



# Design Review Committee Briefing #41

**Subject:** Revised Flow and Loading Projections

**Date:** April 1, 2021

---

## The Issue

Prudent utility planning requires forecasting utility demands in the future to avoid the reduction in level of service as new users are added to the system and to avoid building additional capacity before it is needed. Industrial flow and loadings represent a significant portion of the allocated flow and loadings for the Nampa WWTP. The City of Nampa (City) has updated its flow and loading projections to accurately reflect local industry. The purpose of this Design Review Committee Briefing is to summarize the update flow and loading projections. Three previous briefings flow and load projections and industrial capacity have been presented to the Design Review Committee (DRC); DRC Briefings #5, #6 and #24.

## Background and Analysis

Flow and loadings to the Nampa Wastewater Treatment Plant (WWTP) were originally projected in the Facility Plan. Refer to DRC Briefing #5 for a summary of these projections. There are two primary sources of wastewater flow and loadings to the City's system: domestic and industrial. Updates on these

### Domestic Flow and Loadings

Domestic flow and loadings comprise wastewater discharge from residential customers and commercial customers within the City. In the Facility Plan, future domestic flows and loadings were projected based on future population estimates and the historical wastewater generation rates. As would be expected, domestic flow and loading contributions to the Nampa WWTP are expected to increase between now and the end of the planning period (2040). This is driven both by the population growth within the existing sewer service area as well as the expansion of the service area.

An analysis of current growth within the City indicates that domestic flow and loading growth is occurring at approximately the rate assumed in the Facility Plan. Planning and Zoning data indicates Nampa is adding approximately 1,200 to 1,400 new households each year. This slightly exceeds the average expected growth rate over the planning period of 1,100 new households per year. Since projections are based on long-term averages, no change in the domestic flow and loading projections are recommended.

### Industrial Flow and Loadings

The flow and loadings from existing industrial customers are governed by their Significant Industrial User (SIU) permit. These permits represent agreements between the City and these customers. Since the completion of the Facility Plan, there has been a major change for one large industrial allocation. Simplot.

In 2011 Simplot announced it planned to close its Nampa potato processing plant. The City negotiated with Simplot to sell unused industrial capacity to domestic users to offset the impacts of new construction. Recently, the remaining Simplot capacity allocation was returned to the City. Now that Simplot's contributions have been removed from the system, the City is free to re-evaluate its flow and loading projections.

The City desires to continue to support existing and potential future industrial customers, thus, an allocation for future industrial growth is maintained and unchanged for in future projections. The current future industrial allocation allows for a major food processing company or several smaller companies. More information can be found in Briefing #5.

The updated future flow and loading projections for each industry are presented in Table 1. An updated summary of industrial and domestic future flow and loading projections are presented in Table 2.

## Potential Consequences

The Design Review Committee should be aware of the potential consequences, described below:

- **Availability of Capital:** The Project Group F Upgrades are currently over budget. Updating the flow and loads could result in the ability to delay capital projects which are currently out of the budget.
- **Reduction in Capital Spending for Capacity:** Reducing the flow and loading projections reduces the needed capacity over the planning period at the Nampa WWTP. This change will allow the deferment of several investments until outside the planning window. This is further detailed in DRC Briefing #43.
- **Cost of Capital:** The cost of capital for the Phase II Upgrades is less than the expected cost of capital in the future due to the State Revolving Fund (SRF) Loan the Idaho Department of Environmental Quality (IDEQ) has offered the City. The interest rate for the SRF Loan (1.68%) is less than the current inflation rate in the wastewater sector. Therefore, any capital projects delayed through a change in the assumed flow and loading projections will likely cost more when it is constructed in the future.

## Recommendation

The Program Team recommends updating the flow and load projections to reflect the removal of Simplot from the system. This approach will provide more realistic growth projections and limit overcapitalizing the Nampa WWTP.

Table 1. Nampa Wastewater Future Industrial Flows and Loads (March 2021 Update)															
Industry	Flow (mgd)			BOD (lb/day)			TSS (lb/day)			TKN (lb/day)			TP (lb/day)		
	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Monthly Average	Maximum Month	Peak Day <sup>2</sup>	Monthly Average	Maximum Month	Peak Day <sup>2</sup>	Monthly Average	Maximum Month	Peak Day <sup>2</sup>
Admiral Beverage Company	0.1	0.1	0.15	1,500	1,500	2,250	25	25	37.5	10	10	15	6	6	9
Great American Appetizers	0.0975	0.0975	0.14625	1,500	1,500	2,250	1,150	1,150	1,725	46.87	46.87	70.305	11.25	11.25	16.875
Materne North America	0.0924	0.0924	0.1386	1,079.6	1,079.6	1,619.4	269.9	269.9	404.85	8.5	8.5	12.75	3.1	3.1	4.65
Packaging Corporation of America	0.02	0.02	0.03	335	335	502.5	335	335	502.5	-	-	-	-	-	-
ON Semiconductor	0.5	0.5	0.75	-	-	-	-	-	-	50	50	75	30	30	45
Porta Pros, LLC	0.0034	0.0034	0.0051	85	85	127.5	57	57	85.5	23	23	34.5	1.7	1.7	2.55
Simplot Food Group	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TASCO	1.375	1.375	2.0625	8,600	8,600	12,900	3,000	3,000	4,500	1,225	1,225	1,837.5	54	54	81
Future Industrial Growth	1	1	1.5	12,518	12,518	18,77	12,518	12,518	18,777	918	918	1,377	417	417	626
<b>Revised Industrial Projection</b>	<b>3.2</b>	<b>3.2</b>	<b>4.8</b>	<b>25,618</b>	<b>25,618</b>	<b>38,426</b>	<b>17,355</b>	<b>17,355</b>	<b>26,032</b>	<b>2,281</b>	<b>2,281</b>	<b>3,422</b>	<b>523</b>	<b>523</b>	<b>785</b>
Previous Projection (includes Simplot)	3.8	3.8	5.7	32,907	32,907	49,360	23,150	23,150	34,725	2,906	2,906	4,360	762	762	1,143

Table 2. Nampa Wastewater Future Influent Flows and Loads - 2040 (March 2021 Update)															
	Flow (mgd)			BOD (lb/day)			TSS (lb/day)			TKN (lb/day)			TP (lb/day)		
	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Annual Average	Maximum Month	Peak Day <sup>2</sup>	Annual Average	Maximum Month	Peak Day <sup>2</sup>
Total Industrial- Updated without Simplot	3.2	3.2	4.8	25,618	25,618	38,426	17,355	17,355	26,032	2,281	2,281	3,422	523	523	785
Total Domestic Baseflow (2040)	13.69	13.69	13.69	30,652	38,136	83,029	35,330	41,892	90,700	4,693	5,483	9,079	708	848	1,347
Irrigation-Related Flow <sup>4</sup>	0.95	2.28	2.38	-	-	-	-	-	-	-	-	-	-	-	-
Other I/I	0.14	0.34	2.3	-	-	-	-	-	-	-	-	-	-	-	-
<b>UPDATED TOTAL FLOW / LOADS - 2040</b>	<b>18.0</b>	<b>19.5</b>	<b>23.2</b>	<b>56270</b>	<b>63,754</b>	<b>121455</b>	<b>52685</b>	<b>59247</b>	<b>116732</b>	<b>6974</b>	<b>7764</b>	<b>12501</b>	<b>1231</b>	<b>1371</b>	<b>2132</b>
PREVIOUS TOTAL FLOW / LOADS - 2040 ( includes Simplot)	18.6	20.1	24.1	63,559	71,043	132,389	58,480	65,042	125,425	7,599	8,389	13,439	1,470	1,610	2,489