Burnsville Water Treatment Plant Condition Assessment

Executive Summary

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Agenda

- Background
- Review condition assessment process
- Review summary results
- Next steps

BACKGROUND

- Last WTP Facility Plan completed in 2010 focusing on 1976 Groundwater Treatment Plant
- 2010 Plan identified GWTP deficiencies and process improvements
- Led to several projects to address deficiencies.
  - Chemical Feed Improvements - Powdered Activated Carbon Project (2012), Blended Phosphate (2013)
  - Chlorine Safety Upgrades (2015)
  - Generator Addition (2017)
  - Groundwater Treatment Plant Rehab (2017)
  - Electrical Improvements (2021 & 2024)
  - SWTP Granular Activated Carbon Replacements (Every 3 years)

PROJECT SUMMARY

- Intentional investments over the last 15 years and regular preventive maintenance by the city have resulted in a WTP in relatively good condition
- WTP is in better condition as compared to peers

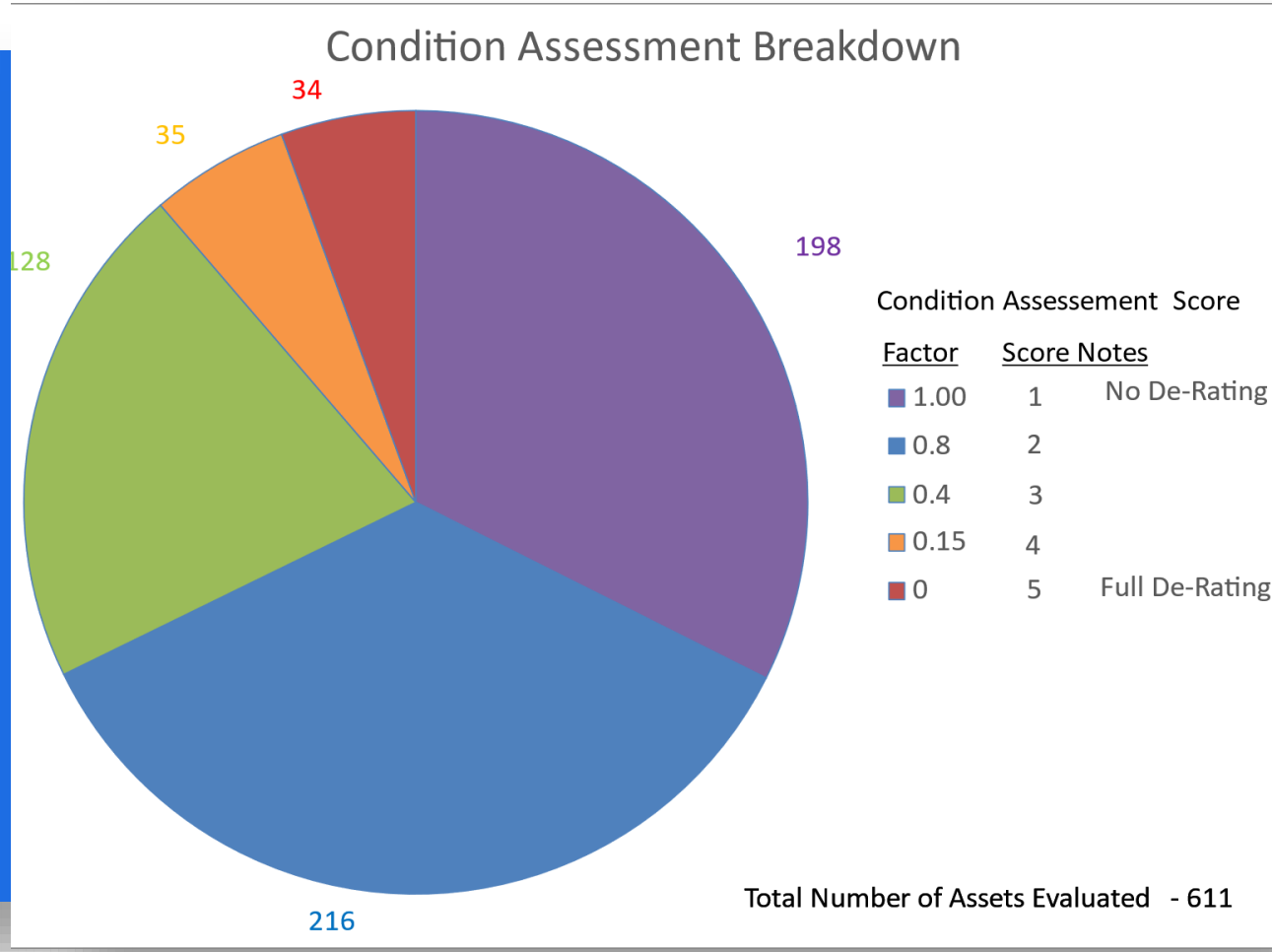
- Condition assessment provides planning level tool for future project and funding needs.
- Gives City Risk Based Plan for replacement/rehabilitation.
- Aging infrastructure, especially in 1976-era ground water treatment plant, needs rehabilitation to reduce risk of failure.
- Creates focus areas

Process Walkthrough

- Task 1 – Facility Inventory Listing
  - Includes all water system vertical facilities – Wells, GWTP, SWTP, Intakes, PAC
- Task 2 – Installation Year/Rehab Year
- Task 3 – Effective Service Life (ESL) Calculation
  - ESL – “How Long Should a Piece of Equipment Last”
  - Estimated Remaining Life (ERL) = ESL – Current Age
- Task 4 – Criticality
- Task 5 – Condition Assessment
- Task 6 – Cost Estimates
- Task 7 – Facility Replacement CIP

Condition Assessment Breakdown

- 2024 vs. 2010 – Added in all Wells and SWTP facilities.
- Breakdown
  - “Want” Low or No Red & Orange
  - Green or Blue = Minor Wear (i.e. Start Planning)



Heat Map

- Criticality – 1 (Low) to 5 (High)
- Condition – 1 (New) to 5 (Poor)

		Condition Assessment Rating					
		1	2	3	4	5	
Criticality Rating	5	60	60	24	8	2	154
	4	39	36	37	16	5	133
	3	84	91	50	8	23	256
	2	2	1	1	1	0	5
	1	13	28	16	2	4	63
		198	216	128	35	34	**611**

Strategy A	31	5%
Strategy B	92	15%
Strategy C	151	25%
Strategy D	294	48%
Strategy E	43	7%

		Condition Assessment Rating					
		1 (new)	2	3	4	5 (poor)	
Criticality Rating	5 (high)	$ 40,513,000	$ 14,245,000	$ 2,570,000	$ 1,342,000	$ 223,000	$ 58,893,000
	4	$ 1,631,000	$ 24,412,000	$ 1,249,000	$ 644,000	$ 419,000	$ 28,355,000
	3	$ 8,260,000	$ 12,466,000	$ 4,556,000	$ 1,241,000	$ 622,000	$ 27,145,000
	2	$ 81,000	$ 10,000	$ 6,000	$ 93,000	$ -	$ 190,000
	1 (low)	$ 658,000	$ 3,492,000	$ 1,486,000	$ 282,000	$ 65,000	$ 5,983,000
		$ 51,143,000	$ 54,625,000	$ 9,867,000	$ 3,602,000	$ 1,329,000	**$ 120,566,000**

Strategy A	$ 2,628,000	2%
Strategy B	$ 5,682,000	5%
Strategy C	$ 43,371,000	36%
Strategy D	$ 64,654,000	54%
Strategy E	$ 4,231,000	4%

Heat Map & Planning

Criticality Rating	Condition Assessment Rating 1	2	3	4	5	
5	60	60	24	8	2	154
4	39	36	36	16	5	132
3	83	87	52	8	24	254
2	2	1	1	1	0	5
1	13	27	16	2	5	63
	197	211	129	35	36	**608**

Strategy A	31	5%
Strategy B	92	15%
Strategy C	154	25%
Strategy D	289	48%
Strategy E	42	7%

Strategy Group	Project	2025-2028 (in 2024-2028 CIP)
A	Electrical Switchgear Project	$1,200,000 (2025)
A	Effluent Header, Flowmeter & Pipeline	$1,050,000 (2026)
A (&B)	HVAC System Upgrades	$500,000 (2027)
A	GWTP Actuator Updates	$0 (Needs to be completed after HVAC Project)
B	Well Rehab	$1,881,000 (2025-28)
B	Surface Water Intake	$337,000 (2025-28)
B	HSP & VFD Projects	$2,117,000 (2025-28)
B	WTP Facility Projects	$ 1,190,000 (2024-28)

Other relevant activities underway and coordinated

- Costs shown are for treatment process, as is.
- Water Quality Study (within 10 years)
  - Taste and Odor study (ongoing) developing costs for additional treatment.
  - Study includes Regulatory Review, Treatment Evaluation, & WTP Process Needs
  - Planning for existing contaminants (example: radionuclides) and Contaminants of Emerging Concern (example: PFAS) factored into long term planning.
- Long term supply plan (beyond 10 years)
  - Kraemer Quarry surface water source conversion to lake.
  - Landfill remediation impacts.
  - Considerations for serving neighboring communities (regional water).

NEXT STEPS

- Data is being used for CIP funding planning
- High criticality items (Group A) being addressed in next 5 years as part of CIP
- Years 6-10 identify groupings of projects and funding based on Assessment
- Years 10+ future average spend based on study findings and planning efforts

Questions?