CITY OF VENICE

INFRASTRUCTURE REPORT CARD

Ardurra Group, Inc.
Jacobs Engineering
Stantec

- Introduction
- Overview of the ASCE Report Card System
- Water System Evaluation
- Wastewater System Evaluation
- Financial Impact Evaluation
- Closing

SPEAKERS

Javier Vargas, MPA – Utilities Director

Chris Kuzler, PE – Ardurra

Chris Sharek, PE - Jacobs

Andrew Burnham - Stantec

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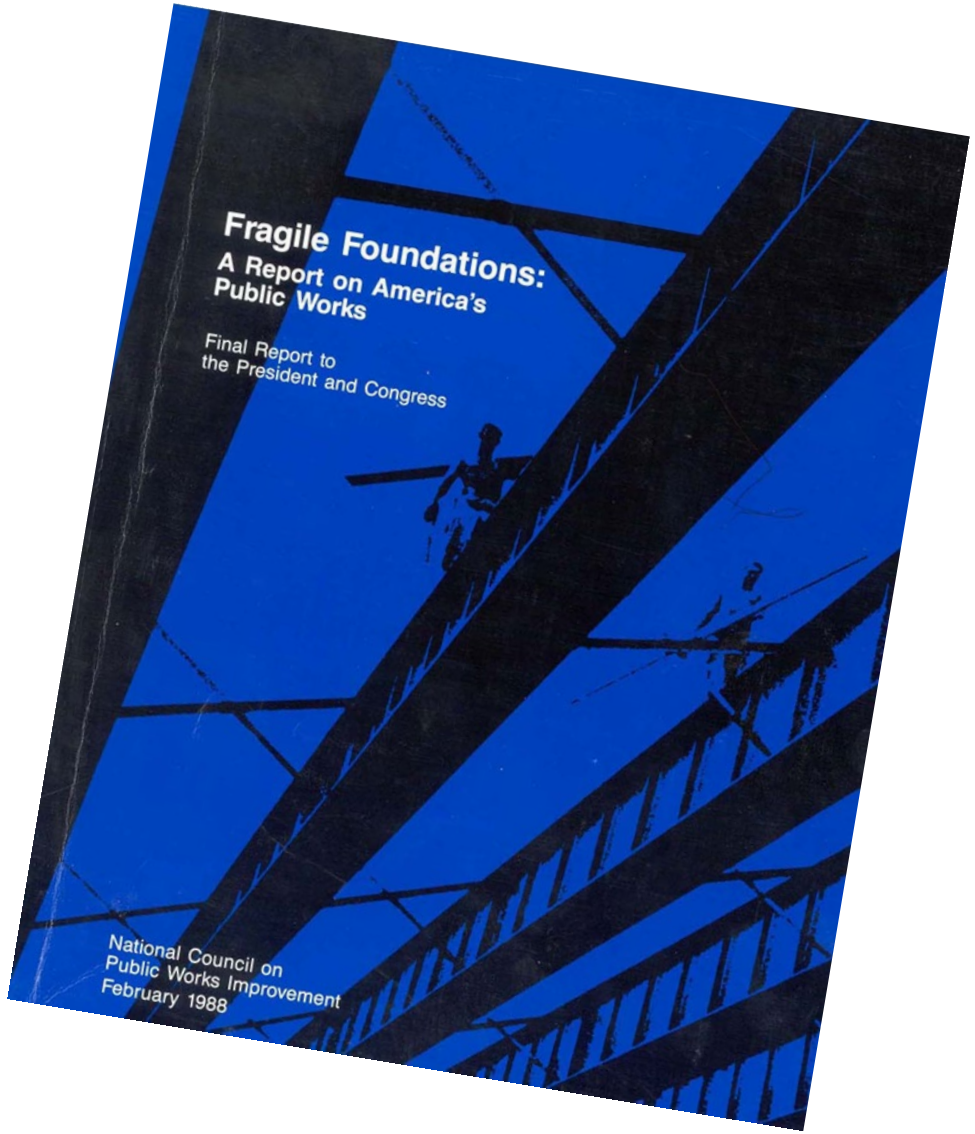
ASCE REPORT CARD

- Started in 1988 with the National Council on Public Works Improvements' *Fragile Foundations* report

  "...convincing evidence that the quality of America's infrastructure is barely adequate to fulfill current requirements and insufficient to meet the demands of future economic growth and development."

- First ASCE report was in 1998. Then 2001, 2003, 2005, 2009, 2013, 2017 and 2021

- All reports concluded that the same problems persist



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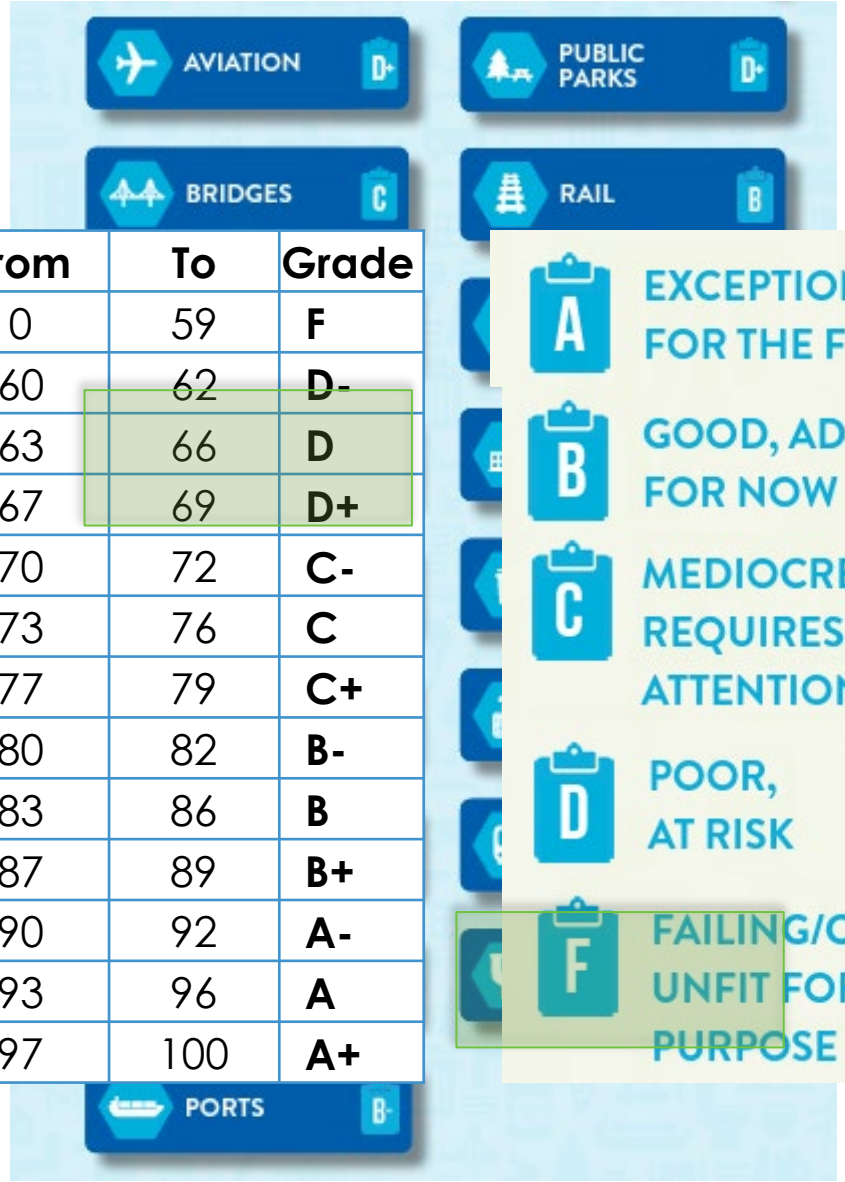
ASCE REPORT CARD

- Committee of 31 civil engineers with decades of expertise
- 17 infrastructure categories
- 8 Scoring Criteria
  - *Capacity*
  - *Condition*
  - *Funding*
  - *Future Need*
  - *Operation and Maintenance*
  - *Public Safety*
  - *Resilience*
  - *Innovation*



From	To	Grade
0	59	F
60	62	D-
63	66	D
67	69	D+
70	72	C-
73	76	C
77	79	C+
80	82	B-
83	86	B
87	89	B+
90	92	A-
93	96	A
97	100	A+

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2021 NATIONAL AND STATE REPORT CARD RESULTS

UNITED STATES

FLORIDA

Venice, FL City on the Gulf

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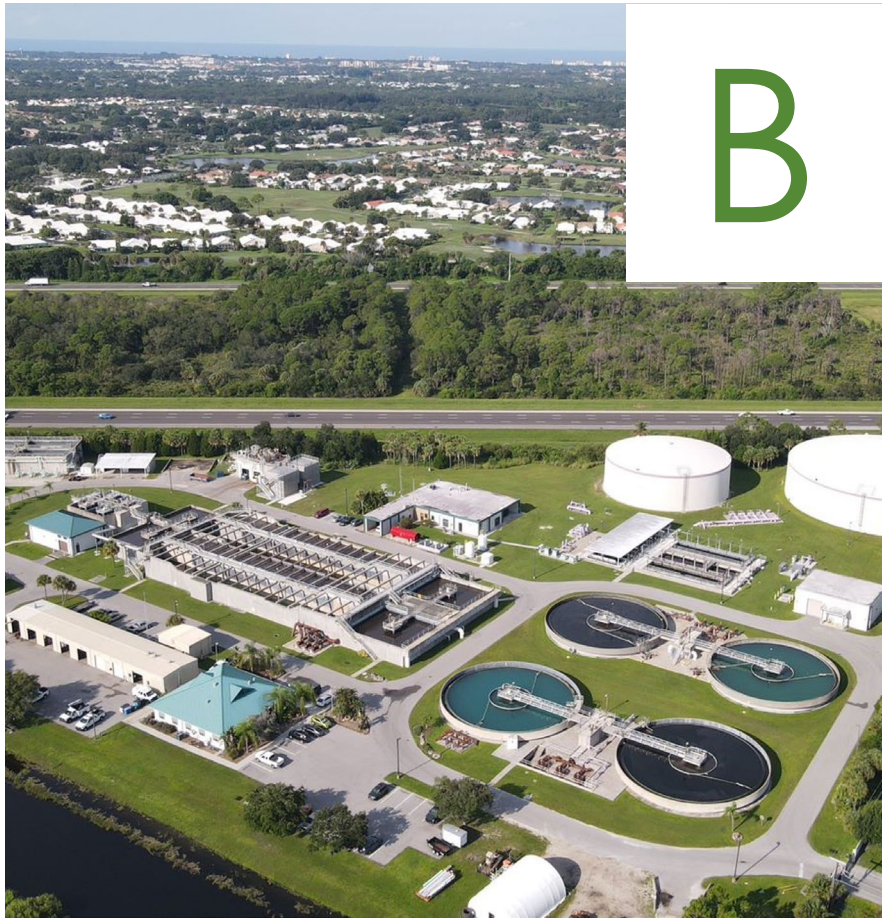
CITY OF VENICE REPORT CARD RESULTS

Drinking Water

B

Wastewater



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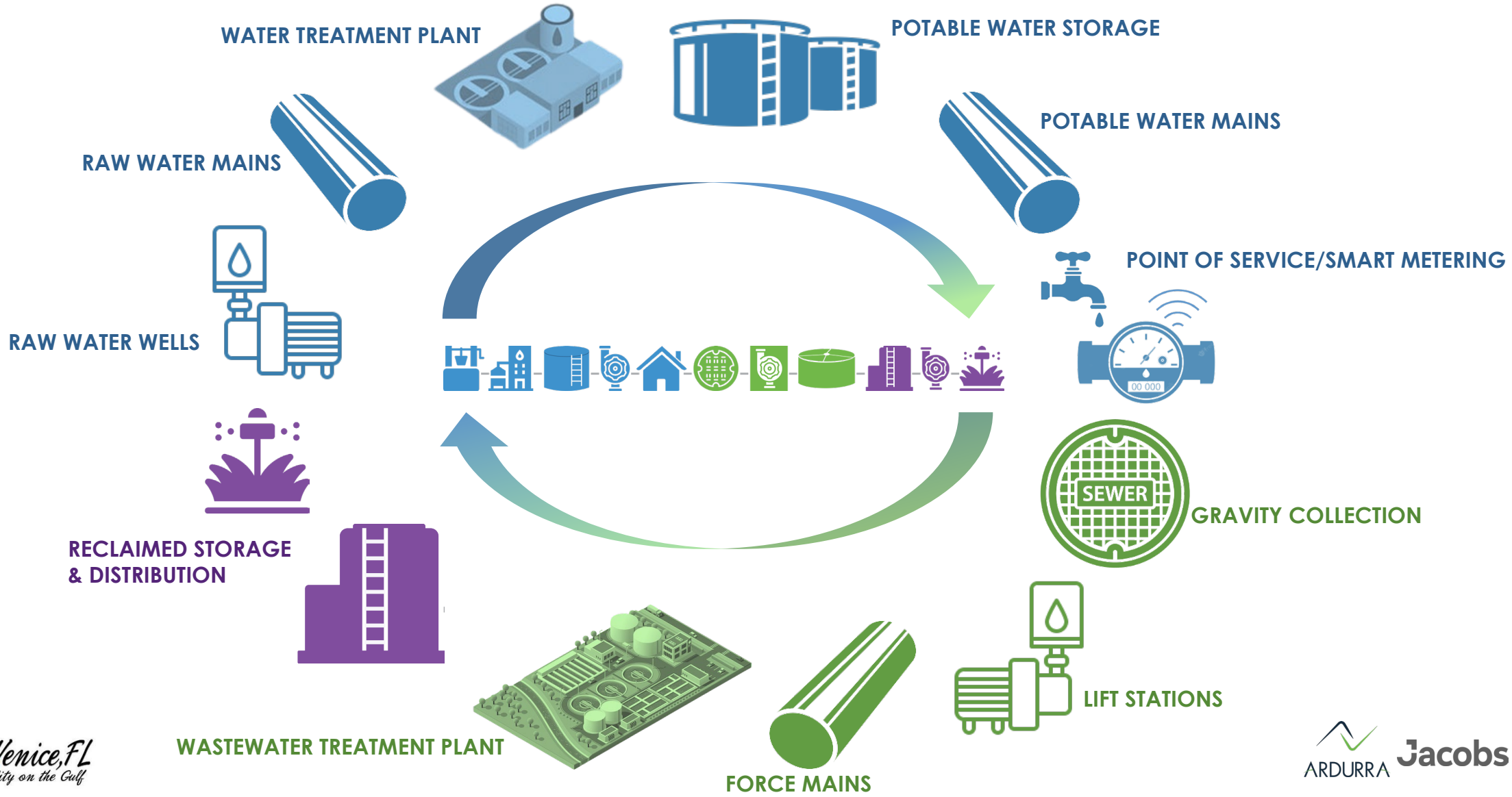
THE UTILITY "HYDROLOGIC CYCLE"



DRINKING WATER

Jacobs

DRINKING WATER SYSTEM OVERVIEW

2.4 MGD OF POTABLE WATER DELIVERED DAILY

200 MILES OF DISTRIBUTION PIPING, 1,100 FIRE HYDRANTS, OVER 3,800 MAIN LINE VALVES

ABOUT 14,000 WATER ACCOUNTS AND 12,000 BACKFLOW PREVENTERS

TWO 300,000-GAL ELEVATED POTABLE WATER STORAGE TANKS

1.0 MG ON-SITE STORAGE

1.5 MG GROUND STORAGE TANK

FUTURE STORAGE TANK AND BOOSTER STATION

2 BRACKISH RAW WATER WELLFIELDS

15 RAW WATER WELLS

14 MILES OF RAW WATER MAINS

24 RAW WATER VALVES

RO WTP OPERATING CAPACITY 4.66 MGD

4 RO SKIDS EACH WITH A CAPACITY OF 1.1 MGD, AND APPROXIMATELY 56% RECOVERY

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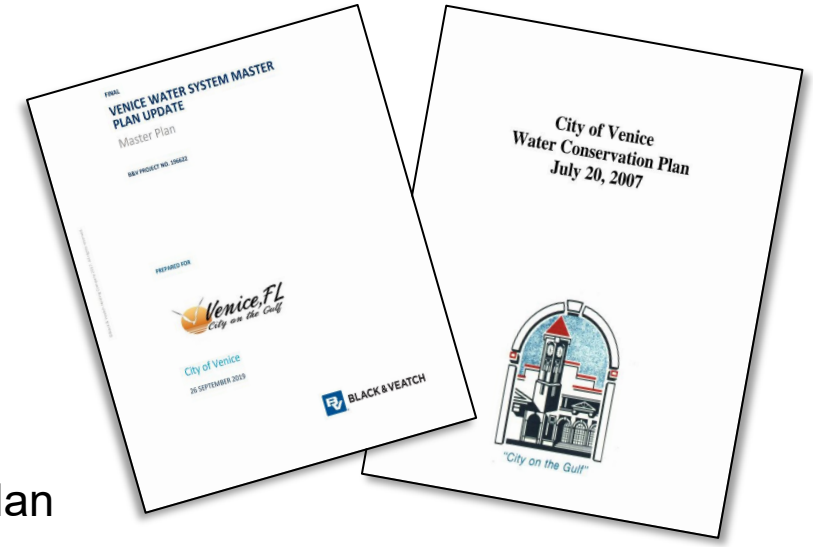
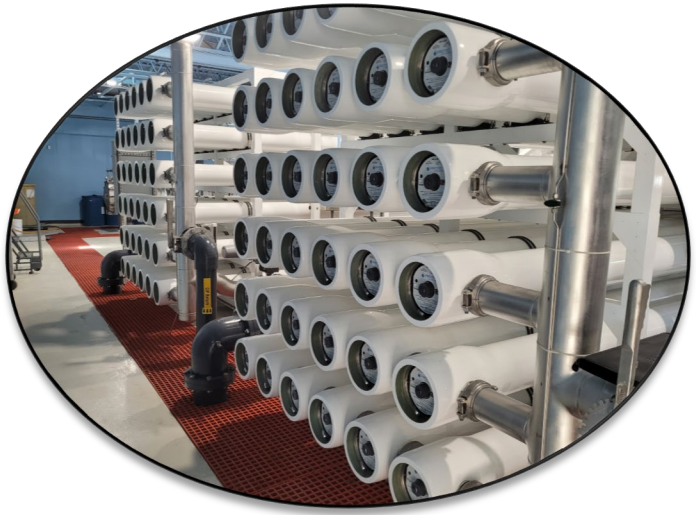
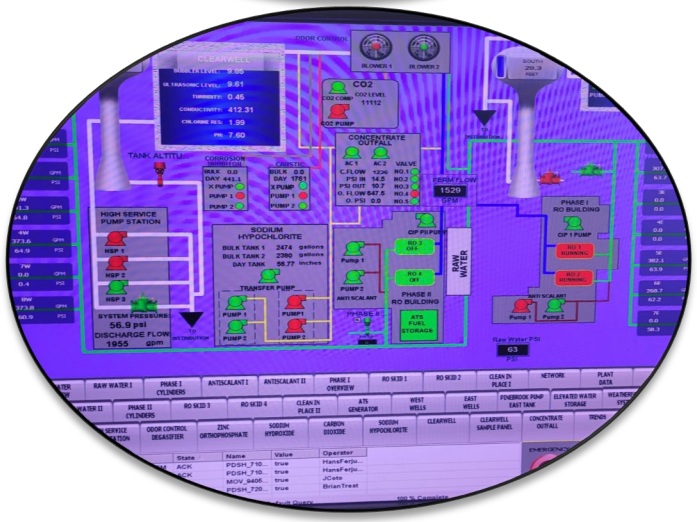
DRINKING WATER SYSTEM REPORT CARD APPROACH

- **Staff Interviews Included:**
  - Operation, maintenance, administration and field crews
  - Preventative to predictive maintenance
  - Focus on reducing operational costs
- **Site Visits to Existing Infrastructure**
- **Records Review**
  - Capital Improvement Plan
  - Water Supply Plan
  - Water Conservation Plan
  - Water Use Permit
  - Monthly Operating Reports
  - Utility Master Plans
  - Operation & Maintenance Plan







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DRINKING WATER SYSTEM REPORT CARD

Utility Subsystems	By The Numbers	Challenges	Highlights
Raw Water Wells **B+** 87/100	• 2 Brackish Raw Water Wellfields • 15 Raw Water Wells	• Additional Wells will provide rotational capacity and allow for more frequent maintenance • Western/Intercoastal Wellfield in area of high risk to climate change impacts (SLR, Storm Surge, etc.)	• Only 12 Wells needed to meet peak demand. Each wellfield can be isolated with appropriate valving • Average daily withdrawal of 6.86 MGD and a peak month withdrawal of 8.24 MGD
Raw Water Mains **B** 83/100	• 14 Miles of Raw Water Mains • 24 Raw Water Valves	• Piping constructed in the 1970s, pipes are replaced as failures occur	• Capacity is sufficient to meet and exceed peak production demands

DRINKING WATER SYSTEM REPORT CARD

Utility Subsystems	By The Numbers	Challenges	Highlights
Water Treatment Plant **B** 86/100	• The WTP has an operating capacity 4.66 MGD • 4 RO Skids with a capacity of 4.4 MGD capacity and 58% recovery rate	• WTP within area of high risk to climate change impacts (SLR, Storm Surge, etc.) • The City's buildings are only hurricane-rated for a Category 2 Hurricane	• WTP has a permeate recovery of 58%, A project is underway to increase the permeate recovery to 75% • Generator load testing, vibration analysis, thermography, differential pressure evaluation of the RO membranes • Phosphorus-free anti-scalant reduced nutrient loads in the intracoastal
Potable Water Storage **B** 86/100	• Two 300,000-GAL Elevated Storage Tanks • 1.5 MG Ground Storage Tank • 3.1 MG Total Storage • Future 2 MG Tank	• City water demand is shifting to the NE region, planning for storage relocation is underway	• Solar panels are being installed at the new ground storage tank facility to provide a net zero energy facility • The interior condition of the on-site elevated tank and ground storage tank is inspected every two years

DRINKING WATER SYSTEM REPORT CARD

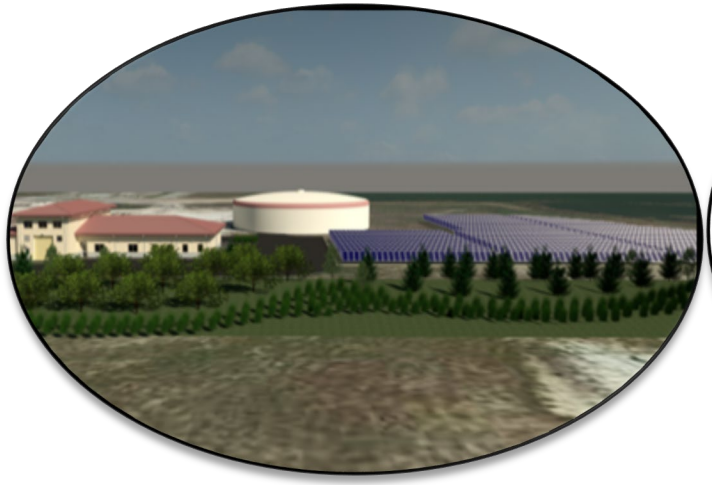
Utility Subsystems	By The Numbers	Challenges	Highlights
Potable Water Distribution **B-** 82/100	• 2.4 MGD Potable Water delivered daily • 200 Miles of Potable Water Distribution Mains • 1100 Fire Hydrants & 3,800 Main Line Valves	• Regularly maintain air release valves, main line valves, and fire hydrants • Three intracoastal water main crossings are considered high risk due to their age and exposure to a saline environment	• City to replace pipelines built prior to 1979 • A new booster pump in North Venice is planned and will improve water quality and quantity
Point of Water Service **A-** 90/100	• 14,000 Water Accounts, 12,000 Backflow Preventers	• New regulations require lead and copper evaluations for existing water services	• The City has taken over operation and maintenance of backflow prevention devices • Approximately 80% of the AMRs have been converted to AMI, providing customers accurate and near real-time data

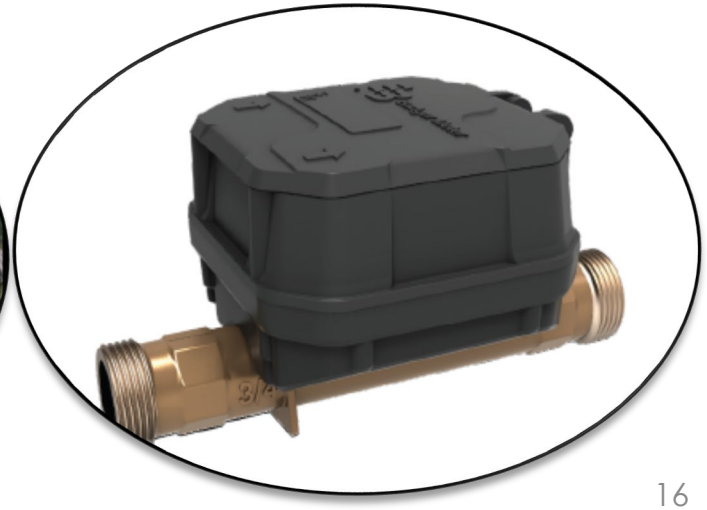
SUMMARY OF VENICE DRINKING WATER SYSTEM GRADES

SUBSYSTEM	SCORE	GRADE
Raw Water Wells	87	B+
Raw Water Mains	83	B
Water Treatment Plant	86	B
Potable Water Storage	86	B
Potable Water Distribution	82	B-
Point of Water Service (Meter & Backflow)	90	A-
FINAL GRADE	**86**	**B**

VENICE DRINKING WATER SYSTEM "OVER-ACHIEVEMENTS"

- **Where does The City Excel**
  - Backflow Prevention Ownership
  - Electric Vehicle Charging & Fleet
  - Renewable Energy (Solar)
  - Automated Meter Infrastructure (AMI)
  - Proactive Maintenance
  - Increased Treatment Plant Efficiency





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DRINKING WATER SYSTEM : RAISE THE GRADE

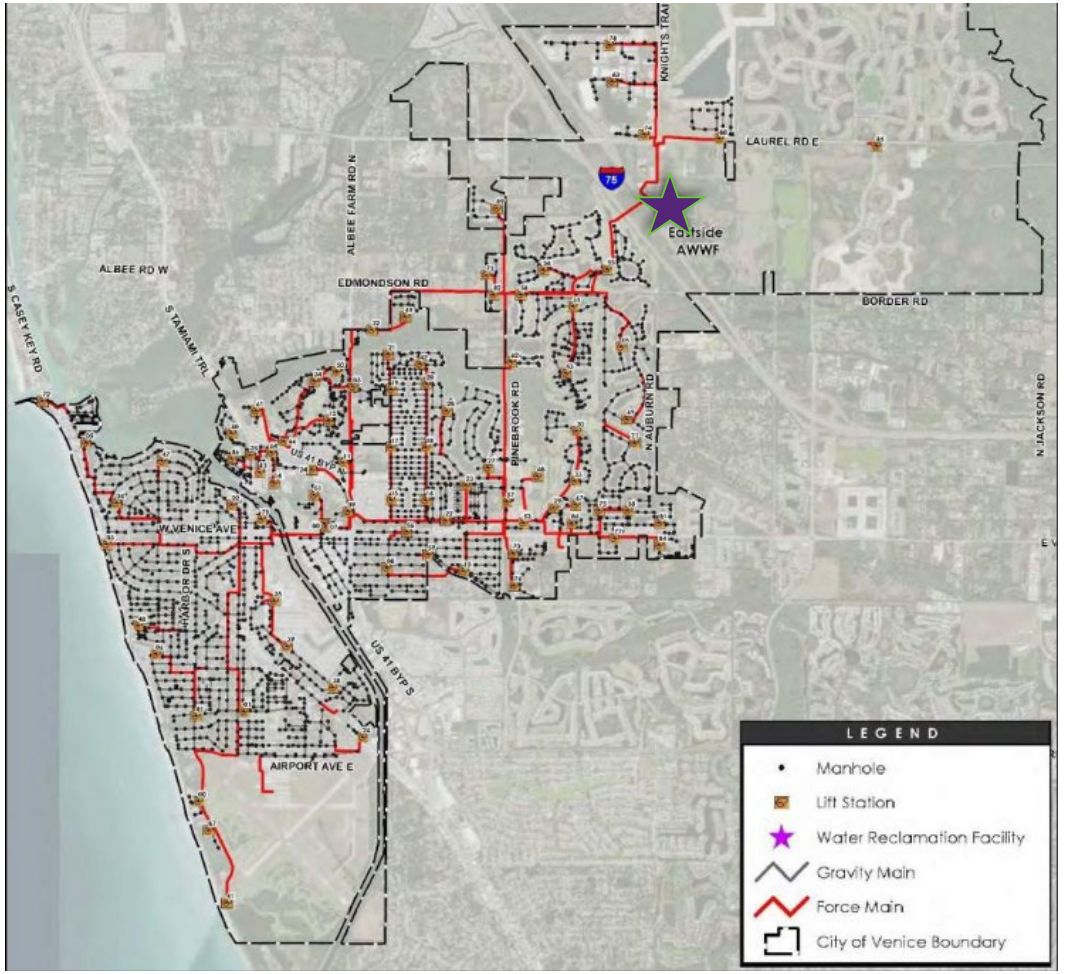
Project	Estimated Budget	Years	Improves Criteria
Raw Water System Improvements/Additional Wells	$6,000,000	2026 - 2031	• Capacity, Operation & Maintenance, Future Needs, Resilience
Raw Water Main Crossing I-75	$6,000,000	2026-2031	• Capacity, Operation & Maintenance, Future Needs, Resilience
Lead & Copper Rule Compliance (ongoing)	$500,000	2023-2029	• Operation & Maintenance, Safety
Remote Pressure Sensors	$300,000	2024-2025	• Operation & Maintenance, Resilience
Water Plant Interim Improvements Storm Hardening (ongoing)	$500,000	2023-2024	• Safety, Resilience
Water Plant Relocation	$100,000,000	After 2032	• Condition, Capacity, Operation & Maintenance, Future Needs, Resilience, Innovation

WASTEWATER

ARDURRA

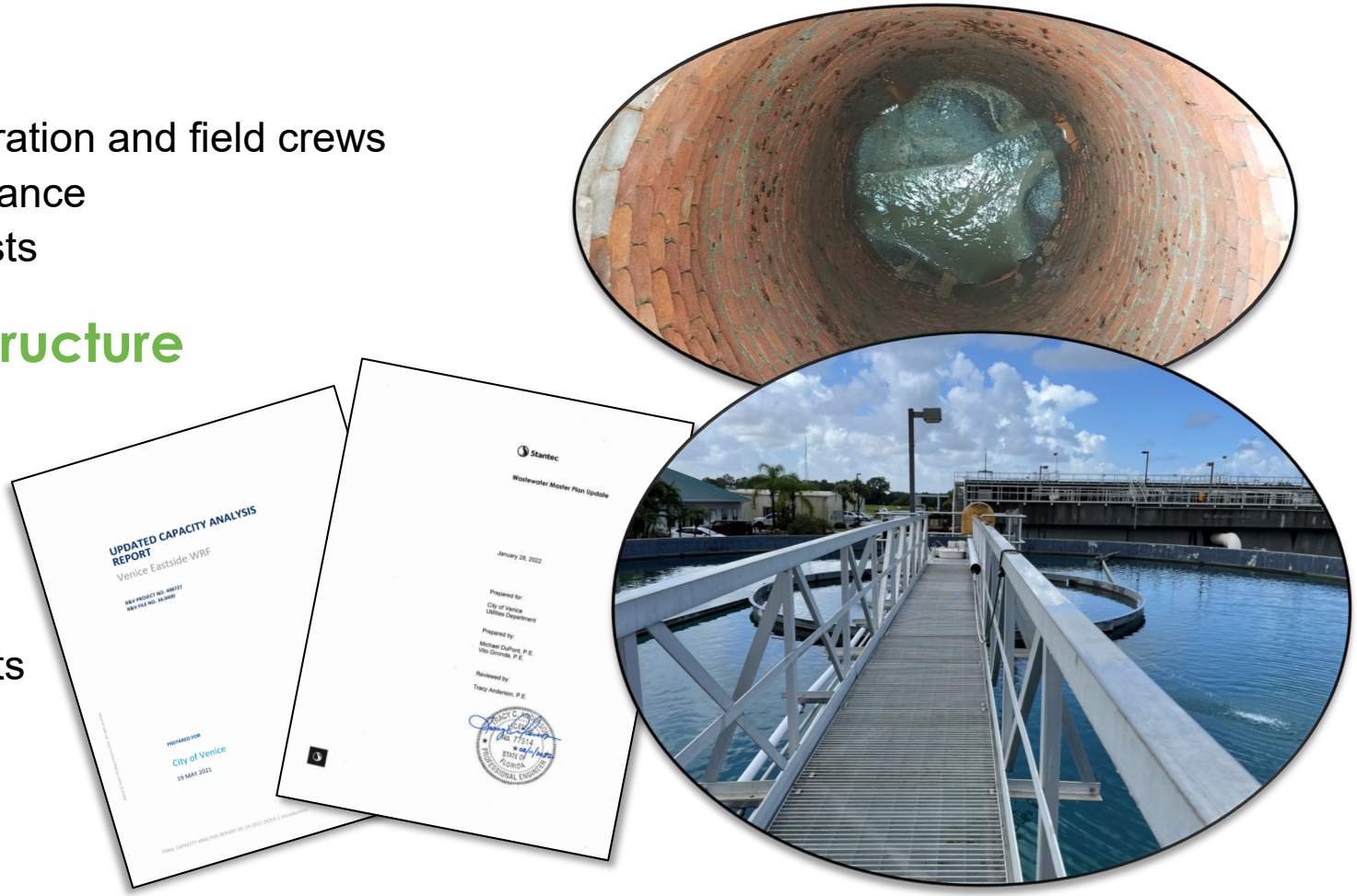
WASTEWATER & RECLAIMED WATER SYSTEM OVERVIEW

- 26,000 customers plus up to 3.0 MGD from Sarasota County
- 105 miles of gravity sewers
- 2,462 manholes
- 92 lift stations
- 37 miles of transmission force mains
- One Advanced Water Reclamation Facility (WRF)
- Approx. 2,800 reclaimed water meters



WASTEWATER SYSTEM REPORT CARD APPROACH

- **Staff Interviews Included:**
  - Operation, maintenance, administration and field crews
  - Preventative to predictive maintenance
  - Focus on reducing operational costs
- **Site Visits to Existing Infrastructure**
- **Records Review**
  - Capital Improvement Plan
  - Wastewater Master Plan
  - 2021 Capacity Analysis Report
  - WRF Discharge Monitoring Reports
  - Reclaimed Water Master Plan
  - Annual Reuse Reports



WASTEWATER SYSTEM REPORT CARD

Utility Subsystem	By the Numbers	Challenges	Highlights
Gravity Sewer System **B** 83/100	• 105 miles of gravity sewers • 2,462 manholes	• I&I introduced by sections of old clay pipe and brick manholes	• Proactive program in place for televising, cleaning and lining older lines and manholes to reduce I&I • Limited surcharging during wet weather events • Smart Covers (17 locations) • Bioaugmentation used to reduce grease buildup
Lift Stations **B** 85.5/100	• 92 lift stations	• Maintenance intensive. Otherwise, no major challenges	• Well maintained • Most fenced. All panels and hatches are locked • Backup generators or portable generator receptacles at all stations • All PLCs recently replaced at plant and master lift stations

WASTEWATER SYSTEM REPORT CARD

Utility Subsystem	By the Numbers	Challenges	Highlights
Transmission Force Mains **B-** 80/100	• 37 miles of force mains	• Critical crossings at the Intracoastal Waterway and I-75 • Some force mains are at capacity	• Project underway to begin assessment of force main materials and condition • Parallel, backup force mains in design at the Intracoastal Waterway and I-75 • Plans for future force mains to divert flows
Water Reclamation Facility **B** 85/100	• One 8.0 MGD Water Reclamation Facility • Current flows ~3.48 MGD	• Hydraulic surcharging during severe wet weather • Aeration control	• Well maintained and adequate capacity • Project planned to construct an equalization basin • Blowers being replaced with more efficient units

WASTEWATER SYSTEM REPORT CARD

Utility Subsystem	By the Numbers	Challenges	Highlights
Reclaimed Water Storage and Distribution **A-** 92/100	• Two reclaimed water storage tanks (3 MG and 7.5 MG) at the WRF • 35 MG storage pond • 52 miles of transmission/ distribution mains • 3,089 reclaimed water meters	• Expansion of the system is required to address future flows • A number of valves need replacement	• Surface water discharge is available but not used since 2017 • Aquifer storage and recovery (ASR) system is in design for alternate disposal and recovery (3 MGD capacity) • Valves are being systematically replaced

CITY OF VENICE WASTEWATER GRADES

SUBSYSTEM	SCORE	GRADE
Gravity Sewer System	83	B
Lift Stations	86	B
Transmission Force Mains	80	B-
Water Reclamation Facility	85	B
Reclaimed Water Storage & Distribution	92	A-
FINAL GRADE	**85**	**B**

CITY OF VENICE WASTEWATER SYSTEM "OVER-ACHIEVEMENTS"

- ✓ Proactive sewer cleaning, lining and replacement program
- ✓ Smart Cover monitoring system
- ✓ Bioaugmentation used to reduce grease buildup
- ✓ Proactive lift station maintenance
- ✓ Very little surcharging. Spills are rare
- ✓ Renewable Energy (Solar) planned for reclaimed storage pond
- ✓ Robust reclaimed water system

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WASTEWATER & RECLAIMED WATER SYSTEMS POTENTIAL PROJECTS TO RAISE THE GRADE

Project	Estimated Budget	Years	Improves Criteria
WRF Equalization Basin	$2,400,000	2024-2030	• Operation & Maintenance, Future Need, Resilience, Innovation
Reclaimed Water System Valve Replacements	$500,000	2023-2032	• Condition, Operation & Maintenance, Resilience, Safety
WRF Aeration System Improvements	$2,000,000	2028-2031	• Condition, Operation & Maintenance, Innovation
WRF 2nd Anoxic/Clarifier Piping Improvements	$2,000,000	2028–2031	• Capacity, Operation & Maintenance, Resilience

WASTEWATER & RECLAIMED WATER SYSTEMS POTENTIAL PROJECTS TO RAISE THE GRADE

Project	Estimated Budget	Years	Improves Criteria
Filters and Chlorine Contact Analysis & Improvements	$1,500,000	2029-2030	• Operational Flexibility, Resilience
WRF Emergency Power Evaluation	$250,000	2028	• Future Need, Resilience, Innovation
Lift Station Rehabilitation Program	$2,500,000	2023–2032	• Condition, Operation & Maintenance, Future Need, Innovation

INFRASTRUCTURE REPORT CARD FUNDING

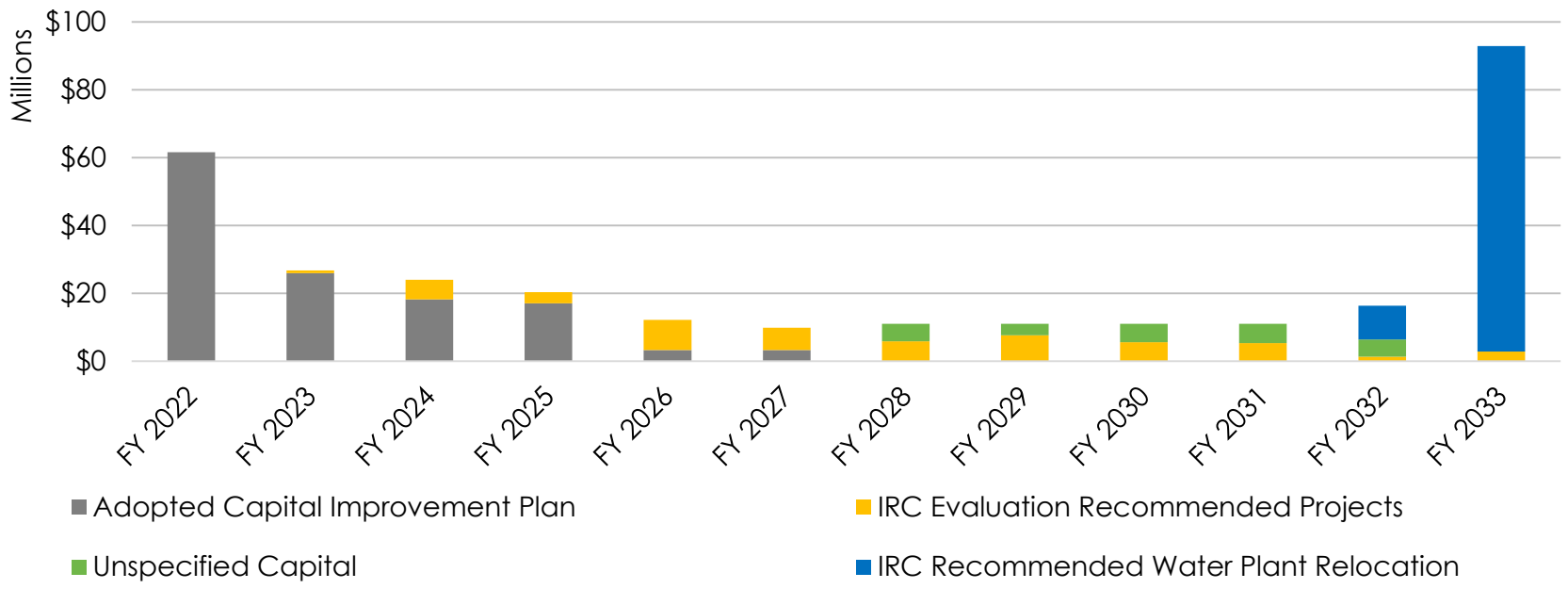
FINANCIAL MODEL UPDATE

- Stantec performed water, sewer, and reclaimed rate study in 2018
  - Study recommended 2.15% water & sewer rate increases in FY 2020 - FY 2023

- During IRC study, Stantec updated financial model based on:
  - 2021 year ending fund balance & financial performance
  - 2022 & 2023 Budget, plus annual operating cost escalation
  - Current CIP, plus IRC recommended projects
  - Application of grant funds, SRF loans, & Sarasota County revenues

CAPITAL COSTS FUNDED THROUGH RATES

- City's existing capital plan totals $129M from FY 2022-2032
- Identified capital projects from IRC total $151M ($100M is water plant relocation)
- Analysis assumes additional $25M of unidentified future projects based on historical spending levels



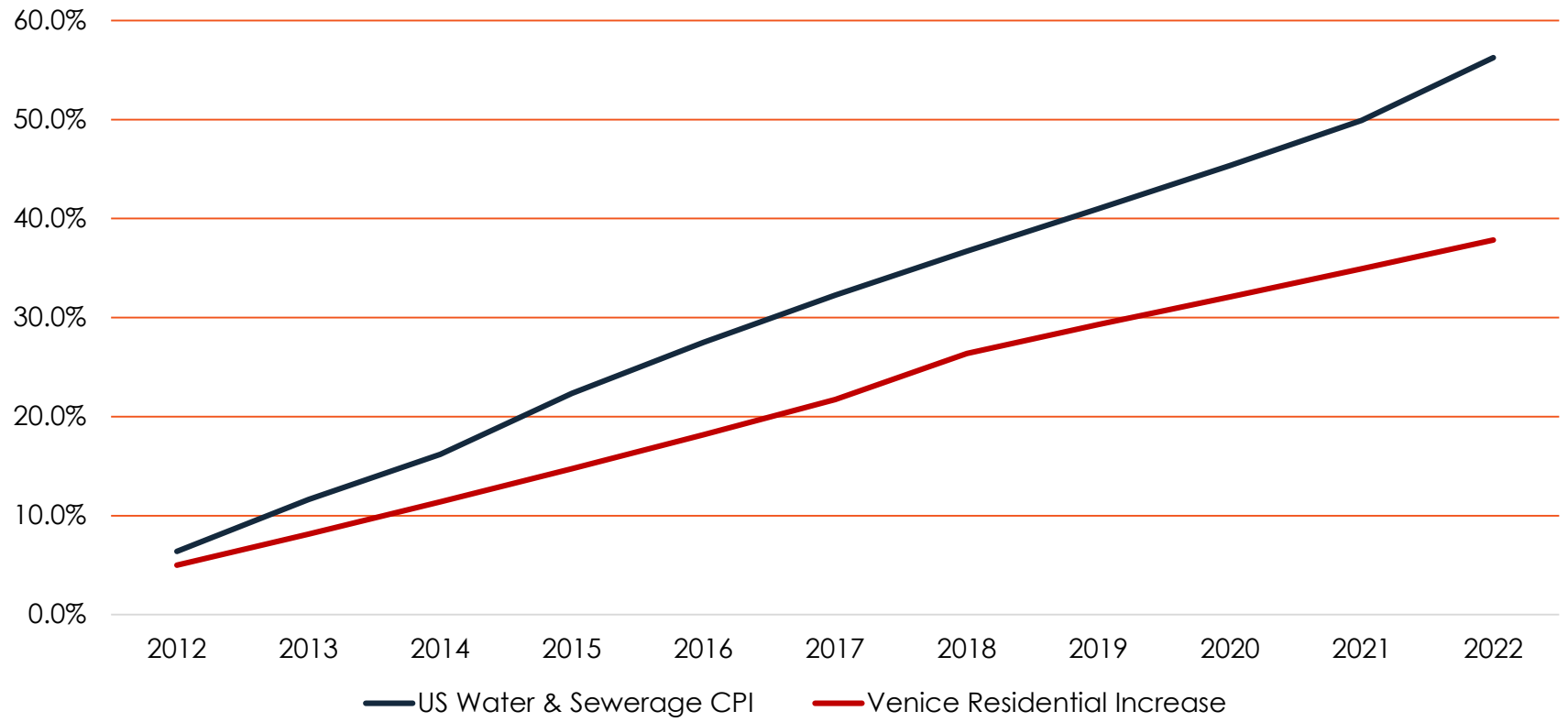
RATE INCREASES NEEDED TO FUND IRC RECOMMENDATIONS

- 2 scenarios presented:
  1. Current CIP, unspecified, and IRC projects (not including water plant relocation)
  2. Current CIP, unspecified, and IRC projects, including water plant relocation
     - Assumes building reserves for water plant over time

		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
Scenario 1 (no WTP)	Water Increase	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%
	Sewer Increase	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%
	Typical Bill Increase[1]	**2.15%**	**2.15%**	**2.15%**	**2.15%**	**2.15%**	**2.15%**	**2.15%**	**2.15%**	**2.15%**
Scenario 2 (with WTP)	Water Increase	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
	Sewer Increase	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%	2.15%
	Typical Bill Increase[1]	**3.75%**	**3.75%**	**3.75%**	**3.75%**	**3.75%**	**3.75%**	**3.75%**	**3.75%**	**3.75%**

WATER & SEWER INCREASES NATIONWIDE

The City of Venice has seen less of an increase in residential water bills than the U.S. average since 2012.



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NEXT STEPS

- New rate plan will be proposed in Summer 2023 for FY 2024 – FY 2028
  - City staff prepared CIP based on recommendations from Infrastructure Report Card
  - Incorporates 2022 actuals, inflation, and customer growth
    - Overall annual cost increases anticipated to be *higher* than 2.15%
  - Stakeholder group will be involved in making recommendations

QUESTIONS?