel w/ New 36" Elliptical)	\$205,088	\$0	\$153,816	\$51,272	
2056	71" x 47" CMP Culvert at Legacy Trail and Sheep Road at 1000 North	\$443,238	\$0	\$0	\$443,238	\$459,256
	Sheep Road Rick's Creek - 71" x 47" Elliptical RCP Culvert	\$325,090	\$0	\$0	\$325,090	
	1650 North (Milky Way) - 100 West to 200 West (SUB-DRAIN PROJECT)	\$459,256	\$459,256	\$0	\$0	
2057	Sheep Road 2075 North - 36" Culvert	\$246,750	\$0	\$0	\$246,750	\$1,101,990
	Mountain View Drive & Creek View Drive (SUB-DRAIN PROJECT)	\$1,101,990	\$1,101,990	\$0	\$0	
	Lund Lane - 700 West to 200 West (SUB-DRAIN PROJECT)	\$0	\$0	\$0	\$679,800	
2058	Hillside Property Drainage Project (Searching for Grant. City Pays 25%)	\$4,661,925	\$1,165,481	\$3,496,444	\$0	\$1,165,481
TOTAL		\$28,446,898	\$21,377,112	\$4,396,576	\$3,353,010	\$21,377,112
PER YEAR COST		\$917,642	\$689,584	\$141,825	\$108,162	\$689,584

CENTERVILLE
CITY COUNCIL

Staff Report
9/15/2026

Item No. 2.

Title: Discussion - Church Well

Initiated By: Mike Carlson, Public Works Director

Staff Representative: Mike Carlson, Public Works Director

SUBJECT:

Discuss Church Well Fill Station operations, including the Source Protection Plan, winter operations, operating costs, inappropriate use, and well expectations

RECOMMENDATION:

1. Close the well.
2. Operate the well only during non-freezing months, such as closing it from October through April, or base operation on outside temperatures.
3. Operate the well only during designated hours that align with staff availability, such as 7:00 a.m. to 7:00 p.m.
4. Assign the Water Department to maintain the well around the clock and identify methods to avoid using deicers.
5. Continue current operations without additional changes while accepting the risk of future incidents; deicer use would still need to stop.

BACKGROUND:

- The Fill Station well has been in operation for 24 years.
- A significant portion of use appears to come from outside city limits.
- Fluoride has been removed from the water, and the same water now flows into residents' homes and taps; however, with Chlorine.
 - Misuse of the well has included washing dogs, bathing, filling RVs, and other inappropriate activities.
 - The approved Source Protection Plan outlines how the well must be protected. Winter operations involving a deicer may conflict with Municipal Code 9.03, the Drinking Water Source Protection Program, which is adopted by the City Council every five years.
 - Winter operation of the well. Related settlements or lawsuits have occurred, including one this year that cost \$1,500 from the water fund.
 - Potential stormwater violations related to both the well and deicer use.
 - Costs: The well has been pulled twice, with the most recent cost around \$42,000. These funds come from our citizens' water bills.
 - Water use at the well
 - o 2023 650,000
 - o 2024 500,000
 - o 2025 950,000
 - o 2026 800,000 to date (August 1st)
 - o Total since we repaired the well and pulled the pump: 2.5 million plus.

- Estimated installation cost of a coin-operated system: \$3,500 to \$4,000. This also comes with other problems, like: I am paying for it; why is it not working (expectation).
- Current filter costs 350 per month and has been going on for fifteen years (does not include other maintenance costs).
- It appears that more users come from outside the city than from within city limits.
- The Well remains an important emergency resource for providing drinking water.

Rules governing the well include the Source Protection Plan and the following items:

- The plan must remain an ongoing program. See the Council packet attachment for additional detail.
- The plan is updated every five years, approved and adopted by the City Council, and approved by the Division of Drinking Water.
- The Deicer Safety Data Sheet should be considered.

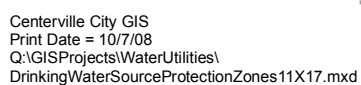
- If the well remains open during winter, what level of snow and ice control should be expected?

ATTACHMENTS:

1. Map Drinking WaterSource Protection Zones 11X17
2. Church Well SPP
3. Streamline Blue Heat Deicer
4. 9 (9.1) Appendix Sample Memo for training
5. Book1
6. 8 (9.A) (9.B) notification letters of Zone 2, Land Owner

[illegible]

 Protection Zone 1 (100' radius from well head)
 Protection Zone 2 (250 day groundwater time of travel)
 Protection Zone 3 (3-year groundwater time of travel)
 Protection Zone 4 (15-year groundwater time of travel)
 Centerville City Limits



CHURCH WELL (SS174) WS001 & WS011 (Grouped Source)
UPDATES 2020 SOURCE PROTECTION PLAN

1.0 INTRODUCTION (No changes)

- 1.1 System Information
Centerville City
06001
1250 West 655 North, Centerville, Utah 84014
(801)292-8232
- 1.2 Source Information
Source Name: Church Well
Source Number: WS 001 & WS 011
Source Type: Well
- 1.3 Designated Person
Randy Randall & Michael Carlson

2.0 THE DELINEATION REPORT
No changes

3.0 THE INVENTORY OF POTENTIAL CONTAMINATION SOURCES
One changes to inventory sites

Update of Best management practices;

- No Insecticides, Herbicides or Fertilizers are stored there at 700 East 400 South anymore. We will keep watching this for the years to come. We will still be watching the zones as well as education of property owners.

17	Centerville City 700 E. 400 S.	Insecticides- less than 300 gal/year herbicides- 15- 20 gal/year Fertilizers-4 to - 8 tons/year	Point	N	4	New Suggested Management, keep and inspection of the build to see if any return.
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4.0 THE ASSESSMENT OF POTENTIAL CONTAMINATION SOURCE HAZARDS
No changes

5.0 MANAGEMENT PROGRAM FOR EXISTING POTENTIAL CONTAMINATION SOURCE
No changes

6.0 THE MANAGEMENT PROGRAM FOR FUTURE POTENTIAL CONTAMINATION
No changes

7.0 THE IMPLEMENTATION SCHEDULE
All strategies were met in accordance with the implementation dates, to the best of
our ability's, See suggested new strategy's in the "change to implementation 7.1".

7.1 **Potential Contamination Source**

Public Education Program

Strategy

Provide information on Drinking Water Source Protection to all Residents and Businesses connected to the City water system by the way of City Newsletters, Annual Drinking Water Report, or Bill stuffers

Implementation Date

* Within 12 months of the acceptance of the Church Well's drinking water source protection Management plan.

Change to implementation

We would like to discontinue going into the schools and teaching the 5th graders because we have not been allowed or asked to go in and teach.
New goal is outline above in Strategy's.

7.2 **Potential Contamination Source**

All recorded Potential Contaminations Sources

Strategy

A site Visit every three years in which the established management program is assessed and additional management established as needed.

Implementation Date

* Within 12 months of the acceptance of the Church Well's drinking water source protection Management plan.

Change to implementation

No Change to this one.

7.3 **Potential Contamination Source**

Future Developments within Centerville City Boundary's

Strategy

Overlay Zone

Implementation Date

* Immediately upon acceptance of Centerville City's Management Plans for Church Well and other city wells.

Change to implementation

No Change to this one.

8.0 THE RESOURCE EVALUATION
No changes

9.0 THE RECORD KEEPING SECTION

(A) Public Education - we have submitted many newsletters articles as well as bill stuffers. Also we have focus a lot in out water Quality Reports on Source Protection annually
See articles in appendixes.

(B) Notification letters of zone 2 land owners property within the Wellhead protection areas

1	Year	Date	Who was in charge
	2020	July	Blake Mendenhall

(C)

2 Implementation strategy's of Road Salt Application,				
Dates	Dates	Training Person		Notes:
2016	Oct	Mike		Verbal training
2017	Oct	Mike		Verbal training
2018	Nov	Mike		Verbal training
2019	Oct	Mike		Verbal training
2020	Oct 6th	Mike		Written training

** From now on dates and notes will be inputted in to this report

(D)

17 Implementation Strategy's management of each Zone 1 & 2.				
Year	Month	Date	Who	Notes or corrective action
2017	January		Mike	No Action needed
2019	October		Mike	No Action needed
2020	April	4/14/2020	Mike	Made One Change see 3.0

** From now on dates and notes will be inputted in to this report

(E) City Ordinance 2011-22 for the Hill Side Overlay still in effect. See in the rear of the the book or file in this section.

9.1 See articles in appendixes.

10.0 THE CONTINGENCY PLAN

11.0 No change

PUBLIC NOTIFICATION

11.1 Centerville has given notice through our Consumer Confidence Reports and on our Web Site that our source protection is available for review at the Centerville City Public Works Department. Also see articles in the back of this section.

12.0 WAIVERS

No waivers

Note this is a grouped Well SS174 (WS001 & WS011)

References

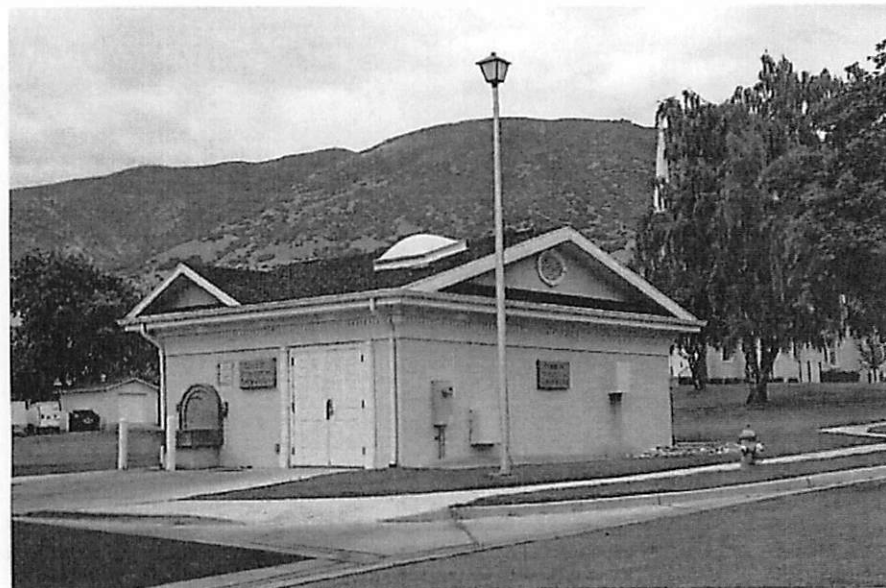
Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Church Well



Your property is in the 250 Day Protection Zone for the Church Well located at 210 East 200 South. This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

Approved by Centerville City Public Works Department

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

One gallon of gas can pollute 600 thousand gallons of ground water. Also one gram of 2-4D (household herbicide) can contaminate 2.6 million gallons of drinking water.

Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

With hazardous materials or harmful substances-

Don't pour it down the drain.

Don't put it in the trash.

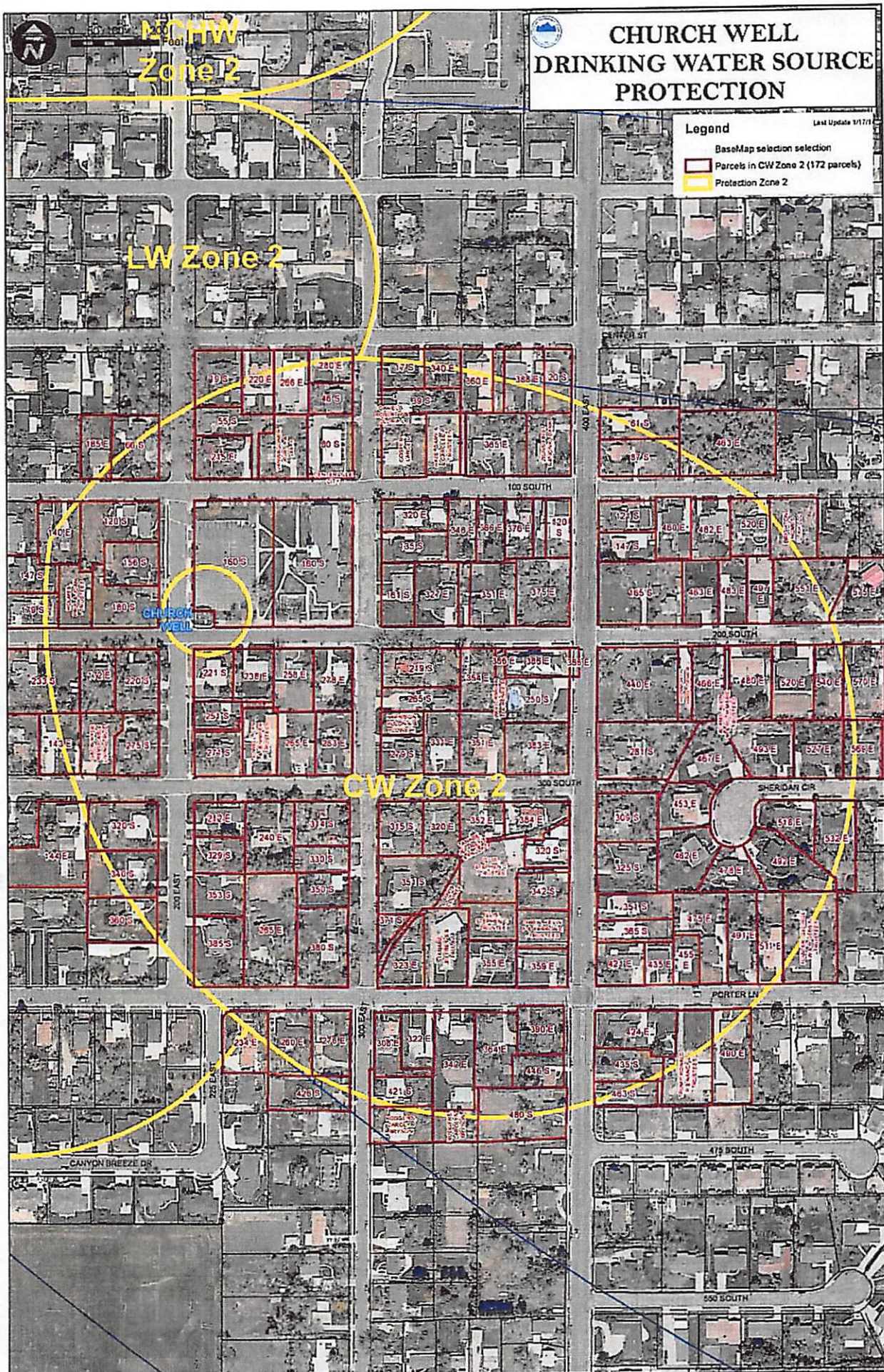
Don't dump it on the ground.

Do Use and Dispose of Harmful Materials Properly. If you have questions on how to properly dispose of hazardous materials, please call the Centerville City Public Works (801-292-8232) or the Davis County Utah State Extension Service Office (801-451-3412).

Centerville City Municipal Code

Centerville City Ordinance Chapter 9-10 establishes requirements for drinking water source protection. It states that is unlawful for a person to "discharge, or permit the discharge of any regulated substances or petroleum products, whether treated or untreated, to soils, air, groundwater, or surface water in any Protection Zone, that may have a deleterious effect upon groundwater within the City . . ." (Section 9-10-090(a)).

A violation of the Ordinance is a Class B misdemeanor (Section 9-10-150(f)) which carries a punishment of imprisonment up to six months and a fine of up to \$1,000 (Utah Code Annotated Sections 76-3-204 and 76-3-301).





CENTERVILLE

city 2024 Water Quality Report

Join Us

If you want to learn more, please attend any of our regularly scheduled City Council meetings. They are held on the first and third Tuesday of each month at 7:00 pm at Centerville City Hall located at 250 North Main. Please check the City Council agenda prior to attending because our water system is not discussed at each meeting.

Contact Questions

Centerville Public Works
801-292-8232



This report shows our water quality and what it means to you, our customer.

Your Drinking Water

Centerville City is pleased to present you, our customer, with the most current Drinking Water Quality report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water.

Centerville City provides its consumers with ground/surface water. These sources are listed as Church Well 210 E 200 S, 50E Cen St Lion Well, Ricks Creek Well, City Hall Well, Carrington Well, Church Well Main, Chase Lane Well, UTAH6013 Weber Basin WCD - South.

Source Protection

The Drinking Water Source Protection Plan for Centerville City is available for your review. It contains information about source protection zones, potential contamination sources and management strategies to protect our drinking water. Our sources have been determined to have a low level of susceptibility from potential contamination sources. We have also developed management strategies to further protect our sources from contamination. Please contact us if you have questions or concerns about our source protection plan.

Cross Connection

There are many connections to our water distribution system. When connections are properly installed and maintained, the concerns are very minimal. However, unapproved and improper piping changes or connections can adversely affect not only the availability, but also the quality of the water. A cross connection may let polluted water or even chemicals mingle into the water supply system when not properly protected. This not only compromises the water quality but can also affect your health. So, what can you do? Do not make or allow improper connections at your homes. Even that unprotected garden hose lying in the puddle next to the driveway is a cross connection. The unprotected lawn sprinkler system after you have fertilized or sprayed is also a cross connection. When the cross connection is allowed to exist at your home, it will affect you and your family first. If you'd like to learn more about helping to protect the quality of our water, call us for further information about ways you can help.

We at Centerville City work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future.

Centerville City routinely monitors contaminants in our drinking water in accordance with the Federal and Utah State laws. The following table shows the results of our monitoring for 2024. It is important to remember that all water sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health.

TEST RESULTS							
Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
Microbiological Contaminants							
Total Coliform Bacteria	N	1	N/A	0	Presence of coliform bacteria in 5% of monthly samples	2024	Naturally present in the environment
Fecal coliform and <i>E. coli</i>	N	0	N/A	0	If a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	2024	Human and animal fecal waste
Turbidity for Ground Water	N	0-0.33	NTU	N/A	5	2020, 2024	Soil runoff
Turbidity for Surface Water	N	0-0.33	NTU	N/A	0.5 in at least 95% of the samples and must never exceed 5.0	2020, 2024	Soil Runoff (highest single measurement & the lowest monthly percentage of samples meeting the turbidity limits)
Inorganic Contaminants							
Barium	N	0.023-0.052	ppb	2000	2000	2020, 2024	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Carbon, Total Organic (TOC)	N	0.9-4	ppm	NA	TT	2024	Naturally present in the environment
Copper a. 90% results b. # of sites that exceed the AL	N	a. 0.237 b. 0	ppm	1.3	AL=1.3	2023	Corrosion of household plumbing systems; erosion of natural deposits
Lead a. 90% results b. # of sites that exceed the AL	N	a. 3 b. 0	ppb	0	AL=15	2023	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate (as Nitrogen)	N	.411-3.622	ppm	10	10	2023, 2024	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	0-0.8	ppb	50	50	2020, 2024	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium	N	26.004-39.041	ppm	None set by EPA	None set by EPA	2020, 2024	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	20.496-36.791	ppm	1000	1000	2020, 2024	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
If the sulfate level of a public water system is greater than 500 ppm, the supplier must satisfactorily demonstrate that: a) no better water is available, and b) the water shall not be available for human consumption from commercial establishments. In no case shall water having a level above 1000 ppm be used.							
TDS (Total Dissolved solids)	N	192-484	ppm	2000	2000	2020, 2024	Erosion of natural deposits
If TDS is greater than 1000 ppm the supplier shall demonstrate to the Utah Drinking Water Board that no better water is available. The Board shall not allow the use of an inferior source of water if a better source is available.							
Disinfection By-products							
THM [Total trihalomethanes]	N	0-97.91	ppb	0	80	2024	By-product of drinking water disinfection
Haloacetic Acids	N	0-38.4	ppb	0	60	2024	By-product of drinking water disinfection
Radioactive Contaminants							
Alpha emitters	N	0.881-14.8	pCi/l	0	15	2020, 2023, 2024	Erosion of natural deposits
Combined Radium	N	0.186-0.982	pCi/l	0	5	2023, 2024	Erosion of natural deposits
Gross alpha including radon and uranium	N	17.4-18.1	pCi/l	0	0	2024	Erosion of natural deposits
Radium 226	N	0.022-0.4	pCi/l	0	5	2020, 2023, 2024	Erosion of natural deposits
Radium 228	N	0-0.739	pCi/l	0	5	2020, 2023, 2024	Erosion of natural deposits
Uranium	N	20.7-25.7	Ppb	0	30	2024	Erosion of natural deposits



CENTERVILLE CITY

PUBLIC WORKS

655 North 1250 West • Centerville, Utah 84014 • (801) 292-8232 • Fax: (801) 292-8251

October 7, 2020

Melissa Noble

The following is a 2020 a Eagle Scout Project by Blake Mendenhall, a local Scout group, where a handout was distributed to all residents in the 250 day zone. At the same time the scouts and Leaders also explained the Source Protection Plan and what the residents could do to help out.

The number of households they tried to contact for each well is listed below:

Church Well 163

Lyon Well 156

City Hall Well 140

Chase Lane Well 110

Holbrook Well 127

Carrington Well 146

Rick's Creek Well 79

Porter Lane well 90

Rolling Hill Well 0, because it is on the hillside with no homes or business in the 250 day zone.

More about the Eagle Project:



I finally finished my Eagle Project. I ended up having 29 people help me complete the project and it took 49 man hours including printing the flyers, folding, stapling rubber bands and walking door to door.



The page follow are the information he passes out.

MEMORANDUM

TO: Marc Marchant and Streets Department Crews
FROM: Mike Carlson, Deputy Public Works Director
DATE: October 6th, 2020
RE: Source Protection Plan and Road Salt Application

We are reminding you regarding the use of road salt around the city pump houses which are Holbrook Well, Church Well, Porter Lane Well, Lyon Well, City Hall Well, and Rick's Creek Well, Chase Lane Well, Carrington Well. Please review the city copy of the Source Protection Plan.

These areas should be watched closely to ensure that not too much salt is put on the road. We have maps of the areas if you need one.



Please remember the trucks a calibrated for the set amount of road salt to dispense. If possible lower the amount if it will still do the job with less salt when you are around our wells.

Thanks for your help in keeping our water safe and clean.



SAFETY DATA SHEET

Section 1: Chemical Product and Company Identification

Product name: Streamline's Blue Heat
Product Code: 104
Chemical Use: Ice Melt

Date Prepared: 4/15/15
Supersedes: New

Restrictions on use: Use in accordance with all Federal, State and local regulations.

Company Identification: Streamline Supply Inc.
460 N. 1000 W.
Centerville, Utah 84014

Manufactured by: Streamline Supply Inc.
460 N. 1000 W.
Centerville, Utah 84014

Emergency Telephone Numbers: For Transportation Emergency: PERS (800) 633-8253
For Medical Emergency: PERS (800) 633-8253 or (877) 350-5426
For SDS or other information: (877) 350-5426 or (801) 294-2980
Email: info@streamlinesupply.com
Fax: (801) 294-2626

Section 2: Hazard(s) Identification

GHS Classification: Serious Eye Damage/Eye Irritation: Category 2A

GHS Label element

Hazard pictograms:



Signal Word: WARNING

Hazard Statements: H319 Causes serious eye irritation

PRECAUTIONARY STATEMENTS:

Prevention: P264 Wash exposed skin thoroughly after handling.
P280 Wear protective gloves, protective clothing, face and eye protection.

Response: IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical attention.

Section 3: Composition/Information on Ingredients

CHEMICAL NAME	CAS NUMBER	% BY WEIGHT
Sodium chloride	7647-14-5	>=70% - <=95%
Calcium chloride	10043-52-4	>= 3% - <=10%
Potassium chloride	7447-40-7	>= 1% - <=5%
Magnesium chloride	7791-18-6	>= 1% - <=5%

The specific chemical identity of this composition is being withheld as a trade secret

Section 4: First Aid Measures**First Aid Procedures:**

General Advice: Consult a physician. Show safety data sheet to doctor in attendance.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.

IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and shoes. Wash these before reuse. If skin irritation occurs get medical attention.

HALATION: Moved exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

INGESTION: Do NOT induce vomiting unless directed to do so by medical personnel. Rinse mouth. If vomiting occurs, the head should be kept low so vomit does not enter the lungs. If affected person is conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms or effects are described in labeling (see section 2) and or section 11.

Indication of any immediate medical attention and special treatment needed: No data available

Section 5: Fire-Fighting Measures

Suitable extinguishing media: Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media: No data available

Specific hazards arising from chemical: Hydrogen chloride gas, Calcium oxide

Special protective action for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Specific Explosion Hazards: No data available.

Section 6: Accidental Release Measures**Steps to Take in Case Material Is Released or Spilled:****Personal precautions, protective equipment and emergency procedures:****For non-emergency personnel:**

Always use proper personal protective equipment as described in section 8. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust. Do not let product enter drains.

For emergency responders:

Wear proper protection during cleanup. See section 8. Ventilate area.

Environmental precautions:

Avoid run-off into storm sewers and ditches that lead to waterways.

Section 6: Accidental Release Measures (continued)**Method and materials for containment and cleaning up:**

Pick up by sweeping and shovel without creating dust. Keep in suitable, closed container for disposal according to Federal, State, and local regulations.

Reference to other sections: See section 13 for disposal information.

Section 7: Handling and Storage

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Do not ingest. Use with adequate ventilation. Avoid breathing vapor, mist or dust. Observe label precautions and direction for use.

Storage: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area. Store away from strong acids and oxidizing materials. Keep away from food and drinks. Keep in a tightly closed container. Avoid humid or wet conditions as product will cake and become hard.

Specific end use(s): Apart from the use mention in section 1 no other uses are stipulated.

Section 8: Exposure Controls/Personal Protection**Exposure Controls/Personal Protection****Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Exposure controls**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal protective equipment**Eye/face protection:**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection:

Handle with gloves. Wear appropriate chemical resistant gloves. Nitrile, latex or rubber gloves are recommended.

Body protection:

Wear suitable protective clothing. Impervious clothing.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Engineering Controls

Engineering Measures: Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling.

Section 9: Physical Data

Appearance: Blue crystalline
Odor: No data available
Odor Threshold: No data available
pH: 6 - 9
Melting/freezing Point: No data available
Boiling Point: No data available
Boiling Range: No data available
Flash Point: No data available
Evaporation Rate: No data available
Upper /lower flammability or Explosive Limits: No data available
Vapor Pressure: No data available
Vapor Density (Air =1): No data available
Relative density: 2.16
Weight/gallon: No data available.
Solubility in Water: Soluble in water
Partition coefficient n-octanol/water): No data available
Auto-ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available

Section 10: Stability and Reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials. Exposure to moisture may affect product quality. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Incompatibility With Various Substances: Strong oxidizing agents and acids.

Hazardous Decomposition Products: May evolve chlorine gas when in contact with strong acids.

Section 11: Toxicological Information**Information on likely routes of exposure**

Inhalation: Inhalation of dusts may cause respiratory irritation.

Skin contact: Prolonged or repeated skin contact may cause irritation.

Eye contact: Dust in the eyes will cause irritation.

Ingestion: Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye and skin contact: Exposure may cause temporary irritation, redness, or discomfort. For ingestion, consuming less than a few grams would not be harmful. The following effects were observed after ingesting an excessive quantity: nausea and vomiting, diarrhea, cramps, restlessness, irritability, dehydration, water retention, nose bleed, gastrointestinal tract damage, fever, sweating, sunken eyes, high blood pressure, muscle weakness, dry mouth and nose, shock, cerebral edema (fluid on brain), pulmonary edema (fluid in lungs), blood cell shrinkage, and brain damage (due to dehydration of brain cells). Death is generally due to cardiovascular collapse or CNS damage.

Section 11: Toxicological Information (continued)**Information on toxicological effects**

Acute toxicity: In some cases of confirmed hypertension, ingestion may result in elevated blood pressure.

Acute toxicity

LD50 Oral - Rat -2,301 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Moderate eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Rat

Unscheduled DNA synthesis

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12: Ecological Information**Toxicity**

Toxicity to fish LC50 - *Lepomis macrochirus* - 10,650 mg/l - 96 h

Toxicity to daphnia and: EC50 - *Daphnia magna* (Water flea) - 2,400 mg/l - 48 h
other aquatic (OECD Test Guideline 202)
invertebrates

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Section 13: Disposal Information

Disposal Considerations: Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transportation Information**DOT**

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to - Not applicable.

**Annex II of MARPOL 73/78 and
the IBC Code**

Section 15: Regulatory Information**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Calcium chloride CAS#: 10043-52-4

New Jersey Right To Know Components

Calcium chloride CAS#: 10043-52-4

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information**Hazardous Materials Identification System (HMIS)**

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

National Fire Protective Association: Health - 2, Flammability - 0, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.



Section 16: Other Information (continued)**OVERVIEW**

This information was compiled from current manufacturer's SDS's of the component parts of the product.

Disclaimer: The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

STREAMLINE SUPPLY INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, STREAMLINE SUPPLY INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

MEMORANDUM

TO: Marc Marchant and Streets Department Crews
FROM: Mike Carlson, Deputy Public Works Director
DATE: October 6th, 2020
RE: Source Protection Plan and Road Salt Application

We are reminding you regarding the use of road salt around the city pump houses which are Holbrook Well, Church Well, Porter Lane Well, Lyon Well, City Hall Well, and Rick's Creek Well, Chase Lane Well, Carrington Well. Please review the city copy of the Source Protection Plan.

These areas should be watched closely to ensure that not too much salt is put on the road. We have maps of the areas if you need one.



Please remember the trucks are calibrated for the set amount of road salt to dispense. If possible, lower the amount if it will still do the job with less salt when you are around our wells.

Thanks for your help in keeping our water safe and clean.

MEMORANDUM

TO: Bruce Cox, Parks Department
FROM: Mike Carlson
DATE: April 6th, 2020
RE: Source Protection Plan

We are reminding you of some areas in our Source Protection Plan. I know that you have removed most all the chemical but as a reminder we would like you to store less than 300 gallons of insecticide, less than 15 to 20 gallons a year of herbicides and less than 4 to 8 ton per year of fertilizers.

Please make sure that all chemicals are stored indoors on a dry concrete or wood floor. At the cemetery, Founder's Park, City Hall and Rick's Creek, all pesticides and fertilizers should be applied only as directed on the label. Please be sure that all spills are cleaned up immediately in the appropriate way.

If you need any more information, please see me or refer to our Source Protection Plan. We appreciate your help in keeping our water clean and safe.

CHURCH WELL (SS174) WS001 & WS011 (Grouped Source)
UPDATES 2020 SOURCE PROTECTION PLAN

1.0 INTRODUCTION (No changes)

1.1 System Information
Centerville City
06001
1250 West 655 North, Centerville, Utah 84014
(801)292-8232

1.2 Source Information
Source Name: Church Well
Source Number: WS 001 & WS 011
Source Type: Well

1.3 Designated Person
Randy Randall & Michael Carlson

2.0 THE DELINEATION REPORT
No changes

3.0 THE INVENTORY OF POTENTIAL CONTAMINATION SOURCES
One changes to inventory sites

Update of Best management practices;

- No Insecticides, Herbicides or Fertilizers are stored there at 700 East 400 South anymore. We will keep watching this for the years to come. We will still be watching the zones as well as education of property owners.

17	Centerville City 700 E. 400 S.	Insecticides- less than 300 gal/year herbicides- 15- 20 gal/year Fertilizers-4 to -8 tons/year	Point	N	4	New Suggested Management, keep and inspection of the build to see if any return.
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4.0 THE ASSESSMENT OF POTENTIAL CONTAMINATION SOURCE HAZARDS
No changes

5.0 MANAGEMENT PROGRAM FOR EXISTING POTENTIAL CONTAMINATION SOURCE
No changes

6.0 THE MANAGEMENT PROGRAM FOR FUTURE POTENTIAL CONTAMINATION
No changes

7.0 THE IMPLEMENTATION SCHEDULE
All strategies were met in accordance with the implementation dates, to the best of
our ability's, See suggested new strategy's in the "change to implementation 7.1".

7.1 **Potential Contamination Source**
Public Education Program
Strategy
Provide information on Drinking Water Source Protection to all Residents and Businesses connected to the City water system by the way of City Newsletters, Annual Drinking Water Report, or Bill stuffers
Implementation Date
* Within 12 months of the acceptance of the Church Well's drinking water source protection Management plan.
Change to implementation
We would like to discontinue going into the schools and teaching the 5th graders because we have not been allowed or asked to go in and teach.
New goal is outline above in Strategy's.

7.2 **Potential Contamination Source**
All recorded Potential Contaminations Sources
Strategy
A site Visit every three years in which the established management program is assessed and additional management established as needed.
Implementation Date
* Within 12 months of the acceptance of the Church Well's drinking water source protection Management plan.
Change to implementation
No Change to this one.

7.3 **Potential Contamination Source**
Future Developments within Centerville City Boundary's
Strategy
Overlay Zone
Implementation Date
* Immediately upon acceptance of Centerville City's Management Plans for Church Well and other city wells.
Change to implementation
No Change to this one.

8.0 THE RESOURCE EVALUATION
No changes

9.0 THE RECORD KEEPING SECTION

(A) Public Education - we have submitted many newsletters articles as well as bill stuffers. Also we have focus a lot in out water Quality Reports on Source Protection annually
See articles in appendixes.

(B) Notification letters of zone 2 land owners property within the Wellhead protection areas

1	Year	Date	Who was in charge
	2020	July	Blake Mendenhall

(C)

2	Implementation strategy's of Road Salt Application,			
Dates	Dates	Training Person		Notes:
2016	Oct	Mike		Verbal training
2017	Oct	Mike		Verbal training
2018	Nov	Mike		Verbal training
2019	Oct	Mike		Verbal training
2020	Oct 6th	Mike		Written training

** From now on dates and notes will be inputted in to this report

(D)

17	Implementation Strategy's management of each Zone 1 & 2.			
Year	Month	Date	Who	Notes or corrective action
2017	January		Mike	No Action needed
2019	October		Mike	No Action needed
2020	April	4/14/2020	Mike	Made One Change see 3.0

** From now on dates and notes will be inputted in to this report

(E) City Ordinance 2011-22 for the Hill Side Overlay still in effect. See in the rear of the the book or file in this section.

9.1 See articles in appendixes.

10.0 THE CONTINGENCY PLAN

11.0 No change

PUBLIC NOTIFICATION

11.1 Centerville has given notice through our Consumer Confidence Reports and on our Web Site that our source protection is available for review at the Centerville City Public Works Department. Also see articles in the back of this section.

12.0 WAIVERS

No waivers

Note this is a grouped Well SS174 (WS001 & WS011)



CENTERVILLE CITY

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October 7, 2020

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References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Church Well



Your property is in the 250 Day Protection Zone for the Church Well located at 210 East 200 South. This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

Approved by Centerville City Public Works Department

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

One gallon of gas can pollute 600 thousand gallons of ground water. Also one gram of 2-4D (household herbicide) can contaminate 2.6 million gallons of drinking water.

Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

With hazardous materials or harmful substances-

Don't pour it down the drain.

Don't put it in the trash.

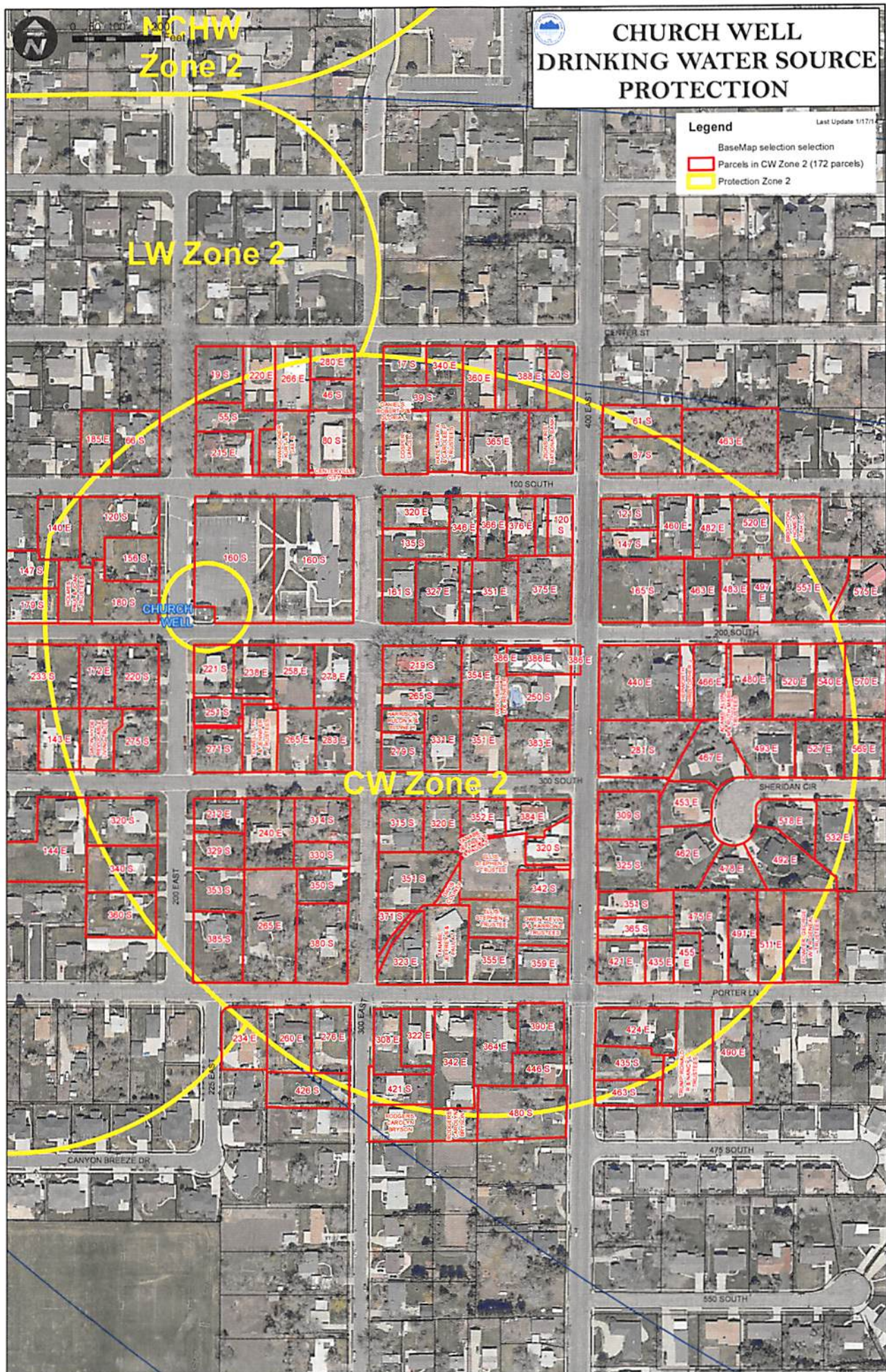
Don't dump it on the ground.

Do Use and Dispose of Harmful Materials Properly. If you have questions on how to properly dispose of hazardous materials, please call the Centerville City Public Works (801-292-8232) or the Davis County Utah State Extension Service Office (801-451-3412).

Centerville City Municipal Code

Centerville City Ordinance Chapter 9-10 establishes requirements for drinking water source protection. It states that is unlawful for a person to "discharge, or permit the discharge of any regulated substances or petroleum products, whether treated or untreated, to soils, air, groundwater, or surface water in any Protection Zone, that may have a deleterious effect upon groundwater within the City . . ." (Section 9-10-090(a)).

A violation of the Ordinance is a Class B misdemeanor (Section 9-10-150(f)) which carries a punishment of imprisonment up to six months and a fine of up to \$1,000 (Utah Code Annotated Sections 76-3-204 and 76-3-301).



References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Holbrook Well



Your property is in the 250 Day Protection Zone for the Holbrook Well located at 1350 North Cottonwood (275 East). This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

Approved by Centerville City Public Works Department

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

One gallon of gas can pollute 600 thousand gallons of ground water. Also one gram of 2-4D (household herbicide) can contaminate 2.6 million gallons of drinking water.

Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

With hazardous materials or harmful substances-

Don't pour it down the drain.

Don't put it in the trash.

Don't dump it on the ground.

Do Use and Dispose of Harmful Materials Properly. If you have questions on how to properly dispose of hazardous materials, please call the Centerville City Public Works (801-292-8232) or the Davis County Utah State Extension Service Office (801-451-3412).

Centerville City Municipal Code

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Parents in NW Zone 2 (129 count)
Last Update 1/17/18

References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Lions Well



Your property is in the 250 Day Protection Zone for the Lions Well located at 50 East Center Street. This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

Approved by Centerville City Public Works Department

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

One gallon of gas can pollute 600 thousand gallons of ground water. Also one gram of 2-4D (household herbicide) can contaminate 2.6 million gallons of drinking water.

Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

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Automotive, Household, and Other Products

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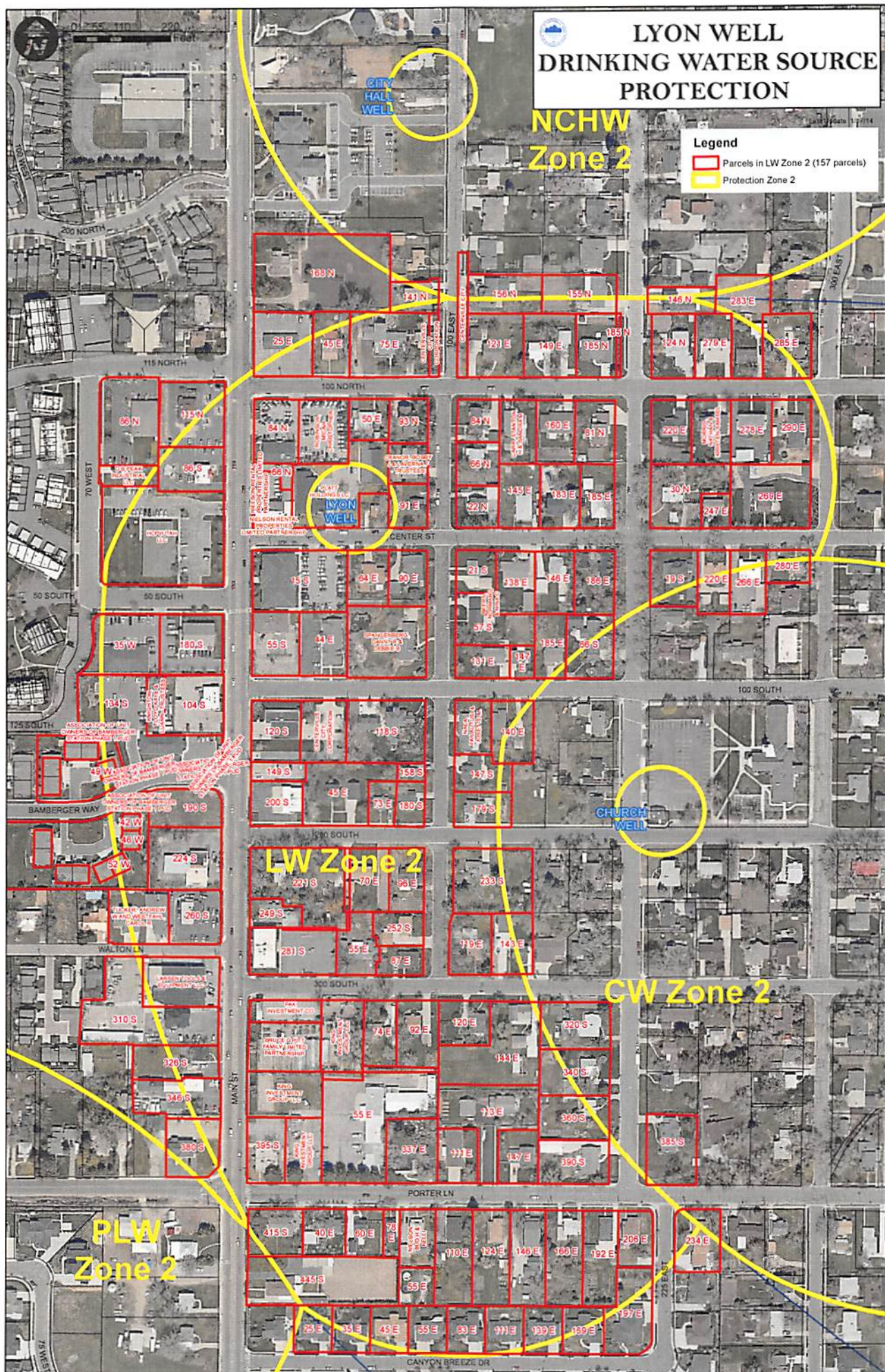
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References

Centerville City Drinking Water Source Protection Plan Section 5

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April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Porter Lane Well



Your property is in the 250 Day Protection Zone for the Porter Lane Well located at 160 West Porter Lane (400 South). This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

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Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
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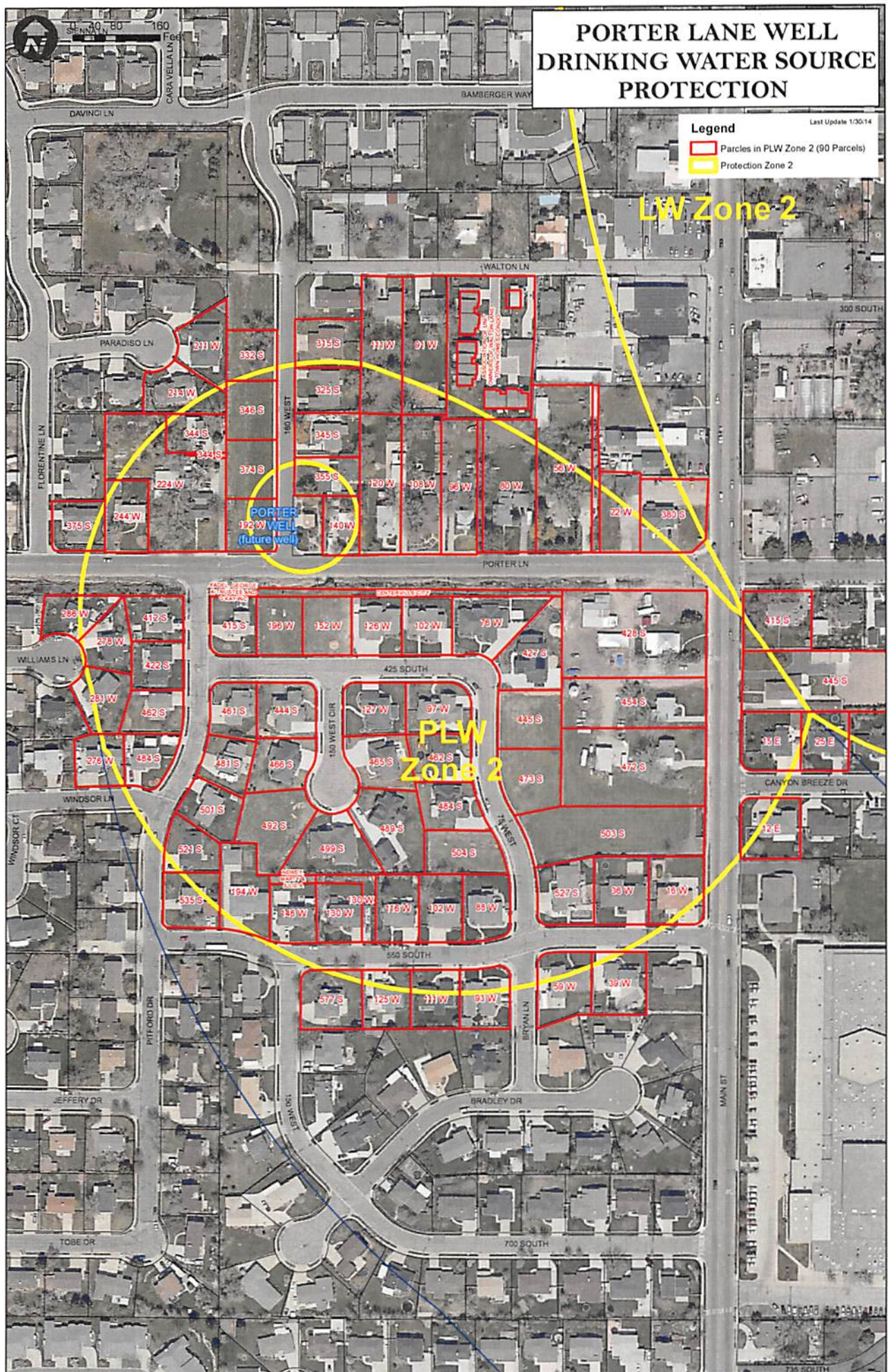
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Slus	Owner	MaiAddress	MaiCity	MaiState	MaiZipcod	SiteAddress	Tax Id
12	FISHER, B JAMES & MARLENE L	12 EAST CANYON BREEZE DRIVE	CENTERVILLE	UT	84014	12 E CANYON BREEZE DR	03-139-0001
15	VAN ORMAN, LORNA - TRUSTEE	15 EAST CANYON BREEZE DR	CENTERVILLE	UT	84014	15 E CANYON BREEZE DR	03-139-0010
16	FREEMAN, CARY DUANE & ARNA MARIA	16 WEST 550 SOUTH	CENTERVILLE	UT	84014	16 W 550 SOUTH	03-147-0049
22	C PROPERTIES LLC	871 NORTH BONITO WAY	CENTERVILLE	UT	84014	22 W 400 SOUTH	03-002-0250
25	WILLIAMS, KAREN & DOUGLAS	25 EAST CANYON BREEZE DR	CENTERVILLE	UT	84014	25 E 475 SOUTH	03-139-0009
36	BEETON, GERALD JAMES & SHIRLEY RAE - TRUSTEES	36 WEST 550 SOUTH	CENTERVILLE	UT	84014	36 W 550 SOUTH	03-147-0050
39	CURTIS, CALVIN C & MELANIE A	39 WEST 550 SOUTH	CENTERVILLE	UT	84014	39 W 550 SOUTH	03-147-0047
56	WEIR, HARRY M & ELOISE O - TRUSTEES	56 WEST 550 SOUTH	CENTERVILLE	UT	84014	56 W 400 SOUTH	03-002-0251
59	BRISON, JEFFREY H & TAMM I - TRUSTEES	59 WEST 550 SOUTH	CENTERVILLE	UT	84014	59 W 550 SOUTH	03-147-0046
76	GETZ, KENNETH D & DAWN L	76 WEST 425 SOUTH	CENTERVILLE	UT	84014	76 W 425 SOUTH	03-224-0005
80	WHITAKER, MARYLYNNE	80 WEST PORTER LANE	CENTERVILLE	UT	84014	80 W PORTER LN	03-002-0008
88	ALDER, BENSON R & CATHERINE S	88 WEST 550 SOUTH	CENTERVILLE	UT	84014	88 W 550 SOUTH	03-147-0052
91	ADAMSON, DAVID M	91 WEST WALTON LANE	CENTERVILLE	UT	84014	91 W WALTON LN	03-002-0241
93	COOK, DARYL HENRY & MARIE - TRUSTEES	93 WEST 550 SOUTH	CENTERVILLE	UT	84014	93 W 550 SOUTH	03-147-0045
96	CARLSON, C RAY - TRUSTEE	1700 SHADY PINES DR	IDAHO FALLS	ID	83404-3142	96 W PORTER LN	03-002-0007
97	GARNER, MATTHEW C & JISSEL R	97 WEST 425 SOUTH	CENTERVILLE	UT	84014	97 W 425 SOUTH	03-224-0013
102	HENDERSON, JAY A & TERESA D	102 WEST 550 SOUTH	CENTERVILLE	UT	84014	102 W 550 SOUTH	03-147-0053
102	ORTON, STEVEN L & ELVA R	102 WEST 425 SOUTH	CENTERVILLE	UT	84014	102 W 425 SOUTH	03-224-0004
108	HAGEN, JEAN L AND SOLARCZYK, LYNN	108 WEST PORTER LANE	CENTERVILLE	UT	84014	108 W PORTER LN	03-002-0006
111	GARDNER, DONALD E & KATHRYN H - TRUSTEES	111 WEST 550 SOUTH	CENTERVILLE	UT	84014	111 W 550 SOUTH	03-147-0044
111	GRIFFITHS, BRANDON & CARRI	111 WEST WALTON LANE	CENTERVILLE	UT	84014	111 W WALTON LN	03-002-0271
116	MATTHEWS, A BLAKE & PATRICE	116 WEST 550 SOUTH	CENTERVILLE	UT	84014	116 W 550 SOUTH	03-147-0054
120	RASMUSSEN, CHRISTIAN J	120 WEST 400 SOUTH	CENTERVILLE	UT	84014	120 W 400 SOUTH	03-002-0005
125	LARSON, SUSAN H	125 WEST 550 SOUTH	CENTERVILLE	UT	84014	125 W 550 SOUTH	03-147-0043
126	BULLOCK, WILLIAM PARRI & ANI T	126 WEST 425 SOUTH	CENTERVILLE	UT	84014	126 W 425 SOUTH	03-224-0003
127	ROMRELL, BRET A & KAREN H	443 SOUTH 150 WEST CIR	CENTERVILLE	UT	84014	127 W 425 SOUTH	03-224-0014
130	WILLIAMS, DEAN A & CHERYL N - TRUSTEES	130 WEST 550 SOUTH	CENTERVILLE	UT	84014	130 W 550 SOUTH	03-130-0037
130	WILLIAMS, DEAN A & CHERYL N - TRUSTEES	130 WEST 550 SOUTH	CENTERVILLE	UT	84014	130 W 550 SOUTH	03-130-0037
140	BOYER, RACHEL RENAE & JON THOMAS	140 WEST 400 SOUTH	CENTERVILLE	UT	84014	140 W 400 SOUTH	03-002-0113
146	NEWBY, MARTYN & JULIE A	146 WEST 550 SOUTH	CENTERVILLE	UT	84014	146 W 550 SOUTH	03-130-0025
152	BARLOW, TODD	764 EAST VILLAGE WAY	FRUIT HEIGHTS	UT	84037-2148	152 W 425 SOUTH	03-224-0002
192	WAYNE D CARLSON CONSTRUCTION INC	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	192 W PORTER LN	03-208-0001
194	BARBER, LYNN J & CORNIE H	194 WEST 550 SOUTH	CENTERVILLE	UT	84014	194 W 550 SOUTH	03-130-0036
196	SMITH, JUDD D & LISA M	1908 NORTH 750 WEST	CENTERVILLE	UT	84014	196 W 425 SOUTH	03-224-0001
211	WALTON, JOHN W & ELIZABETH J	211 WEST PARADISO LN	CENTERVILLE	UT	84014	211 W PARADISO LN	02-196-0015
214	GREGG, BRADLEY & SUSAN	14021 SOUTH 30TH PLACE	PHOENIX	AZ	85044-4590	214 W PARADISO LN	02-196-0014
224	LINDSTROM, WILLIAM ROYAL & SHERRI LYN BURLESON - TRUSTEES	224 WEST PORTER LN	CENTERVILLE	UT	84014	224 W 400 SOUTH	03-001-0132
244	BAN, MARK S AND BARTMAN, JULIE C	810 WESTMINSTER AVE	SALT LAKE CITY	UT	84105	244 W PORTER LN	03-001-0026
276	BLOOD, PHILLIP D & LISA KAY	276 WEST WINDSOR LANE	CENTERVILLE	UT	84014	276 W 500 SOUTH	03-145-0207
278	HUFF, FREDERICK J & HELENE PHILKAR	278 WEST 425 SOUTH	CENTERVILLE	UT	84014	278 W 425 SOUTH	03-145-0203
281	KING, TEDJ & MICHAEL D	281 WEST 425 SOUTH	CENTERVILLE	UT	84014	281 W 425 SOUTH	03-145-0204
286	CARLOS, ROBERTO & ELVA	286 WILLIAMS LANE	CENTERVILLE	UT	84014	286 W 425 SOUTH	03-145-0202
315	JOHNSON, MEDIT L	317 SOUTH 160 WEST	CENTERVILLE	UT	84014	315 S 160 WEST	03-002-0256
325	SA PROPERTY INVESTMENTS LLC	27 WEST GLOVER LAKE	FARMINGTON	UT	84025	325 S 160 WEST	03-002-0252
332	WAYNE D CARLSON CONSTRUCTION INC	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	332 S 160 WEST	03-208-0004
344	LINDSTROM, WILLIAM ROYAL & SHERRI LYN BURLESON - TRUSTEES	224 WEST PORTER LN	CENTERVILLE	UT	84014	344 S 210 WEST	03-001-0191
344	LINDSTROM, WILLIAM ROYAL & SHERRI LYN BURLESON - TRUSTEES	224 WEST PORTER LN	CENTERVILLE	UT	84014	344 S 210 WEST	03-001-0191
345	MATTHEWS, LURCH & JOANNA	345 SOUTH 160 WEST	CENTERVILLE	UT	84014	345 S 160 WEST	03-002-0258
346	WAYNE D CARLSON CONSTRUCTION INC	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	346 S 160 WEST	03-208-0003
355	MCKEY, R CORY & REBECCA	355 SOUTH 160 WEST	CENTERVILLE	UT	84014	355 S 160 WEST	03-002-0257
374	WAYNE D CARLSON CONSTRUCTION INC	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	374 S 160 WEST	03-208-0002
375	BUTLER, BARBARA G - TRUSTEE	375 SOUTH FLORENTINE LN	CENTERVILLE	UT	84014	375 S FLORENTINE LN	02-196-0009
380	C PROPERTIES LLC	871 NORTH BONITO WAY	CENTERVILLE	UT	84014	380 S MAIN ST	03-002-0259
412	STENQUEST, WADE K & JILL	412 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	412 S PITFORD DR	03-145-0211
415	FRANCIS, RALPH R JR - TRUSTEE	1405 PRESTO ST APT 7	IDAHO FALLS	ID	83402-1578	415 S PITFORD DR	03-145-0212
415	WARD, ADAM & KRISTINE	415 SOUTH MAIN STREET	CENTERVILLE	UT	84014	415 S MAIN ST	03-002-0099
422	REYNOLDS, LORI - TRUSTEE	422 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	422 S PITFORD DR	03-145-0210
427	SUMMERHAYS, SPENCER R & JULIE	427 SOUTH 75 WEST	CENTERVILLE	UT	84014	427 S 75 WEST	03-224-0005
428	MILLER, MICHAEL T & JAMIE	428 SOUTH MAIN ST	CENTERVILLE	UT	84014	428 S MAIN ST	03-002-0030
444	BURTON, GRANT & CARRIE	444 SOUTH 150 WEST	CENTERVILLE	UT	84014	444 S 150 WEST CIR	03-224-0020
445	BARBER, LAWRENCE & DOROTHY L - TRUSTEES	445 SOUTH MAIN STREET	CENTERVILLE	UT	84014	445 S MAIN ST	03-002-0036
445	WAYNE D CARLSON CONSTRUCTION INC	C/O WAYNE D CARLSON	BOUNTIFUL	UT	84010	445 S 75 WEST	03-224-0007
454	WILLIAMS, THOMAS J & JEANETTE - TRUSTEES	PO BOX 164	CENTERVILLE	UT	84014-0164	454 S MAIN ST	03-002-0233
461	COTTAM, SCOTT & SHANNON	461 SOUTH 250 WEST	CENTERVILLE	UT	84014	461 S 250 WEST	03-145-0213
462	ANDERSON, SEAN GARY & BROOKE LARSON	462 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	462 S PITFORD DR	03-145-0209
462	TRUMP, SCOTT & SUSAN	462 SOUTH 75 WEST	CENTERVILLE	UT	84014	462 S 75 WEST	03-224-0012
465	CHUBBARDY, VLADIMIR A & SHALINA G	465 SOUTH 150 WEST	CENTERVILLE	UT	84014	465 S 150 WEST CIR	03-224-0015
466	WAHLSTROM, KATHERINE A	466 SOUTH 150 WEST CIRCLE	CENTERVILLE	UT	84014	465 S 150 WEST CIR	03-224-0019
472	WAYNE D CARLSON CONSTRUCTION INC	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	472 S MAIN ST	03-002-0251
473	CARLSON, WAYNE D	2653 CAVE HOLLOW WAY	BOUNTIFUL	UT	84010	473 S 75 WEST	03-224-0008
481	WILSON, GERALD C & JANE C	481 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	481 S PITFORD DR	03-145-0214
484	ALVALLE, RAE LYNN AND ALVALLE-ARROYO, PEDRO JR	PO BOX 1214	CENTERVILLE	UT	84014	484 S PITFORD DR	03-145-0203
484	BALLO, CHAD J & ALLISON L	484 SOUTH 75 WEST	CENTERVILLE	UT	84014	484 S 75 WEST	03-224-0011
489	CONNORS, MICHAEL C & WENDY M	489 SOUTH 150 WEST CIR	CENTERVILLE	UT	84014	489 S 150 WEST CIR	03-224-0016
492	ANDERSON, RYAN & ERICA	716 EAST EAST HILLS DR	BOUNTIFUL	UT	84010-2518	492 S 150 WEST CIR	03-224-0018
499	FARNES, RAY C & DENISE J - TRUSTEES	499 SOUTH 150 WEST CIR	CENTERVILLE	UT	84014	499 S 150 WEST CIR	03-224-0017
501	MATERN, MITCH R & LORIE A	501 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	501 S PITFORD DR	03-145-0215
503	WILLIAMS, THOMAS J & JEANETTE - TRUSTEES	454 SOUTH MAIN	CENTERVILLE	UT	84014	503 S 75 WEST	03-224-0009
504	TRUMP, DOUGLAS F	189 NORTH 100 EAST	FARMINGTON	UT	84025	504 S 75 WEST	03-224-0010
521	CARR, DANIEL H & TERRIE L	521 SOUTH PITFORD DRIVE	CENTERVILLE	UT	84014	521 S PITFORD DR	03-145-0216
527	JOLLEY, CURTIS B & LERRICE B - TRUSTEES	527 SOUTH 75 WEST	CENTERVILLE	UT	84014	527 S 75 WEST	03-147-0051
535	ADAMS, DAVID P	535 SOUTH PITFORD DR	CENTERVILLE	UT	84014	535 S PITFORD DR	03-118-0003
577	EDWARDS, STEVEN M & PATRICIA A	577 SOUTH 150 WEST	CENTERVILLE	UT	84014	577 S 150 WEST	03-130-0034
	ASSOCIATION OF UNIT OWNERS OF WALTON LANE TOWN HOMES CONDO	633 WEST PORTER LANE	WOODS CROSS	UT	84037		03-220-0003
	CENTERVILLE CITY	250 NORTH MAIN ST	CENTERVILLE	UT	84014		03-002-0255
	FADEL, GEORGE K-TRUSTEE AND G KAY INC	170 WEST 400 SOUTH	BOUNTIFUL	UT	84010		03-002-0282
	NEWBY, MARTY & JULIE A	146 WEST 550 SOUTH	CENTERVILLE	UT	84014		03-002-0220
						GAP	
						GAP	

References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
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Your Property is in a Well Protection Zone for the Centerville Ricks Creek Well



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Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

With hazardous materials or harmful substances-

Don't pour it down the drain.

Don't put it in the trash.

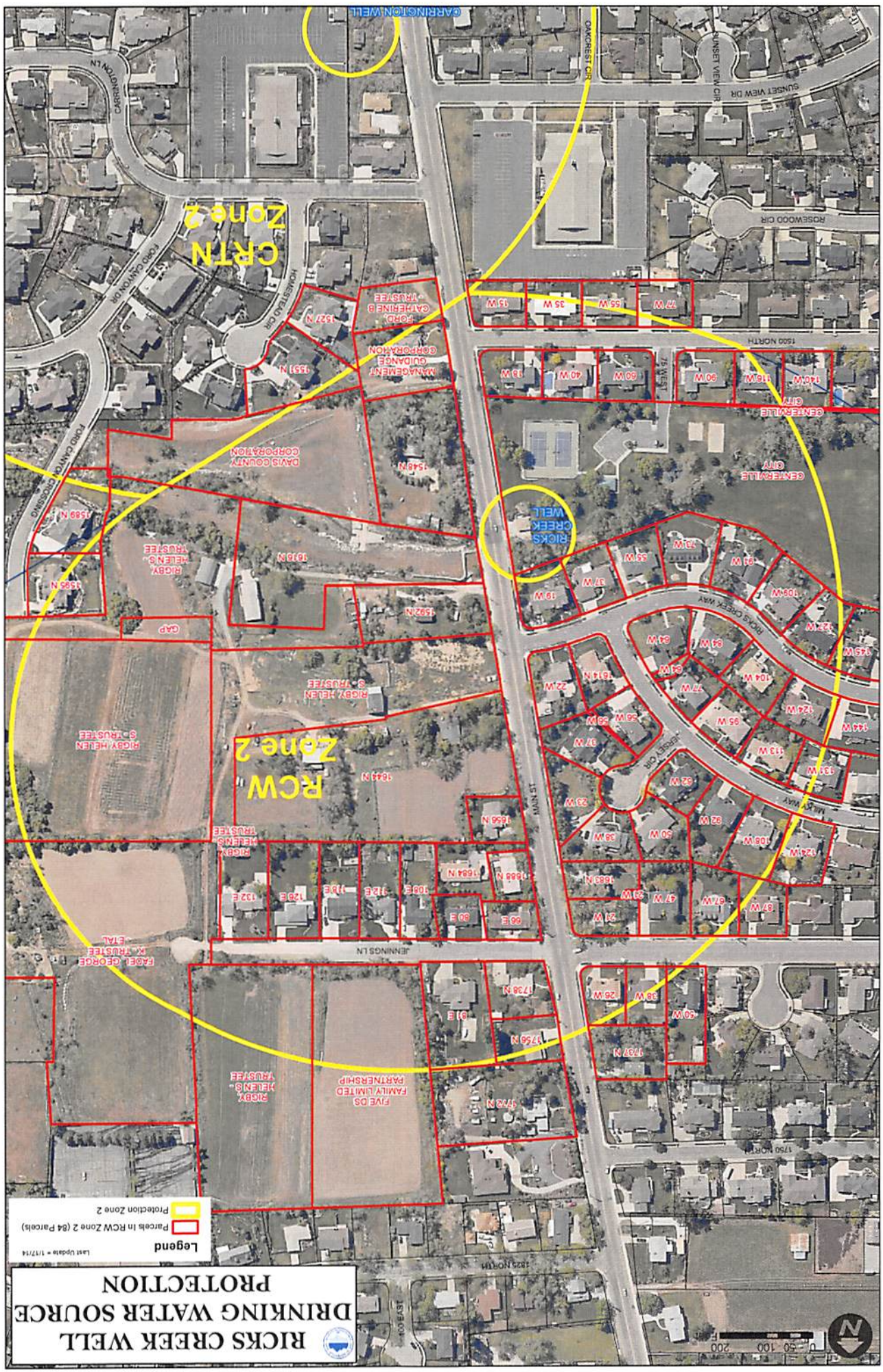
Don't dump it on the ground.

Do Use and Dispose of Harmful Materials Properly. If you have questions on how to properly dispose of hazardous materials, please call the Centerville City Public Works (801-292-8232) or the Davis County Utah State Extension Service Office (801-451-3412).

Centerville City Municipal Code

Centerville City Ordinance Chapter 9-10 establishes requirements for drinking water source protection. It states that is unlawful for a person to "discharge, or permit the discharge of any regulated substances or petroleum products, whether treated or untreated, to soils, air, groundwater, or surface water in any Protection Zone, that may have a deleterious effect upon groundwater within the City . . ." (Section 9-10-090(a)).

A violation of the Ordinance is a Class B misdemeanor (Section 9-10-150(f)) which carries a punishment of imprisonment up to six months and a fine of up to \$1,000 (Utah Code Annotated Sections 76-3-204 and 76-3-301).



Situs	Owner	MailAddress	MailCity	MailState	MailZipcd	SiteAddress	Tax Id
15	MOULTON, CHARLES S & FRANCES R - TRUSTEES	15 WEST 1500 NORTH	CENTERVILLE	UT	84014	15 W 1500 NORTH	02-017-0001
18	MAXFIELD, NILDEN V & LYNN R	18 WEST 1500 NORTH	CENTERVILLE	UT	84014	18 W 1500 NORTH	02-017-0018
19	RIAR, STANLEY S	19 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	19 W RICKS CREEK WAY	02-017-0014
21	ROONEY G STEPHENS CONSTRUCTION INC	703 WESTBROOK	KAYSVILLE	UT	84037	21 W 1700 NORTH	02-106-0015
21	ROONEY G STEPHENS CONSTRUCTION INC	703 WESTBROOK	KAYSVILLE	UT	84037	21 W 1700 NORTH	02-106-0015
22	POND, STEPHEN S & KATHLEEN K	22 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	22 W RICKS CREEK WAY	02-017-0035
23	BEAN, DOUGLAS M & LISA MAY	38 WEST JERSEY CIRCLE	CENTERVILLE	UT	84014	23 W JERSEY CIR	02-112-0026
26	BRIAN, LON F & JULIE S	26 WEST 1700 NORTH	CENTERVILLE	UT	84014	26 W 1700 NORTH	02-099-0019
35	GALL, SCOTT J & VICTORIA LYNN - TRUSTEES	35 WEST 1500 NORTH	CENTERVILLE	UT	84014	35 W 1500 NORTH	02-017-0002
37	JOHNSON, VICKY JAY - TRUSTEE	37 WEST JERSEY CIRCLE	CENTERVILLE	UT	84014	37 W JERSEY CIR	02-112-0028
37	LACY, THOMAS E & WENDY A - TRUSTEES	PO BOX 1087	CENTERVILLE	UT	84014-1087	37 W 1600 NORTH	02-017-0033
38	BEAN, DOUGLAS M & LISA MAY	38 WEST JERSEY CIRCLE	CENTERVILLE	UT	84014	38 W JERSEY CIR	02-112-0027
38	JENSEN, CHRISTOPHER & ASHLEY	38 WEST 1700 NORTH	CENTERVILLE	UT	84014	38 W 1700 NORTH	02-099-0018
40	COLVIN, JOHN R & HOLLY K	40 WEST 1500 NORTH	CENTERVILLE	UT	84014	40 W 1500 NORTH	02-017-0017
47	HOMER, BECKY ANN	47 WEST JENNINGS LANE	CENTERVILLE	UT	84014	47 W JENNINGS LN	02-106-0007
50	LIFERTH, DENNIS R & MARGARET J	50 WEST JERSEY CIRCLE	CENTERVILLE	UT	84014	50 W JERSEY CIR	02-112-0025
50	WILKINSON, CLARE A & JANIE W	50 WEST JENNINGS LANE	CENTERVILLE	UT	84014	50 W 1700 NORTH	02-099-0021
55	LAYTON, KENNETH FRANK & MARY KATHLEEN - TRUSTEES	55 WEST 1600 NORTH	CENTERVILLE	UT	84014	55 W 1600 NORTH	02-017-0032
55	PEERY, MICHAEL EARL & PAULINE J	55 WEST 1500 NORTH	CENTERVILLE	UT	84014	55 W 1500 NORTH	02-017-0003
56	MANNER, MARK A & JILL	56 WEST 1650 NORTH	CENTERVILLE	UT	84014	56 W 1650 NORTH	02-112-0032
56	MANNER, MARK A & JILL	56 WEST 1650 NORTH	CENTERVILLE	UT	84014	56 W 1650 NORTH	02-112-0032
60	SKINNER, BRENT J & LA RUE - TRUSTEES	346 OCEAN STREET APT #1	SOUTH PORTLAND	ME	04061	56 W 1650 NORTH	02-112-0032
62	JONES, KENNETH & JANENE D - TRUSTEES	62 WEST JERSEY CIRCLE	CENTERVILLE	UT	84014	62 W JERSEY CIR	02-017-0006
64	BEHRMANN, FRED H & MICHELLE C	64 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	64 W RICKS CREEK WAY	02-017-0051
64	BEHRMANN, FRED H & MICHELLE C	64 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	64 W RICKS CREEK WAY	02-017-0051
66	JENNINGS INVESTMENTS LLC	824 EAST SUNBURST LN	ALPINE	UT	84004	66 E 1700 NORTH	02-013-0020
67	BARKER, TERIKO T - TRUSTEE	67 WEST 1700 NORTH	CENTERVILLE	UT	84014	67 W 1700 NORTH	02-106-0006
73	RUSSELL, RONALD G - TRUSTEE	73 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	73 W RICKS CREEK WAY	02-017-0031
77	SHELTON, STACY M & R SCOTT	77 WEST 1650 NORTH	CENTERVILLE	UT	84014	77 W 1650 NORTH	02-112-0009
77	SHIPLEY, BRUCE E & RITA H - TRUSTEES	77 WEST 1500 NORTH	CENTERVILLE	UT	84014	77 W 1500 NORTH	02-017-0004
81	LAUDER, STEVEN E & CHERYL A	80 EAST JENNINGS LN	CENTERVILLE	UT	84014	80 E JENNINGS LN	02-013-0021
81	CLAY, THOMAS A & CHERIE C	81 EAST JENNINGS LANE	CENTERVILLE	UT	84014	81 E JENNINGS LN	02-013-0099
84	COOPER, JAMES R & LEONA C - TRUSTEES	84 WEST 1600 NORTH	CENTERVILLE	UT	84014	84 W 1600 NORTH	02-017-0038
87	LARSON, DOUGLAS R & ALLISON L	87 WEST 1700 NORTH	CENTERVILLE	UT	84014	87 W 1700 NORTH	02-106-0005
90	VANWAGONE, JON & ALAYNE	90 WEST 1500 NORTH	CENTERVILLE	UT	84014	90 W 1500 NORTH	02-017-0015
91	CLARK, JAY DEE & COLLEEN K	91 WEST 1600 NORTH	CENTERVILLE	UT	84014	91 W 1600 NORTH	02-017-0000
92	ABRODT, LINDA P - TRUSTEE	92 WEST MILKY WAY	CENTERVILLE	UT	84014	92 W MILKY WAY	02-112-0006
95	REES, WILLARD DALE & MARIAN P - TRUSTEES	95 WEST 1650 NORTH	CENTERVILLE	UT	84014	95 W 1650 NORTH	02-112-0014
104	TILLOTSON, ROBERT M & JEAN W	104 WEST 1600 NORTH	CENTERVILLE	UT	84014	104 W 1600 NORTH	02-017-0019
108	CLR CHERRY CREEK HOLDINGS LLC	C/O CURTIS PETERSON	CENTERVILLE	UT	84014	108 E 1700 NORTH	02-013-0071
108	LINDSAY, CONNIE W	108 WEST 1650 NORTH	CENTERVILLE	UT	84014	108 W 1650 NORTH	02-112-0023
109	HUNTLEY, VANCE K & AMY L	109 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	109 W RICKS CREEK WAY	02-017-0029
112	HANCKY, DOUGLAS S & JUDY K	112 EAST JENNINGS LN	CENTERVILLE	UT	84014	112 E JENNINGS LN	02-013-0046
113	WORTH, CHARLES B & GLORIA B - TRUSTEES	113 WEST MILKY WAY	CENTERVILLE	UT	84014	113 W 1650 NORTH	02-112-0015
116	MCCABRY, ROBERTA O - TRUSTEE	116 WEST 1500 NORTH	CENTERVILLE	UT	84014	116 W 1500 NORTH	02-017-0014
118	VEALL, JAMES LINDEN & KRISTY	118 EAST JENNINGS	CENTERVILLE	UT	84014	118 E JENNINGS LN	02-013-0101
124	BECK, JAMES L & LINDA W	124 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	124 W RICKS CREEK WAY	02-017-0040
124	CHAMBERLAIN, DAVID M & MONICA	124 WEST 1650 NORTH	CENTERVILLE	UT	84014	124 W 1650 NORTH	02-112-0022
126	NIELSEN, LEONARD D & MARY ANNE	126 EAST JENNINGS LANE	CENTERVILLE	UT	84014	126 E JENNINGS LN	02-013-0026
127	NEWTON, JAMES H & HELEN W	127 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	127 W RICKS CREEK WAY	02-017-0028
132	PORTER, STEVEN J & JAN C - TRUSTEES	132 WEST MILKY WAY	CENTERVILLE	UT	84014	131 W MILKY WAY	02-112-0016
132	DANIELS, BRENT W & TEARSA	132 EAST JENNINGS LANE	CENTERVILLE	UT	84014	132 E JENNINGS LN	02-013-0027
140	BEHRMAN, VON M & MAUREEN J	140 WEST 1500 NORTH	CENTERVILLE	UT	84014	140 W 1500 NORTH	02-017-0013
144	HANSEN, E LYNN & VEDA H	144 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	144 W RICKS CREEK WAY	02-017-0041
145	ROBBINS, JAN N	145 WEST RICKS CREEK WAY	CENTERVILLE	UT	84014	145 W RICKS CREEK WAY	02-017-0027
1527	ANDREW, JOHN C	1527 NORTH HOMESTEAD CIRCLE	CENTERVILLE	UT	84014	1527 N HOMESTEAD CIR	02-182-0101
1548	FRICKSON, LYNN H - TRUSTEE	1548 NORTH MAIN ST	CENTERVILLE	UT	84014-1135	1548 N MAIN ST	02-013-0016
1551	JACKSON, JAMES ANDREW & CARL	1551 NORTH HOMESTEAD CIRCLE	CENTERVILLE	UT	84014	1551 N HOMESTEAD CIR	02-182-0201
1589	ROBBISON, JOHN E & MIKELLE E	1589 NORTH FORD CANYON CROSSING	CENTERVILLE	UT	84014-1248	1589 N FORD CANYON CROSSING	02-234-0001
1592	KIAR, LACOS & BENJAMIN	1592 NORTH MAIN ST	CENTERVILLE	UT	84014	1592 N MAIN ST	02-013-0030
1595	JOHNSON, TRAVIS LYNN & ALICIA VILATE	1595 NORTH FORD CANYON CROSSING	CENTERVILLE	UT	84014	1595 N FORD CANYON CROSSING	02-209-0002
1614	SWEATFIELD, KENNETH L & JOANNE S - TRUSTEES	1614 NORTH 75 WEST	CENTERVILLE	UT	84014	1614 N 75 WEST	02-017-0036
1616	RIGBY, HELEN S - TRUSTEE	1616 NORTH MAIN ST	CENTERVILLE	UT	84014	1616 N MAIN ST	02-013-0031
1644	FIVE DS FAMILY LIMITED PARTNERSHIP - ETAL	840 NORTH 400 EAST	CENTERVILLE	UT	84014	1644 N MAIN ST	02-013-0142
1654	RIGBY, WILLIAM DEE & KRISTEN P	1656 NORTH MAIN	CENTERVILLE	UT	84014	1656 N MAIN ST	02-013-0024
1683	BLASER, ROBERT A & MELANIE A	1683 NORTH MAIN ST	CENTERVILLE	UT	84014	1683 N MAIN ST	02-106-0013
1684	CLARK, ROBERT N & GLORIA P	1684 NORTH MAIN STREET	CENTERVILLE	UT	84014	1684 N MAIN ST	02-013-0124
1688	V & B NEUNSWANDER LC	83 WEST CENTERVILLE COMMONS WAY	CENTERVILLE	UT	84014	1688 N MAIN ST	02-013-0121
1737	ROUCHE, ROBIN D & JOANNE M	1387 NORTH OAKRIDGE DR	CENTERVILLE	UT	84014	1737 N MAIN ST	02-099-0020
1738	JENSEN, MARIAN - TRUSTEE	1738 NORTH MAIN ST	CENTERVILLE	UT	84014	1738 N MAIN ST	02-013-0059
1756	BOWLER, IRA ROYAL & LORIANE J - TRUSTEES	1756 NORTH MAIN ST	CENTERVILLE	UT	84014	1756 N MAIN ST	02-013-0139
1772	SHERIFF, OLEN R & MARILYN F	1772 NORTH MAIN	CENTERVILLE	UT	84014	1772 N MAIN ST	02-013-0126
GAP							GAP
	CENTERVILLE CITY	521 NORTH 400 WEST	CENTERVILLE	UT	84014		02-013-0056
	DAVIS COUNTY CORPORATION	521 NORTH 400 WEST	CENTERVILLE	UT	84014		02-013-0055
	FADEL, GEORGE K - TRUSTEE - ETAL	PO BOX 618	FARMINGTON	UT	84025-0618		02-013-0144
	FIVE DS FAMILY LIMITED PARTNERSHIP	170 WEST 400 SOUTH	BOCA RATON	FL	33430		02-013-0146
	FORD, CATHERINE B - TRUSTEE	840 NORTH 400 EAST	CENTERVILLE	UT	84014		02-013-0148
	MANAGEMENT GUIDANCE CORPORATION	1416 NORTH 50 WEST CIR	CENTERVILLE	UT	84014		02-013-0137
	RIGBY, HELEN S - TRUSTEE	PO BOX 901	SALT LAKE CITY	UT	84110		02-013-0136
	RIGBY, HELEN S - TRUSTEE	1616 NORTH MAIN ST	CENTERVILLE	UT	84014		02-013-0140
	RIGBY, HELEN S - TRUSTEE	1616 NORTH MAIN ST	CENTERVILLE	UT	84014		02-013-0147
	RIGBY, HELEN S - TRUSTEE	1616 NORTH MAIN ST	CENTERVILLE	UT	84014		02-013-0141
	RIGBY, HELEN S - TRUSTEE	1616 NORTH MAIN ST	CENTERVILLE	UT	84014		02-013-0145

References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville City Hall Well



Your property is in the 250 Day Protection Zone for the City Hall Well located at 100 East 300 North. This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

Approved by Centerville City Public Works Department

For many years it was believed that ground water had a natural filtration by trapping contaminants passing through layers of rock, sand, and soil. However, more cases of ground water contamination are being reported. Cleaning up contaminated water is difficult, expensive, and sometimes impossible. That is why it is important to prevent contamination before it starts.

One gallon of gas can pollute 600 thousand gallons of ground water. Also one gram of 2-4D (household herbicide) can contaminate 2.6 million gallons of drinking water.

Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

With hazardous materials or harmful substances-

Don't pour it down the drain.

Don't put it in the trash.

Don't dump it on the ground.

Do Use and Dispose of Harmful Materials Properly. If you have questions on how to properly dispose of hazardous materials, please call the Centerville City Public Works (801-292-8232) or the Davis County Utah State Extension Service Office (801-451-3412).

Centerville City Municipal Code

Centerville City Ordinance Chapter 9-10 establishes requirements for drinking water source protection. It states that is unlawful for a person to "discharge, or permit the discharge of any regulated substances or petroleum products, whether treated or untreated, to soils, air, groundwater, or surface water in any Protection Zone, that may have a deleterious effect upon groundwater within the City . . ."(Section 9-10-090(a)).

A violation of the Ordinance is a Class B misdemeanor (Section 9-10-150(f)) which carries a punishment of imprisonment up to six months and a fine of up to \$1,000 (Utah Code Annotated Sections 76-3-204 and 76-3-301).

[illegible]

References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Carrington Well



Your property is in the 250 Day Protection Zone for the Carrington Well located at 1475 North 50 East. This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

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Some Potential Contamination Sources that Exist in Households

Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
5. Fall application of nitrogen on sandy soil should be avoided

Pesticides-

1. Chemicals used must be registered at the Federal, State, and Local level.
2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
3. Spray equipment should be properly calibrated and maintained.
4. Rinse water from containers and application equipment can be diluted and spread on turf.
5. Banned or outdated pesticides should be disposed of through a licensed hazardous waste transporter.

Use non-chemical control measures and substitute less toxic, less persistent, and less mobile pesticides whenever possible.

Solvents (Thinners or Degreasers) and Cleaners

Store in tightly covered containers and never put on ground.

Automotive, Household, and Other Products

Antifreeze should not be disposed on the ground. Also batteries, brake fluid, motor oils, gasoline, rustproofers, stain and spot removers, household cleansers, disinfectants, printing ink, paints, wood preservatives, and many other products can be a ground water contaminant and should never be placed on the ground.

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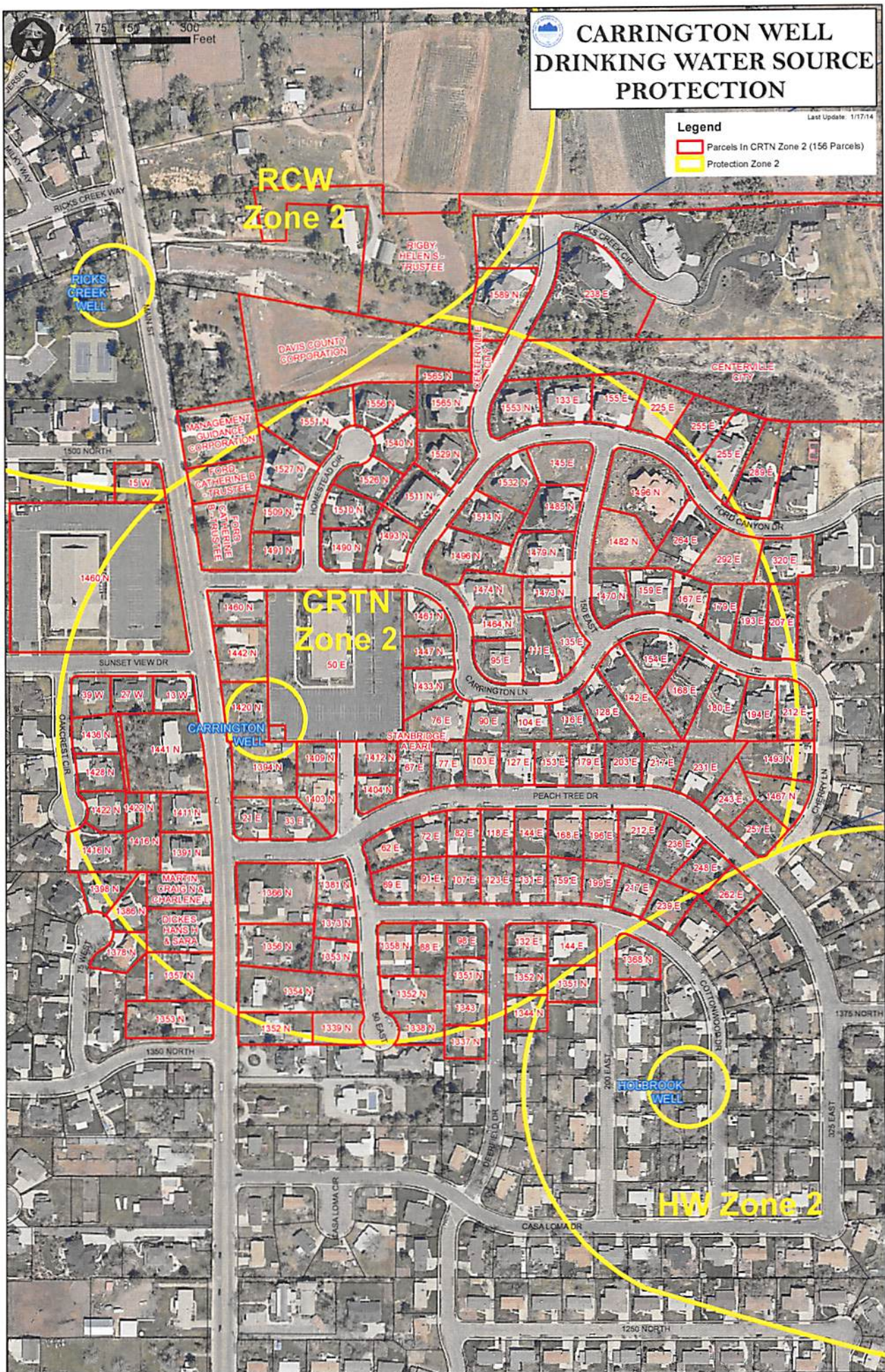
Don't dump it on the ground.

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[illegible]

References

Centerville City Drinking Water Source Protection Plan Section 5

EPA Citizen's Guide to Ground-Water Protection, EPA 440/6-90-004,
April 1990

Ground Water Source Protection User's Guide, State of Utah, DEQ,
Division of Drinking Water, July 2001



Your Property is in a Well Protection Zone for the Centerville Chase Lane Well



Your property is in the 250 Day Protection Zone for the Chase Lane Well located at 70 East Chase Lane (1000 North). This means if you put contaminants on the ground it will take 250 days or less for them to reach the well.

It is important you know how to protect our drinking water wells because bacteria can survive for up to 250 days. In this brochure it will tell you some of the potential contamination sources that could exist in or around your property. It will tell you how to prevent ground water contamination. Two thirds of Centerville's water comes from deep wells.

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Fertilizers-

Consider these factors so you don't apply too much fertilizer thus preventing contamination of ground water:

1. Type of turf
2. Method and timing of application
3. Weather conditions
4. Soil characteristics
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Pesticides-

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2. Chemicals must be applied strictly in accordance with authorized uses, label directions and other Federal or State policies and requirements.
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SiteNumber	Owner	MailAddress	MailCity	MailState	MailZipcod	SiteAddress	Tax Id
21	MOSS, DAVID T & NATAL	21 EAST 1100 NORTH	CENTERVILLE	UT	84014	21 E 1100 NORTH	02-021-0009
22	BRINKERHOFF, MAXINE	522 WEST CREEKSIDE LN	CENTERVILLE	UT	84014	22 W CREEKSIDE LN	02-037-0048
22	VAN SCHALKWYK, RICHARD	22 EAST 1100 NORTH	CENTERVILLE	UT	84014	22 E 1100 NORTH	02-021-0008
23	SIMPSON, SEAN R & EMILY	23 WEST CHASE LANE	CENTERVILLE	UT	84014	23 W CHASE LN	02-095-0086
23	WARD, LLOYD REED & SA23	EAST ADAMS CIRCLE	CENTERVILLE	UT	84014	23 E ADAMS CIR	02-173-0001
45	JOHNSON, MICHAEL E & 45	EAST ADAMS CIRCLE	CENTERVILLE	UT	84014	45 E ADAMS CIR	02-173-0009
46	POKORNIER, JOHN R	218 HARVESTER LN	BELGRADE	MT	59714-9294	46 E 1100 NORTH	02-021-0007
59	NELSON, MARK A & SON	59 EAST 1100 NORTH	CENTERVILLE	UT	84014	59 E 1100 NORTH	02-021-0017
68	JENKINS, DAVID B & PAM	68 EAST 1100 NORTH	CENTERVILLE	UT	84014	68 E 1100 NORTH	02-021-0006
69	LUND, RANDY M & CHRIS	69 EAST ADAMS CIRCLE	CENTERVILLE	UT	84014	69 E ADAMS CIR	02-173-0003
82	KEITH, NORMAN	82 EAST 1100 NORTH	CENTERVILLE	UT	84014	82 E 1100 NORTH	02-021-0005
83	BURNETT, MARK E & JAN	83 EAST ADAMS CIRCLE	CENTERVILLE	UT	84014	83 E ADAMS CIR	02-173-0004
85	SUMMERHAYS, BRYAN P	2063 NORTH 400 WEST	CENTERVILLE	UT	84014	85 E 1000 NORTH	02-015-0039
91	STAHL, JULIE & REED	91 EAST 1100 NORTH	CENTERVILLE	UT	84014	91 E 1100 NORTH	02-021-0024
96	WENDEL, PAUL W & KATH	96 EAST 1100 NORTH	CENTERVILLE	UT	84014	96 E 1100 NORTH	02-021-0004
97	GREEN, STEVEN R & KRIS	97 EAST ADAMS CIRCLE	CENTERVILLE	UT	84014	97 E ADAMS CIR	02-173-0005
100	PHILLIPS, ROGER R & KA	100 EAST 1000 NORTH	CENTERVILLE	UT	84014	100 E 1000 NORTH	02-096-0043
112	EVANS, LYNN & BROWN	112 EAST 1100 NORTH	CENTERVILLE	UT	84014	112 E 1100 NORTH	02-021-0003
120	SOMETHING BORROWED	120 CHASE LN	CENTERVILLE	UT	84014	120 E CHASE LN	02-096-0053
122	JAMES, DENNIS R & MAR	122 EAST 1100 NORTH	CENTERVILLE	UT	84014	122 E 1100 NORTH	02-021-0002
139	BYRNES, SHANNON M	139 EAST 900 NORTH	CENTERVILLE	UT	84014	139 E 900 NORTH	02-040-0001
142	KING, RANDOLPH D & GE	142 EAST 1100 NORTH	CENTERVILLE	UT	84014	142 E 1100 NORTH	02-021-0001
156	WINEGAR, BERT H & JUD	156 EAST 1100 NORTH	CENTERVILLE	UT	84014	156 E 1100 NORTH	02-022-0041
160	CHASE, JAMES L	PO BOX 848	CENTERVILLE	UT	84014	160 E 1000 NORTH	02-096-0010
161	ALLSOP, MARK & BROOK	161 EAST 900 NORTH	CENTERVILLE	UT	84014	161 E 900 NORTH	02-040-0002
163	PLACE, BROCK L & CHRIS	163 EAST 1100 NORTH	CENTERVILLE	UT	84014	163 E 1100 NORTH	02-022-0031
174	MCKINNEY, THEODORE R	174 EAST 1100 NORTH	CENTERVILLE	UT	84014	174 E 1100 NORTH	02-022-0042
179	ATWOOD, MICHAEL LEON	179 EAST BALSAM DR	CENTERVILLE	UT	84014	179 E BALSAM DR	02-040-0024
179	LAURENCE, NANCY T	179 EAST 1000 NORTH	CENTERVILLE	UT	84014	179 E 1000 NORTH	02-015-0084
180	TURNER, TROY & ANNET	180 EAST BALSAM DRIVE	CENTERVILLE	UT	84014	180 E 850 NORTH	02-040-0036
183	ANCELL, KENNETH L & M	183 EAST 900 NORTH	CENTERVILLE	UT	84014	183 E 900 NORTH	02-040-0003
192	HEPORTH, LOUIS DON	192 EAST 900 NORTH	CENTERVILLE	UT	84014	192 E 900 NORTH	02-040-0019
195	BOSS, PAUL C & PAULA	195 EAST BALSAM DR	CENTERVILLE	UT	84014	195 E 850 NORTH	02-040-0025
196	BARRUS, ROY L & JOANN	196 EAST CHASE LANE	CENTERVILLE	UT	84014	196 E CHASE LN	02-096-0011
198	ABRAHAMSON, MATTHEW	198 EAST BALSAM DR	CENTERVILLE	UT	84014	198 E BALSAM DR	02-040-0035
198	HOLDSTOCK, TIM LAURET	198 EAST 1100 NORTH	CENTERVILLE	UT	84014	198 E 1100 NORTH	02-022-0043
203	SIMPSON, WILLIAM C & 203	EAST 1100 NORTH	CENTERVILLE	UT	84014	203 E 1100 NORTH	02-022-0035
205	GONZALEZ, MARTIN & PL	205 EAST BRIARWOOD D	CENTERVILLE	UT	84014	205 E 900 NORTH	02-040-0004
211	STRINGHAM, DWIGHT & 211	EAST BALSAM DRIVE	CENTERVILLE	UT	84014	211 E BALSAM DR	02-040-0026
215	MOLINA, JUAN & MARIA	215 EAST CHASE LANE	CENTERVILLE	UT	84014	215 E CHASE LN	02-080-0007
216	LARSEN, ANDREW & ABB	216 EAST BALSAM DRIVE	CENTERVILLE	UT	84014	216 E 850 NORTH	02-040-0034
218	WHIPPLE, LORI E - TRUST	218 EAST BRIARWOOD D	CENTERVILLE	UT	84014	218 E 900 NORTH	02-040-0018
224	MILLER, MICHAEL V & M	224 EAST 1100 NORTH	CENTERVILLE	UT	84014	224 E 1100 NORTH	02-022-0044
225	ABEZZO, SALIM S & LAUR	225 EAST 900 NORTH	SAMMAMISH	WA	98074	225 E 900 NORTH	02-040-0005
227	REES, TYLER & TIFFANY	227 EAST BALSAM DRIVE	CENTERVILLE	UT	84014	227 E BALSAM DR	02-040-0027
230	BUTTERS, ASHLEY B	230 EAST 1000 NORTH	CENTERVILLE	UT	84014	230 E 1000 NORTH	02-096-0012
239	TIDWELL, LLOYD L & GLA	239 EAST 1000 NORTH	CENTERVILLE	UT	84014	239 E 1000 NORTH	02-015-0042
242	CHRISTENSEN, THOMAS	1242 EAST 1100 NORTH	CENTERVILLE	UT	84014	242 E 1100 NORTH	02-022-0045
242	HANSEN, STEVEN DALTO	242 EAST CHASE LANE	CENTERVILLE	UT	84014	242 E CHASE LN	02-096-0013
242	KETCHUM, JOSHUA & SU	242 EAST 900 NORTH	CENTERVILLE	UT	84014	242 E 900 NORTH	02-040-0017
243	CHRISTENSEN, TRACY LY	243 EAST 700 SOUTH APT	VERNAL	UT	84078-3738	243 E BALSAM DR	02-040-0028
245	OLSEN, DUSTIN M	245 EAST 900 NORTH	CENTERVILLE	UT	84014	245 E 900 NORTH	02-040-0006
260	WICKRELL, CRAIG B	260 EAST 1000 NORTH	CENTERVILLE	UT	84014	260 E 1000 NORTH	02-096-0014
264	DUBACH, MARY E	264 EAST BRIARWOOD D	CENTERVILLE	UT	84014	264 E 900 NORTH	02-040-0016
265	KNIGHTON, RONALD L & 265	EAST BRIARWOOD C	CENTERVILLE	UT	84014	265 E 900 NORTH	02-040-0007
270	DOCKLING, MATTHEW I	270 EAST 1000 NORTH	CENTERVILLE	UT	84014	270 E 1000 NORTH	02-096-0153
275	NELSON, JEANETTE CART	275 EAST BRIARWOOD C	CENTERVILLE	UT	84014	275 E 900 NORTH	02-040-0008
285	ROGERS, SAMMIE K	830 NORTH 500 WEST A	BOUNTIFUL	UT	84010	285 E 900 NORTH	02-040-0009
286	DANIEL, TEDDY L	286 EAST BRIARWOOD D	CENTERVILLE	UT	84014	286 E BRIARWOOD DR	02-040-0015
295	CONNOR, DONALD J & B	295 EAST BRIARWOOD D	CENTERVILLE	UT	84014	295 E 900 NORTH	02-040-0010
305	BHONSLE, GIRAJDEV	305 EAST 900 NORTH	CENTERVILLE	UT	84014	305 E 900 NORTH	02-040-0011
306	DAVIS, JENNIFER S & SC	304 EAST BRIARWOOD D	CENTERVILLE	UT	84014	306 E 900 NORTH	02-040-0014
777	BROWN, VERN G & CHRIS	153 EAST 475 SOUTH	KAYSVILLE	UT	84037	777 N CHERRYWOOD CIR	02-041-0032
787	BOYLE, TERRANCE A & E	787 NORTH BONITA WAY	CENTERVILLE	UT	84014	787 N BONITA WAY	02-040-0040
788	SESSIONS, FERRIS LYNN	788 NORTH MAIN STREET	CENTERVILLE	UT	84014	788 N MAIN ST	02-096-0270
790	MATINDALE, ELDON L	1138 NORTH CHASE DR	SALT LAKE	UT	84054	790 N MAIN ST	02-096-0171
798	STRATTON, GABRIEL	798 NORTH BONITA WAY	CENTERVILLE	UT	84014	798 N BONITA WAY	02-040-0041
819	HOTH, VICKI C & STEPH	819 NORTH BONITA WAY	CENTERVILLE	UT	84014	819 N BONITA WAY	02-040-0039
820	HUGHES, WARREN D & C	820 NORTH MAIN ST	CENTERVILLE	UT	84014	820 N MAIN ST	02-096-0004
836	CORDON, MICHAEL CORN	836 NORTH MAIN ST	CENTERVILLE	UT	84014	836 N MAIN ST	02-096-0003
836	OLSON, COREY D	836 NORTH BONITA WAY	CENTERVILLE	UT	84014	836 N BONITA WAY	02-040-0037
840	PEREZ, GRACIELA HOURC	PO BOX 384	CENTERVILLE	UT	84014-0384	840 N MAIN ST	02-096-0047
840	WILLIAMS, TODD & RAE	860 NORTH MAIN ST	CENTERVILLE	UT	84014	860 N MAIN ST	02-096-0045
864	MCCLELL, LARRY W & K	864 NORTH BONITA WAY	CENTERVILLE	UT	84014	864 N BONITA WAY	02-040-0023
871	COOK, HELEN P - TRUSTE	871 NORTH BONITA WAY	CENTERVILLE	UT	84014	871 N BONITA WAY	02-040-0049
871	COOK, HELEN P - TRUSTE	871 NORTH BONITA WAY	CENTERVILLE	UT	84014	871 N BONITA WAY	02-040-0049
887	KELSMER, RALPH E - TR	887 NORTH BONITA WAY	CENTERVILLE	UT	84014	887 N BONITA WAY	02-040-0048
888	ROBINSON, JOYCE B - TR	888 NORTH BONITA WAY	CENTERVILLE	UT	84014	888 N BONITA WAY	02-040-0020
903	WARD, MICHAEL RAY & F	903 NORTH 610 WEST	CENTERVILLE	UT	84014	903 N MAIN ST	02-095-0010
923	RICHTER, FRED ELDON & P	923 BOX 573	CENTERVILLE	UT	84014-0573	923 N MAIN ST	02-095-0009
925	LLOYD, MARY J	925 NORTH 400 EAST	CENTERVILLE	UT	84014	925 N 400 EAST	02-096-0157
950	CORP OF PRESIDING BIS	50 EAST NORTH TEMPLE	SALT LAKE CITY	UT	84150	950 N MAIN ST	02-096-0002
970	GRIFFITHS, GORDON TH	970 NORTH MAIN STREET	CENTERVILLE	UT	84014	970 N MAIN ST	02-096-0258
974	PERRY, WHITNEY B AND	974 NORTH 100 EAST	CENTERVILLE	UT	84014	974 N 100 EAST	02-096-0055
975	BUHLER, GLENN L & CO	975 NORTH 400 EAST	CENTERVILLE	UT	84014	975 N 400 EAST	02-096-0156
981	BROWN, THOMAS VERN	1792 NORTH 595 WEST	WASHINGTON	UT	84780	981 N MAIN ST	02-095-0087
981	PERRY, ANDREW C & CH	980 NORTH 100 EAST	CENTERVILLE	UT	84014	981 N 100 EAST	02-096-0054
985	STRINGFELLOW, SHAN D	985 NORTH 100 EAST	CENTERVILLE	UT	84014	985 N 100 EAST	02-096-0044
985	WRIGHT, LEE A & TRICIA	985 NORTH 400 EAST	CENTERVILLE	UT	84014	985 N 400 EAST	02-096-0168
991	WILSON, NOREEN H	991 NORTH 400 EAST	CENTERVILLE	UT	84014	991 N 400 EAST	02-096-0147
995	VANDERMEIDE, MICHAEL	1995 NORTH 400 EAST	CENTERVILLE	UT	84014	995 N 400 EAST	02-096-0148
1007	TAYLOR, JAMES M & ROS	1007 NORTH 300 EAST	CENTERVILLE	UT	84014	1007 N 300 EAST	02-023-0059
1010	PARKIN, GUY D & JUDY	1010 NORTH WIL MAR P	CENTERVILLE	UT	84014	1010 N WIL MAR PL	02-080-0001
1012	BARENZ, HOLLY	1012 NORTH 250 EAST	CENTERVILLE	UT	84014	1012 N 250 EAST	02-022-0050
1015	PELLS, McDONALD & JEA	1015 NORTH WIL MAR P	CENTERVILLE	UT	84014	1015 N WIL MAR PL	02-080-0006
1020	DUFFIN, MICHAEL D & K	1020 NORTH WIL MAR P	CENTERVILLE	UT	84014	1020 N WIL MAR PL	02-080-0002
1020	SAIN, HOWARD C & GAB	1020 NORTH MAIN ST	CENTERVILLE	UT	84014	1020 N MAIN ST	02-015-0037
1023	NUMBERS, DAVE & JUDY	1023 NORTH MAIN ST	CENTERVILLE	UT	84014	1023 N MAIN ST	02-015-0034
1025	DAVIS, GERALD E & MAR	1025 NORTH WIL MAR P	CENTERVILLE	UT	84014	1025 N WIL MAR PL	02-080-0005
1030	VOLLE, JASON D AND ST	1030 NORTH WIL MAR P	CENTERVILLE	UT	84014	1030 N WIL MAR PL	02-080-0003
1031	CLINGER, BRYCE A & CA	1031 NORTH 250 EAST	CENTERVILLE	UT	84014	1031 N 250 EAST	02-022-0048
1034	DALTON, RICHARD B & U	1034 NORTH 250 EAST	CENTERVILLE	UT	84014	1034 N 250 EAST	02-022-0051
1035	GUNN, JUDITH H - TRUST	1035 NORTH MAIN	CENTERVILLE	UT	84014	1035 N MAIN ST	02-015-0032
1035	MANGEL, STEVEN M & U	1035 NORTH WIL MAR P	CENTERVILLE	UT	84014	1035 N WIL MAR PL	02-080-0004
1037	LITTLEFIELD, GREGG EL	1037 NORTH 300 EAST	CENTERVILLE	UT	84014	1037 N 300 EAST	02-023-0058
1052	SCHULTZ, EVELYN N - TR	1052 NORTH 250 EAST	CENTERVILLE	UT	84014	1052 N 250 EAST	02-022-0052
1053	EVERTON, CAROLYN - TR	1053 NORTH 250 EAST	CENTERVILLE	UT	84014	1053 N 250 EAST	02-022-0047
1071	BRADLEY, N REED & JULY	1071 NORTH 250 EAST	CENTERVILLE	UT	84014	1071 N 250 EAST	02-022-0046
1072	ALLEN, DEBORAH L	1072 NORTH 250 EAST	CENTERVILLE	UT	84014	1072 N 250 EAST	02-022-0053
1109	CORSE, JOHN J - TRUST	1109 NORTH DEERFIELD	CENTERVILLE	UT	84014	1109 N DEERFIELD DR	02-023-0025
1112	NELSON, BRUCE & JACQ	1112 NORTH DEERFIELD	CENTERVILLE	UT	84014	1112 N DEERFIELD DR	02-021-0030
1126	MILES, DARRILL L & SHE	1126 NORTH 75 EAST	CENTERVILLE	UT	84014	1126 N 75 EAST	02-021-0023
1129	BOTT, CAMERON C & RA	1129 NORTH 75 EAST	CENTERVILLE	UT	84014	1129 N 75 EAST	02-021-0018
1131	WOOTTON, ROBERT D & (C	& B INVESTMENT CO)	CENTERVILLE	UT	84014	1131 N 125 EAST	02-021-0026
1134	HADLEY, MICHAEL S & D	1134 NORTH DEERFIELD	CENTERVILLE	UT	84014	1134 N DEERFIELD DR	02-021-0029
	ANDERSON, ERIC R & RO	121 EAST CHASE LANE	CENTERVILLE	UT	84014		02-015-0103
	ASSOCIATION OF UNIT O	21 WEST PHEASANT BROOK	CENTERVILLE	UT	84014		02-037-0050
	BYRNES, ROBERT W & SH	883 NORTH POPLAR CIRC	CENTERVILLE	UT	84014		02-096-0222
	BYRNES, ROBERT W & SH	883 NORTH POPLAR CIRC	CENTERVILLE	UT	84014		02-096-0197
	CENTERVILLE CITY	ATTN: CITY RECORDER	CENTERVILLE	UT	84014		02-173-0011
	CENTERVILLE CITY CORP	521 NORTH 400 WEST	CENTERVILLE	UT	84014		02-040-0046
	CHRISTENSEN, RUTH H	1960 KAGLE CIRCLE	CENTERVILLE	UT	84014-1422		02-095-0093
	CORP OF PRESIDING BIS	50 EAST NORTH TEMPLE	SALT LAKE CITY	UT	84150		02-096-0226
	DERBIDGE, ROSS FERRIS	165 EAST CHASE LANE	CENTERVILLE	UT	84014		02-015-0122
	DERBIDGE, ROSS FERRIS	170 ADAMS CIR	CENTERVILLE	UT	84014		02-015-0123
	GREEN, STEVEN R & KRIS	97 EAST ADAMS CIRCLE	CENTERVILLE	UT	84014		02-173-0010
	JAMES, DENNIS R & MAR	122 EAST 1100 NORTH	CENTERVILLE	UT	84014		02-021-0032
	KING, RANDOLPH DEAN	142 EAST 1100 NORTH	CENTERVILLE	UT	84014		02-021-0031
	LARSON, DAVID & JANE	140 EAST CHASE LANE	CENTERVILLE	UT	84014		02-096-0196
	STOKES, PAUL K & CHRIS	1009 NORTH 250 EAST	CENTERVILLE	UT	84014		02-022-0049

GAP