

# **Drake Quarterly Update**

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- **Progress to Date**
- **Review Board direction from this year**
- **Schedule for Board directed tasks**
- **Transmission Planning Study: Scope, Process and Analysis**
- **Solution: Scoping, Scoring, and Estimating**

# Progress to Date

## 11/18/15 (UB): EIRP Approval

- Support for Portfolio D
- Vote to decommission Drake NLT 2035

## 01/20/16 (UB):

- Vote to close Drake Unit 5  
NLT 12/31/17

## 12/18/17 (UB):

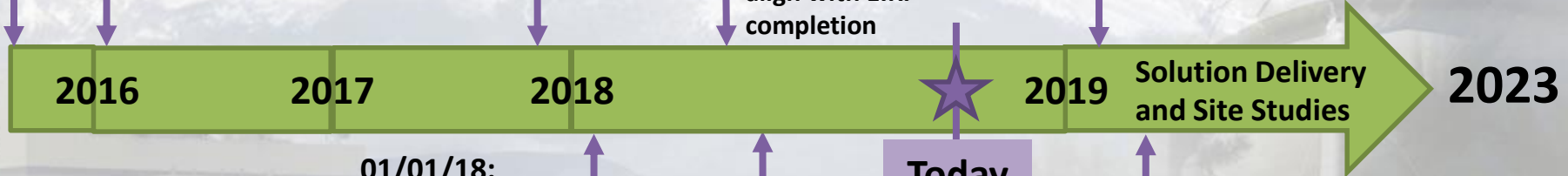
- Support for scenario 3c
- Accelerate projects and hire consultant
- Completion of site studies by 2019
  - Appraisal, Phase II, and salvage value

## 06/20/18 (UB):

- Delay Phase II and Appraisal to 2020 to align with EIRP completion

## 1Q 2019 Updates (UB):

- 01/19 Update
  - Potential Rate Impact Analysis
- 04/19 Update
  - Presentation of Preferred Solution
  - Proposed delivery strategy



## 01/01/18:

- Accelerate projects
- Develop SOW for transmission consultant

## 07/11/18:

- Kick-off with Transmission Planning Consultant
  - Potential Solution development
  - Decision Matrix and evaluation

## 03/31/19:

- Transmission Planning Study Completion

- **Support 3c** – Distributed generation and import power options, including no replacement generation at Drake or Birdsall sites
- **Specific Actions to Include:**
  1. **Accelerate planned projects**
  2. **Retain consultant to validate and advance transmission projects**
  3. **Complete Drake site assessment studies:**
    - Evaluation of salvage value by end of 2019
    - Appraisal by June 2020
    - Phase II environmental assessment by June 2020
  4. **Complete an EIRP by August of 2020**

# Schedule for Major Tasks

BOARD DIRECTION		2018				2019				2020	2021	2022	2023
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Active Transmission System Projects	1. "Accelerate planned projects..."	Kelker Transformer											
		Cottonwood Transformer											
						Nixon-Kelker Upgrade							
										North System Solution			
Pending Transmission Planning Solution	2. "Retain consultant..."	Transmission Planning Study											
										Overhead Transmission Design & Construction			
										Underground Transmission Design & Construction			
										Substation Design & Construction / Upgrades			
								Transmission Line Upgrades					
Drake Site	3. "Site assessment..."					Salvage Value							
										Phase II			
										Appraisal			
IRP	4. "Complete IRP..."									EIRP			
										GIRP			

## Phase 1: Solution Development and Scoping

- Reviewed 10 year and 20 year system models to determine solution development and scoping
- Evaluation by use of matrix and advancement of 3 solutions

## Phase 2: Solution Sensitivity Analysis on 3 Options

- Sensitivity Analysis: Distributed generation, spot load, and extreme events
- Evaluation by use of matrix and advancement of preferred (1) solution

## Phase 3: Preferred Solution Sensitivity Analysis

- Significant stressing of solution to ensure robustness
- Confirmation of preferred solution

# Transmission Planning Study Process

Evaluate current system

Remove Drake and Birdsall from current system and Identify line overloads

Line overload

Line within operational parameters

New high-voltage source from East, South-East, South (345kV or 230kV) (called Backbone Project)

Review system for balance and identify any additional line overloads not corrected by high-voltage source

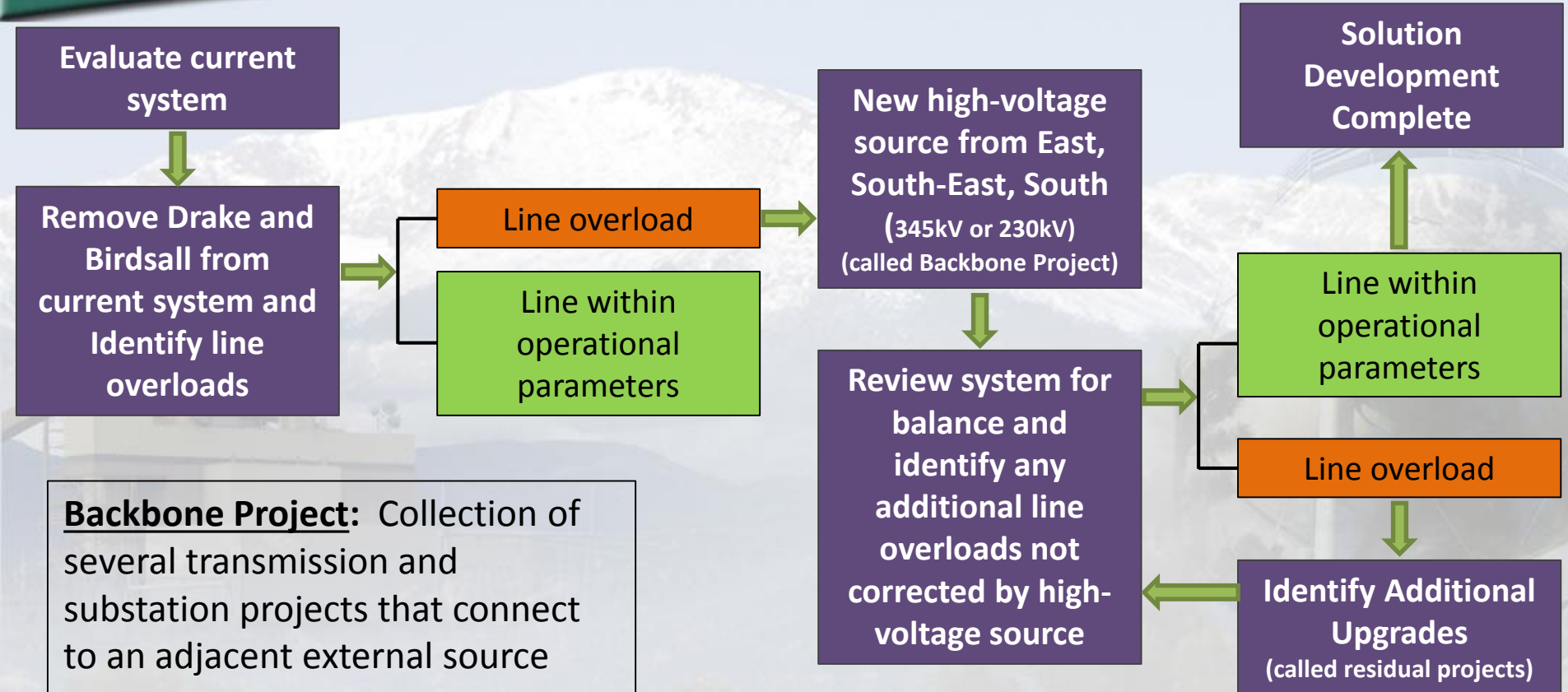
Solution Development Complete

Line within operational parameters

Line overload

Identify Additional Upgrades (called residual projects)

**Backbone Project:** Collection of several transmission and substation projects that connect to an adjacent external source



# Transmission Planning Study Process

Sample Solution Development		Impact Identification		Solution Development		
		Current System	Drake/Birdsall Removed	Backbone Projects	Residual Project 1	Residual Project 2
Monitored Facility		10yr	10yr	10yr	10yr	10yr
Existing Springs Utilities Transmission System	Transmission-Line 1					
	T-Line 2					
	T-Line 3					
	T-Line 4					
	T-Line 5					
	T-Line 6					
	T-Line 7					
	T-Line 8					
	T-Line 9					
	T-Line 10					
	T-Line 11					
	T-Line 12					
	Substation 1					
	Substation 2					

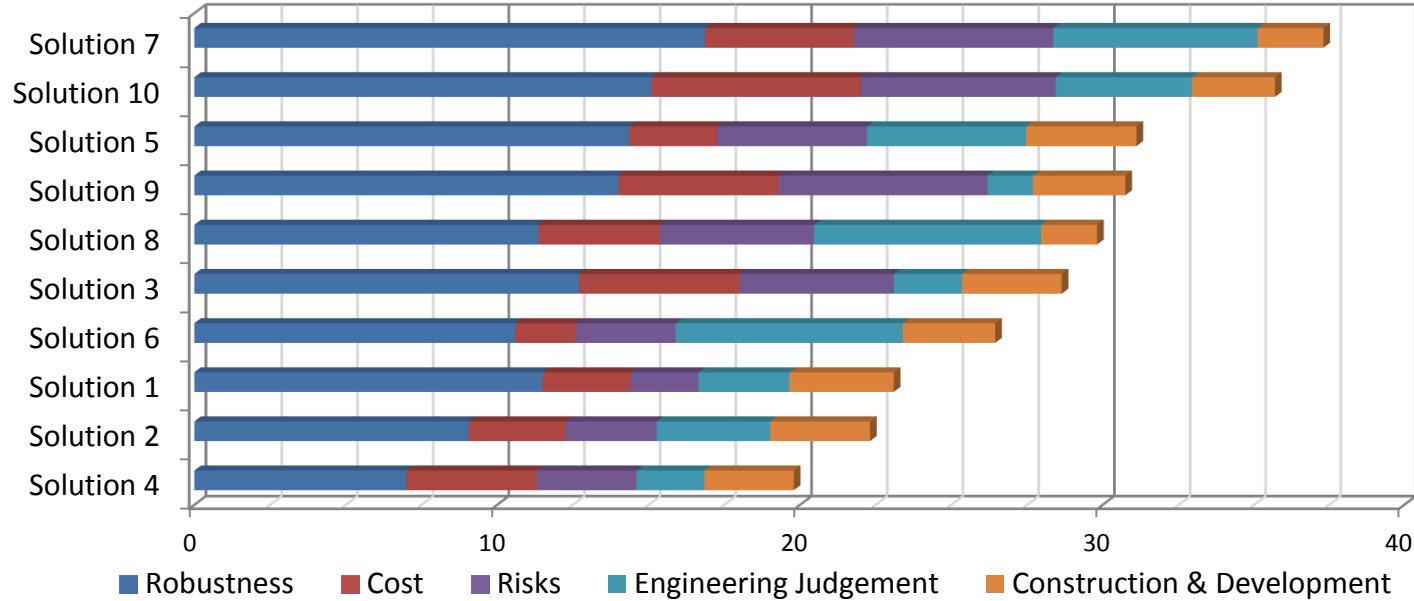




# Solution Evaluation Scoring

Evaluation Factor	Weighting	Description
<b>Robustness</b>	<b>40%</b>	<b>Mitigation of existing issues, import / export capability</b>
<b>Cost</b>	<b>20%</b>	<b>2018 capital cost, lifecycle cost, cost per loading relief, ability to phase</b>
<b>Risks</b>	<b>15%</b>	<b>CIP-014 (NERC), fault current, multiple outage mitigation, RTO compatibility</b>
<b>Engineering Judgment</b>	<b>15%</b>	<b>Flexibility, system capacity</b>
<b>Construction and Development</b>	<b>10%</b>	<b>Routing constraints, outage coordination, permitting, agency coordination</b>

# Solution Scoring



Major Category	Weight	Solution 4	Solution 2	Solution 1	Solution 6	Solution 3	Solution 8	Solution 9	Solution 5	Solution 10	Solution 7
Robustness	40%	7.00	9.07	11.50	10.60	12.70	11.37	14.00	14.37	15.10	16.9
Cost	20%	4.30	3.20	2.90	2.00	5.30	4.00	5.30	2.90	6.90	4.9
Risks	15%	3.30	3.00	2.25	3.30	5.10	5.10	6.90	4.95	6.45	6.6
Engineering Judgment	15%	2.25	3.75	3.00	7.50	2.25	7.50	1.50	5.25	4.50	6.8
Construction & Development	10%	2.95	3.30	3.45	3.05	3.30	1.85	3.05	3.65	2.75	2.2
<b>Total Composite Score</b>	<b>100%</b>	<b>19.80</b>	<b>22.32</b>	<b>23.10</b>	<b>26.45</b>	<b>28.65</b>	<b>29.82</b>	<b>30.75</b>	<b>31.12</b>	<b>35.70</b>	<b>37.32</b>

# Solution Cost Estimating

<b>Solution Summary</b>	<b>Solution 5</b>	<b>Solution 7</b>	<b>Solution 10</b>
<b>New Transmission – Overhead (Miles)</b>	<b>0</b>	<b>6.8</b>	<b>17</b>
<b>New Transmission – Underground (Miles)</b>	<b>13.9</b>	<b>13.9</b>	<b>7.3</b>
<b>Upgraded Transmission – Overhead (Miles)</b>	<b>4.6</b>	<b>4.6</b>	<b>14.5</b>
<b>Upgraded Transmission – Underground (Miles)</b>	<b>0</b>	<b>0</b>	<b>1.2</b>
<b>Underground Bores</b>	<b>8</b>	<b>8</b>	<b>7</b>
<b>New Substations</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>Expanded Substations</b>	<b>2</b>	<b>5</b>	<b>4</b>
<b>New Transformers</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Total Estimated Portfolio Project Costs*</b>	<b>\$229.2M</b>	<b>\$213.6M</b>	<b>\$181.5M</b>

\*2018 dollars for 10-year 2028 planning horizon for system and Drake related needs. These are Class 5 cost estimates with contingency included.



# **Long-Range Infrastructure Plan Options Financial Impact**

- Base financial plan developed from current October 2018 Forecast
- Rate impacts based on proposed rates effective 1/1/19
  - Illustrative overall system rate increases
  - No future ECA/ECC & GCA/GCC increases included
- Costs include inflation
- Generation costs are from previous model runs (Dec 2017)
- New transmission infrastructure updated with an additional \$166.8M
- Transmission Solution 7 was used for financial modeling
  - 1 of 10 initial solutions
  - Class 5 estimates (-50% / +100%)

# 5 Year Financial Plan

## Prior 5 Year Plan

### Key Financials

	2019	2020	2021	2022
Non-Fuel Operating Expenses	\$ 343,598	\$ 353,470	\$ 357,479	\$ 364,629
Capital Expenditures	\$ 199,834	\$ 195,744	\$ 191,969	\$ 197,243
Bond Issuance	\$ 107,155	\$ -	\$ 125,349	\$ -
Debt Service	\$ 187,773	\$ 195,875	\$ 199,322	\$ 207,624

## Current 5 Year Plan

	2019	2020	2021	2022
Non-Fuel Operating Expenses	\$ 347,677	\$ 354,631	\$ 354,631	\$ 361,724
Capital Expenditures	\$ 181,953	\$ 177,331	\$ 173,607	\$ 178,687
Bond Issuance	\$ -	\$ -	\$ -	\$ -
Debt Service	\$ 187,986	\$ 188,501	\$ 192,282	\$ 193,288

### Financial Metrics

Debt Service Coverage	1.81	1.77	1.78	1.75
Debt Ratio	54.6%	53.3%	52.1%	50.5%
Days Cash On Hand	130	137	148	153

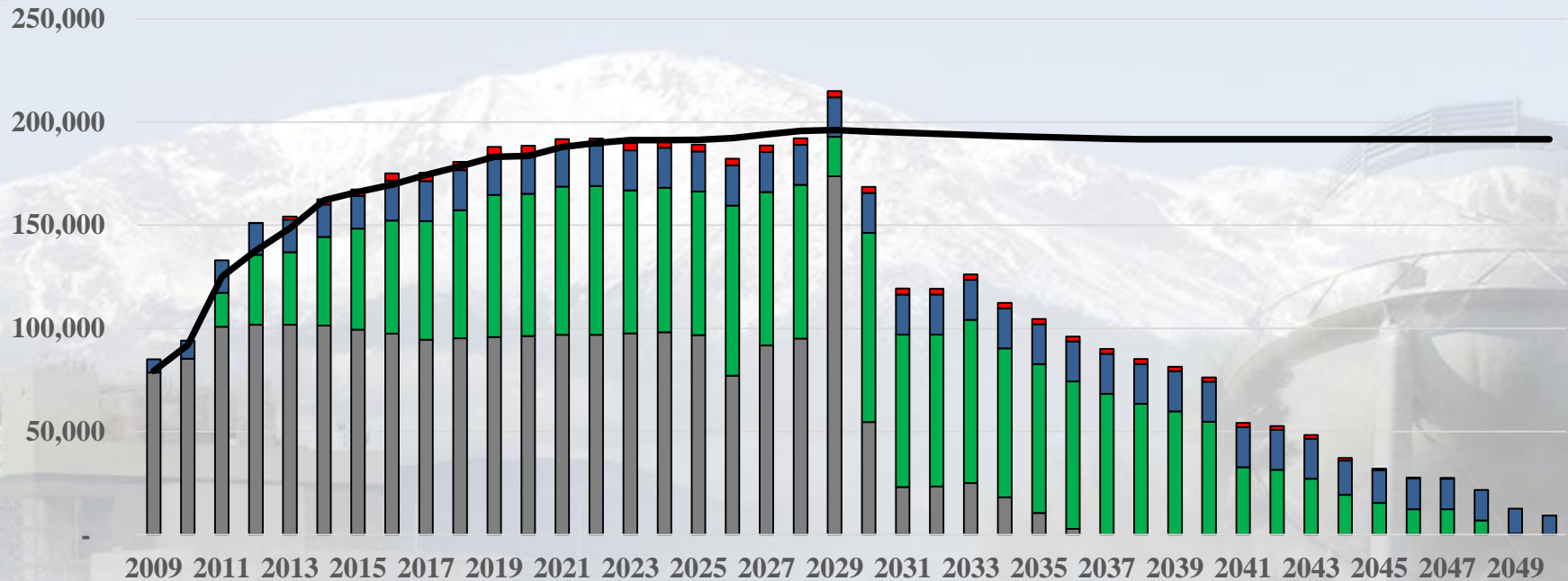
Debt Service Coverage	1.89	1.86	1.88	1.88
Debt Ratio	52.6%	50.6%	48.5%	46.4%
Days Cash On Hand	150	151	166	179

### Projected Rate Increases

Electric	0.0%	1.5%	1.5%	1.5%
Gas	1.5%	1.5%	1.5%	1.0%
Water	3.0%	3.0%	3.0%	3.0%
Wastewater	2.0%	2.0%	2.0%	1.0%

Electric	0.0%	0.0%	0.0%	0.0%
Gas	0.0%	0.0%	0.0%	0.0%
Water	3.5%	3.5%	3.0%	3.0%
Wastewater	2.0%	2.0%	2.0%	0.0%

# Current Debt Service (In thousands)



Existing Debt Service (prior to 2008)  
SDS Debt Service

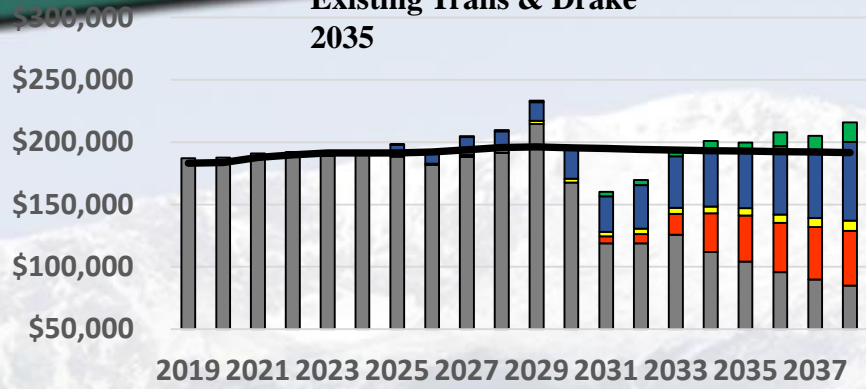
Other Existing Debt (2008-present)  
Scrubber Debt Service



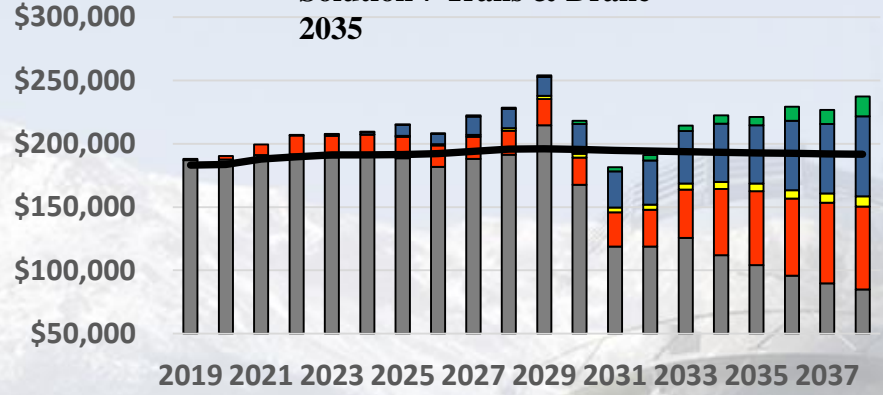
- Base financial plan with Drake decommissioned in 2035
- Transmission Solution 7
  - Drake decommissioned in 2035
  - Drake decommissioned in 2030
  - Drake decommissioned in 2025

# Enterprise Debt Service Forecast (In thousands)

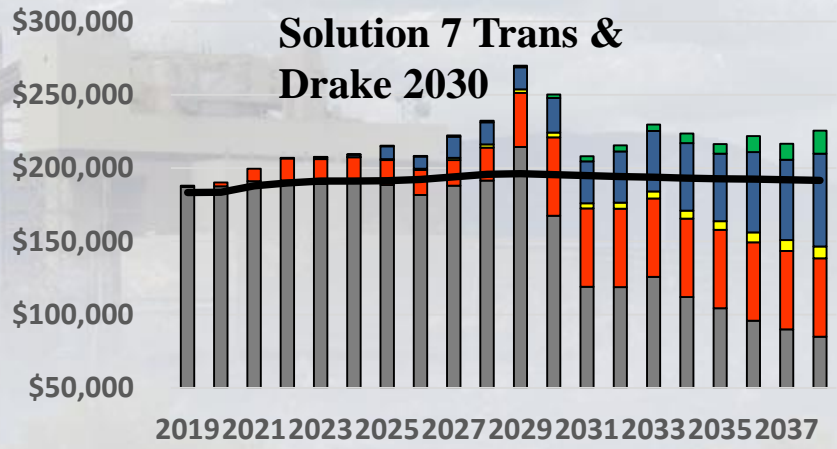
**Existing Trans & Drake  
 2035**



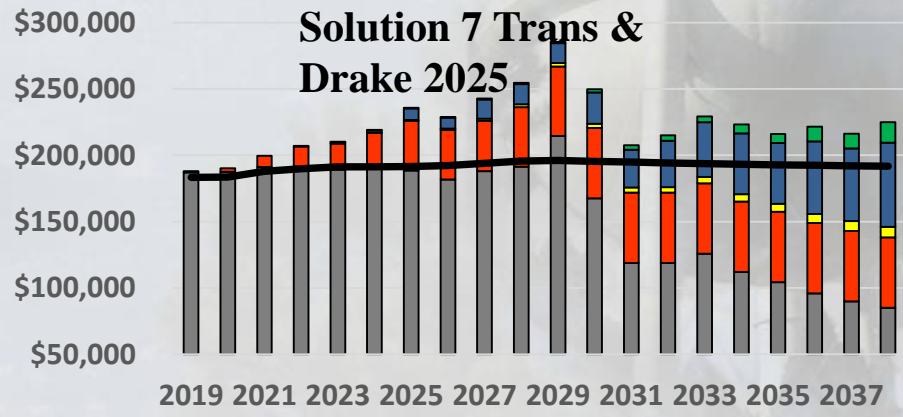
**Solution 7 Trans & Drake  
 2035**



**Solution 7 Trans &  
 Drake 2030**



**Solution 7 Trans &  
 Drake 2025**



# Illustrative Rate Impact

## Current Projected Non-Electric Rate Increases

	2020-25	2026-30	2031-35	Total
Gas	0%	2%	4%	6%
Water	17%	8%	2%	27%
Wastewater	6%	4%	4%	14%
<b>Total Non-Electric Rate Impact</b>	<b>23%</b>	<b>14%</b>	<b>10%</b>	<b>47%</b>

## Electric Rate Increase Options

Current Transmission, Drake Decommissioned 2035	0%	0%	0-3%	0-3%
Solution 7, Drake Decommissioned 2035	4-6%	0%	2-4%	6-10%
Solution 7, Drake Decommissioned 2030	4-6%	6-8%	0%	10-14%
Solution 7, Drake Decommissioned 2025	9-11%	2-4%	0%	11-15%

<b>Total Enterprise Rate Impact</b>	<b>23-34%</b>	<b>14-22%</b>	<b>10-14%</b>	<b>47-62%</b>
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Note: All rates will be refined through the adoption of 5 year plans & integrated resource plans.

- Continue to consider financial impact from an enterprise perspective
- Utilize financial analysis framework through all Integrated Resource Plan processes
- Provide refined results for future Board actions

# Future Utilities Board Updates

- **January 2019**
  - Transmission Planning Study Update
  - Potential rate impact analysis
- **April 2019**
  - Presentation of preferred solution
  - Solution delivery strategy



# Questions and Discussions