

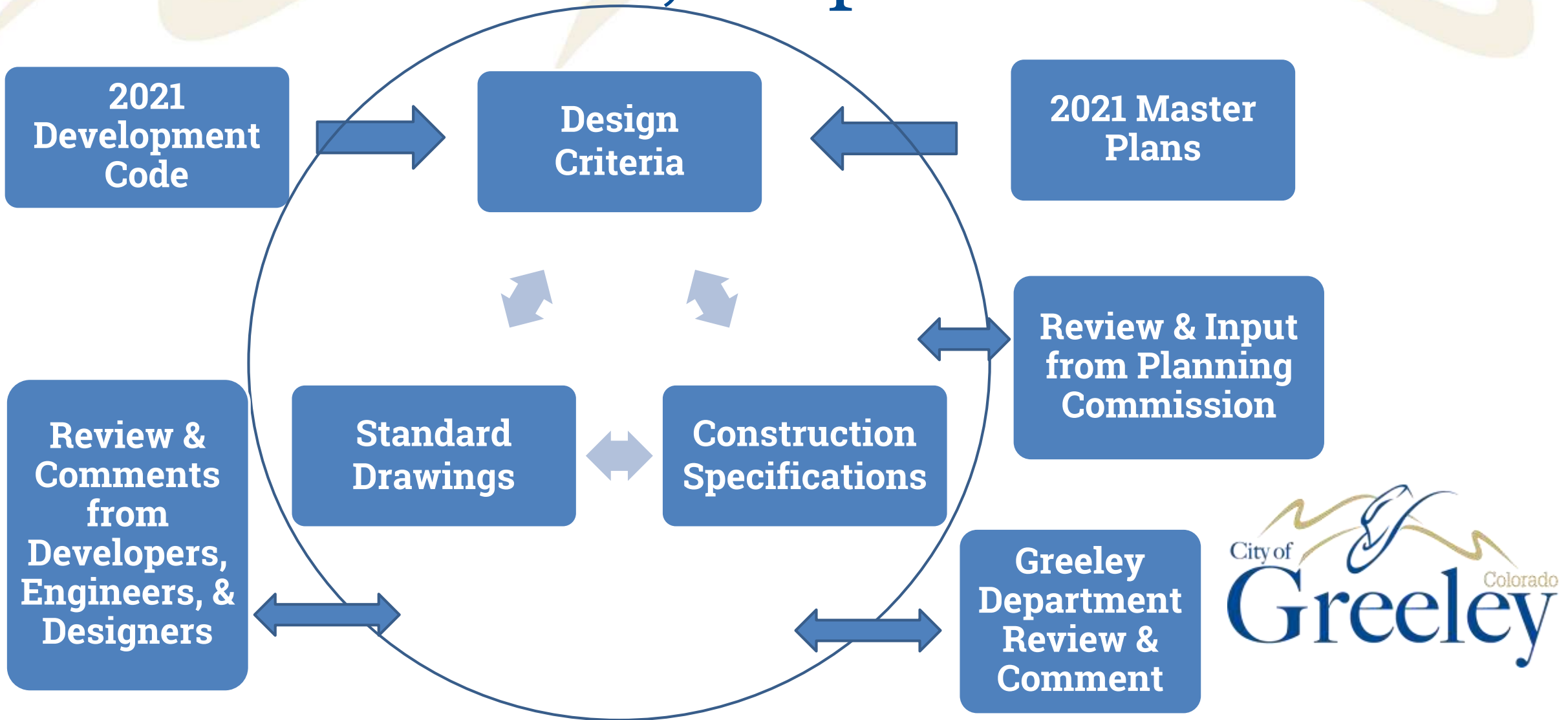
Updated Water & Sewer Design Criteria, Standards Details, & Construction Specifications

**Presented to
City Council**

September 6, 2022



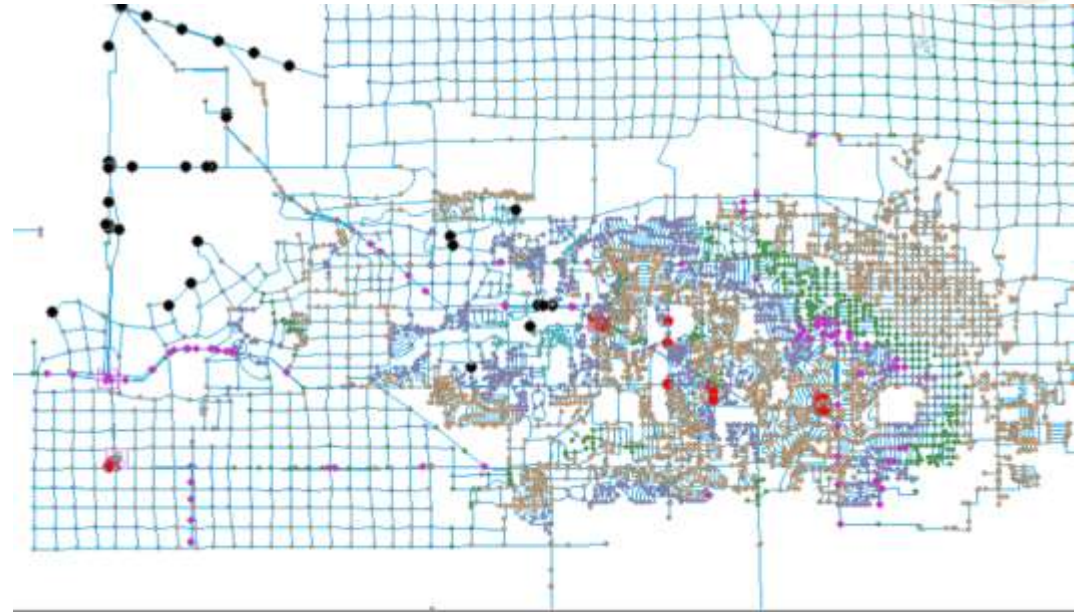
Process for Updating Design Criteria, Standards Details, & Specifications



Design Criteria

Goals

- **Alignment of W&S master plans.**
- **Align criteria with current W&S practices**
- **Potential savings and reduced questions**
- **Utility Engineering (SUE) Laws**



Design Criteria: Section 1

General Requirements of Development

- **Minor changes to this section**
- **Alignment with Engineering Development Review process**



Design Criteria: Section 2

Submittal Requirements

- **Hydraulic models in a format that can be integrated with the City's overall models – InfoWater & InfoSWMM**
- **Updated reimbursement of oversized public infrastructure:**
 - **Sanitary sewer lift stations**
 - **Non-potable ponds and pump stations.**



Design Criteria: Section 3

Potable Water

- Provides guidance for development when assumptions are made on future customers
- Updated future flows more accurately using zoning, acreages, and building footprints
- Provides new criteria to model water flows:
 - Commercial & industrial parcels based on zoning

Residential			
Zoning based on <i>City of Greeley Charter and Code, Chapter 24.401, Zoning District Development Standards.</i>			
Use	Units Per Acre*	Occupancy	Peak Hour Demand
R-E	3	3.1 persons	1.9 gpm/unit
R-L	5	3.1 persons	1.9 gpm/unit
R-M	10	2.7 persons	1.7 gpm/unit
R-H	20	1.7 persons	1.1 gpm/unit
R-MH	15	1.7 persons	1.1 gpm/unit
*Use these unit per acre values unless specific unit counts are known			
Commercial			
Where uses are known, use the specific demand values. Commercial demands based on 1000 ft ² of building area unless noted otherwise. Otherwise use the appropriate zoning demand values.			
Use	Average Day Demand without Irrigation		
C-L	1500 gpd per acre		
C-H	3000 gpd per acre		
I-L & I-M	1500 gpd per acre		
I-H	3000 gpd per acre		
Use	Average Day Demand		
Restaurant	500 gpd		
Retail/Offices	200 gpd		
Grocery Store	430 gpd		
Laundry, Dry Cleaning	1000 gpd		
Auto Dealer, Repair/Service	115 gpd		
Car Wash with Water Reuse	1500 gpd		
Hospital	380 gpd		
Hotel/Motel	350 gpd		
Retirement & Nursing Home	350 gpd		
School	12 gpd/student without showers 36 gpd/student with showers		
Religious Building	300 gpd		
Warehouse (Non-industrial)	25 gpd		
Irrigation	25 gpm per acre		

Design Criteria: Section 4

Sanitary Sewer

- **Wastewater flows for:**
 - **Commercial & Industrial**
- **Provides guidance for development**
- **Added Lift station criteria**

Residential			
Zoning based on City of Greeley Charter and Code, Chapter 24.401, Zoning District Development Standards			
Use	Units Per Acre	Occupancy	Average Day Wastewater Flows*
R-E	3	3.1 persons	0.22 gpm/unit
R-L	5	3.1 persons	0.22 gpm/unit
R-M	10	2.7 persons	0.19 gpm/unit
R-H	20	1.7 persons	0.12 gpm/unit
Commercial			
Use	Average Day Wastewater Flows*		
C-L (not specified)	1,500 gpd/acre (minimum)		
C-H (not specified)	3,000 gpd/acre (minimum)		
Retail/Offices	200 gpd/1,000 SF		
Hotels/Motels	350 gpd/1,000 SF		
Restaurants	500 gpd/1,000 SF		
Bars and Lounges	300 gpd/1,000 SF		
Neighborhood Stores	200 gpd/1,000 SF		
Department Stores	200 gpd/1,000 SF		
Laundry and Dry Cleaning	1,000 gpd/1,000 SF		
Banks	300 gpd/1,000 SF		
Nursing Homes	350 gpd/1,000 SF		
Warehouses	25 gpd/1,000 SF		
Car Washes	1,500 gpd/1,000 SF		
Auto Dealer/Repair/Service	115 gpd/1,000 SF		
Grocery Store	430 gpd/1,000 SF		
Religious Buildings	300 gpd/1,000 SF		
Factories	800 gpd/1,000 SF		
Hospitals	380 gpd/1,000 SF		
Schools (without showers)	12 gpd/student		
Schools (with showers)	36 gpd/student		
Industrial			
Use	Average Day Wastewater Flows*		
I-L (not specified)	1,500 gpd/acre		
I-M (not specified)	1,500 gpd/acre		
I-H (not specified)	3,000 gpd/acre		
*1cfs = 448.33 gpm			
Average day wastewater flow per capita = 60 gpcd			

Non-Potable Water Design Criteria

- **Comprehensive Update**
- **NP Master Plan**
- **NP policy (Feb of 2022)**
- **Regional Systems**



Design Criteria: Section 6 Landscape and Irrigation

New Criteria:

- **Promotes water conservation**
- **Support attractive and sustainable landscapes**

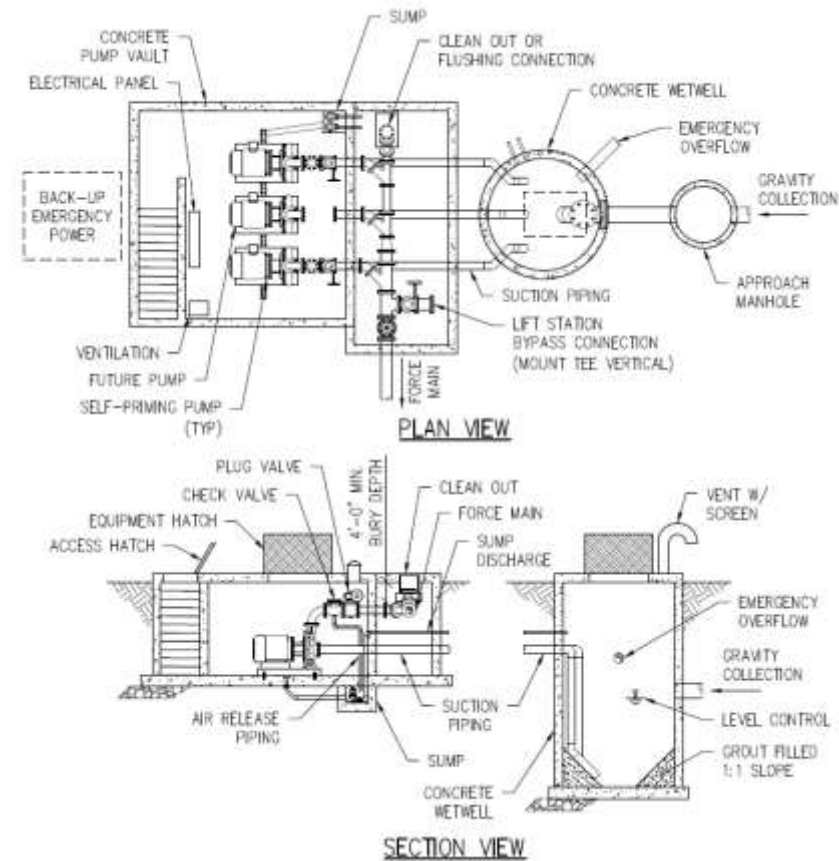
Applicable to:

- **Common areas**
- **Right-of-ways**
- **Municipal buildings**
- **Non-residential (commercial/industrial)**
- **Multi-family residential**



Standard Drawings & Specifications

- **Consistency**
- **Added lift station drawings**
- **Added utility locating details**



Engagement & Review

- **Builders, Realtors, Developers - July 19, 2021**
- **City Departments**
- **Engineering Development Review & Civil Inspection**
- **Planning Commission - March 8th, 2022**
- **Greeley Engineers, Developers, Landscape designers, & Community members - March to June, 2022**
 - **155 comments and questions tracked and addressed**



Recommendations

- **Water & Sewer Board approved and recommended to City Council on July 20, 2022**
- **Planning Commission approved and recommended to City Council on August 9th, 2022**

Recommendation:

Adopt the ordinance to amend Title 20 of the Greeley Municipal Code concerning the adoption of the Water & Sewer Department Design Criteria and Construction Specification



Questions?

