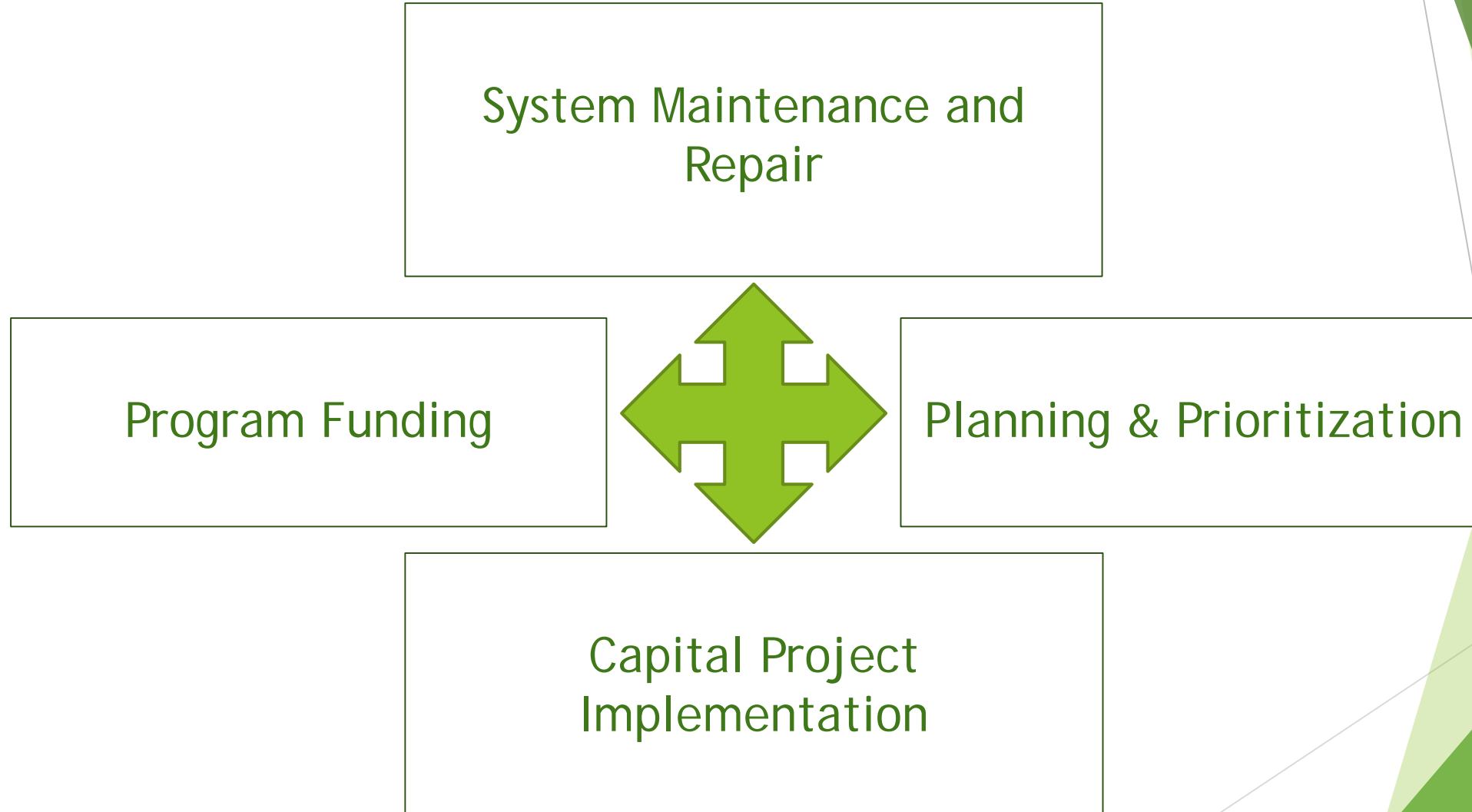


# Draft Storm Water Master Plan - Projects & Programs Prioritization

March 9, 2020

# Program Focus Areas



# Planning & Prioritization

Project/Task	Status & Completion Date
Complete Storm Water System Master Plan	Draft received; presentation to City Council on 2/10/2020
Update Outfall System Plan, in conjunction with Mile High Flood District	MHFD prioritized project for 2020 & allocated their portion of funding; kick off Spring 2020
Develop a proactive maintenance plan, in accordance with recommendations from the Master Plan	Summer 2020

# System Maintenance and Repair

Project/Task	Status & Completion Date
Repair failed section of storm sewer pipe on Oxford Avenue, west of Santa Fe Drive	Complete
Clean out accumulated debris in the Oxford pipe, from Santa Fe Drive to the South Platte River	Bids received; contract award 2/3/2020; completion by 5/10/2020
Repair the existing storm sewer pipe under Jason Court (Rotolo Park outlet)	Work included in Oxford Pipe Cleaning project; completion by 5/10/2020
Complete a system-wide pipe cleaning program	Work began using two newly hired maintenance technicians in early November 2019; completion in Summer 2020

# Capital Project Implementation

Project/Task	Status & Completion Date
Conduct a Stormwater Analysis and Alternatives Feasibility Study of Flood-Prone Areas	13 priority projects identified; Complete
Evaluate the feasibility of an alternative alignment for Project S1	Complete
Initiate design of Projects S1, S2 & S3A and Hospital Project	Issue a Request for Proposals (RFP) & award contracts for preliminary & final design, March-April 2020
Construction of Project S3A & Hospital Project	Fall 2020 - Summer 2021
Construction of Projects S1 & S2	Summer 2021 - EOY 2022

# Project & Program Funding

Project/Task	Status & Completion Date
Loaned \$3 million from the General Fund Long Term Asset Reserve (LTAR) to fund initial efforts	Complete
Evaluate state and federal grant opportunities	CDPHE pre-application submitted 12/30/19; Colorado Water Conservation Board grant submitted 1/31/20
Complete Stormwater Rate Study	Draft received; presentation to City Council on 1/27/2020
Stormwater rate increase	Complete
Issue bonds for desired level of project funding	Summer 2020

# Stormwater System Master Plan

## Objectives:

- ▶ Review known problematic flood areas outside of the Calibre report study area
- ▶ Review 36-inch diameter and larger storm sewer pipe outside of other study areas
- ▶ Determine key stormwater programs and projects to improve the city system
- ▶ Prioritize recommended projects and programs
- ▶ Develop a high level cost estimate for prioritized projects & programs
- ▶ Establish a 15-year Capital Improvement Plan (CIP)

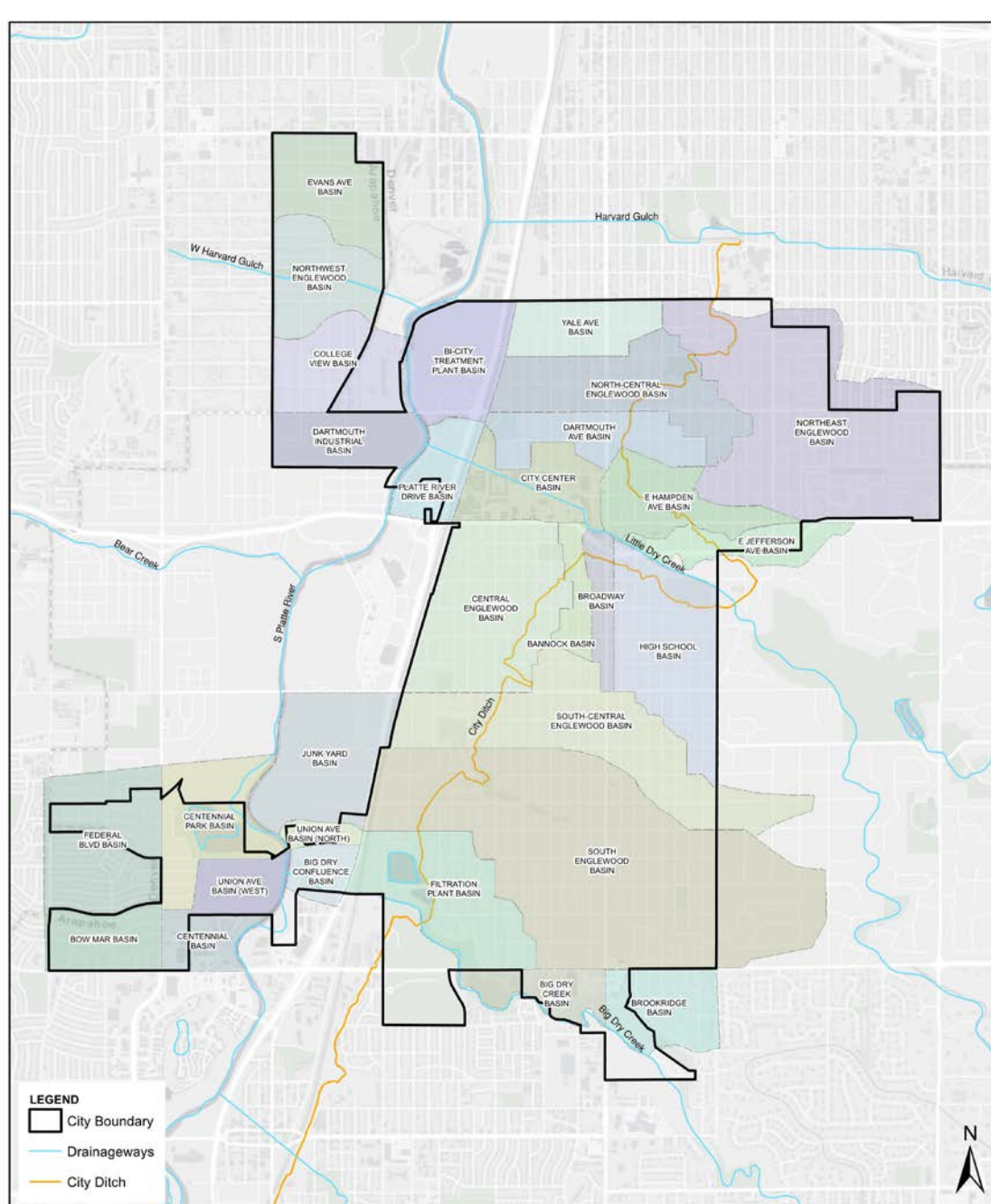


FIGURE 2-1: CITY OF ENGLEWOOD DRAINAGE BASINS

3,400 1,700 0  
1 Inch = 2,809 Feet  
DATE: FEBRUARY 2020

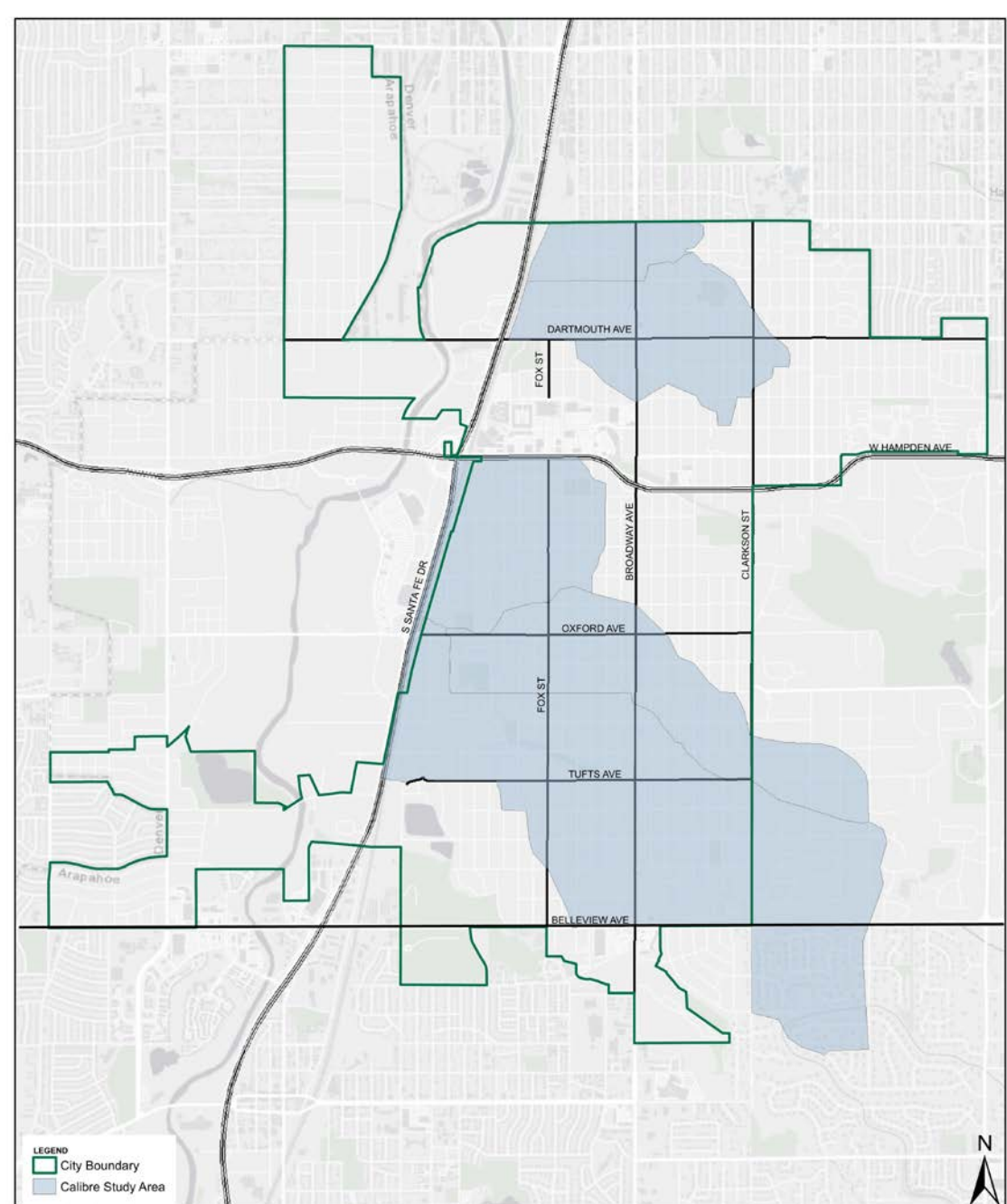
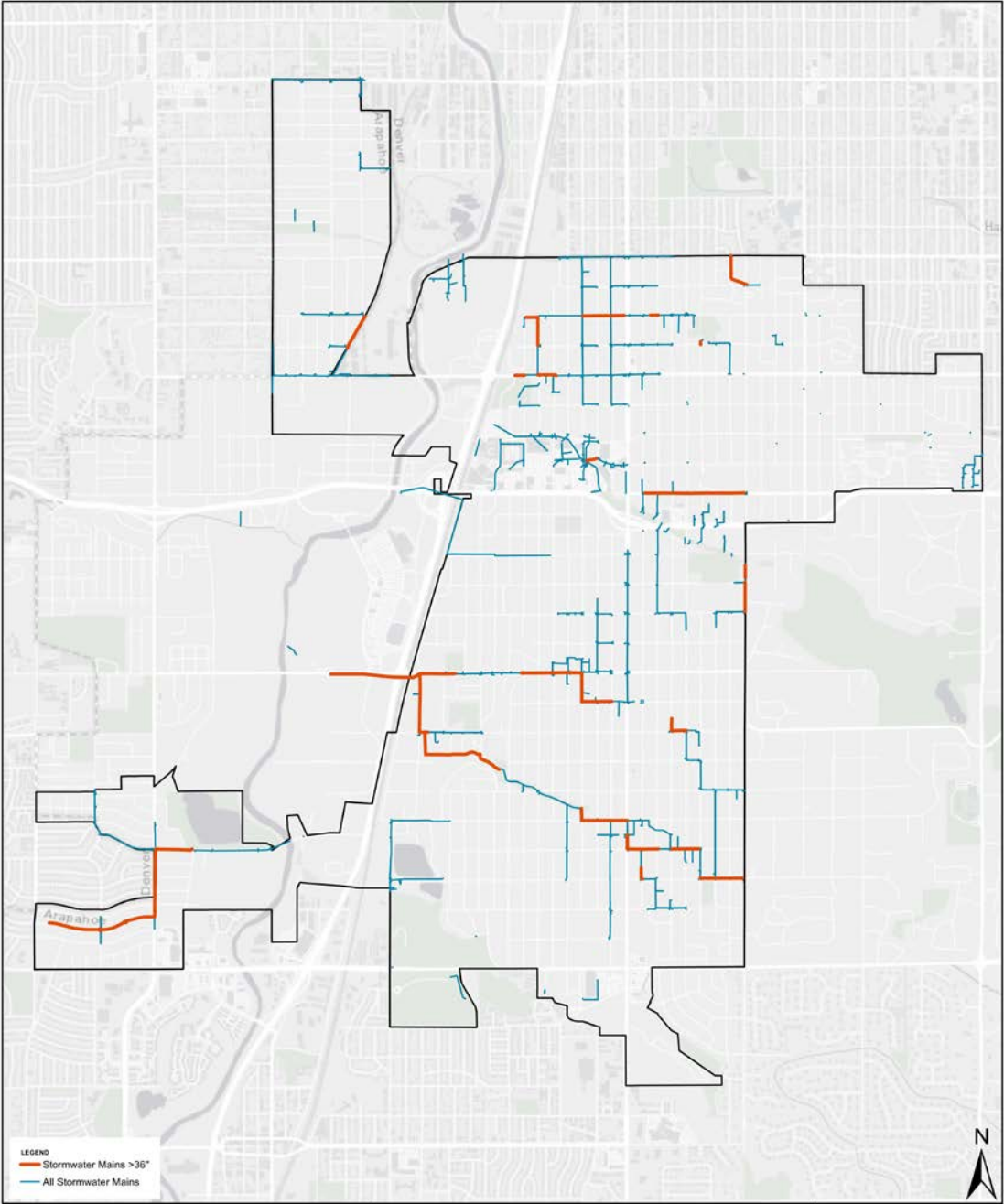


FIGURE 3-1: CALIBRE ENGINEERING STUDY AREA

3,250 1,625 0  
1 Inch = 2,682 Feet  
DATE: FEBRUARY 2020



# Existing Storm Sewer Network



# 15-Year CIP Programs

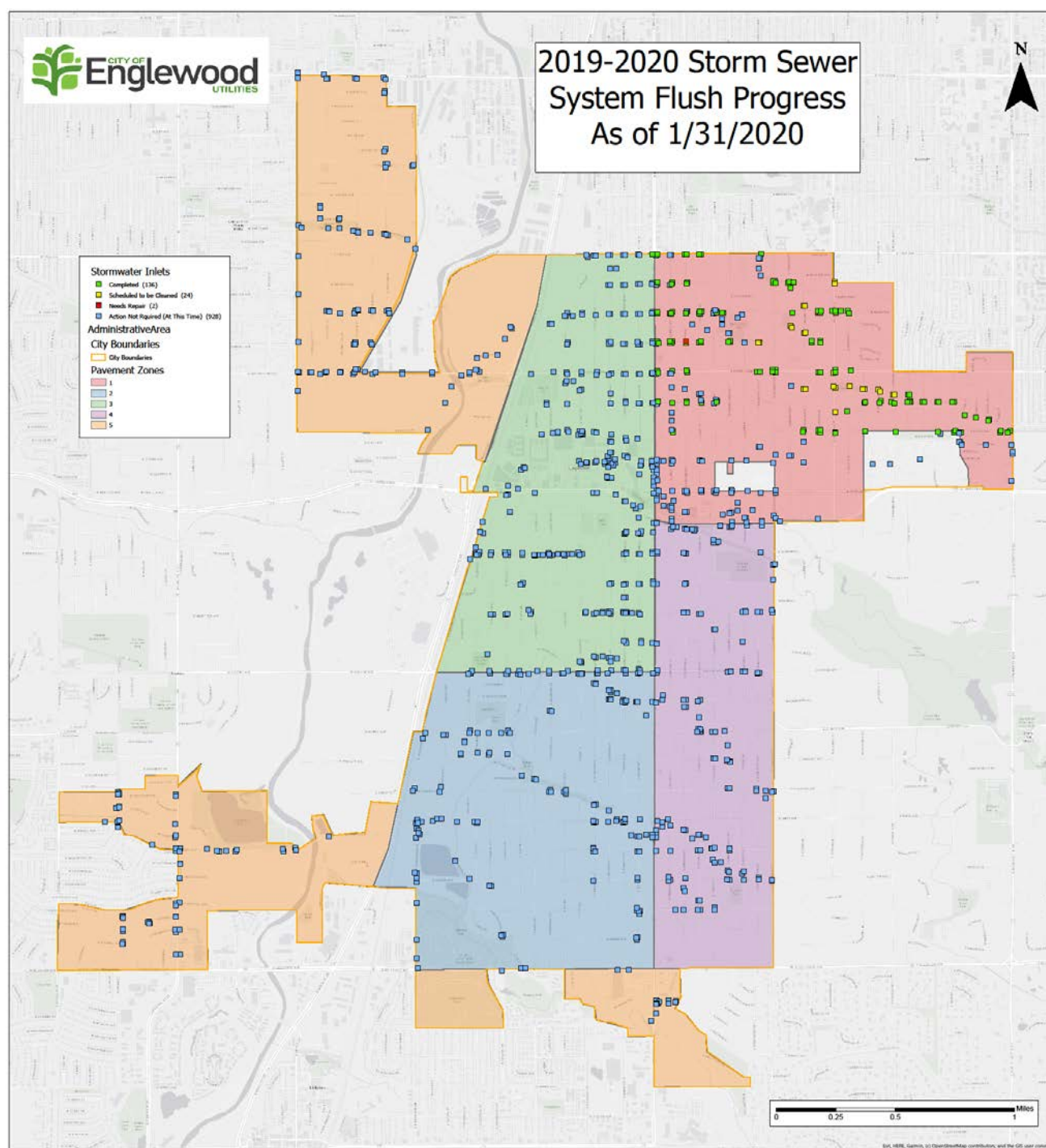
Study Name	Total Program Cost
Geographic Information System (GIS) Mapping	\$125,000
Clean & Televiser Large (> 36-inch) Pipe	\$1,500,000
Clean & Televiser Small (< 36-inch) Pipe	\$1,000,000
Clean & Televiser CDOT Infrastructure	\$400,000
Clean & Televiser - Maintenance Program	\$1,300,000
Asset Management Program	\$275,000
Hydrologic & Hydraulic Model	\$100,000
Install Rain Gauges	\$230,000
Emergency Projects	\$3,150,000
Program Management	\$3,400,000
<b>Total</b>	<b>\$11,480,000</b>

\*All costs in 2019 dollars

# 5-Year Prioritized Programs

Program	2020	2021	2022	2023	2024	5-Year Total
Clean Small Diameter Storm Sewer	Included in operating costs					
Clean Large Diameter Storm Sewer	\$250,000	\$250,000	\$250,000	\$300,000	\$300,000	\$1,350,000
Televise Small & Large Storm Sewer	\$200,000	\$200,000	\$150,000	\$150,000	\$150,000	\$850,000
Rain Gauge Installation	\$15,000	\$30,000	\$30,000	\$35,000	\$35,000	\$145,000
Repair/Rehab of Existing Pipe	\$0	\$400,000	\$450,000	\$500,000	\$500,000	\$1,850,000
GIS/Asset Data Collection	\$25,000	\$25,000	\$30,000	\$30,000	\$30,000	\$140,000
<b>Total</b>	<b>\$490,000</b>	<b>\$905,000</b>	<b>\$910,000</b>	<b>\$1,015,000</b>	<b>\$1,015,000</b>	<b>\$4,335,000</b>

# Small Sewer Cleaning Effort

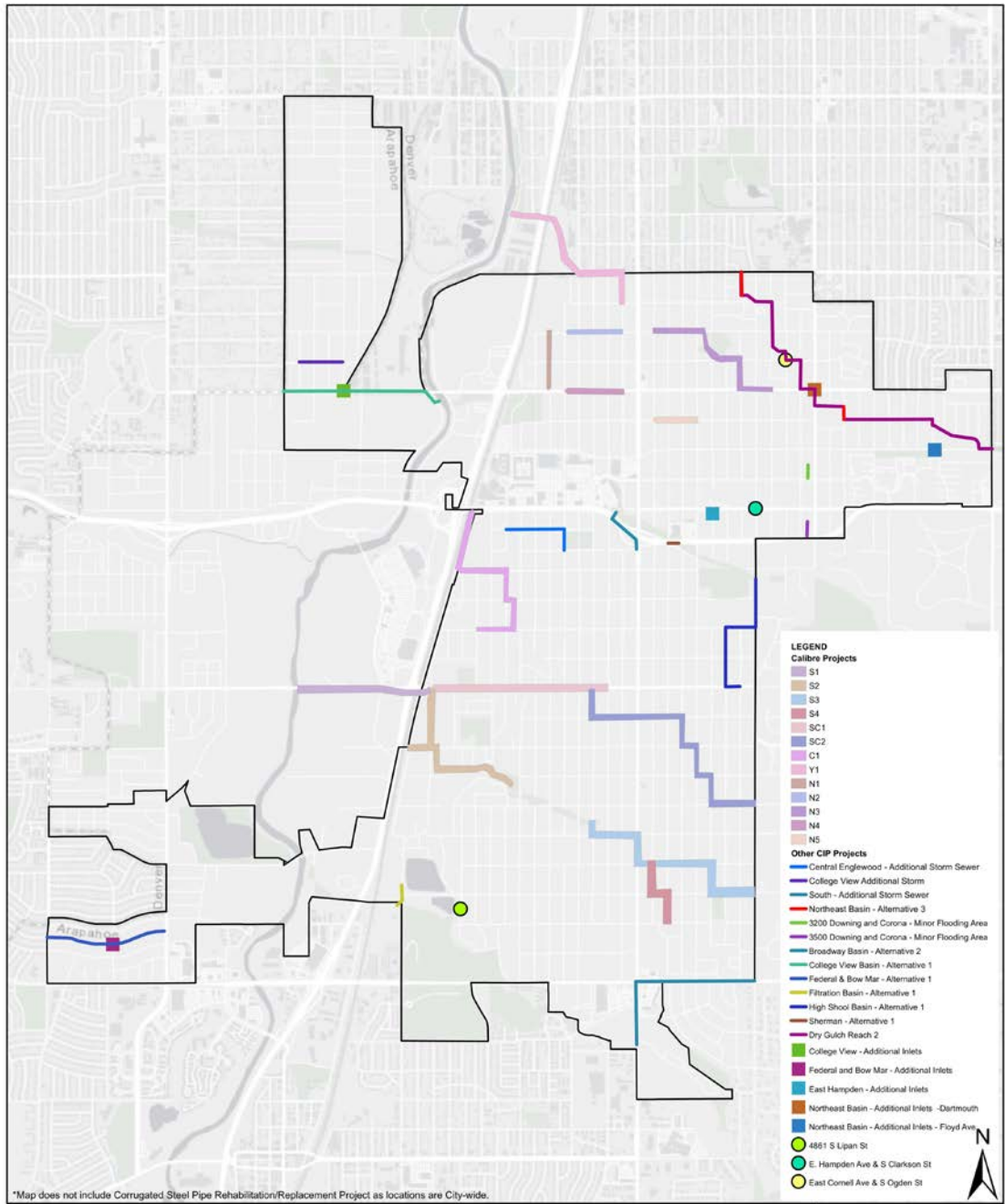


# 15-Year CIP Projects

Project Group/Name	Total Project Cost
13 Flood-Prone Area projects (Calibre)	\$58,000,000
Dry Gulch-Reach 2, Yale Ave to University Blvd.	\$19,100,000
Corrugated Metal Pipe (CMP) Rehabilitation & Replacement	\$14,500,000
1999 TCB Outfall System Plan Projects	\$10,100,000
Hampden Ave & S. Clarkson St.	\$1,600,000
4861 S Lipan St.	\$300,000
E. Cornell Ave. & S. Ogden St.	\$200,000
<b>Total</b>	<b>\$103,800,000</b>

\*All costs in 2019 dollars





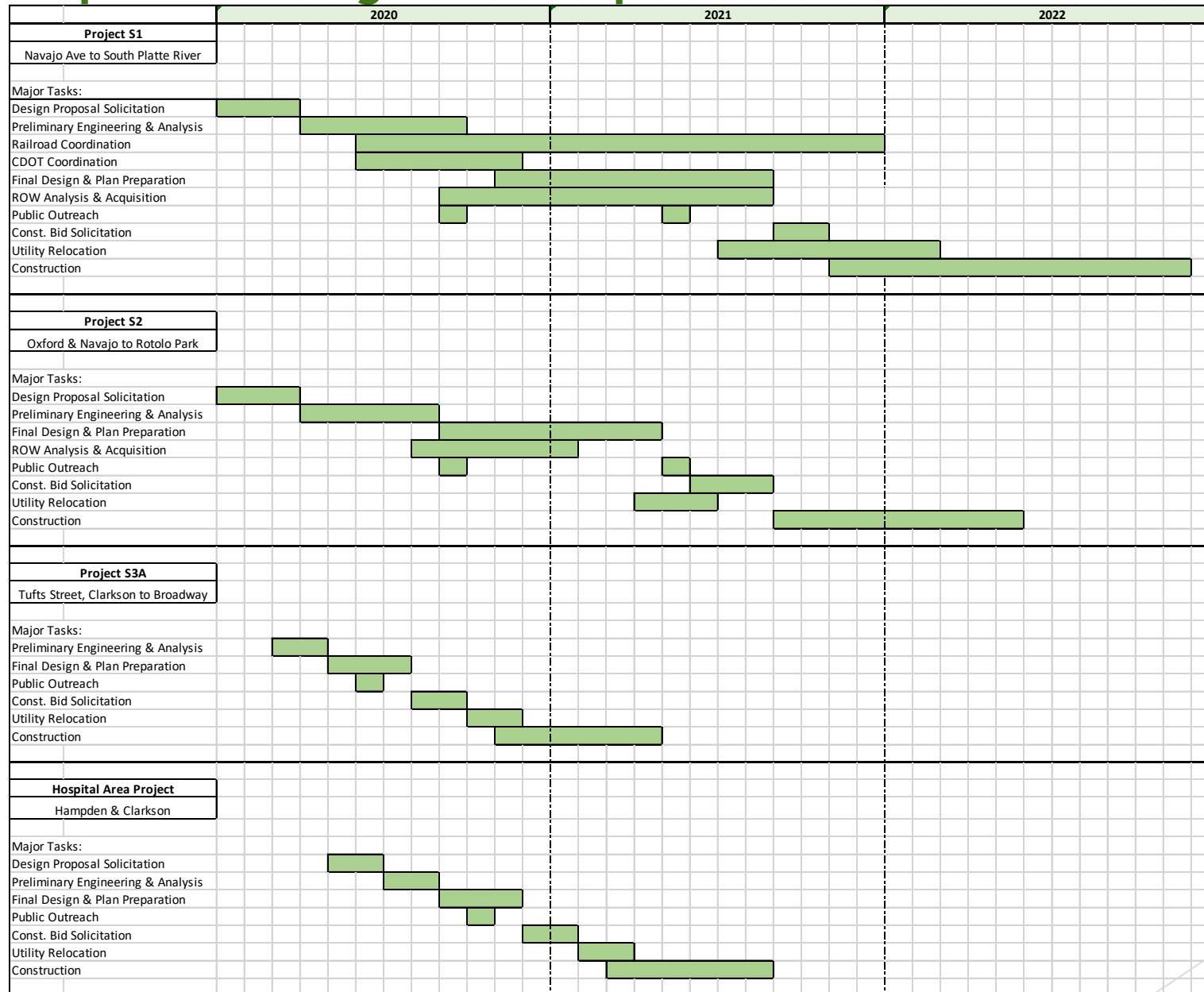
\*Map does not include Corrugated Steel Pipe Rehabilitation/Replacement Project as locations are City-wide.

# Initial Capital Projects

Project	2020	2021	2022	3-Year Total
Project S1	\$800,000	\$5,700,000	\$12,500,000	\$19,000,000
Project S2	\$700,000	\$3,800,000	\$6,500,000	\$11,300,000
Project S3a	\$650,000	\$2,650,000	\$0	\$3,300,000
Hospital Project	\$100,000	\$1,900,000	\$0	\$2,000,000
<b>Total</b>	<b>\$2,250,000</b>	<b>\$14,050,000</b>	<b>\$19,000,000</b>	<b>\$35,300,000</b>
<b>Potential Bond/ Loan Amount</b>				<b>\$35,300,000</b>

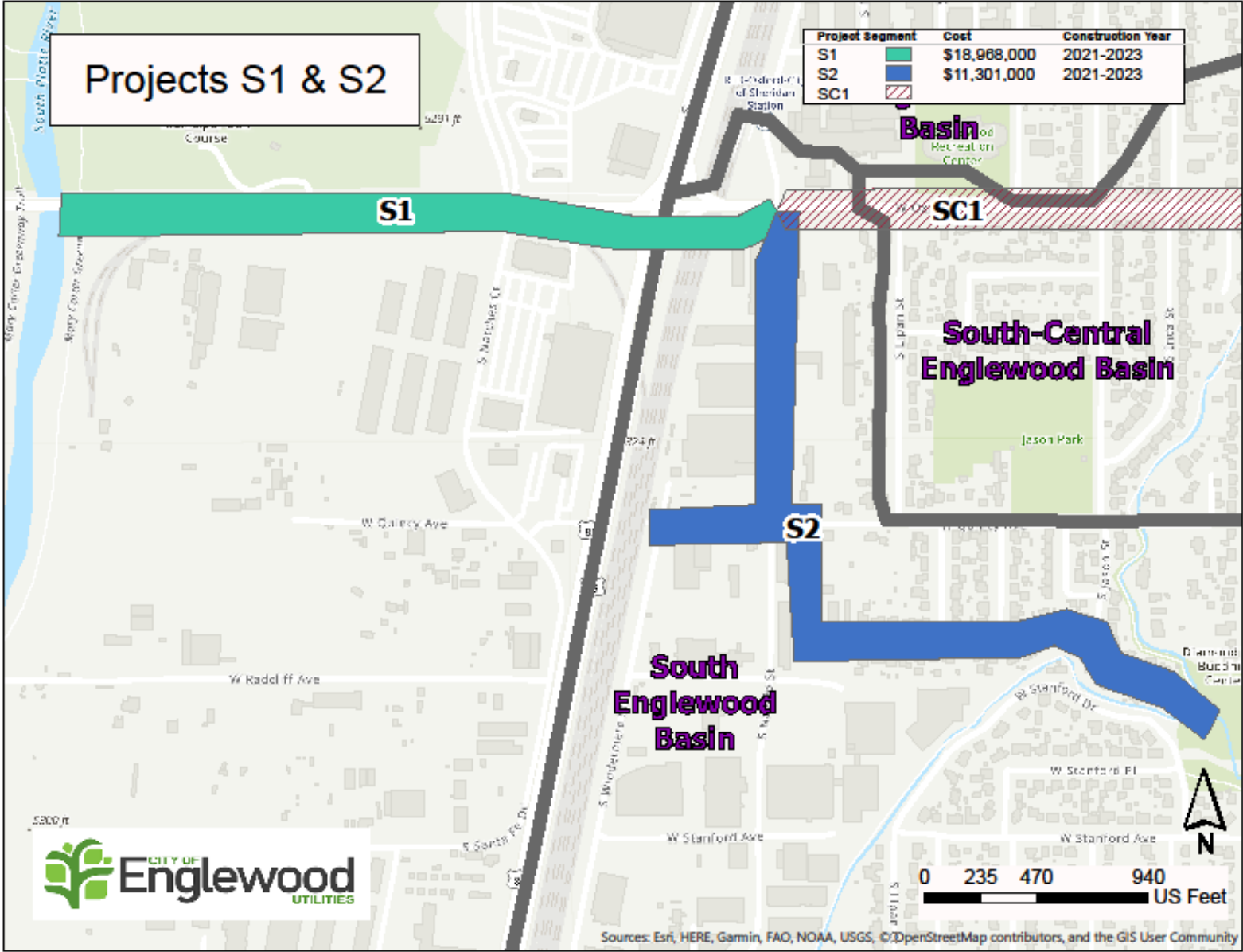
\*All costs in 2019 dollars

# Capital Project Implementation Schedule

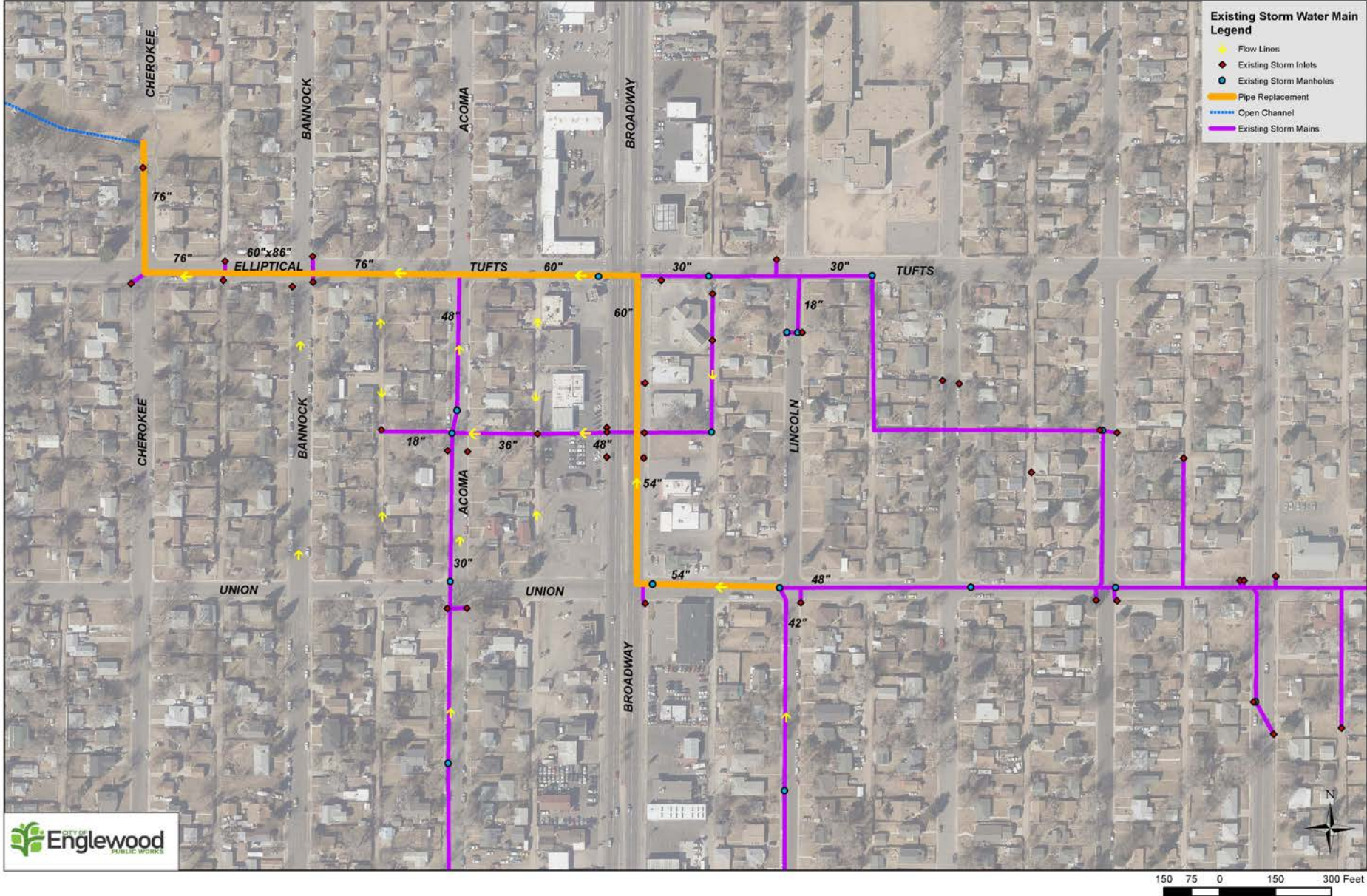




# Project S1 & S2

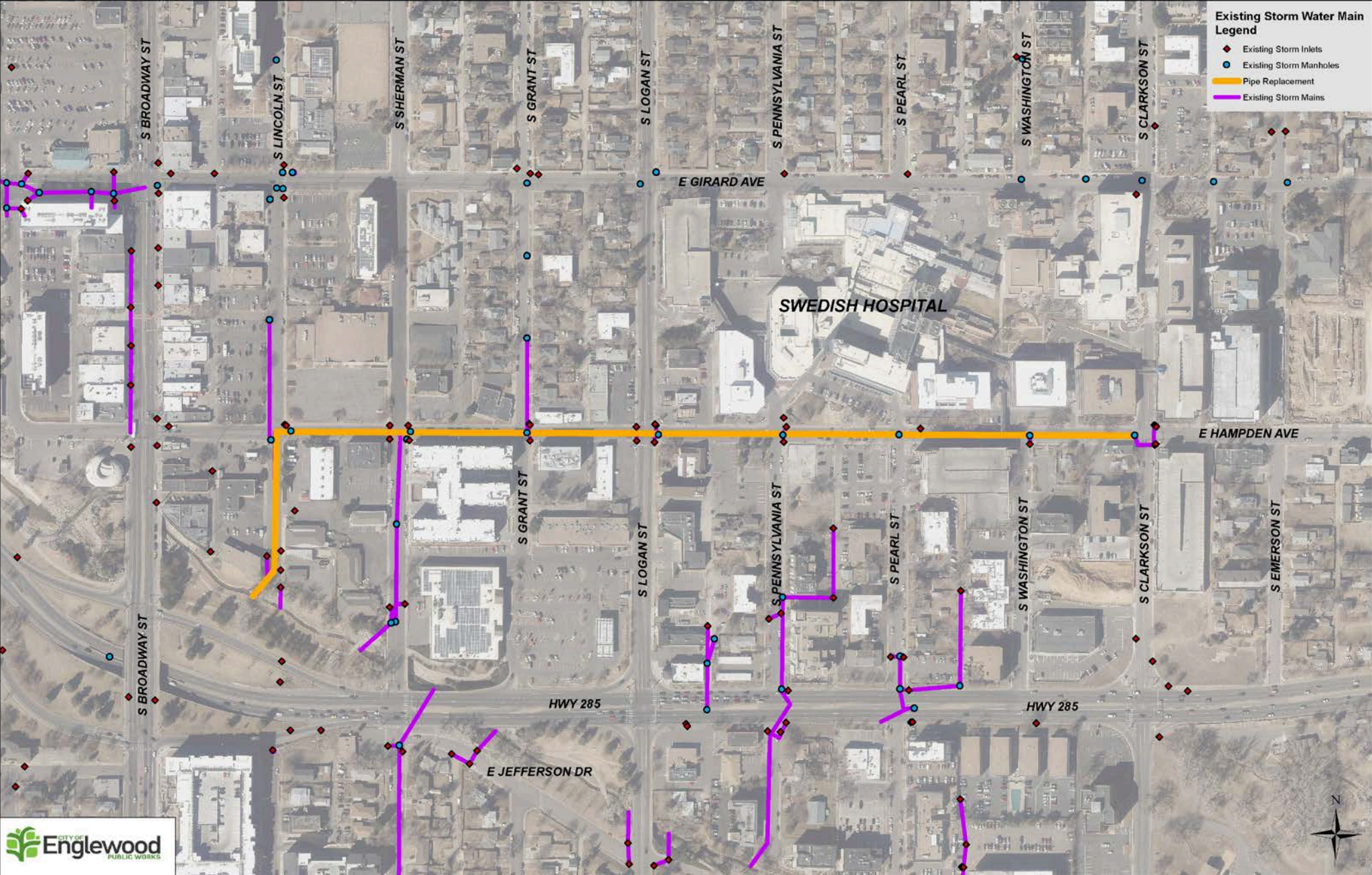


# Project S3a





# Hospital Project





# Recommendation

- ▶ Implement the following **Programs** over the next five years:
  - ▶ Clean Small Diameter Storm Sewer
  - ▶ Clean Large Diameter Storm Sewer
  - ▶ Televis Small & Large Storm Sewer
  - ▶ Rain Gauge Installation
  - ▶ Repair/Rehab of Existing Pipe
  - ▶ GIS/Asset Data Collection
  - ▶ At an estimated cost of \$4.335 million
- ▶ Implement the following **Projects** over the next three years:
  - ▶ **Project S1**
  - ▶ Project S2
  - ▶ Project S3a
  - ▶ Hospital Project
  - ▶ At an estimated cost of \$35.3 million
- ▶ Bond for the \$35.3 million to obtain the funds in 2020

# Questions & Discussion