

In-Tract Line Replacement

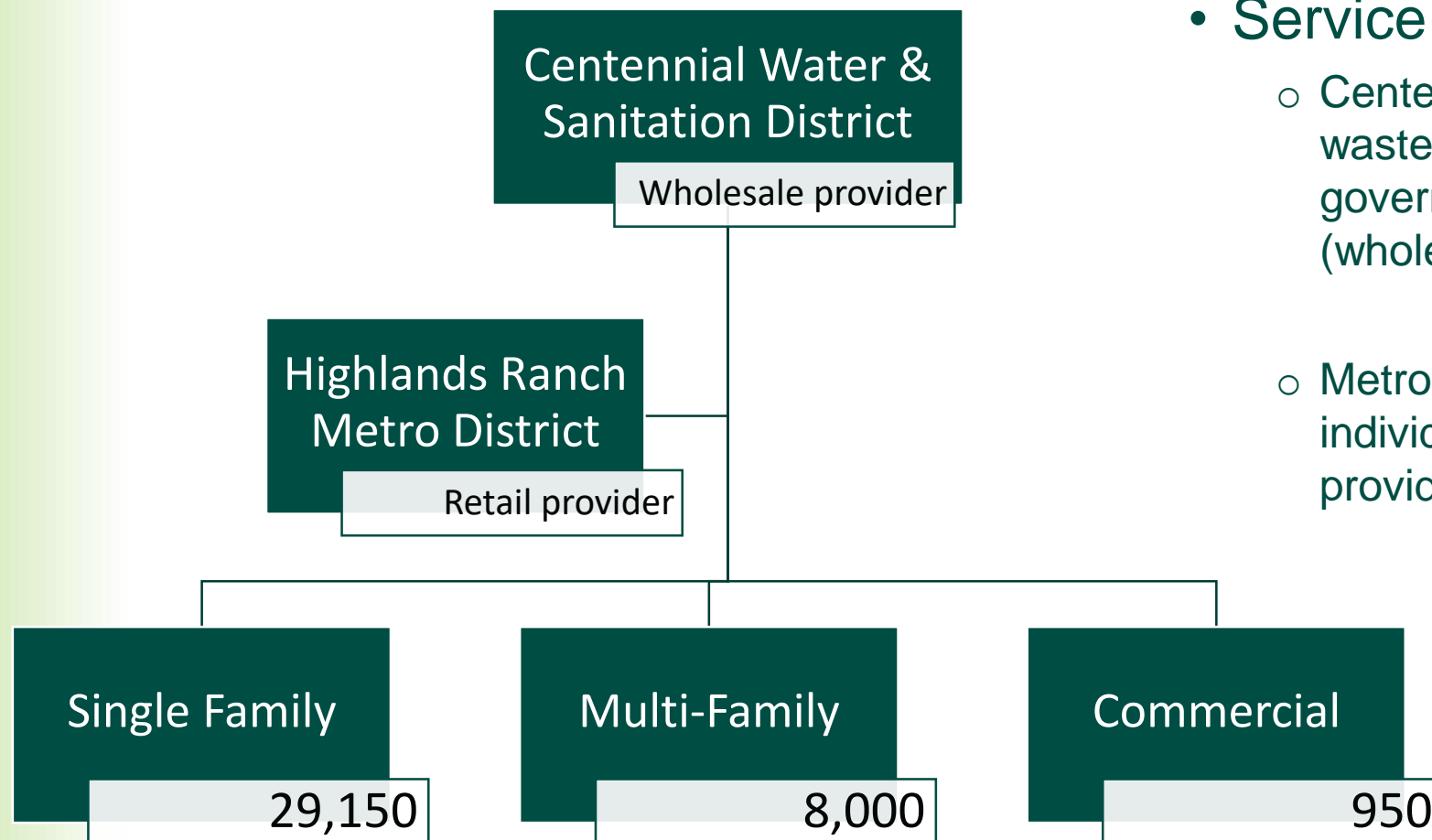
June 14, 2021

Mike Renshaw, General Manager

History of Development: Pay Its Own Way

- System development fee paid per acre at time of development
 - Funded **\$162 million** in improvements:
 - Arterial roadways, traffic signals, and streetlights
 - Storm drainage and channel stabilization
 - Fire stations
 - Highlands Ranch Mansion and Parks & Open Space Service Center
 - C-470 interchange
 - Parks and trails
 - Parkway landscape
- Developer-constructed and donated to Metro District
 - In-tract water and sewer lines
 - Fencing along arterial roadways

Water & Wastewater Service in Highlands Ranch



- **Service Plans**

- Centennial provides water and wastewater service to governmental organizations (wholesale provider)
- Metro Districts provides service to individual customers (retail provider)

Initial Construction

Centennial Water: Funded \$250MM for base infrastructure

- Treatment plants
- Pump stations and lift stations
- Storage tanks
- Main lines

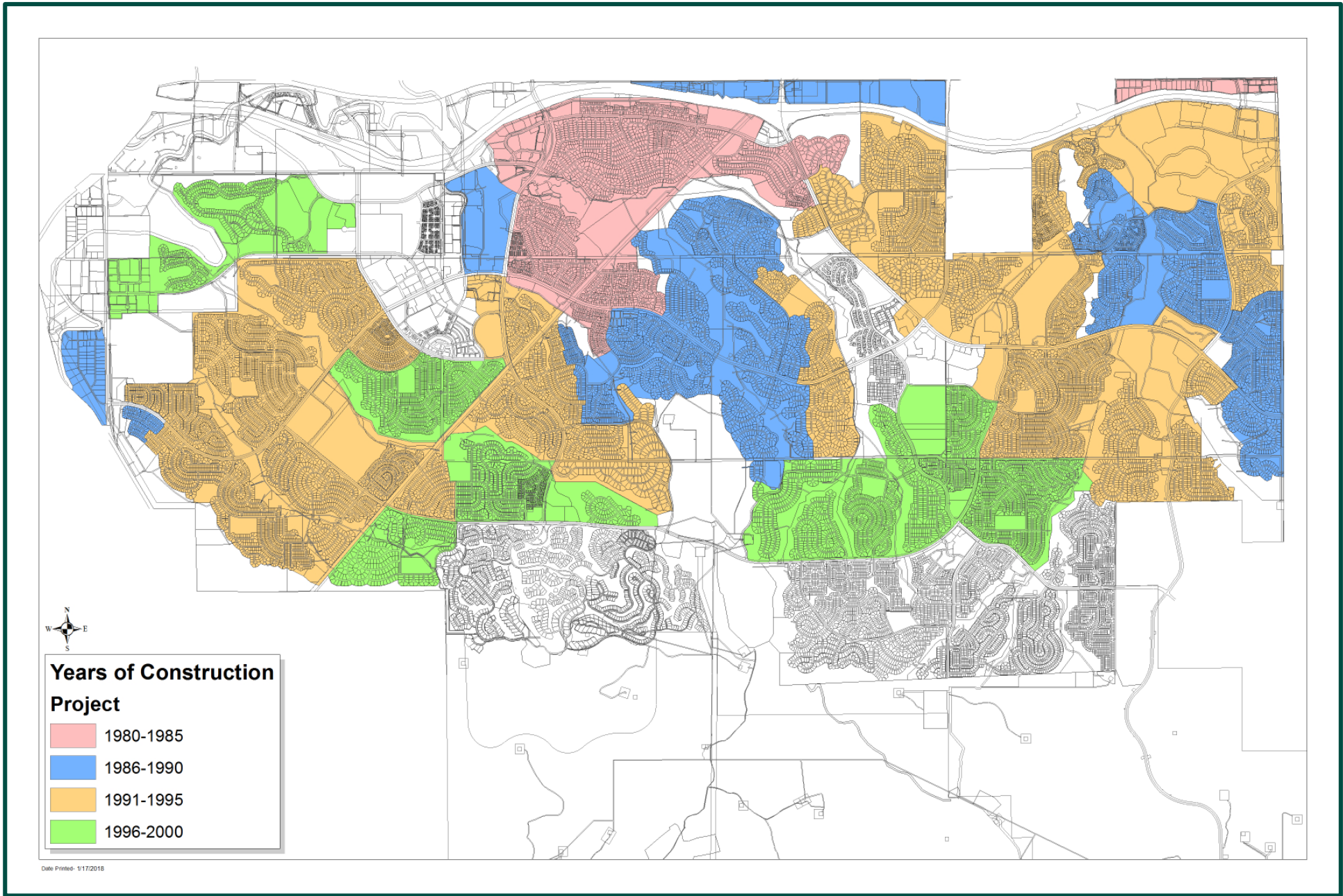


Metro District: Water and sewer pipelines within neighborhoods

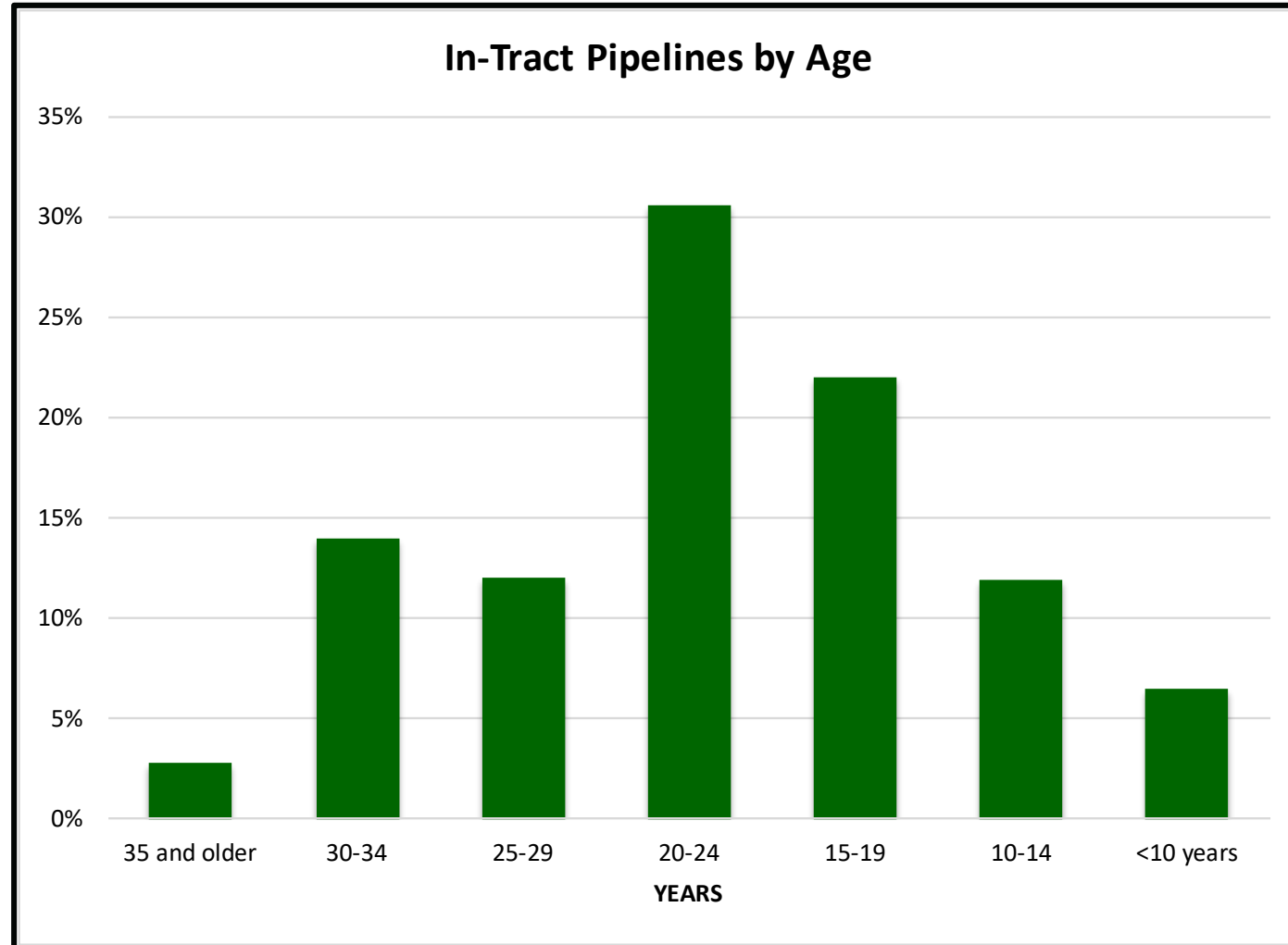
- Constructed by developers and dedicated to Metro District
- All in-tract projects constructed in accordance with standard specifications
- Centennial staff reviewed, approved plans, and on-site inspection

Water & Sewer Agreement

- Highlands Ranch Water and Wastewater Agreement
 - Centennial Water & Sanitation District (CWSD) provides water and wastewater services to HRMD
 - Including routine maintenance and repair of all pipelines
 - Costs are recovered by rates and fees
 - HRMD provides service to individual customers
- 2018 Amendment #1 expanded CWSD scope of services
 - CWSD provided master plan for replacement
 - CWSD recommends 3 year replacement plan
 - CWSD manages the replacement of in-tract pipelines
 - HRMD approves and appropriates funds, with adoption for upcoming year



Distribution by Age



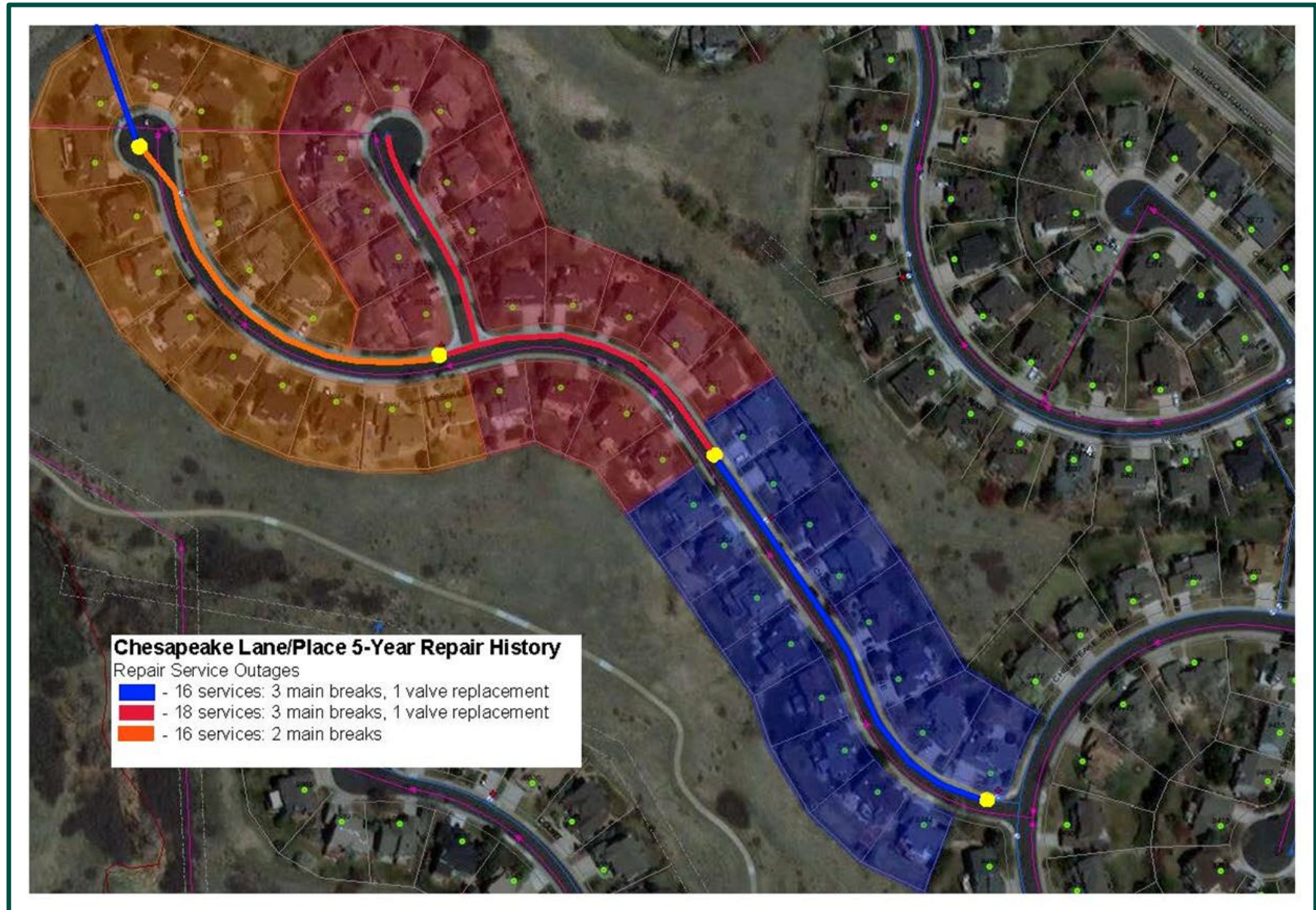
Metro District Assets

- \$66.2 million in water and sewer lines
- Short – term capital plan 2020 thru 2027 \$5.8 million
 - Funding from annual transfer
- Long – term capital projections
 - Projections based on:
 - Age – average life 50 – 75 years
 - Material (ductile iron potential corrosion risk)
 - Average annual percent replaced
 - Funding options
 - Fee
 - Increase in annual transfer
- Other consideration – cost of repairs versus replacement

Why Consider Replacement?

- Factors to consider
 - Age of pipelines
 - Expected service life of Ductile Iron and PVC 50 – 75 years
 - 77% of in-tract lines are 20+ years old
 - Pipe material
 - Ductile Iron is susceptible to corrosion
 - Number of breaks
 - CWSD staff observed an increased number of breaks
 - 72 total main breaks 2015 – 2019
 - Reliability of service
 - Average length of outage due to water line break – 6 hours

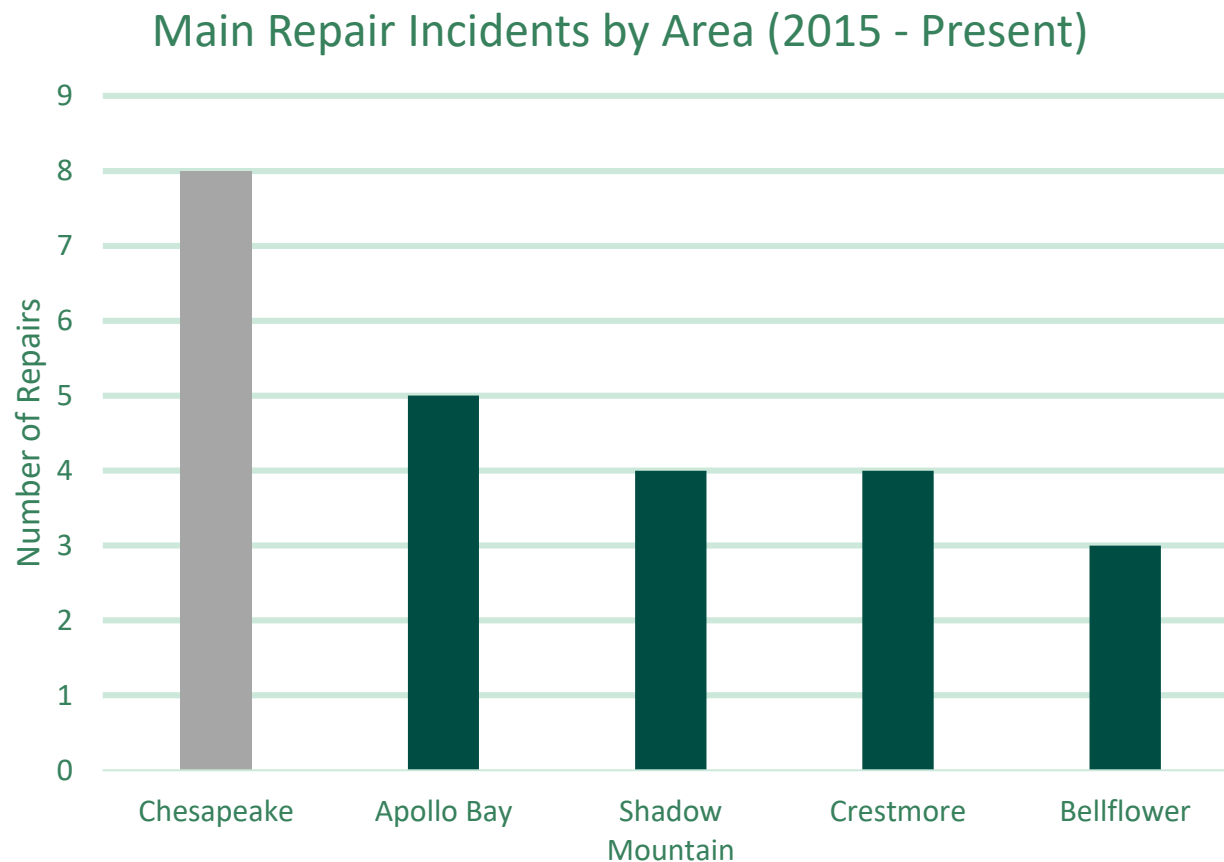
Reliability of Service - Chesapeake



Replacement Program Considerations

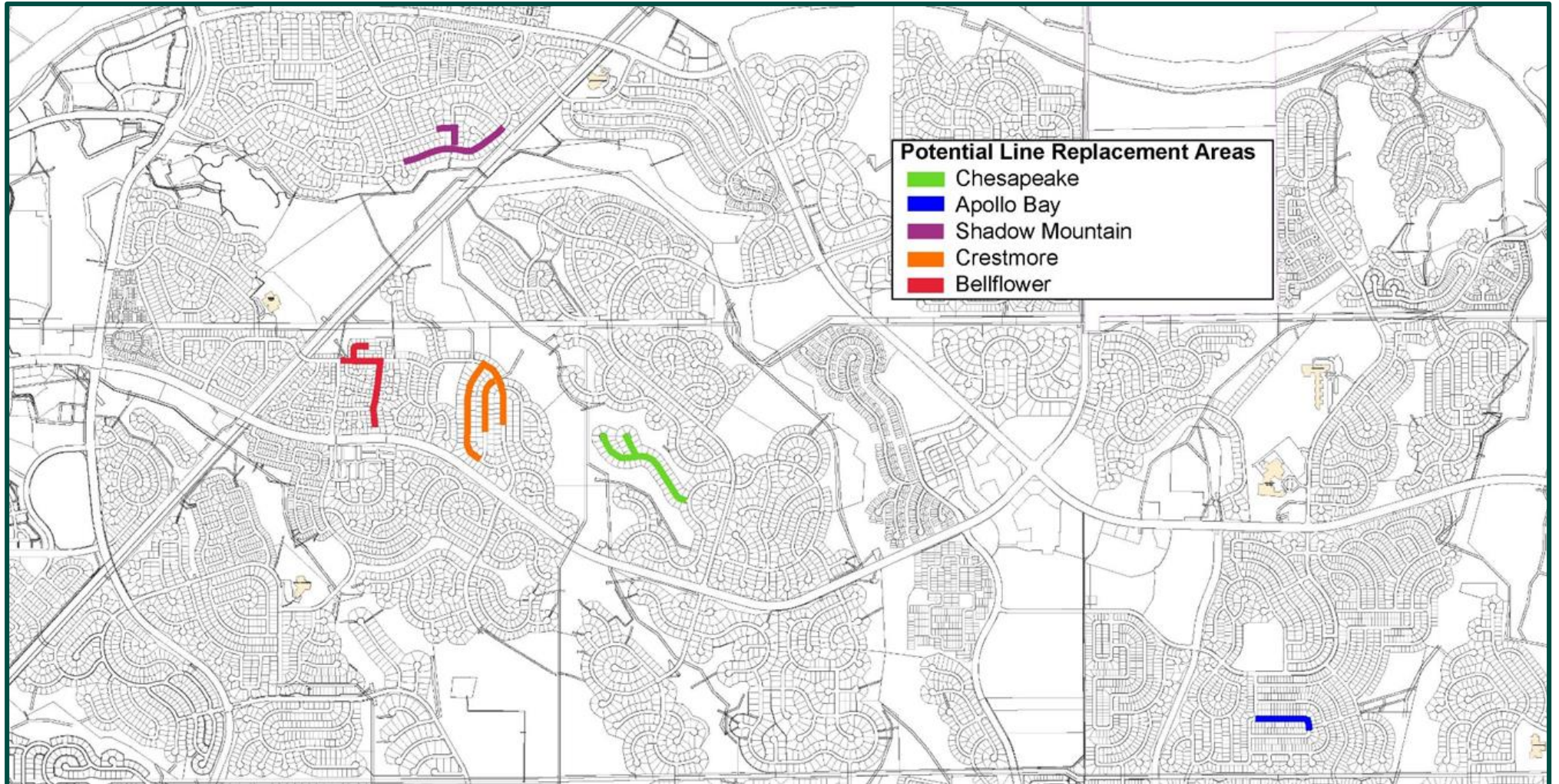
- Preparation for future and understand conditions and requirements for replacement
 - Pipe condition and cause of breaks
 - Douglas County requirements
 - Construction logistics
 - Public notification
 - Temporary water services
 - Limits of construction constraints
 - Schedule constraints
 - Costs

Pipeline Replacement Evaluation



- Evaluation of potential replacement areas
- Number, type, and/or cause of breaks
- 5 areas accounted for 30% of main breaks

Potential Replacement Areas



Near Term Project Cost Estimates

Project	Lineal Feet	Estimated Cost
Crestmore	2,400	\$1,600,000
Shadow Mountain	1,900	\$1,200,000
Bellflower	1,700	\$1,200,000
Apollo Bay	950	\$650,000
TOTAL		\$4,650,000

- Chesapeake Project \$1,200,000

Competing Capital Needs

- Major Repair Fund Section \$35 million
 - Repair and replacement of existing infrastructure including:
 - Playgrounds, courts, and sports fields
 - Park shelters and restrooms
 - Parkway fencing and landscape
 - Park shelters
- New capital to improve or expand existing services
 - Senior Center \$12.5 million
 - Pickleball Courts \$2.5 million
 - Historic Park – master planning to begin in 2023
- Stormwater Master Capital Plan \$45.8 million

**Based on 2020 Capital Improvement Plan*