City of St. Albert

St. Albert Transit Corridor and Neighborhood Intensification Strategy

Servicing Capacity Assessment

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1. Introduction

The City of St. Albert (the City) has retained WSP Canada Inc. (WSP) to complete the St. Albert Transit Corridor and Neighborhood Intensification Strategy. The overall objective of this study is to identify and address barriers to infill and intensification along the St. Albert Trail corridor and within established neighborhoods. This required an interdisciplinary approach that includes growth modeling, land use planning, urban design, servicing conditions analysis, and engagement with City staff and stakeholders.

This report presents the servicing capacity assessment completed in support of the Intensification Strategy. It evaluates the ability of the City's water distribution, wastewater collection, and stormwater management systems to accommodate the proposed intensification and identifies infrastructure constraints and potential upgrade requirements.

1.1 Scope

Assessment scenarios were developed in coordination with the broader Transit Corridor and Neighbourhood Intensification Strategy to reflect the proposed intensification within low-density residential (LDR) neighbourhoods and Trail Corridor Commercial (TCC) areas.

The assessment builds on the findings and modelling completed for the City's Water Distribution System Master Plan 2020 Update (WMP) and Wastewater Collection and Stormwater Management System Utilities Master Plan Update (UMP). The existing models were updated to incorporate the proposed intensification scenarios and evaluate system performance under increased demand and loading. The following existing models were used:

- WaterCAD for the water distribution system;
- PCSWMM for the wastewater collection system; and
- MIKE+ for the stormwater management system.

The analysis evaluated the capacity of the existing systems to accommodate the proposed intensification and identified locations where increased demand or loading may result in servicing constraints. Where constraints were identified, the assessment evaluated the infrastructure improvements recommended in the WMP and UMP to determine whether they provide sufficient capacity to support the proposed redevelopment.

The assessment also identified constraints that would remain following implementation of the master plan upgrades and, where appropriate, additional infrastructure improvements that may be required. The findings are intended to support implementation of the Intensification Strategy by identifying servicing opportunities and constraints required to accommodate long-term intensification.

2. Background Review

A review of the City's Water Distribution System Master Plan 2020 Update (WMP) and Wastewater Collection and Stormwater Management System Utilities Master Plan Update (UMP) was completed to establish baseline servicing conditions and identify known constraints relevant to intensification. The models, findings, and recommended improvements from these studies formed the basis of the servicing capacity assessment presented in this report.

City of St. Albert Water Distribution System Master Plan 2020 Update (Associated Engineering Ltd, 2022)

The City's water distribution system was evaluated as part of the 2020 Water Distribution System Master Plan Update. Most locations within City property meet the Maximum Day plus Fire Flow requirements, with only a few deficiencies identified. The majority of the noted deficiencies occur on private property and typically involve hydrant leads or service lines rather than City-owned mains.

Most residential neighborhoods meet the City's fire flow standards. Where deficiencies exist, they are typically found in cul-de-sacs or areas served by dead-end mains, which limit water looping and pressure. These issues are relatively minor and do not pose significant servicing constraints.

Several of the identified fire flow deficiencies are within commercial zones often due to dead-end mains, long blocks without sufficient looping, or higher water demands associated with larger buildings and mixed-use developments. Some of these fire flow deficiencies may constrain redevelopment:

- Downtown: Generally meets fire flow requirements, with only isolated deficiencies. This area can likely accommodate redevelopment with limited upgrades.
- St. Albert Trail Corridor (north of Sturgeon River): Several locations exhibit fire flow deficiencies that may constrain redevelopment. These include commercial frontages in Inglewood, Lacombe Park, Jensen Lakes, and Erin Ridge North.
- St. Albert Trail Corridor (south of Sturgeon River): Fire flow servicing is improved relative to the north, but deficiencies remain towards the south end, particularly within The Gardens neighborhood.

City of St. Albert Master Plan Update (WSP Canada Inc, 2022)

The UMP assessed the capacity and performance of the City's wastewater collection and stormwater management systems under existing and future conditions. It identified existing deficiencies, evaluated long-term servicing requirements, and recommended infrastructure improvements to maintain the City's intended levels of service.

Wastewater System

The UMP found that most existing gravity sewers in established residential neighbourhoods operate within acceptable capacity under typical conditions. The primary exception is Lacombe Park, where portions of the network are over capacity and at risk for surcharging and flooding. Additional development in this area could exacerbate these conditions unless upgrades or inflow/infiltration reductions are undertaken.

Capacity is also limited within the northeast neighbourhoods (Erin Ridge, Oakmont, Jensen Lakes, and Erin Ridge North) recently assessed in the Erin Ridge North Everitt Drive Wet Weather Storage Design Basis Report (WSP, 2025). Jensen Lakes and Erin Ridge North are planned to discharge to the future Northeast Lift Station and Northeast Sanitary Trunk, which have not yet been constructed. As a result, flows are currently diverted to the Oakmont Lift Stations via the existing gravity system within Erin Ridge and Oakmont, which are nearing capacity. Until the new lift station and trunk are in place, there is limited ability to accommodate additional development in the northeast. This is not expected to have a significant impact on redevelopment as the northeast is generally relatively newer properties and buildings.

Capacity for intensification varies within key commercial districts:

- St. Albert Trail Corridor (north of Sturgeon River): The sanitary system along this corridor is significantly constrained due to downstream bottlenecks and is at risk for surcharging and flooding under wet weather flow. Several upgrades were recommended to improve servicing in this area, which will likely need to be addressed prior to intensification.
- St. Albert Trail Corridor (south of Sturgeon River): Generally has capacity to support intensification, however, capacity is constrained at the Gate Avenue Lift Station, which is currently over capacity. Upgrades to the lift station and portions of the upstream gravity system are likely required to support intensification, and potential downstream impacts should also be reviewed.

The North Interceptor Trunk (NIT), between the Rivercrest Lift Station and St. Albert Pump Station (SAPS), is one of the City's two primary sanitary trunks. Under existing wet-weather conditions, the NIT experiences surcharging. Flow controls installed upstream along the NIT prevent overloading the downstream system, but they also raise hydraulic grades, creating backwater effects and reduced capacity in upstream areas. Any intensification that increases flows to this portion of the NIT should consider potential impacts to the NIT and required mitigation strategies. This may include adjusting the upstream flow control orifice, however, additional review and analysis will be needed to determine feasibility and confirm available capacity at SAPS. The ultimate capacity of the SAPS is expected to be 2,400 L/s.

Stormwater System

The City's stormwater system was most recently assessed in the 2022 St. Albert Master Plan Update, which evaluated both major and minor system capacity. Overall, the system generally meets the intended level of service under existing conditions. However, localized deficiencies were identified in several areas where surface ponding depths exceeded acceptable limits and pipe capacities were constrained. The most notable issues were observed within the following areas:

- Sheridan Drive

- Lacombe Park
- Mission neighborhood
- Grandin and Braeside neighborhood
- Deer Ridge Neighborhood

These areas were flagged for upgrades to address existing drainage challenges and to achieve a 1:5-year level of service. The recommended improvements aim to reduce flood risk and protect nearby properties. These improvements are required under current conditions and would become increasingly important if redevelopment occurs within or upstream of these drainage catchments, as increased runoff could further strain the system.

However, redevelopment within established urban areas is not expected to substantially increase stormwater runoff, especially in areas where impervious cover is already high and not expected to increase much more. Even when slight increases in imperviousness occur, the additional runoff can typically be managed through onsite storage. Therefore, while stormwater system upgrades may be necessary in localized areas, the primary constraints for intensification are expected to be the sanitary and water distribution systems, which are more sensitive to increased demand from redevelopment.

3. Proposed Intensification

The capacity assessment considered two forms of redevelopment: neighbourhood intensification within existing low-density residential (LDR) areas and higher-density redevelopment within the Trail Corridor Commercial (TCC) areas. The areas considered for intensification are shown in **Figure 1**.

Neighbourhood Intensification

Neighbourhood intensification was assessed to represent gradual redevelopment within St. Albert's established neighborhoods. Generally, all LDR parcels constructed before 1980 were considered to be eligible for redevelopment, excluding any parcels already occupied by a duplex or semi-detached dwelling. To reflect differences in the likelihood of redevelopment based on housing age, the following turnover rates were also applied:

- LDR parcels constructed before 1960: 10% turnover rate
- LDR parcels constructed from 1960 to 1980: 3% turnover rate

The assumed turnover rates were applied within each neighbourhood to identify the number and spatial distribution of parcels assumed to redevelop. Redevelopment was assumed to increase density from one primary dwelling unit to two primary dwelling units, each with an associated secondary suite, resulting in a total of four dwelling units per redeveloped parcel.

Trail Corridor Commercial Intensification

The trail corridor intensification focused primarily on TCC areas along St. Albert Trail south of Villeneuve Road; however, the assessment also included the Downtown area and a few adjacent non-TCC parcels. The assessed intensification areas are shown in **Figure 1**.

The TCC land use district is intended to support mixed-use development comprising medium- and high-density residential uses together with commercial, institutional, office, health, recreational, and other non-residential services. Redevelopment within the identified intensification areas was represented using a density of 200 dwelling units per hectare (du/ha), reflecting the anticipated mixed-use development form.

3.1 Updated Intensification Population Estimates

3.1.1 Low Density Residential

LDR intensification was assessed on a neighborhood basis using the boundaries shown in **Figure 1**. In some cases, neighborhoods were subdivided into smaller subareas to better represent spatial variability in redevelopment. This approach was used particularly where older parcels were concentrated in specific

portions of a neighborhood instead of being interspersed throughout, allowing population increases to be assigned to the most likely redevelopment areas rather than uniformly across the entire neighborhood.

All LDR parcels within each neighborhood were classified based on construction period (pre-1960 and 1960–1980) and the number of parcels in each category was used to estimate the total number of redeveloped parcels using the applicable turnover rate.

The redeveloped parcels were assumed to redevelop from one primary dwelling unit to two primary dwelling units, each with a secondary unit; the resulting number of additional primary and secondary units was calculated for each neighborhood. Population densities of 2.8 persons per unit (pp/unit) and 2.0 pp/unit were applied for primary and secondary units, respectively, to estimate the corresponding population increase. **Table 1** below summarizes the estimated increase in population by neighborhood.

Table 1 – Summary of Increased Population by Neighborhood

Neighborhood	LDR Parcels Constructed Pre-1960	LDR Parcels Constructed 1960 - 1980	Total Intensified Lots[1]	Additional Primary Units	Additional Secondary Units	Total Additional Population[2]
Akinsdale	0	925	28	28	56	191
Braeside	95	676	30	30	60	205
Forest Lawn	1	785	24	24	48	164
Inglewood	0	1	1	1	2	7
Lacombe Park	0	1427	44	44	88	300
Mission	135	377	26	26	52	178
Pineview	0	24	1	1	2	7
Sturgeon Heights	155	504	31	31	62	212
The Gardens[3]	144	1432	59	59	118	402
Woodlands	0	311	10	10	20	68
Total	530	6462	254	254	508	1734

Notes:

1. Assuming turnover rates of 10% for pre-1960 parcels and 3% for 1960-1980 parcels.
2. Assuming population densities of 2.8 pp/unit for primary units and 2.0 pp/unit for secondary units.
3. The Gardens was formerly known as the Grandin neighborhood.

3.1.2 Trail Corridor Commercial

TCC areas were delineated into 15 sub-boundaries (**Figure 1**). For each sub-boundary, updated populations were estimated assuming a unit density of 200 units/ha and a population density of 2 pp/unit.

The redevelopment assumptions are summarized in **Table 2** and estimated population for each TCC sub-boundary is summarized in **Table 3**. Some of the TCC areas include small portions of other adjacent non-residential areas such as indicated in **Table 3**.

Table 2 – Assumed Population Densities for TCC Areas

Parameter	Value	Units
Unit Density (moderate)	200	units / ha
Population Density[1]	2	people / unit

Notes:

1. Based on reported average household size for apartment units in the 2024 Census Report.

Table 3 – Summary of Increased Population by TCC Area

Name	Area (ha)	Units	Population
TCC #1	9.9	1,971	3,942
TCC #2	1.3	269	538
TCC #3	11.7	2,338	4,676
TCC #4	2.0	397	794
TCC #5	8.6	1,721	3,442
TCC #6[1]	38.7	7,742	15,484
TCC #7	1.1	215	430
TCC #8	1.1	230	460
TCC #9	0.5	106	212
TCC #10	3.5	702	1,404
TCC #11	2.2	446	892
TCC #12	1.8	352	704
TCC #13[2]	5.4	1,089	2,178
TCC #14	5.0	998	1,996
TCC #15[3]	4.9	975	1,950
TCC #16[4]	2.4	477	954
Total	100.1	20,028	40,056

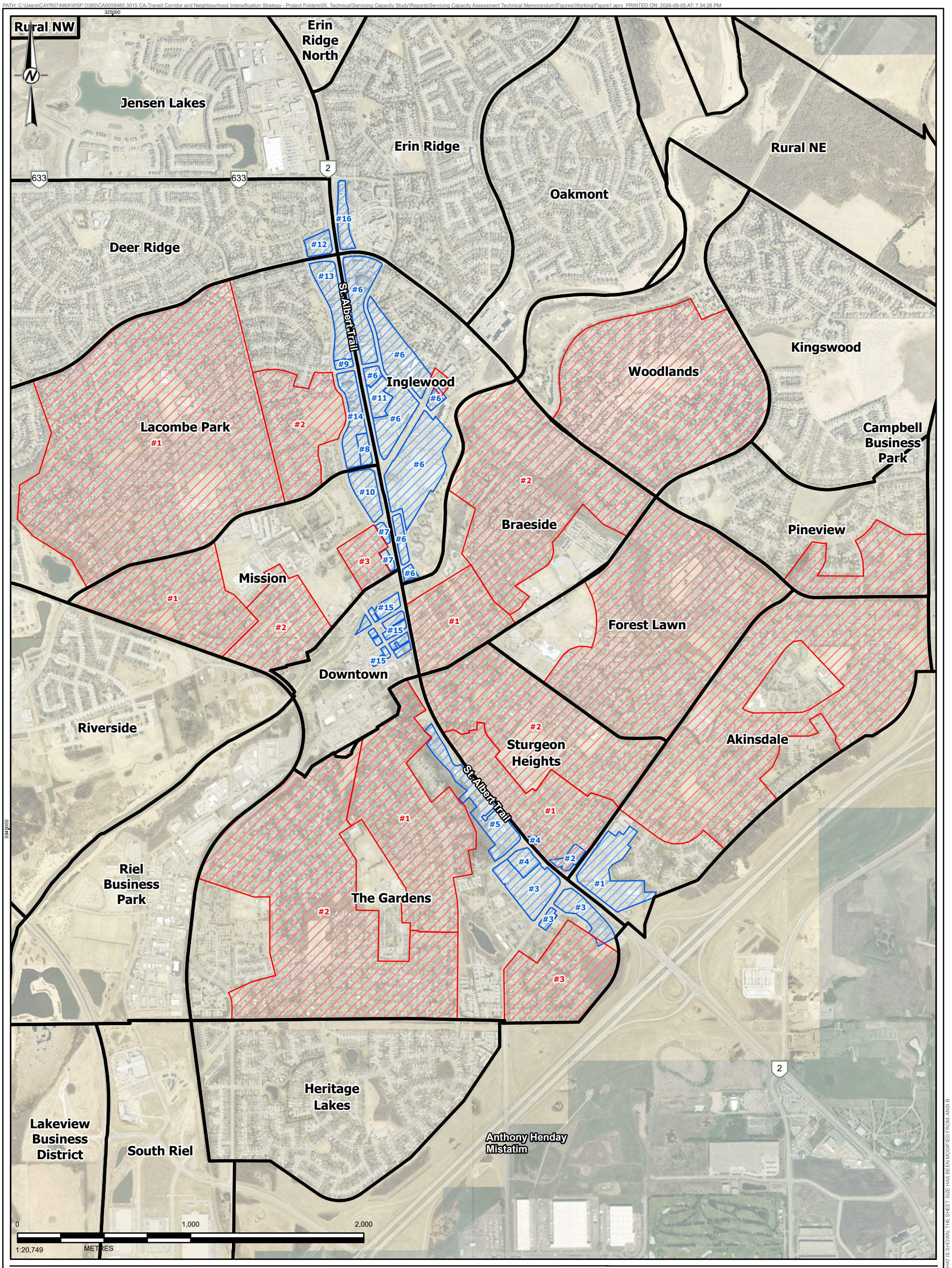
Notes:

1. Small portion of Neighborhood Commercial (NHC) and Direct Control (DC) areas included.

2. Small portion of Neighborhood Commercial (NHC) and Public, Private, and Institutional Services (PSI) areas included.

3. Primarily Downtown (DTN) areas.

4. Primarily Neighborhood Commercial (NHC) areas.



LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS

REFERENCE(S)

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CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
INTENSIFICATION AREAS

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4. Wastewater System

4.1 Design Criteria

The latest City of St. Albert Municipal Engineering Standards (City of St. Albert, 2026) formed the basis for assessing the wastewater system and determining future upgrades. **Table 4** summarizes the key adopted design criteria.

Table 4 – Key Wastewater System Design Criteria

Design Parameter	Value	Details
Average Flow Generation	280 L/c/d	Residential
	6,170 L/ha/day	Non-residential
Peaking Factor[1]	$1 + \frac{14}{4 + \sqrt{P}}$	Residential
	3.0	Non-residential
Inflow & Infiltration Allowance	0.28 L/s/ha	
	0.40 L/s/ha	Sag manholes
Required Sewer Capacity	Design Flow[2] / 0.86	
Manning's n	0.013	
Minimum Depth of Bury from Invert of Services	3.0 m	Measured at property line

Notes:

1. P is the contributing population in 1,000s.
2. Design flow is the total of peak dry weather flow and I&I allowance.

4.2 Model Scenarios

The wastewater capacity assessment was completed using the City's sanitary system models developed for the UMP. Intensification related flows were incorporated as incremental loading layers to maintain traceability between the established UMP baseline and intensification loading. The assessment focused on peak wet weather flow (PWWF), which governs the design of sanitary systems based on the MES. PWWF consists of dry weather flow (DWF), including the applicable peaking factor, plus inflow and infiltration (I&I).

Both of the existing-system PWWF scenarios from the UMP were assessed under proposed intensification: the 1:5-year 4-hour Modified Chicago design event (Scenario 1a) and the 1:25-year 24-hour Huff design event (Scenario 1b). Using the existing WWF scenarios allowed the effects of intensification to be compared directly with the corresponding UMP results. This assessment was used to identify the incremental impacts of redevelopment and determine how much intensification could be accommodated by the existing system without upgrades.

Intensification loading was then applied to the UMP future system model, which reflects ultimate build-out conditions for the City, and incorporates the system upgrades proposed in the UMP such as pipe upsizing, lift station upgrades, and I&I mitigation measures (Scenario 2). This scenario was used to evaluate how the proposed UMP improvements improve the available capacity for intensification and to identify any remaining constraints.

Finally, an additional scenario was developed based on the future system model (Scenario 3). This scenario incorporated further upgrades identified through the current capacity assessment to accommodate the full proposed intensification. These improvements are in addition to those recommended in the UMP.

The scenarios are summarized in **Table 5**.

Table 5 – Summary of Wastewater Model Scenarios

Scenario		Description	Objective
1 – Existing System	1a – PWWF 1:5-Year Event	Existing UMP PWWF model for the 1:5-year 4-hour Modified Chicago event, with additional loading from intensification.	Assess the incremental effects of intensification relative to the corresponding UMP and identify areas which can accommodate intensification without upgrades.
	1b – PWWF 1:25-Year Event	Existing UMP PWWF model for the 1:25-year 24-hour Huff event, with additional loading from intensification.	Assess the incremental effects of intensification relative to the corresponding UMP and identify areas which can accommodate intensification without upgrades.
2 – Future System with UMP Upgrades		Future system model with PWWF reflecting ultimate-build out and UMP proposed upgrades incorporated, with additional loading from intensification.	Evaluate how the proposed UMP upgrades improve the available capacity for intensification and identify any remaining constraints.
3 – Future System with Additional Upgrades		Future system model incorporating the UMP upgrades and additional improvements identified through this assessment.	Identify the additional upgrades required to accommodate the full proposed intensification.

4.3 Model Loading

4.3.1 Low Density Residential

The estimated increase in population for LDR areas was described in **Section 3.1.1**. The corresponding increase in average dry weather flows (ADWF) per neighborhood was estimated based on an average per capita sewage generation rate of 280 L/c/d as per the 2026 Municipal Engineering Standards (MES). **Table 6** below summarizes the estimated increase in ADWF by neighborhood. The calculated ADWF was distributed across model nodes within each corresponding neighbourhood.

Table 6 – Summary of Increased ADWF by Neighborhood

Neighborhood	Additional ADWF[1] (L/s)
Akinsdale	0.62
Braeside	0.66
Forest Lawn	0.53
Inglewood	0.02
Lacombe Park	0.97
Mission	0.58
Pineview	0.02
Sturgeon Heights	0.69
The Gardens[2]	1.30
Woodlands	0.22
Total	5.62

Notes:

1. Assuming an average sewage generation rate of 280 L/c/d per the MES.
2. The Gardens was formerly known as the Grandin neighborhood.

The intensification scenarios were developed using the existing calibrated sanitary models from the UMP. As such, existing diurnal patterns within the model were retained for all LDR areas to represent the peak dry weather flow (PDWF).

Infiltration and inflow (I&I) assumptions from the previous UMP were also retained for LDR areas for the existing system model (Scenario 1). **Table 7** summarizes the existing calibrated I&I rates from the model for each neighbourhood. Accordingly, only the ADWF component of sanitary loading was modified to reflect the proposed intensification within LDR areas. For the future condition models (Scenarios 2 and 3), the calibrated I&I rates in LDR intensification areas were replaced with the MES allowance of 0.28 L/s/ha.

Table 7 – Existing Calibrated I&I Rates for LDR Intensification Areas[1]

Neighborhood	Calibrated 1:25-Year 24-Hour I&I (L/s/ha)	Calibrated 1:5-Year 4-Hour I&I (L/s/ha)
Akinsdale	0.533	0.520
Braeside	0.470	0.558

Neighborhood	Calibrated 1:25-Year 24-Hour I&I (L/s/ha)	Calibrated 1:5-Year 4-Hour I&I (L/s/ha)
Deer Ridge	0.433	0.588
Downtown	0.941	1.102
Erin Ridge	0.263	0.423
Forest Lawn	0.178	0.296
Inglewood	0.180	0.299
Lacombe Park	0.563	0.665
Mission	0.634	0.775
Pineview	0.748	0.875
Sturgeon Heights	0.297	0.494
The Gardens[2]	0.561	0.571
Woodlands	0.294	0.493

Notes:

1. Valued obtained from the Master Plan Update (WSP, 2020).

2. The Gardens was formerly known as the Grandin neighborhood.

4.3.2 Trail Corridor Commercial

The TCC land use district is intended to support mixed-use developments consisting of medium and high-density residential uses alongside a range of non-residential services including commercial, institutional, office, health, and recreational services. Therefore, the projected population for TCC areas was assumed to be evenly split among residential population and non-residential population equivalent.

The DWF for TCC areas was estimated by applying an average sewage generation rate of 280 L/c/d. The peaking factors for the residential population and non-residential population were calculated separately as per the City's MES as summarized in **Table 4** and were used to determine the corresponding PDWF. **Table 8** summarizes the resulting flow estimates for each TCC sub-boundary. The PDWF for each sub-boundary replaced the existing modeled PDWF and was distributed uniformly across all nodes within the corresponding area.

The existing calibrated I&I rates were not applied to the TCC areas because they reflect current development conditions and may overestimate I&I following full redevelopment. Instead, the MES allowance of 0.28 L/s/ha was applied.

Table 8 – Summary of Increased Sanitary Flow Generation by TCC Area

Name	ADWF (L/s)	PDWF (L/s)
TCC #1	12.8	42.1
TCC #2	1.7	6.2
TCC #3	15.2	49.5
TCC #4	2.6	9.0
TCC #5	11.2	37.0
TCC #6	50.2	152.1

Name	ADWF (L/s)	PDWF (L/s)
TCC #7	1.4	5.0
TCC #8	1.5	5.3
TCC #9	0.7	2.5
TCC #10	4.6	15.7
TCC #11	2.9	10.1
TCC #12	2.3	8.0
TCC #13	7.1	23.9
TCC #14	6.5	22.0
TCC #15	6.3	21.5
TCC #16	3.1	10.8
Total	129.8	420.8

4.4 Wastewater System Assessment

4.4.1 Assessment Criteria

The updated models were used to assess the wastewater system under the scenarios described above based on two key criteria:

1. **Hydraulic grade line (HGL) relative to ground elevation:** As indicated in **Table 4**, wastewater service connections are required to have a depth of bury of 3.0 m at the property line, measured from the pipe invert to finished grade. Therefore, locations where the simulated HGL is less than 3.0 m below the ground elevation were identified as having a potential risk of wastewater backup and basement flooding.
2. **Ratio of flow depth relative to pipe diameter (d/D):** Pipe surcharging was assessed using the ratio of modelled flow depth to pipe diameter. A d/D ratio above 0.86 identifies pipes approaching full capacity, while a ratio of 1.00 indicates that the flow depth is higher than the crown of the pipe and that the pipe is surcharged.

The HGL and d/D results were considered together to properly assess system performance. A pipe operating above the desirable d/D ratio may not present an immediate property-backup risk if the HGL remains below the assumed service connection elevation. Similarly, locations where the HGL rises to within 3.0 m of ground elevation may not be an issue if the pipe is not surcharged and service connections are not present, and may indicate a shallow sewer.

4.4.2 Model Results

Model results for the existing and future sanitary servicing scenarios are presented in **Figures 2** through **5** and summarized in **Table 9**. The assessment considered three scenarios as described previously:

- **Scenario 1:** The existing sanitary system with proposed intensification.

- **Scenario 2:** The future system incorporating the improvements and I&I mitigation measures recommended in the UMP.
- **Scenario 3:** The future system incorporating additional improvements identified through this study.

Based on the model results, the proposed LDR intensification results in relatively minor increases in sanitary flow within St. Albert's established residential neighbourhoods. In several areas, the proposed intensification can be accommodated by the existing system without upgrades, while others require the I&I mitigation measures and localized improvements recommended in the UMP to accommodate proposed LDR intensification. Generally, no additional upgrades are required to accommodate LDR intensification beyond those proposed in the UMP.

More significant constraints occur along the St. Albert Trail corridor and upstream of Gate Avenue Lift Station, where the proposed TCC intensification is substantially greater than the growth assessed in the UMP. Many of these areas already had identified capacity constraints in the UMP, which are exacerbated by the significant increase in flows due to TCC intensification. In these areas, the UMP proposed improvements reduce the severity of the capacity concerns but are not sufficient to accommodate the full intensification scenario, and additional local upgrades will be required.

Table 9 summarizes the model results for each intensification area and identifies the upstream areas contributing to the sewers being assessed. Although local sewers may have sufficient capacity, constraints further downstream must also be considered before intensification proceeds. Results for the 1:5-year and 1:25-year PWWF events are presented together under Scenario 1 in **Table 9**. The table also summarizes the effects of the UMP improvements, additional upgrades identified through this study, and the resulting considerations for intensification.

Appendix A presents key wastewater system profiles for areas where additional upgrades were identified, including a comparison of all three scenarios. For Scenario 1, the more critical of the 1:5-year and 1:25-year PWWF results is shown in each profile.

Table 9 – Wastewater Model Results

Area	Upstream Intensification Areas	Scenario 1 – Existing System PWWF	Scenario 2 – Future System with UMP Upgrades	Scenario 3 – Future System with Additional Upgrades	Intensification Considerations
TCC #16		TCC #16 is assumed to discharge east to the existing sewer at Erin Ridge Road and Erin Ridge Drive. A short sewer segment extending from Eastbourne Close along Ellesmere becomes surcharged due to the additional TCC flow. However, the HGL remains more than 3.0 m below ground. The existing local system can accommodate the proposed intensification.	The UMP upgrades do not address this localized condition, and minor surcharging remains. However, the HGL remains more than 3.0 m below ground. No local upgrade is required.	No additional local upgrade was assessed.	TCC #16 can be accommodated within the existing system without any upgrades.
Lacombe Park #1		Significant portions of the sewer system are surcharged, and surface-flooding risk occurs at some manholes. These issues were identified in the UMP and are primarily associated with elevated I&I. Residential intensification causes only a minor increase in flow and does not change the existing conditions.	Reducing I&I to 0.28 L/s/ha, consistent with the UMP, resolves the identified surcharging and surface-flooding concerns. Additional local upgrades are not required to accommodate intensification.	No additional local upgrade was assessed.	The proposed intensification can be accommodated following implementation or confirmation of the assumed I&I reduction.
Mission	Lacombe Park #1	Several sewers in Mission #1 are surcharged, and surface-flooding risk occurs at some manholes. These issues were identified in the UMP and are worsened by residential intensification in Mission and Lacombe Park. No significant constraints were identified in Mission #2 or #3.	Reducing I&I to 0.28 L/s/ha within Mission and Lacombe Park resolves the surcharging and surface-flooding concerns in Mission #1. Additional local upgrades are not required to accommodate intensification.	No additional local upgrade was assessed.	Mission #2 and #3 can be accommodated by the existing local system without upgrades. Mission #1 can be accommodated following I&I reduction as recommended in the UMP.

Area	Upstream Intensification Areas	Scenario 1 – Existing System PWWF	Scenario 2 – Future System with UMP Upgrades	Scenario 3 – Future System with Additional Upgrades	Intensification Considerations
Lacombe Park #2		The local system is significantly surcharged, with surface-flooding risk at most manholes. The local sewers do not appear to be the primary constraint; the issue is primarily caused by backup from the constrained downstream system along Liberton Drive.	GS-01, GS-02, and GS-03 reduce the downstream backup sufficiently to resolve surcharging and surface-flooding risk within Lacombe Park #2. No local sewer upgrade is required.	No separate upgrade is required within Lacombe Park #2. The area remains dependent on the additional improvements identified for the downstream Liberton Drive system. Refer to **NEW-GS-01** in **Table 11**.	The proposed residential intensification can be accommodated locally once additional upgrade **NEW-GS-01** is completed to relieve the downstream system.
Liberton Drive system (consists of TCC #8, #9, #11, #12 and #13)	Lacombe Park #2	Sewers along Liberton Drive are significantly surcharged, with surface-flooding risk at several manholes. These constraints were identified in the UMP, but worsened substantially due to the adjacent TCC intensification. The existing local system does not have capacity for the full intensification scenario.	UMP upgrades GS-02 and GS-03, together with downstream upgrade GS-01, significantly improve conditions and resolve the surface-flooding risk along Liberton Drive. However, some sewer segments remain surcharged, particularly near St. Albert Trail and McKenney Avenue. The UMP upgrades are not sufficient for the full intensification scenario.	Additional upsizing of local sewers is required along the Liberton Drive system. Refer to **NEW-GS-01** in **Table 11**.	The contributing intensification areas can proceed once the required local and connecting sewers are upgraded as per **NEW-GS-01**. The effects of redevelopment on the downstream trunk system should also be reassessed as development proceeds.
Inglewood Drive / Bellrose Drive system (TCC #6 and #10	Lacombe Park #2, TCC #8, #9, #11, #12 and #13	Sewers along St. Albert Trail and the upstream systems along Inglewood Drive and Bellrose Drive are significantly surcharged, with surface-flooding risk at several manholes. These constraints were identified in the UMP but worsen substantially with intensification. The existing local system does not have capacity for the full intensification scenario.	UMP upgrades GS-01 and GS-08 improve conditions, including along the sewer immediately west of St. Albert Trail within Mission. However, significant surcharging and surface-flooding risk remain along Inglewood Drive and Bellrose Drive. The UMP upgrades are not sufficient for the full intensification scenario.	Additional sewer upsizing or relief is required along the Inglewood Drive and Bellrose Drive system. Refer to **UPG-01**, **UPG-02**, **UPG-03**, **NEW-GS-08**, and **NEW-GS-01** in **Table 11**.	The contributing intensification areas can proceed once the required local and connecting sewers are upgraded as per **UPG-01**, **UPG-02**, **UPG-03**, **NEW-GS-08**, and **NEW-GS-01**. The effects of redevelopment on the downstream trunk system should also be reassessed as development proceeds.

Area	Upstream Intensification Areas	Scenario 1 – Existing System PWWF	Scenario 2 – Future System with UMP Upgrades	Scenario 3 – Future System with Additional Upgrades	Intensification Considerations
TCC #7		No significant capacity concerns were identified in the local sewers receiving flow from TCC #7. The existing local system can accommodate the proposed intensification.	No UMP upgrades were proposed or required.	No additional local upgrade was assessed.	TCC #7 can be accommodated by the local receiving system. The effects of redevelopment on the downstream trunk system should also be reassessed as development proceeds.
The Gardens #1 and #2	The Gardens #3	A few short sewer segments along Gladstone Crescent and Garden Crescent in The Gardens #2 are surcharged. These constraints were identified in the UMP and worsen only slightly with residential intensification. There is no surface-flooding risk, and the HGL generally remains more than 3.0 m below ground. At two manholes along Sir Winston Churchill Avenue, the HGL is within 3.0 m of ground; however, these are shallow sewers and the HGL remains well below ground. The existing system can accommodate the proposed intensification.	UMP upgrade GS-05 and I&I reduction resolve the identified surcharging. Additional local upgrades are not required to accommodate intensification.	No additional local upgrade was assessed.	The proposed intensification can be accommodated by the existing system.
TCC #1 and #3; The Gardens #3		These areas discharge to the Gate Ave Lift Station (LS) which is over capacity. The gravity system upstream of Gate Avenue LS is significantly surcharged, with widespread surface-flooding risk. The UMP previously identified capacity constraints at the LS and in the upstream sewers, but the proposed intensification substantially worsens these conditions. LDR intensification within the Gardens #3 produces only a minor flow increase, while TCC #1 and #3 significantly increase flows. The existing system does not have capacity for the full intensification scenario.	UMP upgrades GS-06, GS-07, capacity improvements to Gate Avenue LS, and I&I mitigation reduce the severity of the constraints. However, significant upstream surcharging and surface-flooding risk remain. The UMP upgrades are not sufficient for the full intensification scenario and additional upgrades will be required.	Increasing the ultimate Gate Avenue LS capacity to approximately 125 L/s and further upsizing portions of GS-06 resolve the identified local concerns. Refer to **NEW-GS-06** and **UPG-04** in **Table 11**.	The additional improvements **NEW-GS-06**, **UPG-04**, and upgrades as Gate Ave LS are required to accommodate the full buildout of TCC #1 and #3.
TCC #5		A short sewer segment along St. Albert Trail becomes surcharged due to the additional flow from TCC #5. However, the HGL remains more than 3.0 m below ground. The existing local system can accommodate the proposed intensification.	The UMP upgrades do not address this localized condition, and minor surcharging remains. However, the minimum HGL clearance remains approximately 2.6 m. No local upgrade is required.	No additional local upgrade was assessed.	TCC #5 can be accommodated by the local receiving system.

Area	Upstream Intensification Areas	Scenario 1 – Existing System PWWF	Scenario 2 – Future System with UMP Upgrades	Scenario 3 – Future System with Additional Upgrades	Intensification Considerations
Pineview		Some existing surcharging occurs, primarily in western Pineview. This condition was identified in the UMP and is not caused by the proposed intensification because the intensified portion of Pineview is located in the east and drains south toward Akinsdale. During the 25-year event, additional sewers surcharge, but the HGL remains more than 3.0 m below ground. The existing local system can accommodate the proposed intensification.	Reducing I&I to 0.28 L/s/ha generally resolves the surcharging. A few short segments remain near capacity but are not surcharged. No additional local upgrade is required.	No additional local upgrade was assessed.	Intensification can proceed based on local sewer capacity. Flows from eastern Pineview contribute to Akinsdale, Forest Lawn and Braeside before reaching the downstream trunk system; the capacity of these systems should be considered.
Akinsdale	Eastern Pineview	No significant concerns occur during the 5-year event. During the 25-year event, several sewers surcharge; however, the HGL generally remains more than 3.0 m below ground except at one manhole. These constraints were identified in the UMP and are only slightly worsened by intensification. The existing local system can accommodate the proposed intensification	Reducing I&I to 0.28 L/s/ha generally resolves the surcharging. A few short segments remain near capacity but are not surcharged. No additional local upgrade is required.	No additional local upgrade was assessed.	Intensification can proceed based on local sewer capacity. The cumulative flows from Akinsdale and eastern Pineview should continue to be considered in the downstream Forest Lawn, Braeside and trunk-system assessments.
Forest Lawn	Akinsdale; eastern Pineview; portions of Sturgeon Heights	A short sewer segment is surcharged during the 5-year event, although the HGL remains more than 3.0 m below ground. Surcharging is more extensive during the 25-year event, with the HGL rising to within 3.0 m of ground at several manholes, particularly along the larger-diameter sewer adjacent to the ravine. These constraints were identified in the UMP and are slightly worsened by intensification.	GS-12 and the assumed I&I reduction resolve the identified surcharging and HGL concerns. No additional local upgrade is required.	No additional local upgrade was assessed.	Full intensification in Forest Lawn and its contributing upstream areas can be accommodated following implementation of GS-12 and the assumed I&I reduction. Downstream trunk capacity should continue to be assessed as redevelopment proceeds.
Braeside	Forest Lawn; Akinsdale; eastern Pineview; portions of Sturgeon Heights	Several sewer segments are surcharged during the 5-year event. Conditions worsen during the 25-year event, with surface-flooding risk at some manholes. These constraints were identified in the UMP and are slightly worsened by intensification.	Reducing I&I to 0.28 L/s/ha generally resolves the surcharging and surface-flooding concerns. A few short segments remain slightly overcapacity but are not surcharged. No additional local upgrade is required.	No additional local upgrade was assessed.	Full intensification in Braeside and its contributing upstream areas can be accommodated following implementation or confirmation of the assumed I&I reduction. Downstream trunk capacity should continue to be assessed as redevelopment proceeds.

Area	Upstream Intensification Areas	Scenario 1 – Existing System PWWF	Scenario 2 – Future System with UMP Upgrades	Scenario 3 – Future System with Additional Upgrades	Intensification Considerations
Woodlands		Several sewer segments are surcharged during the 5-year and 25-year events, with the HGL rising to within 3.0 m of ground at several manholes. These constraints were identified in the UMP and are slightly worsened by residential intensification.	Reducing I&I to 0.28 L/s/ha resolves the identified surcharging concerns. No additional local upgrade is required.	No additional local upgrade was assessed.	The proposed intensification can be accommodated following implementation or confirmation of the assumed I&I reduction. Downstream trunk capacity should continue to be assessed as redevelopment proceeds.
TCC #2, TCC #4 and Sturgeon Heights #1		Sewer segments along Savoy Place and Sheridan Drive are surcharged, with the HGL rising to within 3.0 m of ground at some locations. The UMP identified minor surcharging in this area, but conditions worsen due primarily to the significant intensification within TCC #2 and #4. Residential intensification within Sturgeon Heights produces a relatively minor flow increase.	UMP upgrade GS-10 and the assumed I&I reduction resolve most issues. One short segment remains slightly overcapacity but is not surcharged. Further upsizing beyond that identified in GS-10 would fully resolve the remaining local capacity concern.	UMP upgrade GS-10 is revised to accommodate additional flow. This resolves the remaining concern. Refer to **NEW-GS-10**.	Some residential intensification within Sturgeon Heights may be accommodated independently. The revised upgrade **NEW-GS-10** provides capacity for the full TCC #2 and #4 intensification scenario.
TCC #15		Existing surcharging and flooding issues identified in the UMP persist and worsen with intensification. Twilight LS is affected by backup and overflow from upstream systems due to elevated I&I. The existing system does not have capacity for the full intensification scenario.	UMP upgrade GS-09, improvements to Twilight LS, and the assumed I&I reduction resolve the significant concerns. The UMP scenario assumes that overflows from other upstream systems are also resolved. Minor surcharging remains, but the HGL generally remains more than 3.0 m below ground. At Ferron Street and St. Michael Street, the HGL is less than 3.0 m below ground, however this is due to a shallow sewer rather than significant surcharging. The UMP upgrades are sufficient to accommodate proposed intensification.	No additional local upgrade beyond the UMP improvements is identified.	TCC #15 can be accommodated following implementation of the UMP improvements, provided that the assumed upstream overflow reduction and I&I mitigation are achieved.

Downstream Trunk System and SAPS

The North Interceptor Trunk (NIT) and South Interceptor Trunk (SIT) are the City's two primary sanitary trunks and receive flows from most of the City, including most of the assessed intensification areas. The trunks are connected by a 750 mm sewer near Sturgeon Road and Burns Street and ultimately discharge to the St. Albert Pump Station (SAPS), which has an ultimate capacity of 2,400 L/s.

Both the NIT and SIT are surcharged during the existing 5-year PWWF, and some nodes exhibit surface flooding during the 25-year PWWF scenario. These constraints were previously identified in the UMP and are exacerbated by upstream intensification. The UMP upgrades, including I&I mitigation in upstream areas and increasing the downstream orifice along the NIT from 325 mm to 650 mm, substantially improve capacity. These upgrades resolve capacity issues and surface-flooding concerns withing the SIT. Although surface flooding risk in the NIT is also mitigated, the NIT remains surcharged, constraining the upstream system along St. Albert Trail. The results also indicate that a significant volume of flow is transferred from the SIT to the NIT through the 750 mm connection, contributing to the capacity issues in the NIT.

Additionally, the modelled maximum inflow to SAPS exceeds 2,400 L/s under both future system scenarios as shown in **Table 10**. Based on the UMP model, the maximum peak flow to the SAPS was reaching 2,300 L/s in the ultimate system with upgrades. With the significant increase in flows due to intensification, it can be expected that the SAPS capacity is exceeded.

The downstream constraint does not mean that intensification cannot proceed. These results represent the ultimate buildout of the assessed intensification areas, while growth is expected to occur gradually over many years, allowing downstream flows and remaining capacity to be monitored as redevelopment progresses. Intensification can proceed where the required local sewer upgrades have been completed and local capacity has been demonstrated. As planned intensification proceeds, sanitary-flow monitoring should be used to confirm existing flows to the SAPS and evaluate capacity within both trunks to determine when storage or system-control improvements may be required.

Table 10 – Modelled Flow to SAPS

Scenario	Maximum Total Inflow at SAPS (L/S)
1a – Existing System PWWF 1:5-Year Event	1,798
1b – Existing System PWWF 1:25-Year Event	1,883
2 – Future System with UMP Upgrades	2,512
3 – Future System with Additional Upgrades	2,540

Ultimately, the peak flows reaching SAPS will need to be reduced or the capacity of SAPS increased. Because I&I mitigation is already incorporated into the model, further reductions in peak flow would need to be achieved by additional storage within the upstream system. Potential options include the following:

- The NIT currently includes five flow-control orifices intended to provide storage within the trunk and attenuate downstream peak flows. The size or operation of the existing NIT flow-control orifices may

be modified to make greater use of available storage within the trunk and reduce peak flows to the SAPS.

- The SIT appears to have excess capacity. Reconfiguring the NIT–SIT connection or associated controls to retain more flow within the SIT may relieve the surcharging with the NIT. Additionally, introducing flow control on the SIT to temporarily store flow upstream would increase peak flows to the SAPS.
- Providing dedicated in-line or off-line sanitary storage at other suitable locations to relieve the NIT and the SAPS.

The locations, sizes, physical configurations, operating conditions, and intended flow rates of the existing NIT orifices should be confirmed before any control modifications or required storage volumes are established. Although some surcharging within the NIT may be acceptable and is inherent to its use for storage, any changes must ensure that increased surcharge does not create backup or basement-flooding risks within upstream systems. Similarly, retaining additional flow within the SIT would require confirmation that it can be accommodated without creating new capacity or flooding concerns.

4.4.3 Additional Upgrades

The additional local sanitary sewer upgrades identified through the modelling are summarized in **Table 11** and shown on **Figure 5**. Each improvement was assigned an upgrade ID. New improvements are identified as “UPG-XX”, while revisions to UMP upgrades retain the applicable UMP identifier with the prefix “NEW” added on (e.g. NEW-GS-01).

In addition to the gravity sewer upgrades, Gate Avenue Lift Station was assumed to be further upgraded to an ultimate capacity of 125 L/s. These improvements in addition to the UMP proposed improvements and I&I mitigation generally resolve the local capacity constraints identified under the future intensification scenario.

Table 11 – Additional Wastewater System Improvements

Upgrade ID	Proposed Upgrade	Location
UPG-01	Upsize approximately 30 m of existing sewer to 250 mm.	Erin Ridge Drive and Inglewood Drive, from MH 1436002 to MH 2033002
UPG-02	Upsize approximately 205 m of existing sewer to 300 mm.	Inglewood Drive, from MH 2033002 to MH 2024000
UPG-03	Upsize approximately 305 m of existing sewer to 375 mm.	Inglewood Drive and Bellrose Drive, from MH 2024000 to MH 2025006
NEW-GS-08	Revised sizing of UMP upgrade GS-08; further increase the proposed UMP pipe size by upsizing approximately 285 m of existing sewer to 450 mm.	Bellrose Drive, from MH 2025006 to MH 2012000
NEW-GS-01	Further upsizing of part of UMP upgrade GS-01, with the upgrade extended farther downstream; upsize approximately 280 m of existing sewer to 600 mm.	St. Albert Trail from McKenney Avenue to St. Vital Avenue, from MH 2012000 to MH 02

Upgrade ID	Proposed Upgrade	Location
UPG-04	New upgrade extending from UMP upgrade GS-07; upsize approximately 30 m of existing sewer to 250 mm.	Diagonal sewer at the intersection of Garden Road and Grosvenor Boulevard, from MH 1905016 to MH 1905010
NEW-GS-06	Revised sizing of part of UMP upgrade GS-06; further upsize approximately 170 m of existing sewer to 300 mm.	Intersection of St. Albert Trail and Gervais Road, from MH 1596008 to MH 1596004
NEW-GS-10	Revised sizing of part of UMP upgrade GS-10; further upsize approximately 165 m of existing sewer to 300 mm.	Sheridan Drive, from MH 1611000 to MH 1611004

325000

5942000

Jensen Lakes LS
Oakmont LS
SAPS
Rivercrest LS
Twilight LS
Grinder Station
Riverside Temp LS2
Riverside Temp LS1
Fire Hall LS
Riel LS
Gate Avenue LS

St. Albert Trail
St. Albert Trail

633
633
2
2

#16
#12
#13
#6
#6
#9
#6
#14
#6
#11
#6
#8
#6
#10
#7
#6
#7
#6
#15
#15
#15
#5
#4
#4
#2
#1
#3
#3
#3

Inglewood
Woodlands
Lacombe Park #2
Lacombe Park #1
Braeside #2
Mission #3
Pineview
Mission #1
Mission #2
Braeside #1
Forest Lawn
Sturgeon Heights #2
Akinsdale
The Gardens #1
Sturgeon Heights #1
The Gardens #2
The Gardens #3
Anthony Henday
Mistatim

0 1,000 2,000
1:20,749 METRES

LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- NORTH INTERCEPTOR TRUNK (NIT)
- SOUTH INTERCEPTOR TRUNK (SIT)
- LIFT STATIONS
- FORCEMAIN
- PUMPS

MANHOLES

MAXIMUM HGL RELATIVE TO GROUND

- MORE THAN 3.0 m BELOW GROUND
- BETWEEN 0.0 m AND 3.0 m BELOW GROUND
- SURFACE FLOODING

SEWERS

MAXIMUM / FULL DEPTH (d/D)

- d/D ≤ 0.86
- 0.86 < d/D < 1.00
- d/D = 1.00

REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WASTEWATER SYSTEM RESULTS
SCENARIO 1A - EXISTING SYSTEM PWWF 1:5-YEAR EVENT

CONSULTANT

wsp

YYYY-MM-DD	2026-09-06
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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Jensen Lakes LS
Oakmont LS
SAPS
Rivercrest LS
Twilight LS
Grinder Station
Riverside Temp LS2
Riverside Temp LS1
Fire Hall LS
Riel LS
Gate Avenue LS

St. Albert Trail
St. Albert Trail

633
633
2
2

#16
#12
#13
#6
#9
#14
#11
#8
#10
#7
#15
#5
#4
#2
#1
#3

Inglewood
Lacombe Park #2
Lacombe Park #1
Mission #3
Mission #1
Mission #2
Braeside #1
Braeside #2
Woodlands
Pineview
Forest Lawn
Sturgeon Heights #2
Sturgeon Heights #1
Akinsdale
The Gardens #1
The Gardens #2
The Gardens #3
Anthony Henday
Mistatim

0 1,000 2,000
METRES
1:20,749

LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- NORTH INTERCEPTOR TRUNK (NIT)
- SOUTH INTERCEPTOR TRUNK (SIT)
- LIFT STATIONS
- FORCEMAIN
- PUMPS

MANHOLES

MAXIMUM HGL RELATIVE TO GROUND

- MORE THAN 3.0 m BELOW GROUND
- BETWEEN 0.0 m AND 3.0 m BELOW GROUND
- SURFACE FLOODING

SEWERS

MAXIMUM / FULL DEPTH (d/D)

- d/D ≤ 0.86
- 0.86 < d/D < 1.00
- d/D = 1.00

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WASTEWATER SYSTEM RESULTS
SCENARIO 1B - EXISTING SYSTEM PWWF 1:25-YEAR EVENT

CONSULTANT

YYYY-MM-DD	2026-09-06
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

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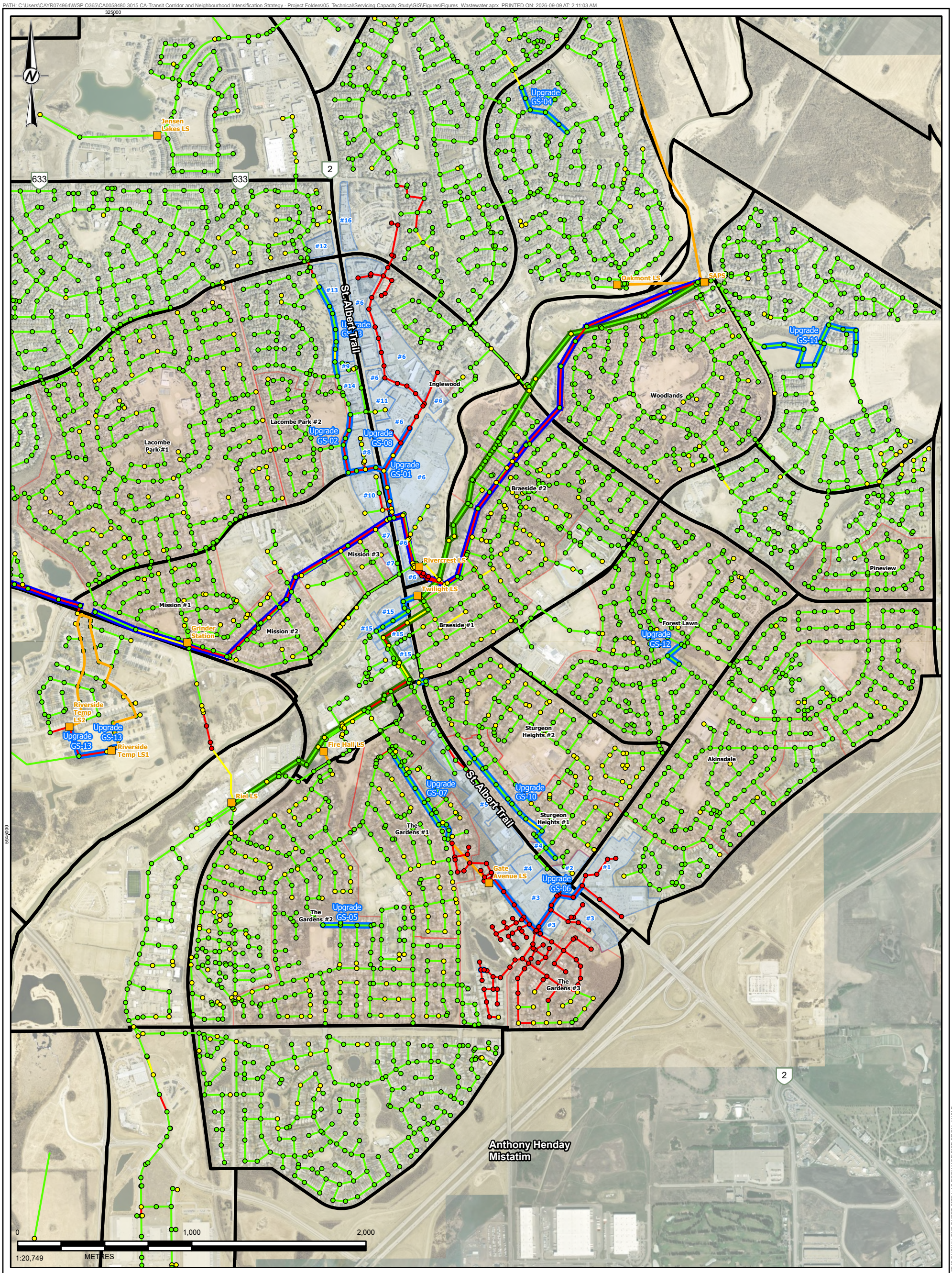
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LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- UMP UPGRADES
- NORTH INTERCEPTOR TRUNK (NIT)
- SOUTH INTERCEPTOR TRUNK (SIT)
- LIFT STATIONS
- FORCEMAIN
- PUMPS

MANHOLES

MAXIMUM HGL RELATIVE TO GROUND

- MORE THAN 3.0 m BELOW GROUND
- BETWEEN 0.0 m AND 3.0 m BELOW GROUND
- SURFACE FLOODING

SEWERS

MAXIMUM / FULL DEPTH (d/D)

- d/D ≤ 0.86
- 0.86 < d/D < 1.00
- d/D = 1.00

REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WASTEWATER SYSTEM RESULTS
SCENARIO 2 - FUTURE SYSTEM PWWF WITH UMP UPGRADES

CONSULTANT

wsp

YYYY-MM-DD	2026-09-09
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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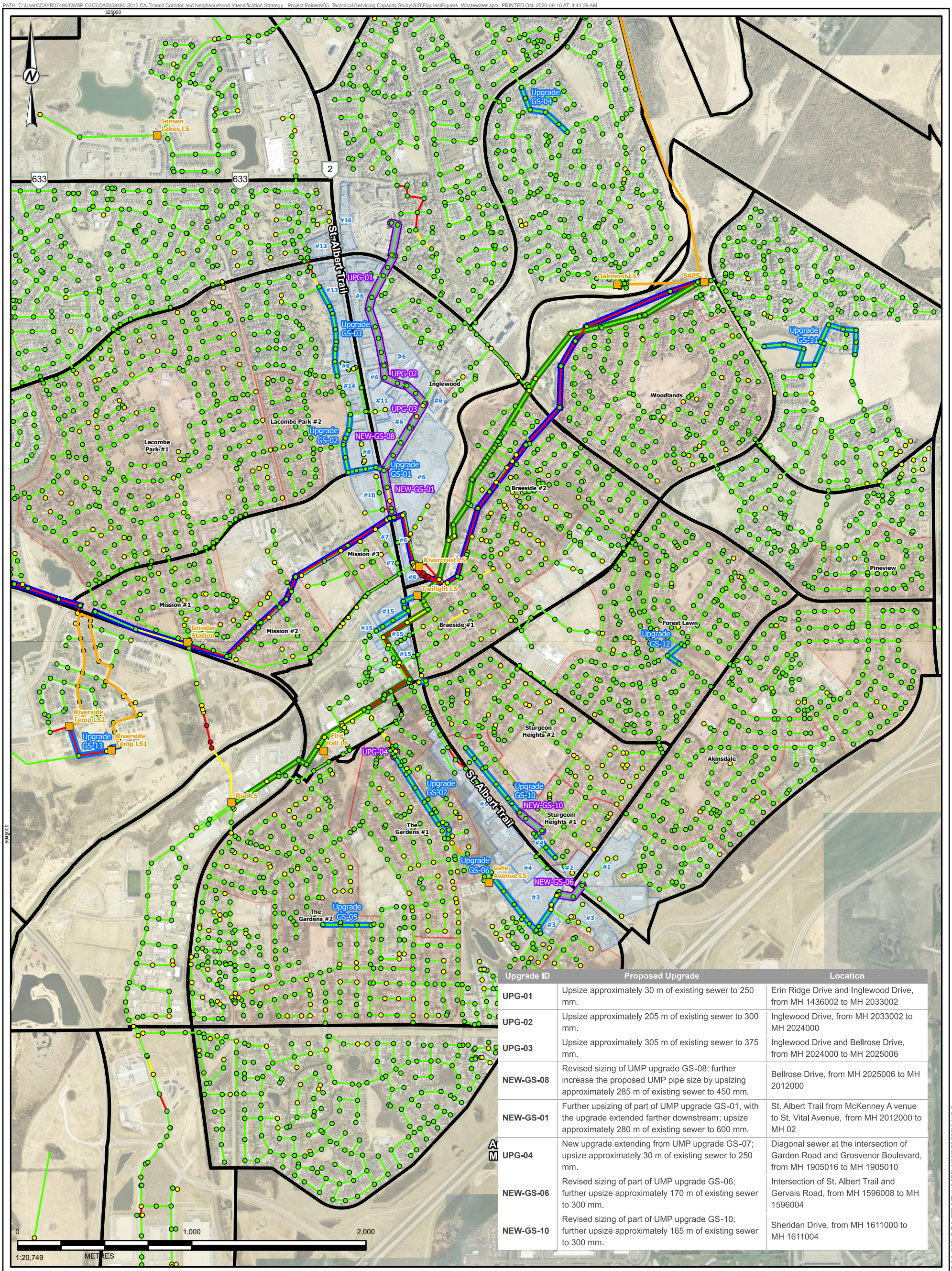
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Upgrade ID	Proposed Upgrade	Location
UPG-01	Upsize approximately 30 m of existing sewer to 250 mm.	Erin Ridge Drive and Inglewood Drive, from MH 1436002 to MH 2033002
UPG-02	Upsize approximately 205 m of existing sewer to 300 mm.	Inglewood Drive, from MH 2033002 to MH 2024000
UPG-03	Upsize approximately 305 m of existing sewer to 375 mm.	Inglewood Drive and Bellrose Drive, from MH 2024000 to MH 2025006
NEW-GS-08	Revised sizing of UMP upgrade GS-08; further increase the proposed UMP pipe size by upsizing approximately 285 m of existing sewer to 450 mm.	Bellrose Drive, from MH 2025006 to MH 2012000
NEW-GS-01	Further upsizing of part of UMP upgrade GS-01, with the upgrade extended farther downstream; upsize approximately 280 m of existing sewer to 600 mm.	St. Albert Trail from McKenney A venue to St. Vital Avenue, from MH 2012000 to MH 02
UPG-04	New upgrade extending from UMP upgrade GS-07; upsize approximately 30 m of existing sewer to 250 mm.	Diagonal sewer at the intersection of Garden Road and Grosvenor Boulevard, from MH 1905016 to MH 1905010
NEW-GS-06	Revised sizing of part of UMP upgrade GS-06; further upsize approximately 170 m of existing sewer to 300 mm.	Intersection of St. Albert Trail and Gervais Road, from MH 1596008 to MH 1596004
NEW-GS-10	Revised sizing of part of UMP upgrade GS-10; further upsize approximately 165 m of existing sewer to 300 mm.	Sheridan Drive, from MH 1611000 to MH 1611004

LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- NORTH INTERCEPTOR TRUNK (NIT)
- SOUTH INTERCEPTOR TRUNK (SIT)
- LIFT STATIONS
- FORCEMAIN
- PUMPS
- UMP UPGRADES
- ADDITIONAL UPGRADES

MANHOLES

MAXIMUM HGL RELATIVE TO GROUND

- MORE THAN 3.0 m BELOW GROUND
- BETWEEN 0.0 m AND 3.0 m BELOW GROUND
- SURFACE FLOODING

SEWERS

MAXIMUM / FULL DEPTH (d/D)

- d/D ≤ 0.86
- 0.86 < d/D < 1.00
- d/D = 1.00

REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WASTEWATER SYSTEM RESULTS
SCENARIO 3 - FUTURE SYSTEM PWWF WITH ADDITIONAL UPGRADES

CONSULTANT

wsp

YYYY-MM-DD	2026-09-10
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0058480.3015		A	5

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5. Water Distribution System

5.1 Design Criteria

The latest City of St. Albert Municipal Engineering Standards (City of St. Albert, 2026) and the previous WMP formed the basis for assessing the water distribution system and determining future upgrades. **Table 12** summarizes the key adopted design criteria.

Table 12 – Key Water Distribution System Design Criteria

Design Parameter	Value	Details
Average Day Demand (ADD)	250 L/c/d	Adopted from the WMP
Maximum Day Demand (MDD)	1.8 * ADD	Adopted from the WMP
Peak Hour Demand (PHD)	3 * ADD	Adopted from the WMP
Non-Residential Demand	25,000 L/ha/day	
Normal Operating Pressure	350 kPa to 700 kPa	ADD scenario
Minimum Allowable Pressure	280 kPa	PHD scenario
Minimum Allowable Residual Pressure	140 kPa	MDD plus fire flow
Hazen-Williams Roughness Coefficient, C	130	Pipe diameters ≤ 200 mm
	150	Pipe diameters > 200 mm

The adopted ADD and peaking factors are lower than those specified in the current MES. However, the previous WMP determined that these values better represent observed system demands while still remaining conservative for long-term infrastructure planning.

Other applicable standards and guidelines were also reviewed to supplement the City's requirements for water distribution systems. The provincial Standards and Guidelines for Municipal Waterworks, Wastewater, and Storm Drainage System (Government of Alberta, 2012) outline a normal operating range of 350 kPa to 550 kPa under maximum hourly design flow. Pressures above 550 kPa should be avoided and reviewed against the Canadian Plumbing Code to determine building requirement to prevent damage to internal piping. The previous UMP noted that this is a target maximum pressure intended to guide new development, and may not be practical in all existing areas.

The fire flow requirements were adopted from the previous UMP as summarized in **Table 13**.

Table 13 – Fire Flow Requirements (adopted from WMP)

Land Use	Value	Details
Residential	100 L/s	Single family
	180 L/s	Multi-family (row housing)

Land Use	Value	Details
	300 L/s	High density (walk-up and high rise apartments)
Non-Residential	300 L/s	Commercial, industrial, institutional

5.2 Model Scenarios

The water distribution system assessment was completed using the City's hydraulic models developed for the Water Distribution System Master Plan 2020 Update (WMP). For consistency, the assessment used the existing and future WMP model scenarios and generally retained the operating assumptions established in the WMP, such as reservoir and pump station configurations, pressure zone boundaries, and fill-line operations, unless otherwise noted. The modifications made for this assessment were specifically related to the proposed intensification demands.

The assessment focused on analyzing the existing water distribution system under PHD and MDD + FF conditions, with proposed intensification incorporated. This assessment allowed the effects of intensification to be compared directly with the previous WMP results and determine how much intensification could be accommodated by the existing system without upgrades.

Intensification demands were then incorporated into the future system model, which reflects ultimate build-out conditions for the City, and incorporates the system upgrades proposed in the WMP such as the new Sturgeon Heights Reservoir and Pump Station, Oakmont Pump Station upgrades, pressure management improvements, and future system expansions. This scenario was used to evaluate how the proposed WMP improvements improve the available capacity for intensification and to identify any remaining system deficiencies. The scenarios are summarized in **Table 14**.

Table 14 – Summary of Waster Distribution System Model Scenarios[1]

Scenario		Description	Objective
1 – Existing System	1a – PHD	Existing WMP model PHD scenario with additional demands from intensification.	Assess the incremental effects of intensification on the existing water distribution system relative to the WMP and identify areas which can accommodate intensification without upgrades.
	1b –MDD + FF	Existing WMP model MDD + FF scenario with additional demands from intensification.	
2 – Future System with WMP Upgrades	2a –PHD	Future system model with UMP incorporated. Modelled PHD reflects ultimate-build out and proposed intensification.	Evaluate how the proposed WMP upgrades improve the available capacity for intensification and identify any remaining constraints.
	2b –MDD + FF	Future system model with WMP upgrades incorporated. Modelled MDD + FF reflects ultimate-build out and proposed intensification.	

Notes:

1. All scenarios retain the operating assumptions and infrastructure configurations established in the WMP models unless otherwise noted.

5.3 Model Updates/Loading

The estimated increase in population was as described in **Section 3.1**. The design parameters summarized in **Table 12** were used to estimate the corresponding increase in demands for the MDD and PHD scenarios. For the LDR areas, the estimated intensification demands were distributed among model nodes within each neighbourhood and added to the existing model demands. The resulting additional LDR demands are summarized in **Table 15**. For the TCC areas, the estimated future demands were distributed among model nodes within each area and replaced the corresponding existing demands. The assigned future TCC demands are summarized in **Table 16**.

The water distribution system comprises seven pressure zones as shown in **Appendix B**. The proposed intensification is distributed across several zones, however, most of the increased demand is located within Zones 101 and 105.

Table 15 – Additional LDR Intensification Demands[1]

Neighborhood	MDD (L/s)	PHD (L/s)
Akinsdale	0.99	1.66
Braeside	1.07	1.78
Forest Lawn	0.85	1.42
Inglewood	0.04	0.06
Lacombe Park	1.56	2.60
Mission	0.93	1.55
Pineview	0.04	0.06
Sturgeon Heights	1.10	1.84
The Gardens[2]	2.09	3.49
Woodlands	0.35	0.59
Total	**9.03**	**15.05**

Notes:

1. Assuming an ADD of 250 L/c/d, with peaking factors of 1.8 and 3.0 for MDD and PHD, respectively.
2. The Gardens was formerly known as the Grandin neighborhood.

Table 16 – TCC Intensification Demands

TCC Area	Additional Demands (L/s)[1]	
	MDD	PHD
TCC #1	20.53	34.22
TCC #2	2.80	4.67
TCC #3	24.35	40.59
TCC #4	4.14	6.89
TCC #5	17.93	29.88
TCC #6	80.65	134.41
TCC #7	2.24	3.73
TCC #8	2.40	3.99
TCC #9	1.10	1.84

TCC Area	Additional Demands (L/s)[1]	
	MDD	PHD
TCC #10	7.31	12.19
TCC #11	4.65	7.74
TCC #12	3.67	6.11
TCC #13	11.34	18.91
TCC #14	10.40	17.33
TCC #15	10.16	16.93
TCC #16	4.97	8.28
Total	**208.63**	**347.71**

Notes:

1. Assuming an ADD of 250 L/c/d, with peaking factors of 1.8 and 3.0 for MDD and PHD, respectively.

5.4 Water Distribution System Assessment

5.4.1 Existing System Model Results

Peak Hour Demand

The updated model was used to assess the change in system pressures under the PHD scenario before and after intensification. Both scenarios retained the operating assumptions established in the WMP, including reservoir operations, pressure zone boundaries, pressure-reducing valve settings, and fill-line operations. Pump station operations also remained unchanged, with the exception of the Sturgeon Heights Pump Station configuration discussed below.

Zones 101 and 105 contain much of the increased demand and are supplied by the Sturgeon Heights, Oakmont, and Lacombe Park reservoir and pump stations. Zone 101 also represents the area served by the Grandin Booster Station. As noted in the WMP, the Grandin Booster Station was assumed not to be operating because it is typically operated only during the summer months. This assumption was retained for both scenarios.

The Sturgeon Heights Pump Station configuration was adjusted for the intensification scenarios to reflect the increase in demand. The appropriate configuration was assigned based on the pumping setpoints adopted from the WMP and summarized in **Table 17**. Before intensification, Pumps 1, 3, and 4 were assumed to operate under the PHD scenario. After intensification, demands increase significantly, and Pumps 1, 2, and 6 are assumed to operate.

Table 17 – Sturgeon Heights Pumping Setpoints (Adopted from WMP)

Pumping Setpoint	Value
Pumping High Pressure Setpoint	456.00 kPa
Pumping Low Pressure Setpoint	406.05 kPa
Pumping Start P1, P5 Flow Setpoint	115.05 L/s
Pumping Start P4, P5 Flow Setpoint	208.95 L/s

Pumping Setpoint	Value
Pumping Start P1, P3, P4 Flow Setpoint	280.05 L/s
Pumping Start P1, P2, P6 Flow Setpoint	460.05 L/s
Pumping Stop P1, P3, P4 Flow Setpoint	390.00 L/s
Pumping Stop P4, P5 Flow Setpoint	250.05 L/s
Pumping Stop P1, P5 Flow Setpoint	160.05 L/s
Pumping Stop P5 Flow Setpoint	100.05 L/s
Pumping All Off Flow Setpoint	4.95 L/s

The total system demand under the PHD scenario increases to approximately 930 L/s after intensification. As summarized in **Table 18**, the three distribution pump stations have a combined pumping capacity of approximately 1,089 L/s. Therefore, the existing pump stations have sufficient combined capacity to meet the projected existing system PHD following intensification.

Table 18 – Total Distribution System Pumping Capacity (Adopted from WMP)

Pump Station	Total Distribution Pumping Capacity (L/s)[1]
Sturgeon Heights	549
Oakmont	210
Lacombe	330
Total	**1,089**

Notes:

1. The WMP assessed distribution pumping capacity up to the 2045 planning horizon.

Model results are presented in **Figure 6** and summarized in **Table 19**. The greatest pressure reductions occur in Zones 101 and 105, where most of the increased demand is concentrated. Both the minimum and maximum pressures decrease by 49 kPa in Zone 101 and by 59 kPa in Zone 105. Despite these reductions, the minimum pressures remain above the PHD criterion of 280 kPa.

The pressure reductions are an expected response to the significant increase in system flows, which increases headloss through the system. The change in pump configuration at the Sturgeon Heights Pump Station also contributes to the reduction. The modelled discharge hydraulic grade at the station decreases by approximately 4 m, from 738 m before intensification to 734 m after intensification, under the revised pump configuration.

Pressure changes in the other zones are negligible. Overall, the proposed intensification does not create any new pressure deficiencies under the assessed PHD scenario. The distribution system continues to satisfy the minimum PHD pressure criterion in the areas affected by intensification. Despite the significant increase in demand, operation of the Grandin Booster Station is not required.

Table 19 – Existing System Peak Hour Demand Results

Zone	Before Intensification		After Intensification		Intensification
	Min. Pressure (kPa)	Max. Pressure (kPa)	Min. Pressure (kPa)	Max. Pressure (kPa)	
100	370	537	370	538	Inglewood
101	362	487	313	438	TCC #3 and The Gardens #3
102	421	683	421	683	No intensification with zone
103	338	551	338	550	Portions of Mission #2, Mission #3, and TCC #6 and #7
104	278	559	278	560	Parts of Braeside #1 and #2, Woodlands, and TCC #15
105	395	834	336	775	Most intensification areas, including portions of Akinsdale, Braeside, Forest Lawn, Lacombe Park, Mission, Pineview, Sturgeon Heights, The Gardens, Woodlands, and most of the TCC areas.
106	386	562	386	562	No intensification with zone

Maximum Day Demand Plus Fire Flow

The MDD plus fire flow scenario was used to assess available fire flow after intensification; model results are presented in **Figure 7**.

The model results generally indicate that intensification has minor impact on available fire flow. Many nodes show no measurable change in fire flow, and among nodes where fire flow availability does decrease, most reductions are between 4% and 6%. This slight reduction is attributed to the increase in MDD due to intensification.

It is noted that the required fire flow at each node does not change because the same land-use based fire flows requirements apply before and after intensification. The increase in MDD is also relatively small compared with the required fire flows. As a result, intensification causes only a minor reduction in available fire flow. **Appendix C** presents a comparison of fire flow availability before and after intensification for each node in the proposed intensification areas.

As indicated in the WMP, most locations within the distribution system satisfy the applicable fire flow requirements, and relatively few deficiencies are identified. Locations that do not satisfy the criteria are generally associated with private infrastructure, including hydrant leads and service lines; however, fire flow capacity is typically evaluated based on public water mains within road rights-of-way, which is generally satisfactory.

Overall, the changes in available fire flow resulting from intensification are relatively minor, and the general conclusions of the WMP remain applicable. The proposed intensification does not introduce any major fire flow deficiencies or adversely affect system performance beyond the conditions identified in the WMP. The existing system upgrades previously recommended in the WMP remain sufficient to accommodate the projected intensification, and additional upgrades are not required.

5.4.2 Ultimate System Model Results

Peak Hour Demand

The ultimate system model developed for the WMP represents the system growth and population projected for 2077. Although the WMP ultimate scenario accounted for some intensification, the intensification assessed in this study is more extensive and results in higher demands. The modelled system PHD increases from approximately 1,224 L/s under the WMP ultimate scenario to 1,480 L/s with the intensification assessed in this study.

Model results are presented in **Figure 8** and modelled system pressures before and after intensification are summarized in **Table 20**. As with the existing scenario, the greatest changes in PHD pressures occur in Zones 101 and 105, where most of the assessed intensification is located. Minimum pressure decreases by 15 kPa in Zone 101 and by 17 kPa in Zone 105. Pressure changes in the other zones are negligible. Following intensification, the minimum pressure in each zone remains at or above the minimum required pressure of 280 kPa. The results indicate that the assessed intensification does not create any pressure deficiencies within the ultimate distribution system under the PHD scenario.

Table 20 – Ultimate System Peak Hour Demand Results

Zone	Before Intensification		After Intensification	
	Min. Pressure (kPa)	Max. Pressure (kPa)	Min. Pressure (kPa)	Max. Pressure (kPa)
100	346	514	346	514
101	333	458	318	443
102	345	609	345	609
103	341	555	340	553
104	280	562	280	560
105	360	788	343	772
106	362	549	362	549
107	343	630	343	630
108	369	614	369	614
109	374	592	374	592

The WMP assessed distribution pumping capacity to the 2045 planning horizon. The projected PHD for 2045 was approximately 813 L/s and already accounted for some proposed intensification. As

summarized in **Table 18**, the WMP identified a combined distribution pumping capacity of 1,089 L/s, representing a 276 L/s of surplus pumping capacity under the 2045 PHD scenario.

The ultimate scenario assessed in this study represents more extensive intensification together with system-wide growth to 2077. As development proceeds beyond 2045, pumping and storage requirements should be confirmed based on actual growth, system operation, and updated demand projections. Future infrastructure planning should account for the additional intensification demands identified in this study.

Maximum Day Demand Plus Fire Flow

The MDD plus fire flow scenario was used to assess available fire flow in the ultimate system before and after intensification. Model results are presented in **Figure 9**.

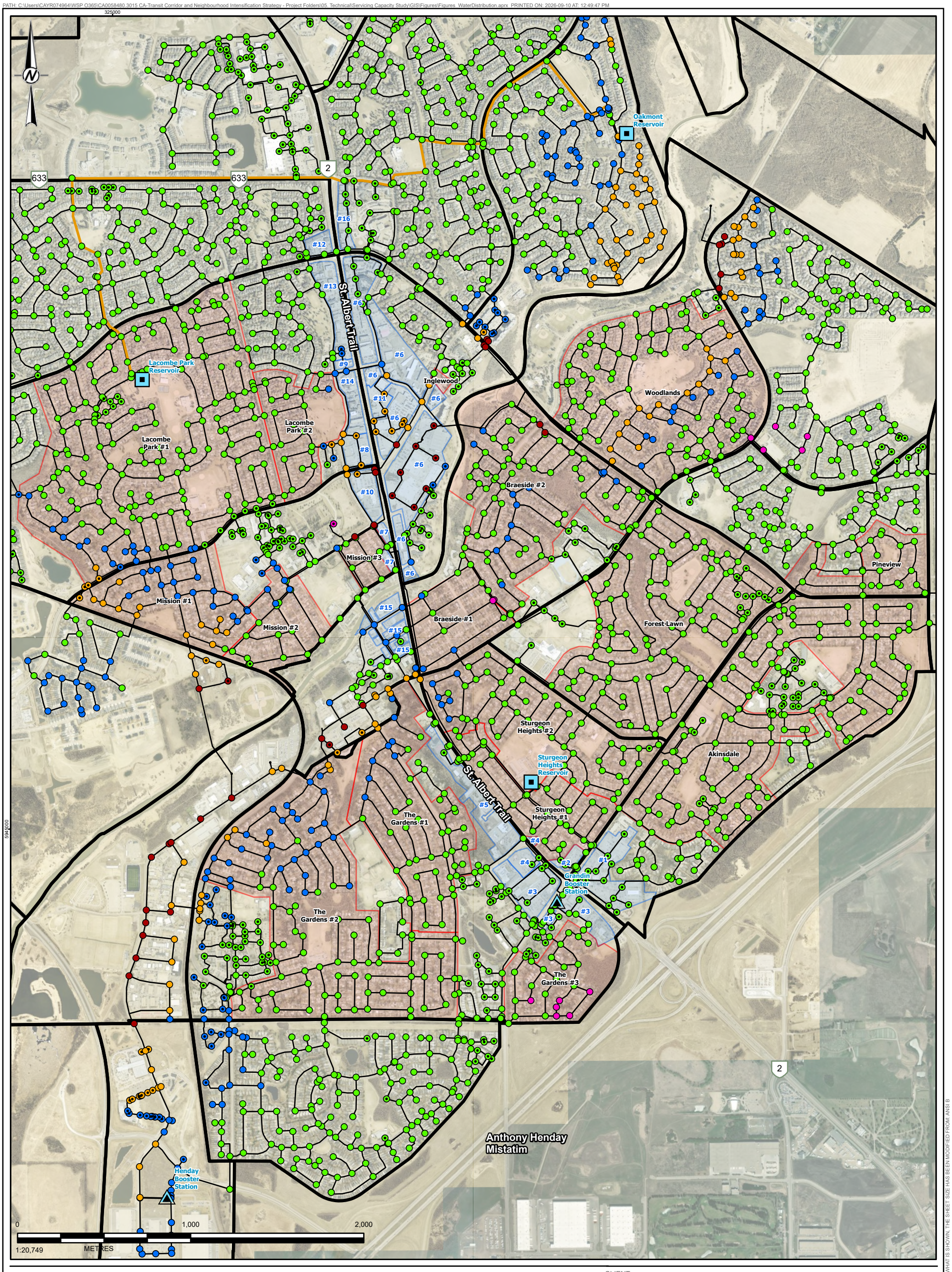
Similar to the existing scenario, the results indicate that intensification has a minor effect on available fire flow. Many locations show no measurable change before and after intensification, while the remaining nodes generally show only a slight decrease attributed to the increase in MDD. **Appendix D** presents a comparison of fire flow availability before and after intensification for each node in the proposed intensification areas.

The ultimate system has fewer fire flow deficiencies than the existing system, both before and after intensification. This improvement reflects the infrastructure upgrades incorporated into the WMP ultimate system. Most locations satisfy the applicable fire flow requirements, and intensification does not introduce any major new deficiencies.

As recommended in the WMP, watermains should be upgraded to the minimum sizes required by the City's standards as future development and replacement of aging infrastructure occurs. This includes minimum diameters of 150 mm in residential areas and 300 mm in non-residential areas. These upgrades will continue to improve fire flow capacity, particularly within the TCC areas. Overall, the planned ultimate system improvements remain sufficient to accommodate the assessed intensification of fire flow requirements.

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LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- RESERVOIR AND PUMPHOUSE
- BOOSTER STATION
- WATERMAINS
- LACOMBE PARK FILL LINE

PEAK HOUR DEMAND (PHD) PRESSURE

- < 280 KPA
- 280 KPA - 350 KPA
- 350 KPA - 550 KPA
- 550 KPA - 620 KPA
- 620 KPA - 689 KPA
- > 689 KPA
- NODES CONSIDERED TO BE WITHIN PRIVATE PROPERTY

REFERENCE(S)

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CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WATER DISTRIBUTION SYSTEM RESULTS SCENARIO 1A - EXISTING SYSTEM PHD

CONSULTANT

wsp

YYYY-MM-DD	2026-09-10
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

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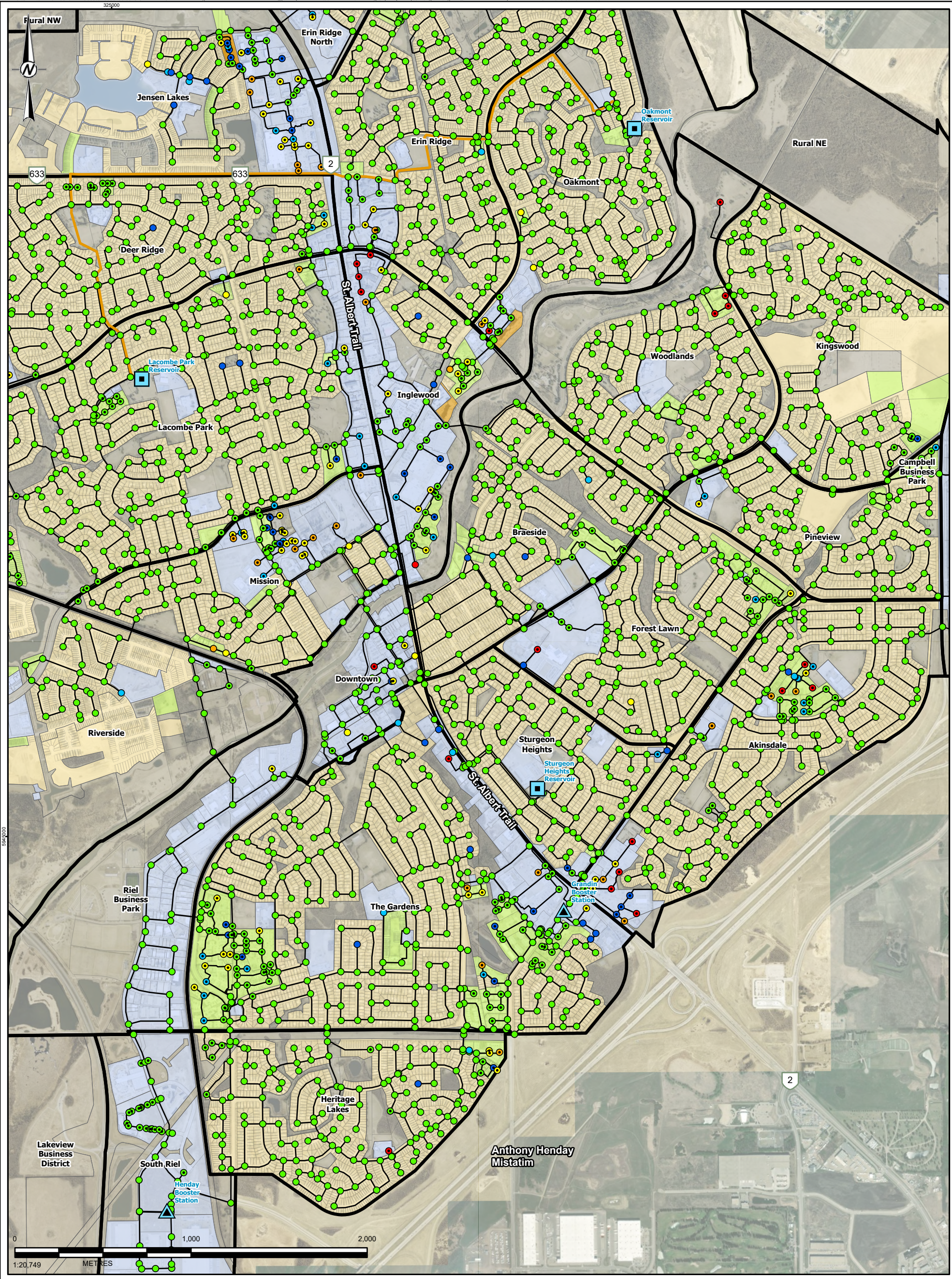
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LEGEND

- PARCELS
- NEIGHBOURHOOD BOUNDARY
- BOOSTER STATION
- RESERVOIR AND PUMPHOUSE
- WATERMAINS
- LACOMBE PARK FILL LINE

REQUIRED FIRE FLOW BY LAND-USE

- LOW DENSITY RESIDENTIAL (100 L/S)
- MEDIUM DENSITY RESIDENTIAL (180 L/S)
- HIGH DENSITY RESIDENTIAL (300 L/S)
- COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (300 L/S)

FIRE FLOW AVAILABILITY

- MEETS/EXCEEDS FIRE FLOW REQUIREMENTS
- 90% - 99%
- 80% - 90%
- 60% - 80%
- 40% - 60%
- 0% - 40%
- NODES CONSIDERED TO BE WITHIN PRIVATE PROPERTY

REFERENCE(S)

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CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WATER DISTRIBUTION SYSTEM RESULTS SCENARIO 1B - EXISTING SYSTEM MDD + FF

CONSULTANT

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DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

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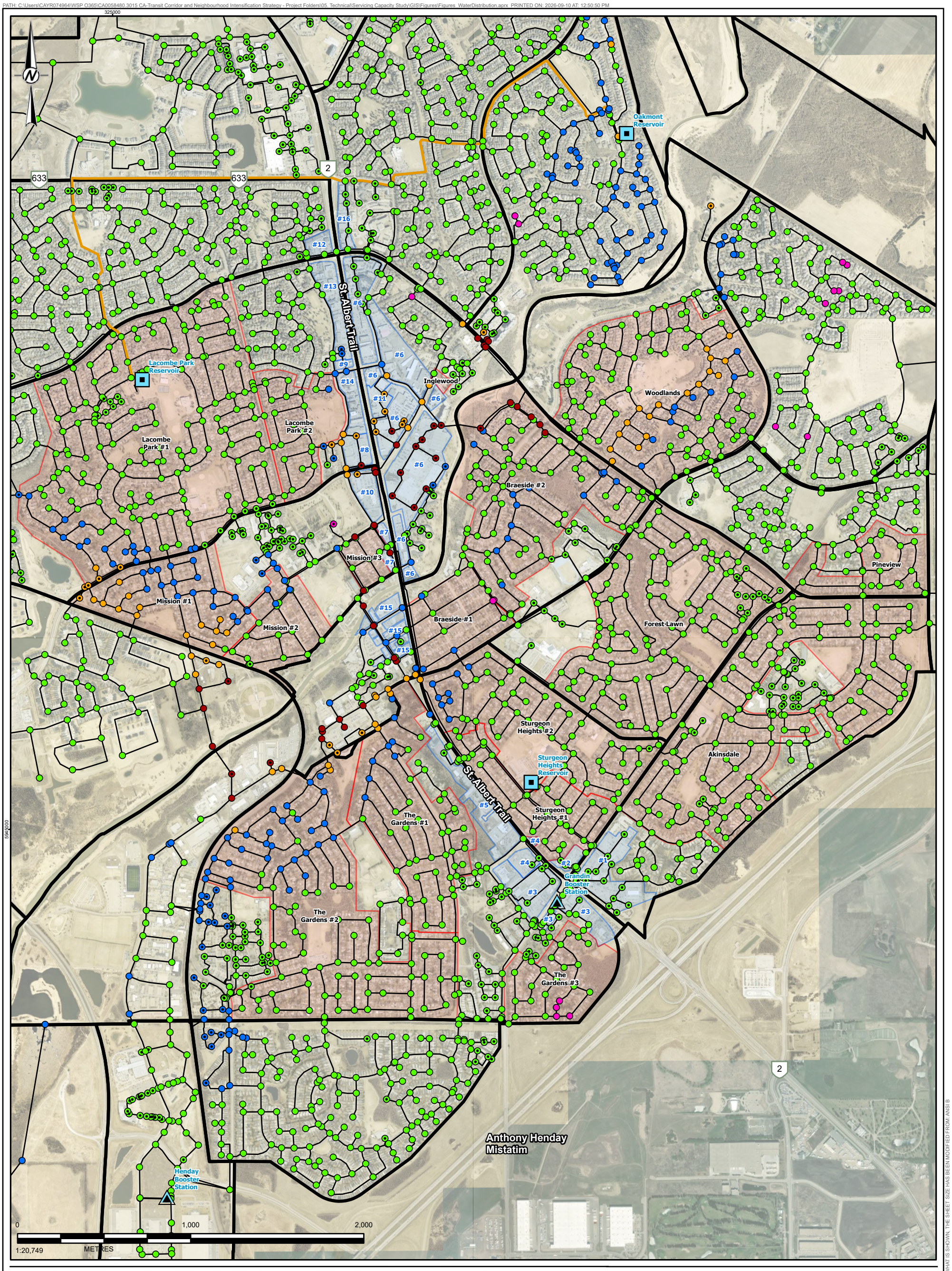
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LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- RESERVOIR AND PUMPHOUSE
- BOOSTER STATION
- WATERMAINS
- LACOMBE PARK FILL LINE

PEAK HOUR DEMAND (PHD) PRESSURE

- < 280 KPA
- 280 KPA - 350 KPA
- 350 KPA - 550 KPA
- 550 KPA - 620 KPA
- 620 KPA - 689 KPA
- > 689 KPA
- NODES CONSIDERED TO BE WITHIN PRIVATE PROPERTY

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CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WATER DISTRIBUTION SYSTEM RESULTS
SCENARIO 2A - FUTURE SYSTEM WITH WMP UPGRADES PHD

CONSULTANT

YYYY-MM-DD	2026-09-10
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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Rural NW
Erin Ridge North
Jensen Lakes
Erin Ridge
Oakmont Reservoir
Rural NE
Oakmont
633
633
2
Deer Ridge
St. Albert Trail
Lacombe Park Reservoir
Inglewood
Woodlands
Kingswood
Lacombe Park
Campbell Business Park
Braeside
Pineview
Mission
Forest Lawn
Downtown
Riverside
Sturgeon Heights
Akinsdale
Sturgeon Heights Reservoir
St. Albert Trail
Grandin Booster Station
Riel Business Park
The Gardens
Heritage Lakes
2
Lakeview Business District
South Riel
Anthony Henday Mistatim
Henday Booster Station

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LEGEND

- PARCELS
- NEIGHBOURHOOD BOUNDARY
- BOOSTER STATION
- RESERVOIR AND PUMPHOUSE
- WATERMAINS
- LACOMBE PARK FILL LINE

REQUIRED FIRE FLOW BY LAND-USE

- LOW DENSITY RESIDENTIAL (100 L/S)
- MEDIUM DENSITY RESIDENTIAL (180 L/S)
- HIGH DENSITY RESIDENTIAL (300 L/S)
- COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (300 L/S)

FIRE FLOW AVAILABILITY

- MEETS/EXCEEDS FIRE FLOW REQUIREMENTS
- 90% - 99%
- 80% - 90%
- 60% - 80%
- 40% - 60%
- 0% - 40%
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CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WATER DISTRIBUTION SYSTEM RESULTS
SCENARIO 2B - FUTURE SYSTEM WITH WMP UPGRADES MDD + FF

CONSULTANT

YYYY-MM-DD	2026-09-10
DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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6. Storm System

6.1 Model Scenarios

The stormwater capacity assessment was completed using the City's MIKE+ stormwater model developed as part of the 2022 Wastewater Collection and Stormwater Management System Utilities Master Plan Update (UMP). The assessment compared existing and intensification conditions to evaluate the effects of redevelopment on the performance of the existing minor storm drainage system.

The analysis was completed using the 1:5-year, 4-hour Chicago design storm event, consistent with the stormwater minor system design criteria adopted in the UMP and the City of St. Albert Municipal Engineering Standards (MES).

6.1.1 Existing Conditions

The existing condition model represents the current stormwater system configuration and catchment characteristics as established in the UMP. Model runoff parameters, catchment characteristics, and drainage boundaries were maintained consistently with the approved UMP model.

6.1.2 Intensification Conditions

The intensification scenario incorporated additional imperviousness within selected neighbourhood catchments to represent anticipated low-density residential redevelopment. The objective of this scenario was to evaluate the potential impact of neighbourhood intensification on the existing stormwater drainage system and to identify locations where redevelopment may introduce additional hydraulic constraints.

A comparison of hydraulic performance between the existing and intensification scenarios was completed using key minor system indicators including:

- Peak pipe discharge;
- Pipe surcharge conditions;
- Localized hydraulic performance at neighbourhood outlet locations; and
- Changes in downstream system response.

6.1.3 Future Stormwater System Considerations

The UMP identified several conceptual stormwater improvements within the existing urban area, including localized storage facilities, major and minor system enhancements, and future drainage

infrastructure associated with growth areas. These recommendations were developed at a planning level and were not incorporated into the future-condition stormwater model as implemented infrastructure.

The future servicing strategy and associated stormwater infrastructure were reviewed to determine whether the future-condition model should be assessed as part of this study. Particular attention was given to the Deer Ridge drainage area, which the UMP identified as the existing neighbourhood most likely to be influenced by future drainage infrastructure. Review of the proposed servicing concept indicated that runoff associated with future development north of Villeneuve Road is directed toward new conveyance infrastructure and stormwater management facilities and does not measurably affect the neighbourhood drainage systems evaluated as part of this assessment.

Accordingly, the assessment focused on the existing stormwater system and evaluated the localized effects of neighbourhood intensification through modifications to catchment imperviousness. This approach is consistent with the planning-level intent of the study and the servicing strategy outlined in the UMP.

6.2 Model Updates

Unlike the wastewater assessment, proposed redevelopment was represented through modifications to catchment imperviousness rather than the addition of new loading nodes. This approach reflects the primary mechanism by which redevelopment influences stormwater systems, namely increased runoff generation resulting from reduced infiltration and surface storage.

The assessment considered both neighbourhood intensification within established low-density residential (LDR) areas and redevelopment within the Trail Corridor Commercial (TCC) areas.

6.2.1 Neighbourhood Intensification

Neighbourhood intensification was represented by modifying catchment imperviousness within the existing MIKE+ stormwater model. The redevelopment assumptions were consistent with those described in **Section 3**, whereby eligible parcels were assumed to redevelop from a single-detached dwelling to two primary dwelling units and associated secondary suites.

The redevelopment percentage for each neighbourhood was determined using the turnover rates described in **Section 3** (10% for pre-1960 developments and 3% for developments constructed between 1960 and 1980). The resulting redevelopment percentage was applied to the total neighbourhood area to estimate an equivalent intensified area.

Existing low-density residential areas were assumed to have an effective imperviousness of approximately 50%, consistent with the assumptions adopted in the UMP. Intensified areas were assigned an imperviousness of 80% to reflect increased building coverage, parking requirements, and reduced pervious area associated with redevelopment.

Because the precise location of future redevelopment is unknown, intensified areas were assigned to representative catchments within each neighbourhood. Where possible, catchments adjacent to

neighbourhood outlet locations or major trunk sewers were selected to conservatively represent the potential increase in runoff entering the downstream storm drainage system.

The neighbourhood intensification assumptions used for the stormwater assessment are summarized in **Table 21**. The redevelopment percentages were calculated using the turnover assumptions described in **Section 3** and applied to the total neighbourhood area to estimate an equivalent intensification area. This intensification area represents the total area assumed to redevelop within each neighbourhood and was subsequently assigned to representative model catchments.

Table 21 – Neighborhood Intensified Area Assumptions

LDR Sub-Area	Total LDR Lots	Total Intensified Lots[1]	Total Area (ha)	Intensified Area (ha)
Akinsdale	925	28	119.4	3.6
Braeside #1	140	11	22.7	1.8
Braeside #2	631	19	79.4	2.4
Forest Lawn	786	24	105.2	3.2
Inglewood	1	1	0.9	0.9
Lacombe Park #1	1389	42	172.7	5.2
Lacombe Park 2	38	2	25.7	1.4
Mission #1	320	10	37.5	1.2
Mission #2	143	12	21.5	1.8
Mission #3	49	4	6.6	0.5
Pineview	24	1	22.6	0.9
Sturgeon Heights #1	259	18	28.3	2.0
Sturgeon Heights #2	400	13	60.4	2.0
The Gardens #1	414	23	54.1	3.0
The Gardens #2	975	30	119.6	3.7
The Gardens #3	187	6	26.8	0.9
Woodlands	311	10	96.7	3.1

Notes:

1. Assuming turnover rates of 10% for pre-1960 parcels and 3% for 1960-1980 parcels.

The modified catchments and associated intensification areas are summarized in **Table 22**. The “Intensified Area (Pending)” column represents the remaining intensification area to be assigned within each neighbourhood after the area of the preceding catchment(s) has been accounted for. Catchments were progressively selected until the cumulative modified catchment area closely matched the target intensification area identified in **Table 21**. Minor positive or negative residual values remain in some neighbourhoods because redevelopment boundaries did not align exactly with the existing MIKE+ catchment boundaries and an exact area match was not always possible.

Table 22 – Modified Catchments and Intensification Areas

Catchment ID	Catchment Neighbourhood	Catchment Area	Overall Intensified Area	Intensified Area (Pending)
S1666	Akinsdale	1.30	3.61	2.31
S1676	Akinsdale	1.63		0.68
S1736_5	Akinsdale	0.68		0.00
S1536	Braeside #1	0.65	1.79	1.13
S885_100	Braeside #1	0.71		0.43
S885_101	Braeside #1	0.36		0.07
S885_1	Braeside #2	2.55	2.39	-0.16
S1388	Forest Lawn	2.89	3.21	0.33
S1461	Forest Lawn	0.39		-0.06
S735	Inglewood	0.81	0.86	0.06
S1245	Lacombe Park #1	3.05	5.22	2.17
S1250	Lacombe Park #1	2.31		-0.14
S1089	Lacombe Park 2	1.22	1.35	0.13
S1479	Mission #1	1.08	1.17	0.09
Catchment_3248_2	Mission #2	1.80	1.80	0.00
S885_54	Mission #3	0.54	0.54	0.00
S1330	Pineview	0.94	0.94	0.00
S1772_2	Sturgeon Heights #1	0.76	1.97	1.20
S1772_1	Sturgeon Heights #1	0.72		0.49
S1747_1	Sturgeon Heights #1	0.49		0.00
S1544_1	Sturgeon Heights #2	1.96	1.96	0.00
S1690_1	The Gardens #1	1.61	3.00	1.39
S1839	The Gardens #1	1.39		0.00
S1804_4	The Gardens #2	3.07	3.68	0.61
S1863	The Gardens #2	0.54		0.07
S1980	The Gardens #3	0.44	0.86	0.42
S1977	The Gardens #3	0.44		-0.02
S815	Woodlands	1.38	3.11	1.73
S846	Woodlands	1.48		0.26
S646	Woodlands	0.28		-0.02

For Mission #2 and Mission #3, the identified intensification areas did not correspond directly to individual model catchments. Accordingly, an area-weighted approach was applied to the host catchments to achieve an equivalent increase in impervious areas while maintaining the existing catchment structure and drainage connectivity. This approach preserved the overall increase in impervious areas associated with redevelopment while maintaining the existing model discretization.

6.2.2 Trail Corridor Commercial Areas

The Trail Corridor Commercial (TCC) areas were reviewed separately from the neighbourhood intensification areas. Unlike the low-density residential neighbourhoods, the TCC areas are generally

already characterized by a high degree of impervious cover associated with existing commercial development, including building footprints, parking lots, internal roadways, and other paved surfaces.

As a result, no modifications to catchment imperviousness were incorporated within the stormwater model for the TCC areas. Existing imperviousness values contained within the UMP model were retained, as redevelopment within these areas is not anticipated to result in a material increase in overall effective imperviousness at the planning level.

Accordingly, the stormwater assessment focused on neighbourhood intensification areas where redevelopment is expected to replace existing LDR development with more intensive forms of housing, resulting in a measurable increase in impervious area and stormwater runoff generation.

6.3 Storm Model Results

6.3.1 Outlet Pipe Assessment

Hydraulic performance was assessed at representative outlet pipes within each neighbourhood drainage area under the 1:5-year, 4-hour Chicago design storm event; model results are illustrated in **Figure 10**. Existing and intensified model conditions were compared to evaluate potential changes in surcharge behaviour resulting from the proposed redevelopment. Representative outlet pipes were selected for each neighbourhood drainage area to assess the potential effect of intensification on downstream hydraulic performance.

The assessment focused on whether intensification resulted in a change to the surcharge condition of the identified outlet pipes. Surcharge conditions were classified based on the simulated hydraulic grade line relative to ground elevation.

Results of the outlet pipe assessment are provided in **Table 23**.

Table 23 – Comparison of Outlet Pipe Hydraulic Performance Under Existing and Intensified Conditions (1:5-Year, 4-Hour Chicago Design Storm)

Sub-Area	Description	Pipe ID	Pipe Diameter (mm)	1:5 Year Discharge Results			1:5 Year Surcharge Results		
				Without Intensification	With Intensification	% Change	Without Intensification	With Intensification	Surcharge Condition Change
Akinsdale	Outlet Pipe#1	79600	900	0.698	0.890	28%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Akinsdale	Outlet Pipe#2	111000	1800	4.070	3.840	-6%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Akinsdale	Outlet Pipe#3	107500	1500	1.650	1.770	7%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Braeside #1	Outlet Pipe	70800	600	0.313	0.562	79%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Braeside #2	Outlet Pipe#1	72300	525	0.447	0.468	5%	No	No	N
Braeside #2	Outlet Pipe#2	366100	600	0.760	1.012	33%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Braeside #2	Outlet Pipe#3	121400_2	1650	5.498	3.950	-28%	No	No	N
Forest Lawn	Outlet Pipe#1	C7_4	2700	6.860	6.581	-4%	No	No	N
Forest Lawn	Outlet Pipe#2	117800	450	0.170	0.290	71%	No	No	N
Inglewood	Outlet Pipe	208000-S	1970	0.002	0.002	7%	No	No	N
Lacombe Park #1	Outlet Pipe#1	185100	1371	4.79	4.88	2%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Lacombe Park #1	Outlet Pipe#2	224600	750	0.846	1.191	41%	No	Yes (Below Ground Level)	Y
Lacombe Park #1	Outlet Pipe#3	216400	675	0.766	0.846	10%	Yes (Above Ground Level)	Yes (Above Ground Level)	N
Lacombe Park #1	Outlet Pipe#4	218700	600	0.546	0.554	1%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Lacombe Park 2	Outlet Pipe	355100	600	0.438	0.758	73%	No	No	N
Mission #1	Outlet Pipe	185500	600	0.254	0.454	79%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Mission #2	Outlet Pipe	Link_67	900	0.405	0.249	-39%	No	No	N
Mission #3	Outlet Pipe	213500-S	1970.5	0.032	0.017	-47%	No	No	N
Pineview	Outlet Pipe	107500	1500	1.650	1.770	7%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Sturgeon Heights #1	Outlet Pipe	65400	675	0.743	0.675	-9%	No	No	N
Sturgeon Heights #2	Outlet Pipe	67600	675	0.777	0.871	12%	No	No	N
The Gardens #1	Outlet Pipe	258400	600	0.363	0.457	26%	No	No	N
The Gardens #2	Outlet Pipe	40000	900	1.887	1.980	5%	No	No	N
The Gardens #3	Outlet Pipe	56700	825	0.640	0.730	14%	Yes (Below Ground Level)	Yes (Below Ground Level)	N
Woodlands	Outlet Pipe	327300_2	1825	3.814	5.012	31%	No	No	N

6.3.2 Results Discussion

Comparison of the existing and intensified model results indicates that the proposed intensification generally does not result in a significant impact to storm sewer performance.

The majority of outlet pipes maintained the same surcharge classification under both existing and intensified conditions. Locations that were not surcharged under existing conditions remained non-surcharged, while locations exhibiting surcharge conditions under existing conditions generally remained unchanged following redevelopment.

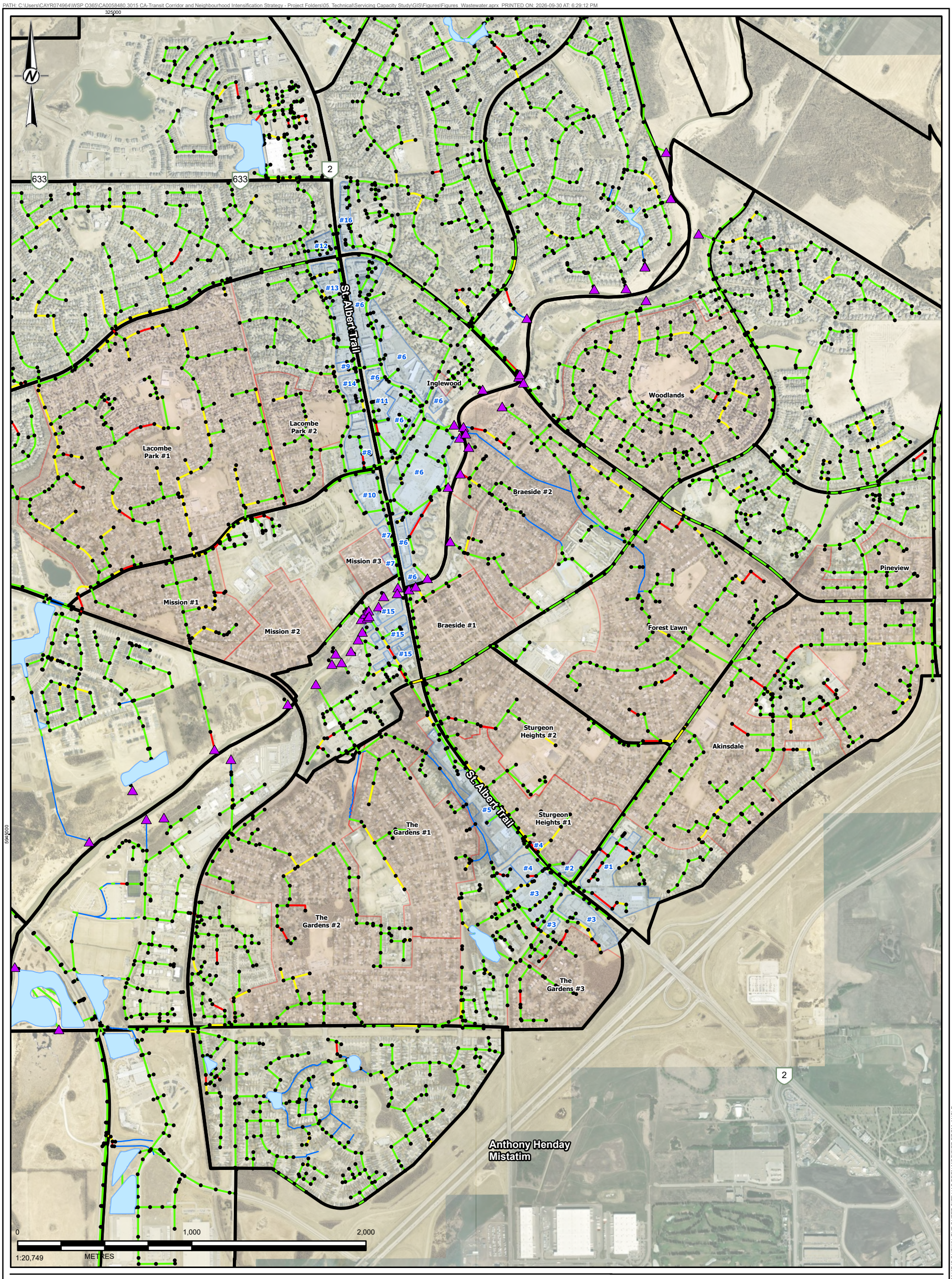
Although localized increases in peak pipe discharge were observed at several outlet locations, these increases generally did not result in corresponding changes to outlet pipe surcharge conditions or overall hydraulic performance.

Of the locations assessed, only one outlet pipe exhibited a change in surcharge condition. Outlet Pipe 224600 in the Lacombe Park #1 drainage area changed from a non-surcharged condition under existing conditions to a surcharge condition below ground level under the intensification scenario. No new above-ground flooding conditions were identified.

Overall, the results indicate that the proposed intensification can generally be accommodated within the existing stormwater drainage system with minimal change to outlet pipe hydraulic performance. Existing hydraulic constraints identified in the UMP remain largely unchanged, with only one outlet location exhibiting a change in surcharge condition.

325000

5941000



LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- STORMWATER PONDS
- DRAINAGE CHANNELS
- MANHOLES
- OUTLETS

STORM SEWER CAPACITY (Q/QFULL)

- ≤ 1.0
- 1.0 - 1.5
- > 1.5

REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
STORM SYSTEM RESULTS
EXISTING MINOR SYSTEM CAPACITY 1:5-YEAR, 4-HOUR CHICAGO

CONSULTANT

YYYY-MM-DD	2026-09-30
DESIGNED	AM
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0058480.3015		A	10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm
0

7. Summary and Conclusions

This servicing capacity assessment evaluated the ability of the City's wastewater, water distribution, and stormwater systems to accommodate the proposed neighbourhood and Trail Corridor Commercial intensification. Findings are summarized below.

Wastewater System

The wastewater system is the primary servicing constraint for the proposed intensification. Redevelopment within established residential areas generally results in relatively minor increases in sanitary flows and can largely be accommodated through I&I mitigation measures and infrastructure improvements already identified in the UMP.

Implementation of the UMP recommendations resolves a significant portion of the identified capacity constraints; however, the assessment identified that additional upgrades beyond those currently proposed in the UMP will be required to fully accommodate the ultimate intensification scenario. In total, four new gravity sewer upgrades were identified, and four UMP-recommended upgrades require further upsizing to provide sufficient capacity under future intensification conditions. Capacity upgrades at the Gate Avenue Lift Station were also recommended. As redevelopment proceeds, these additional improvements will be required to maintain acceptable system performance and accommodate ultimate buildout conditions.

The assessment also identified capacity limitations within the downstream trunk system and at the St. Albert Pump Station under ultimate intensification conditions. Although these constraints do not preclude near-term redevelopment, continued monitoring of the NIT and SIT systems will be required to identify when storage or capacity improvements will be required as intensification proceeds and system loading increases.

Water Distribution System

The proposed intensification results in increased maximum day and peak hour demands but has a relatively limited impact on overall water distribution system performance. The existing system generally maintains acceptable pressures and fire flow availability under the assessed intensification scenarios, and the upgrades identified in the WMP remain sufficient to accommodate projected future demands. As recommended in the WMP, watermains smaller than the City's minimum standard size should be upgraded as infrastructure is replaced due to age, through redevelopment, or in coordination with other capital projects when opportunities arise to improve long-term system capacity and fire flow performance.

Stormwater System

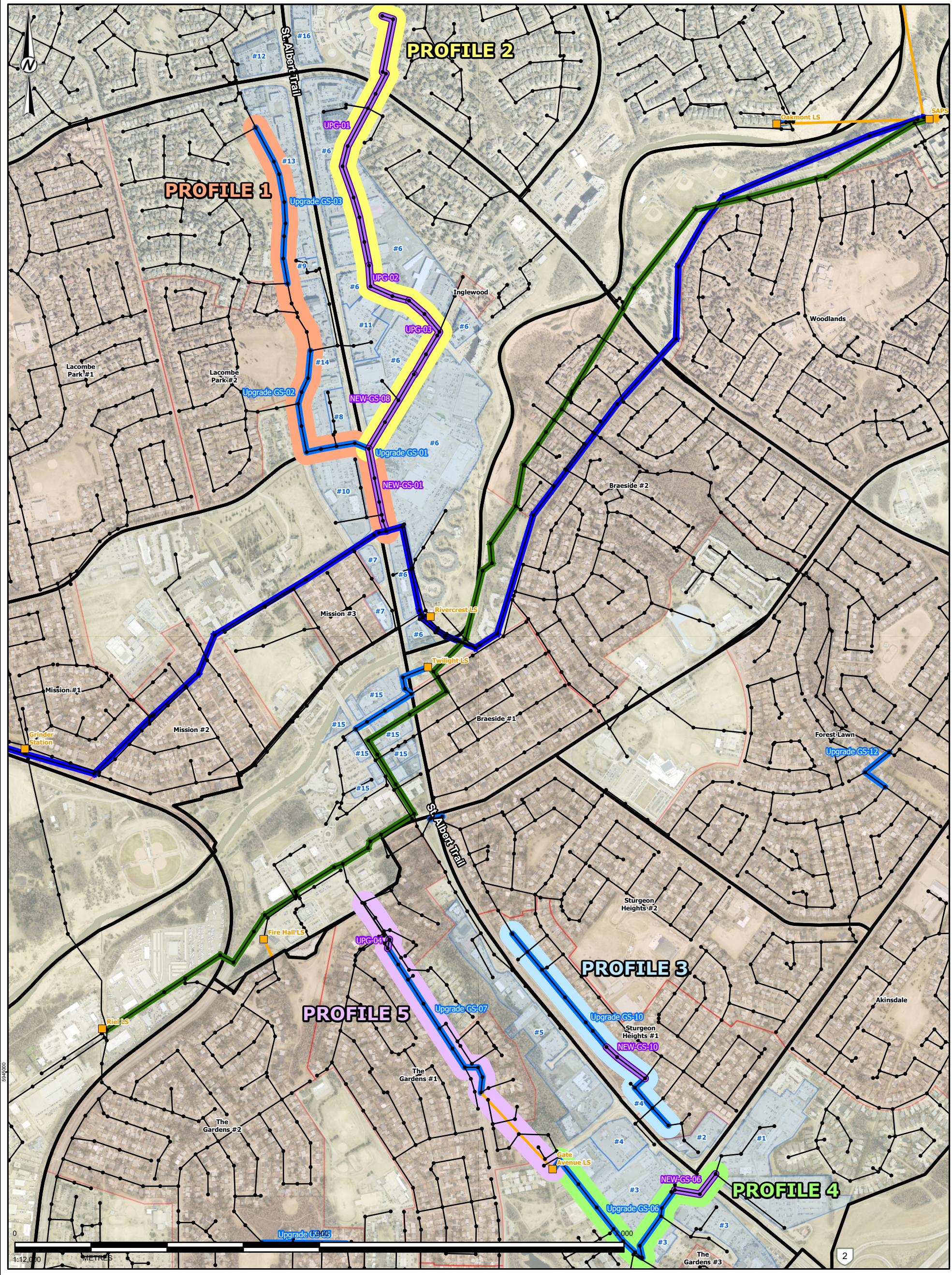
The stormwater assessment indicates that intensification has a limited impact on overall drainage system performance. Although localized increases in runoff and peak flows occur, the majority of storm

sewer systems continue to operate similarly to existing conditions, with only minor changes in surcharge performance observed in isolated locations.

Overall, the existing stormwater system can accommodate the assessed intensification scenario with minimal impacts. The stormwater improvements previously identified in the UMP remain appropriate for addressing existing drainage deficiencies, and no additional stormwater infrastructure upgrades were identified as being specifically required to support the proposed intensification.

Appendices

Appendix A – Wastewater System Profiles



LEGEND

- NEIGHBOURHOOD BOUNDARY
- LDR INTENSIFICATION AREAS
- TCC INTENSIFICATION AREAS
- NORTH INTERCEPTOR TRUNK (NIT)
- SOUTH INTERCEPTOR TRUNK (SIT)
- Manholes
- Sewers
- LIFT STATIONS
- PUMPS

REFERENCE(S)

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PROJECTED COORDINATE SYSTEM: NAD 1983 3TM 114

CLIENT
CITY OF ST. ALBERT

PROJECT
TRANSIT CORRIDOR AND NEIGHBORHOOD INTENSIFICATION STRATEGY: SERVICING CAPACITY ASSESSMENT

TITLE
WASTEWATER SYSTEM PROFILES KEY PLAN

CONSULTANT

wsp

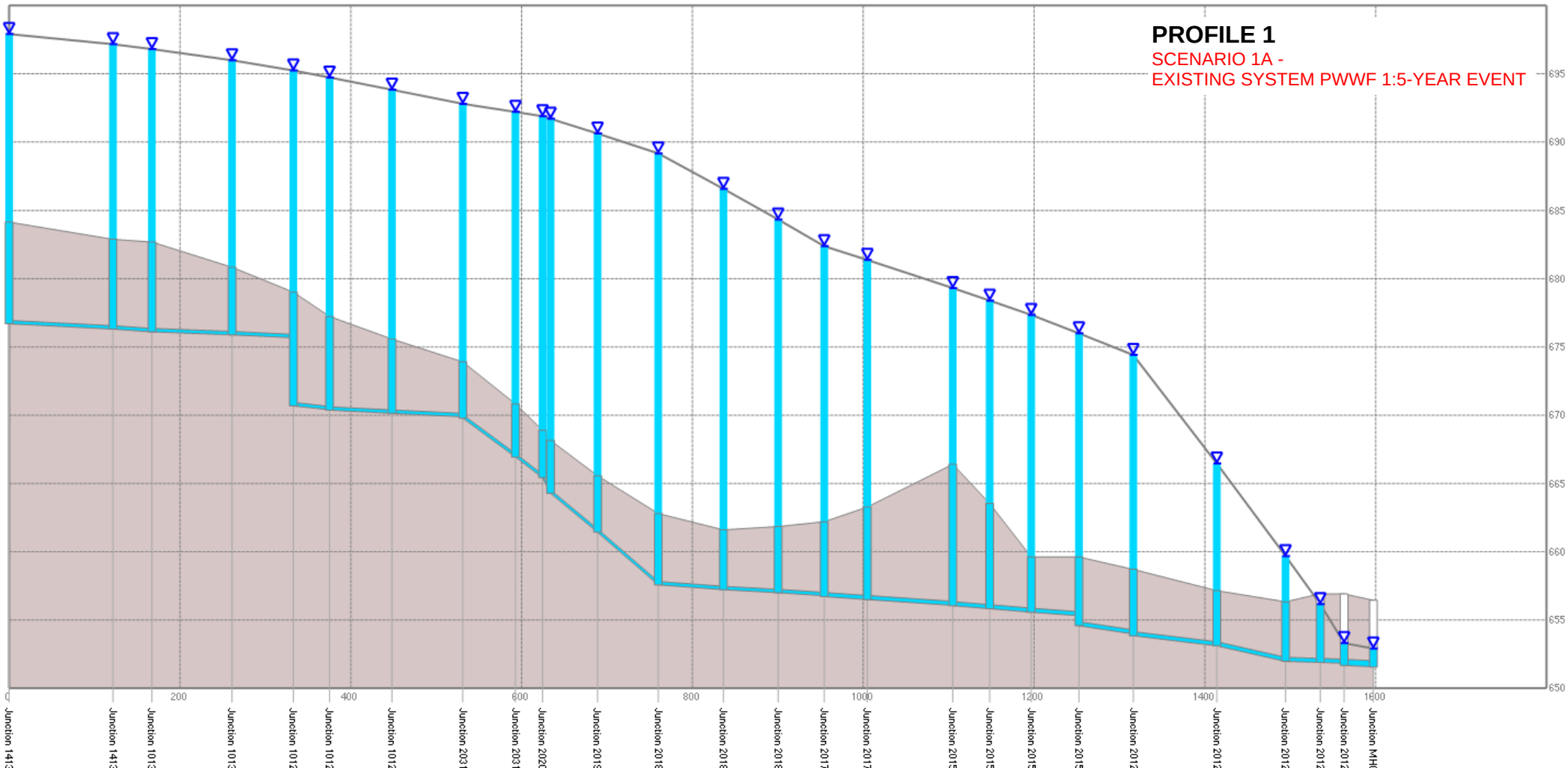
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DESIGNED	YR
PREPARED	YR
REVIEWED	NB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0058480.3015		A	APPENDIX A

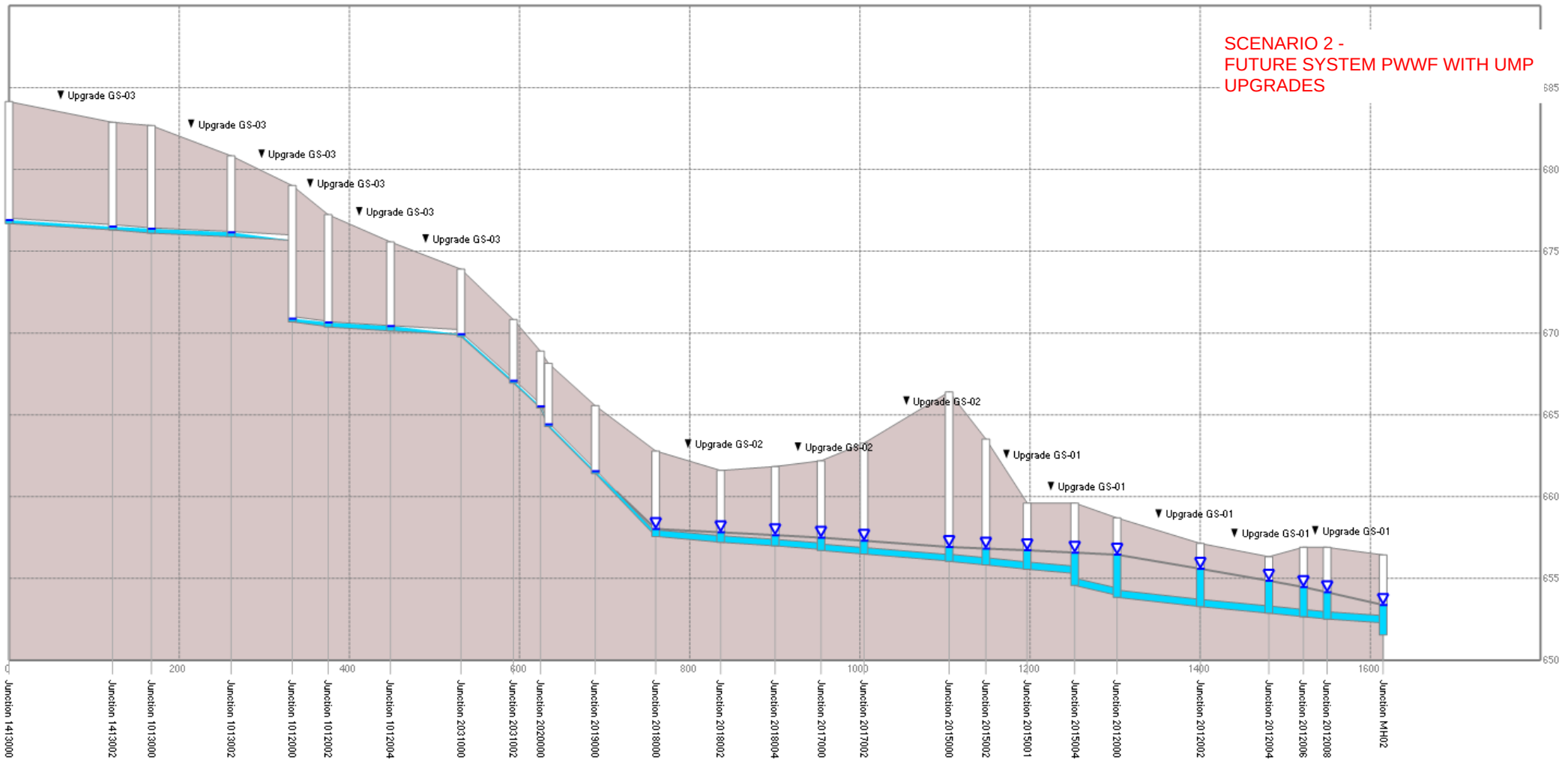
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25mm
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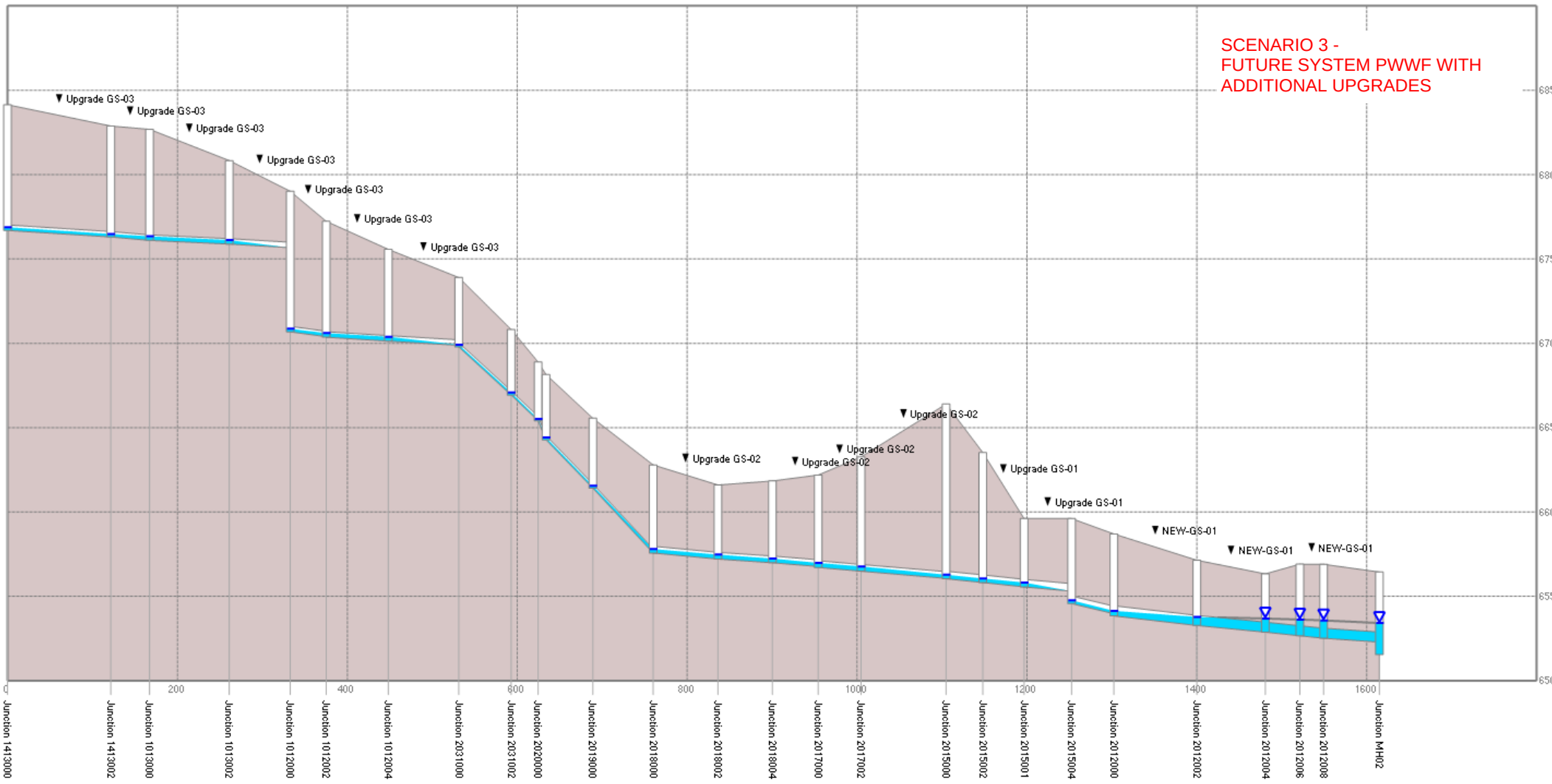
SCENARIO 1A -
EXISTING SYSTEM PWWF 1:5-YEAR EVENT



SCENARIO 2 -
FUTURE SYSTEM PWWF WITH UMP
UPGRADES



SCENARIO 3 -
FUTURE SYSTEM PWWF WITH
ADDITIONAL UPGRADES



PROFILE 2

SCENARIO 1B -
EXISTING SYSTEM PWWF 1:25-YEAR EVENT

Nodes: 1436002 1436000 2052004 2052000 2051002 2051000 2043002 2043000 2042000 2034002 2034000 2033002 2033000 2023000 2024000 2024002 2025000 2025002 2025004 2025006 2016000 2016010 2012000

0 200 400 600 800 1000 1200 1400 1600

650 655 660 665 670 675 680 685 690 695 700 705 710 715

SCENARIO 2 -
FUTURE SYSTEM PWWF WITH UMP UPGRADES

Upgrade GS-08
Upgrade GS-08

Nodes: 1436002 1436000 2052004 2052000 2051002 2051000 2043002 2043000 2042000 2034002 2034000 2033002 2033000 2023000 2024000 2024002 2025000 2025002 2025004 2025006 2016000 2016010 2012000

0 200 400 600 800 1000 1200 1400

650 655 660 665 670 675 680 685 690

SCENARIO 3 -
FUTURE SYSTEM PWWF WITH ADDITIONAL UPGRADES

UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
UPG-01
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NEW-GS-08
NEW-GS-08

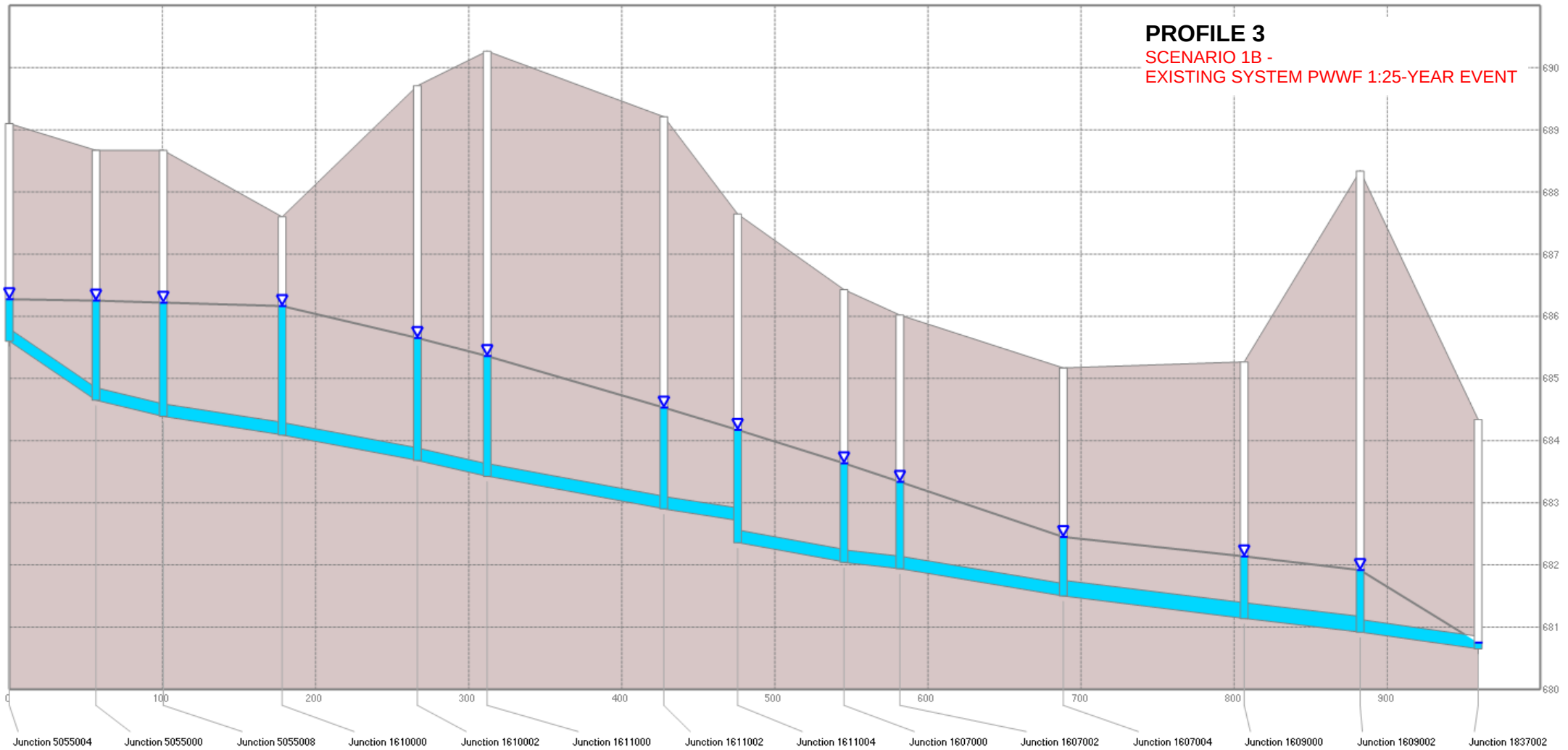
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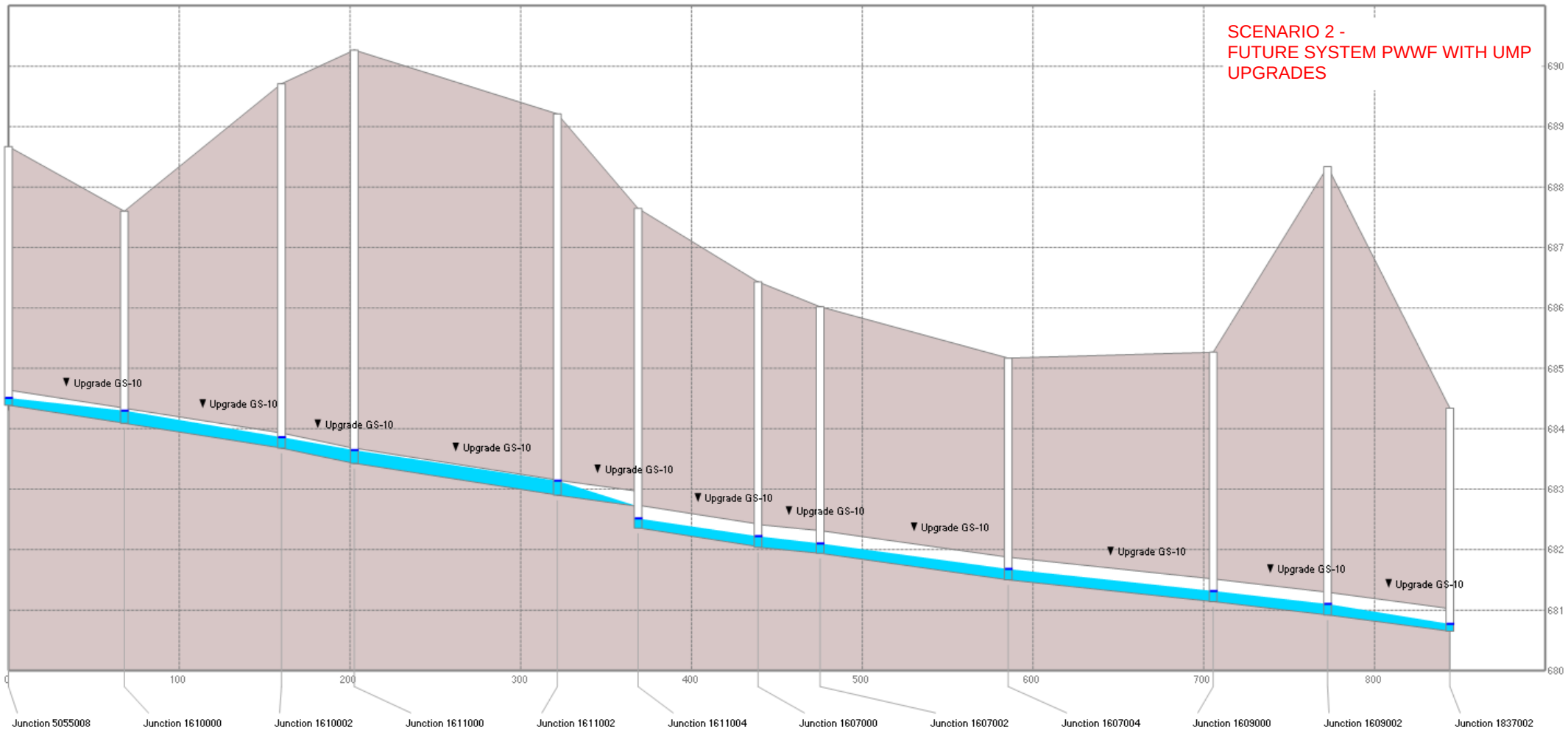
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PROFILE 3

SCENARIO 1B -
EXISTING SYSTEM PWWF 1:25-YEAR EVENT



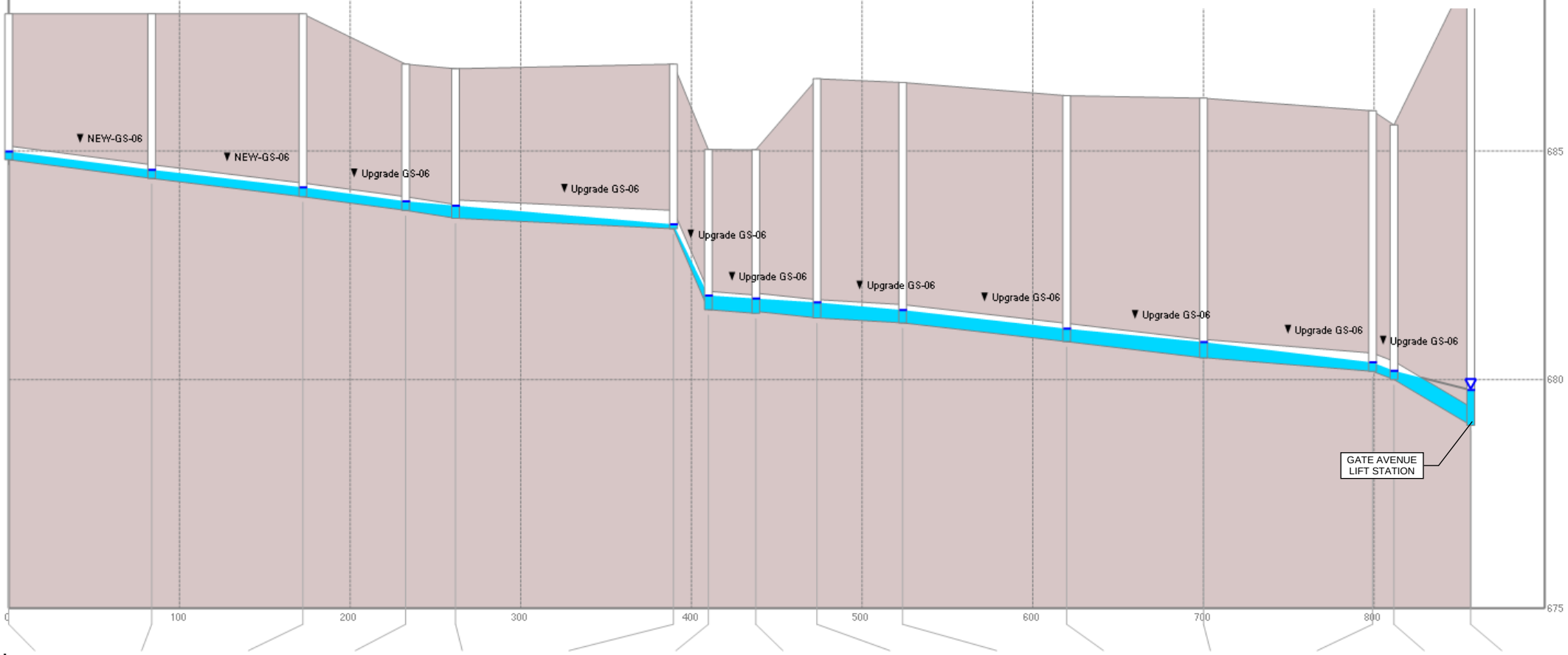
SCENARIO 2 -
FUTURE SYSTEM PWWF WITH UMP UPGRADES



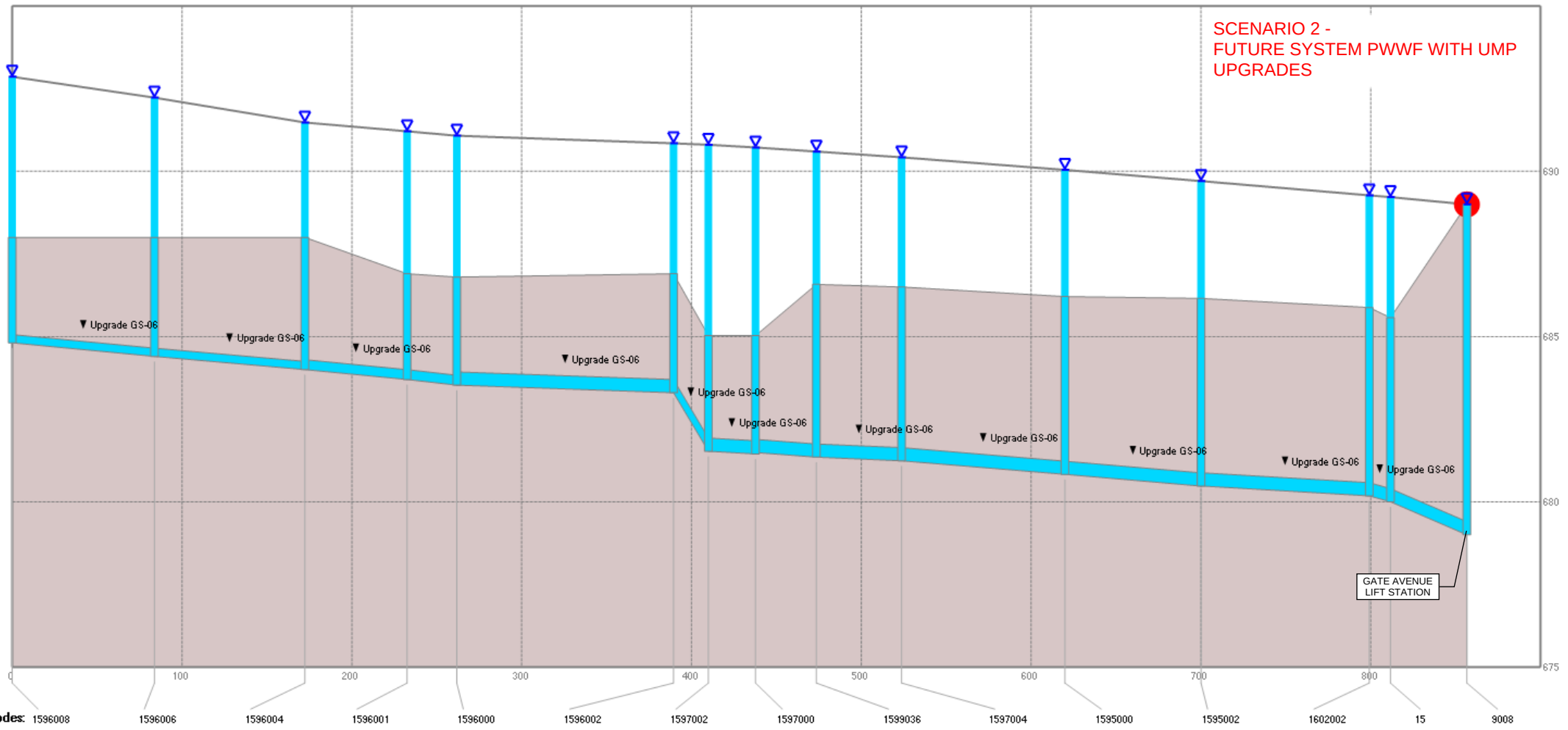
SCENARIO 3 -
FUTURE SYSTEM PWWF WITH ADDITIONAL UPGRADES

PROFILE 4

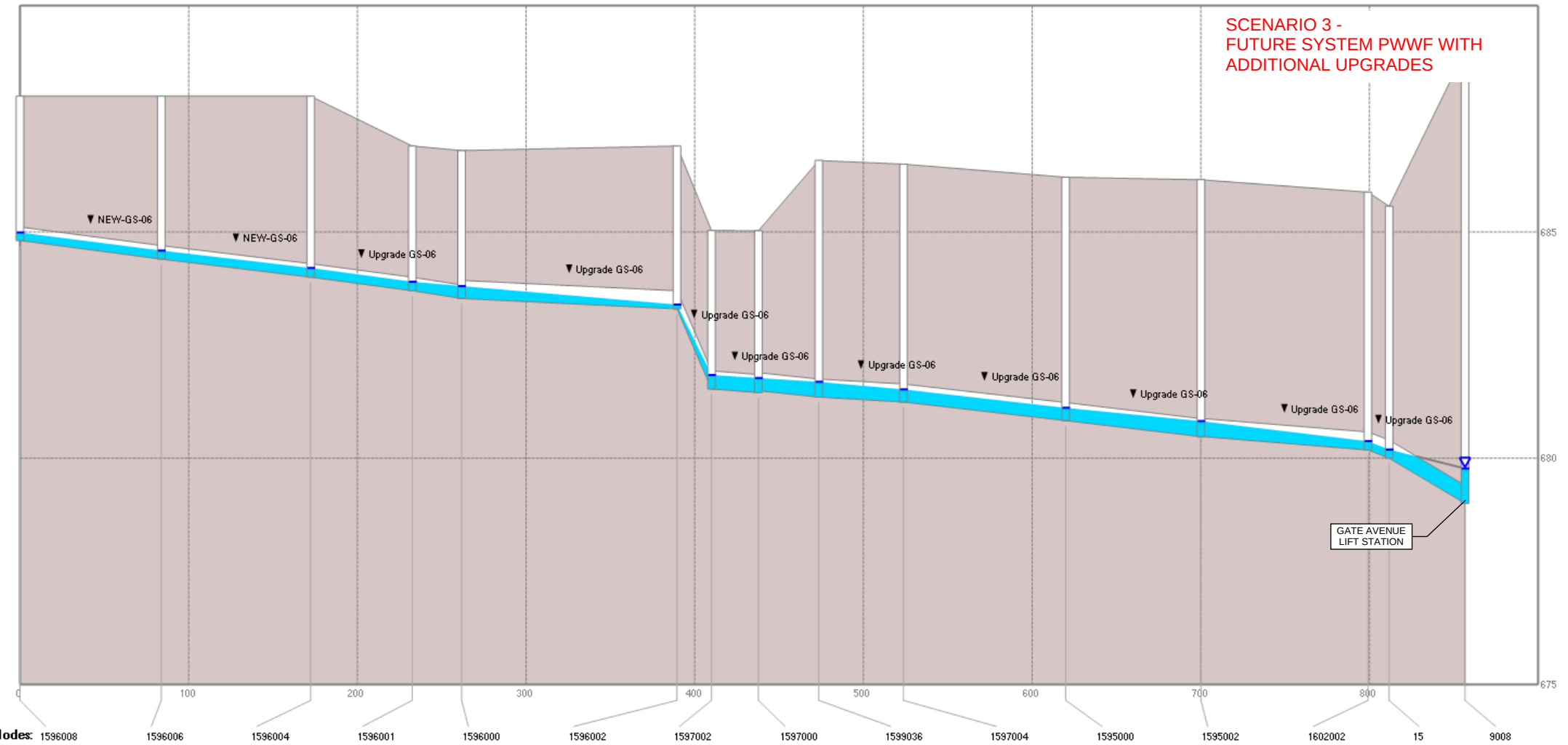
SCENARIO 1A -
EXISTING SYSTEM PWWF 1:5-YEAR EVENT



SCENARIO 2 -
FUTURE SYSTEM PWWF WITH UMP UPGRADES

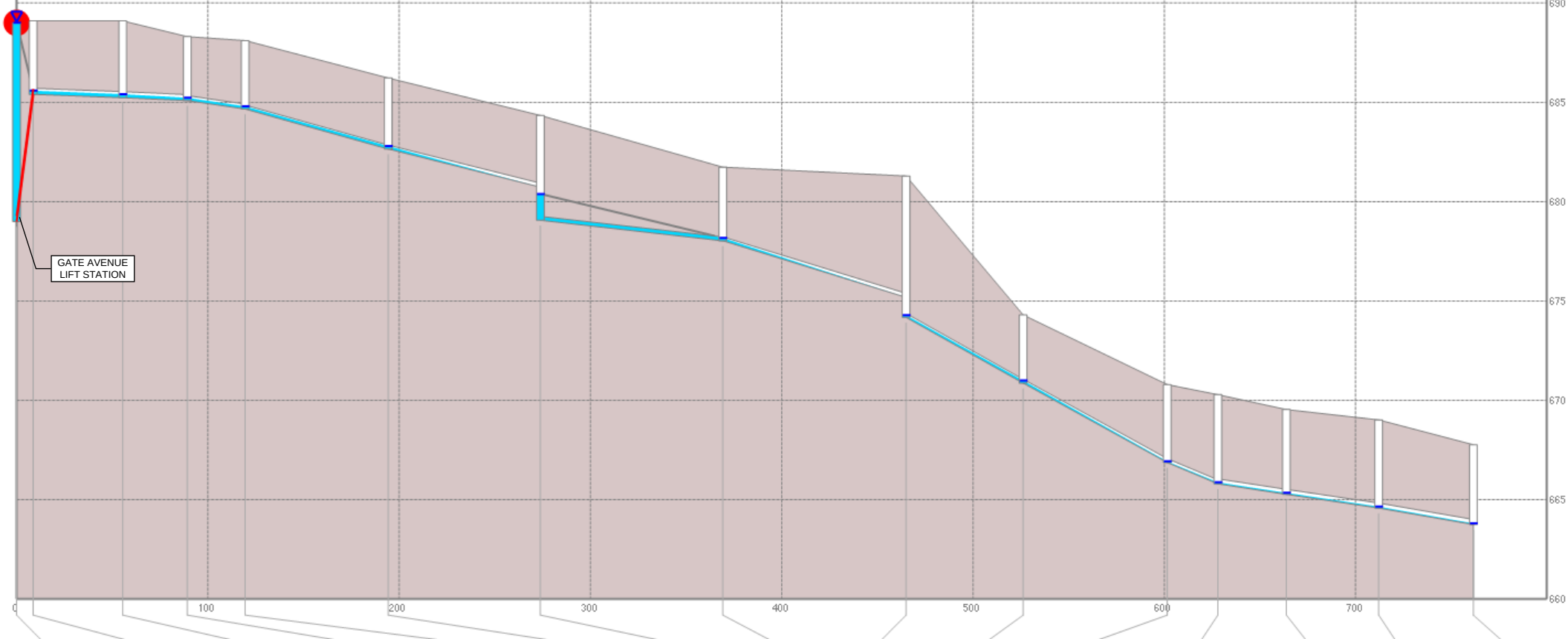


SCENARIO 3 -
FUTURE SYSTEM PWWF WITH ADDITIONAL UPGRADES

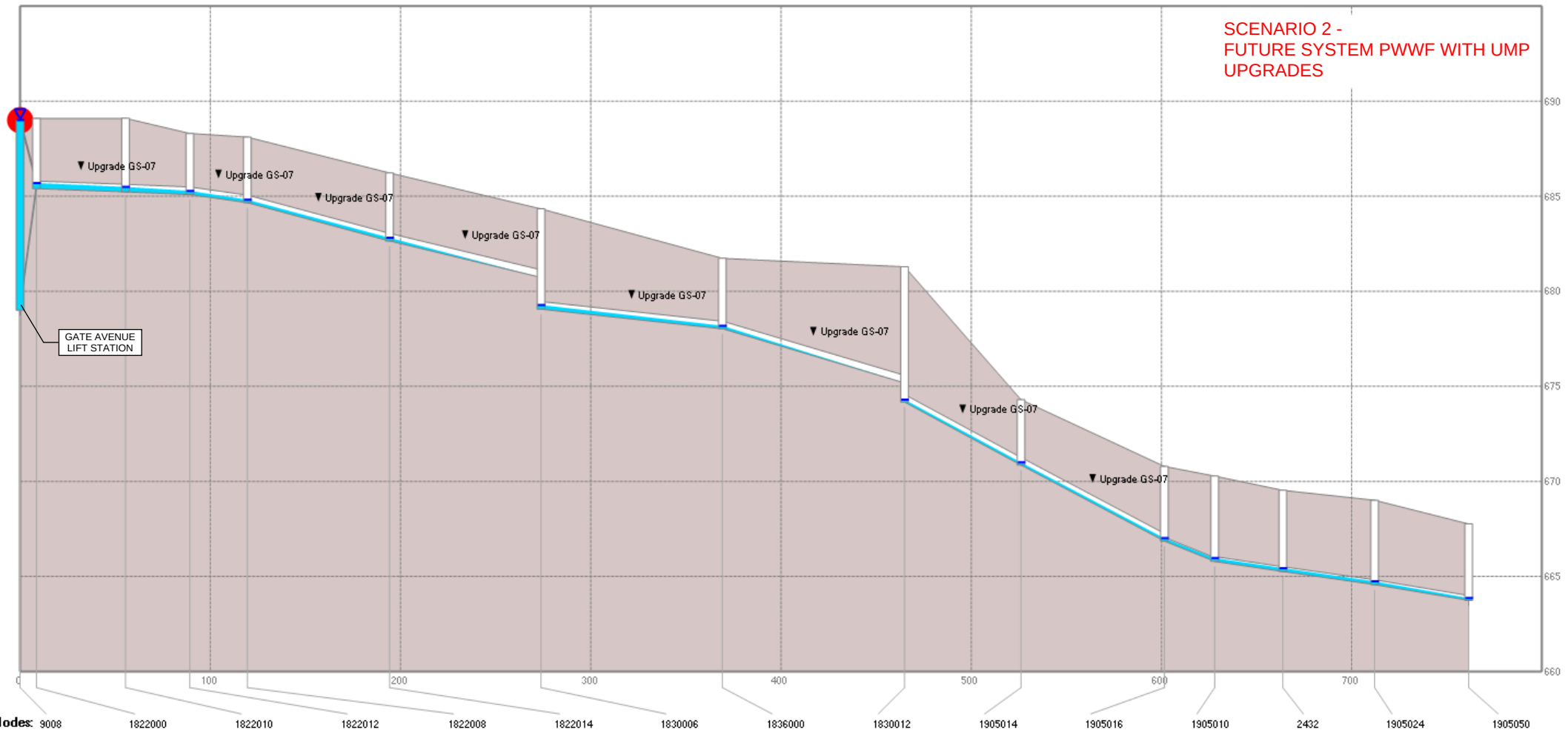


PROFILE 5

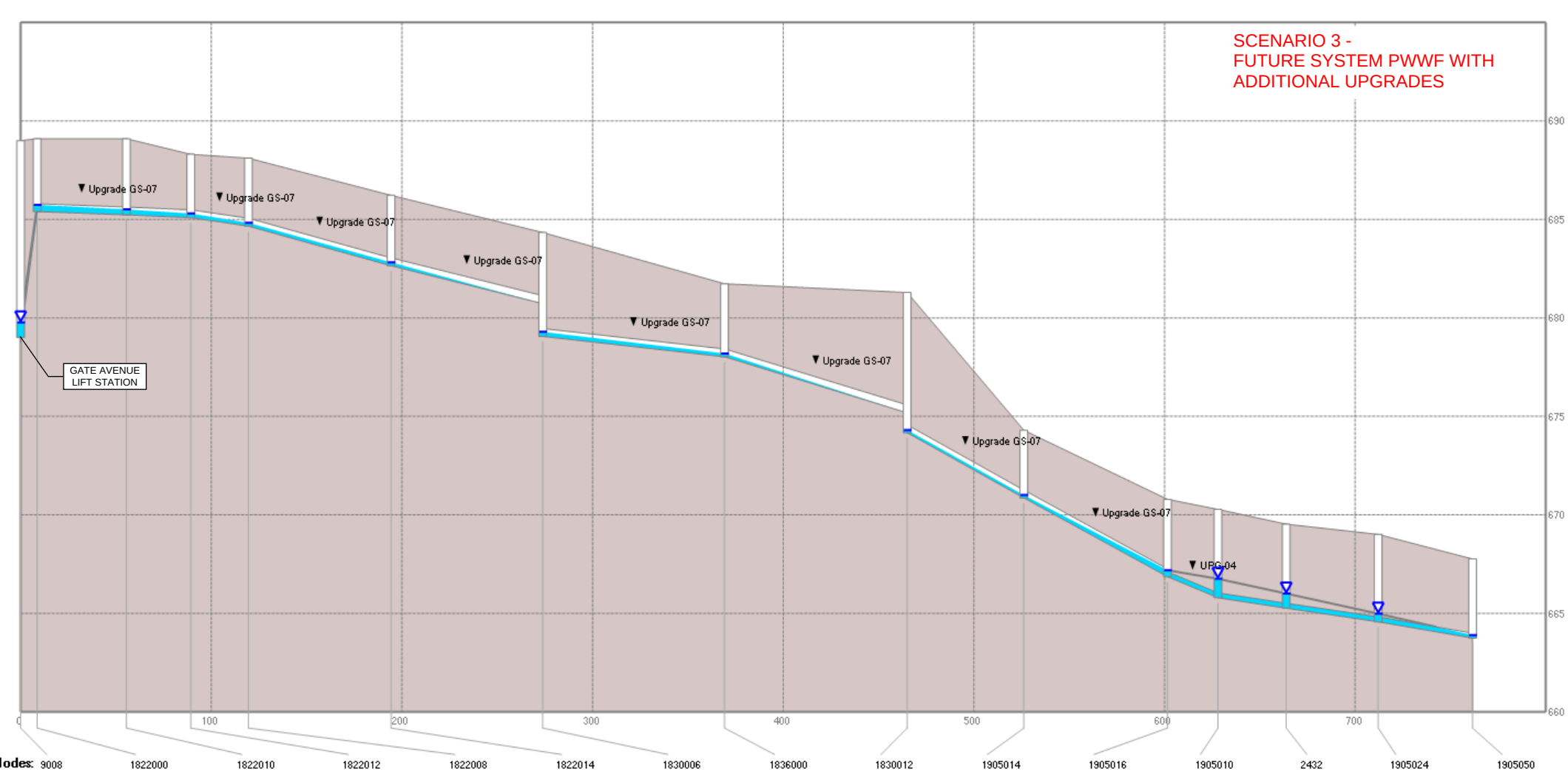
SCENARIO 1A -
EXISTING SYSTEM PWWF 1:5-YEAR EVENT



SCENARIO 2 -
FUTURE SYSTEM PWWF WITH UMP
UPGRADES



SCENARIO 3 -
FUTURE SYSTEM PWWF WITH
ADDITIONAL UPGRADES



Appendix B – Water Distribution System Pressure Zones

IF NOT 25 mm ADJUST SCALES
25 mm

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

N

PRV #023
PRV #022
OAKMONT RESERVOIR
PRV #020
PRV #018
PRV #017
PRV #019
PRV #024
LACOMBE PARK RESERVOIR
PRV #016
PRV #021
PRV #011
PRV #010
PRV #009
PRV #008
PRV #015
PRV #007
PRV #026
PRV #027
PRV #028
PRV #013
PRV #006
PRV #030
PRV #012
PRV #005
PRV #004
PRV #025
PRV #014
PRV #003
PRV #031
PRV #001
STURGEON HEIGHTS RESERVOIR
GRANDIN BOOSTER STATION
PRV #029
HENDAY BOOSTER STATION

LEGEND:

- City of St. Albert Boundary
- Reservoir & Pumphouse
- Booster Station
- PRV
- Check Valve
- Closed Valve

Pressure Zone

- Zone 100
- Zone 101
- Zone 102
- Zone 103
- Zone 104
- Zone 105
- Zone 106

Associated Engineering

CANADA'S BEST MANAGED COMPANIES
Platinum member

City of St. Albert Cultivate Life

FIGURE 3-2

CITY OF ST. ALBERT WATER DISTRIBUTION SYSTEM MASTER PLAN UPDATE

EXISTING WATER SYSTEM
PRESSURE ZONE BOUNDARIES

AE PROJECT No.	2020-3838-00
SCALE	1:32,500
APPROVED	
DATE	2021AUG05
REV	
DESCRIPTION	ISSUED FOR REPORT

SAVE DATE: 8/5/2021 3:10:58 PM SAVED BY:
DRAWING PATH: C:\2020-3838\gis\model\wmp_3-2_Pressure_Zones.mxd
DATA SOURCE: ;

Appendix C – Detailed Comparison of Fire Flow Availability in the Existing System

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
2202	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
2272	Zone 105	TRUE	100	202.083	202%	TRUE	100	191.3123	191%	Akinsdale	-5%
4400550	Zone 105	TRUE	100	218.488	218%	TRUE	100	205.4166	205%	Akinsdale	-6%
4400560	Zone 105	TRUE	100	140.446	140%	TRUE	100	131.8764	132%	Akinsdale	-6%
4400570	Zone 105	TRUE	100	194.076	194%	TRUE	100	183.9077	184%	Akinsdale	-5%
4400580	Zone 105	TRUE	100	187.632	188%	TRUE	100	177.934	178%	Akinsdale	-5%
4400590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400620	Zone 105	TRUE	100	156.513	157%	TRUE	100	149.1379	149%	Akinsdale	-5%
4400630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400650	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400660	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600050	Zone 105	TRUE	100	175.914	176%	TRUE	100	167.0496	167%	Akinsdale	-5%
4600060	Zone 105	TRUE	100	300.1	300%	TRUE	100	283.9558	284%	Akinsdale	-5%
4600070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600100	Zone 105	TRUE	100	192.63	193%	TRUE	100	182.4696	182%	Akinsdale	-5%
4600110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600130	Zone 105	TRUE	100	300.1	300%	TRUE	100	298.2868	298%	Akinsdale	-1%
4600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	296.0005	296%	Akinsdale	-1%
4700020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700030	Zone 105	TRUE	100	272.118	272%	TRUE	100	255.8401	256%	Akinsdale	-6%
4700040	Zone 105	TRUE	100	267.581	268%	TRUE	100	252.3106	252%	Akinsdale	-6%
4700050	Zone 105	TRUE	100	208.878	209%	TRUE	100	197.7654	198%	Akinsdale	-5%
4700070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700080	Zone 105	TRUE	100	257.012	257%	TRUE	100	242.9953	243%	Akinsdale	-5%
4700090	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700110	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700120	Zone 105	TRUE	100	179.749	180%	TRUE	100	171.1492	171%	Akinsdale	-5%
4700130	Zone 105	TRUE	100	174.062	174%	TRUE	100	165.6503	166%	Akinsdale	-5%
4700140	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700150	Zone 105	TRUE	100	164.027	164%	TRUE	100	156.374	156%	Akinsdale	-5%
4700160	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4900020	Zone 105	TRUE	100	163.983	164%	TRUE	100	156.3342	156%	Akinsdale	-5%
4900030	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4900040	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100050	Zone 105	TRUE	100	235.722	236%	TRUE	100	223.246	223%	Akinsdale	-5%
6100060	Zone 105	TRUE	100	285.924	286%	TRUE	100	270.2333	270%	Akinsdale	-5%
6100070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100110	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100130	Zone 105	TRUE	100	284.626	285%	TRUE	100	268.4048	268%	Akinsdale	-6%
6100140	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Akinsdale	0%
6100150	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Akinsdale	0%
6100160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100170	Zone 105	TRUE	100	162.39	162%	TRUE	100	154.418	154%	Akinsdale	-5%
6100180	Zone 105	TRUE	100	121.633	122%	TRUE	100	116.4734	116%	Akinsdale	-4%
6100190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100250	Zone 105	TRUE	100	294.518	295%	TRUE	100	278.2069	278%	Akinsdale	-6%
6100260	Zone 105	TRUE	100	154.896	155%	TRUE	100	144.902	145%	Akinsdale	-6%
6100270	Zone 105	TRUE	100	270.084	270%	TRUE	100	254.7325	255%	Akinsdale	-6%
6100280	Zone 105	TRUE	100	184.839	185%	TRUE	100	175.3447	175%	Akinsdale	-5%
6100310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100340	Zone 105	TRUE	100	190.305	190%	TRUE	100	180.3246	180%	Akinsdale	-5%
6100350	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100360	Zone 105	TRUE	100	205.013	205%	TRUE	100	193.9529	194%	Akinsdale	-5%
6100370	Zone 105	TRUE	100	125.664	126%	TRUE	100	120.2345	120%	Akinsdale	-4%
6100400	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
6100420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100430	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100460	Zone 105	TRUE	100	185.894	186%	TRUE	100	175.8266	176%	Akinsdale	-5%
6100470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100490	Zone 105	TRUE	100	173.906	174%	TRUE	100	164.9407	165%	Akinsdale	-5%
6100510	Zone 105	TRUE	100	147.282	147%	TRUE	100	138.0719	138%	Akinsdale	-6%
6100520	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100550	Zone 105	TRUE	100	160.911	161%	TRUE	100	152.6269	153%	Akinsdale	-5%
6100560	Zone 105	TRUE	100	186.914	187%	TRUE	100	177.2212	177%	Akinsdale	-5%
6100570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100580	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100650	Zone 105	TRUE	100	279.069	279%	TRUE	100	262.7376	263%	Akinsdale	-6%
6100660	Zone 105	TRUE	100	260.806	261%	TRUE	100	245.6135	246%	Akinsdale	-6%
6100670	Zone 105	TRUE	100	274.443	274%	TRUE	100	258.6624	259%	Akinsdale	-6%
6100680	Zone 105	TRUE	100	218.375	218%	TRUE	100	206.2007	206%	Akinsdale	-6%
J2211	Zone 105	TRUE	100	130.863	131%	TRUE	100	125.1508	125%	Akinsdale	-4%
J2216	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
J2217	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
wNode_88	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
wNode_89	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
wNode_90	Zone 105	TRUE	100	241.799	242%	TRUE	100	228.0368	228%	Akinsdale	-6%
wNode_91	Zone 105	TRUE	100	241.099	241%	TRUE	100	227.2853	227%	Akinsdale	-6%
3800120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3800140	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Braeside #1	0%
3900060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900120	Zone 104	TRUE	100	292.245	292%	TRUE	100	289.7793	290%	Braeside #1	-1%
3900130	Zone 104	TRUE	100	209.596	210%	TRUE	100	204.9644	205%	Braeside #1	-2%
3900270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900290	Zone 105	TRUE	100	300.1	300%	TRUE	100	294.9953	295%	Braeside #1	-2%
4000020	Zone 104	TRUE	100	225.501	226%	TRUE	100	223.0321	223%	Braeside #1	-1%
361	Zone 104	TRUE	100	182.683	183%	TRUE	100	182.6545	183%	Braeside #2	0%
2268	Zone 104	TRUE	100	143.225	143%	TRUE	100	143.1243	143%	Braeside #2	0%
3000030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000040	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000070	Zone 104	TRUE	100	206.182	206%	TRUE	100	206.156	206%	Braeside #2	0%
3000080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000100	Zone 104	TRUE	100	221.32	221%	TRUE	100	221.2951	221%	Braeside #2	0%
3000110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000140	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000150	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000160	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000180	Zone 104	TRUE	100	258.349	258%	TRUE	100	258.3029	258%	Braeside #2	0%
3000190	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000200	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000210	Zone 104	TRUE	100	124.567	125%	TRUE	100	124.5425	125%	Braeside #2	0%
3000220	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000230	Zone 104	FALSE	100	89.972	90%	FALSE	100	89.9539	90%	Braeside #2	0%
3000280	Zone 105	TRUE	100	144.735	145%	TRUE	100	137.6597	138%	Braeside #2	-5%
3000290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000300	Zone 105	TRUE	100	127.147	127%	TRUE	100	122.5507	123%	Braeside #2	-4%
3000310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200010	Zone 104	TRUE	100	140.756	141%	TRUE	100	140.7282	141%	Braeside #2	0%
3200020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200040	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200050	Zone 104	TRUE	100	133.904	134%	TRUE	100	133.8781	134%	Braeside #2	0%
3200060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
3200070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3300010	Zone 105	TRUE	100	273.583	274%	TRUE	100	259.6143	260%	Braeside #2	-5%
3300020	Zone 105	TRUE	100	180.642	181%	TRUE	100	172.6649	173%	Braeside #2	-4%
3300030	Zone 105	TRUE	100	278.636	279%	TRUE	100	264.4425	264%	Braeside #2	-5%
3300040	Zone 105	TRUE	100	241.532	242%	TRUE	100	229.2833	229%	Braeside #2	-5%
3300050	Zone 105	TRUE	100	177.661	178%	TRUE	100	168.2837	168%	Braeside #2	-5%
3700010	Zone 105	TRUE	100	221.999	222%	TRUE	100	213.3353	213%	Braeside #2	-4%
3700020	Zone 105	TRUE	100	230.891	231%	TRUE	100	220.1245	220%	Braeside #2	-5%
3700030	Zone 105	TRUE	100	275.44	275%	TRUE	100	262.1468	262%	Braeside #2	-5%
3700040	Zone 105	FALSE	100	97.94	98%	FALSE	100	94.1197	94%	Braeside #2	-4%
3700050	Zone 105	TRUE	100	111.202	111%	TRUE	100	106.7798	107%	Braeside #2	-4%
3700060	Zone 105	TRUE	100	167.97	168%	TRUE	100	160.2939	160%	Braeside #2	-5%
3700070	Zone 105	TRUE	100	290.557	291%	TRUE	100	275.7359	276%	Braeside #2	-5%
3700080	Zone 105	TRUE	100	286.309	286%	TRUE	100	272.806	273%	Braeside #2	-5%
3800010	Zone 104	TRUE	100	128.461	128%	TRUE	100	128.4435	128%	Braeside #2	0%
3800020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3800030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3800040	Zone 104	TRUE	100	299.407	299%	TRUE	100	295.6589	296%	Braeside #2	-1%
3800050	Zone 104	TRUE	100	208.298	208%	TRUE	100	207.9117	208%	Braeside #2	0%
3800080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3800090	Zone 104	TRUE	100	160.936	161%	TRUE	100	160.766	161%	Braeside #2	0%
3800100	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Braeside #2	0%
3800150	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3800170	Zone 104	FALSE	300	272.068	91%	FALSE	300	267.9559	89%	Braeside #2	-2%
4000010	Zone 104	TRUE	100	222.22	222%	TRUE	100	217.0988	217%	Braeside #2	-2%
4100010	Zone 105	TRUE	100	216.509	217%	TRUE	100	205.3182	205%	Braeside #2	-5%
J-383	Zone 104	TRUE	100	148.766	149%	TRUE	100	148.496	148%	Braeside #2	0%
J-416	Zone 105	TRUE	100	171.824	172%	TRUE	100	165.0697	165%	Braeside #2	-4%
J2241	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3500050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500110	Zone 105	TRUE	100	213.255	213%	TRUE	100	202.484	202%	Forest Lawn	-5%
3500120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500160	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
3500170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500180	Zone 105	TRUE	100	222.378	222%	TRUE	100	210.7892	211%	Forest Lawn	-5%
3600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	291.0347	291%	Forest Lawn	-3%
3600050	Zone 105	TRUE	100	300.1	300%	TRUE	100	293.4511	293%	Forest Lawn	-2%
3600060	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
3600070	Zone 105	TRUE	100	300.1	300%	TRUE	100	282.2172	282%	Forest Lawn	-6%
3600080	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
3600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3600100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200015	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200030	Zone 105	TRUE	100	283.527	284%	TRUE	100	266.2587	266%	Forest Lawn	-6%
4200035	Zone 105	TRUE	100	201.746	202%	TRUE	100	190.8083	191%	Forest Lawn	-5%
4200040	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200055	Zone 105	TRUE	100	233.351	233%	TRUE	100	220.4817	220%	Forest Lawn	-6%
4200060	Zone 105	TRUE	100	203.005	203%	TRUE	100	192.4477	192%	Forest Lawn	-5%
4200070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300010	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300020	Zone 105	TRUE	100	235.826	236%	TRUE	100	223.0424	223%	Forest Lawn	-5%
4300050	Zone 105	TRUE	100	181.248	181%	TRUE	100	172.179	172%	Forest Lawn	-5%
4300060	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300070	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
4300090	Zone 105	TRUE	100	197.265	197%	TRUE	100	187.2386	187%	Forest Lawn	-5%
4300100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300110	Zone 105	TRUE	100	192.362	192%	TRUE	100	182.5037	183%	Forest Lawn	-5%
4300120	Zone 105	TRUE	100	206.394	206%	TRUE	100	195.7025	196%	Forest Lawn	-5%
4300130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300180	Zone 105	TRUE	100	202.486	202%	TRUE	100	191.965	192%	Forest Lawn	-5%
4300190	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300200	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300210	Zone 105	TRUE	180	214.848	119%	TRUE	180	202.6512	113%	Forest Lawn	-6%
4300220	Zone 105	TRUE	100	285.826	286%	TRUE	100	270.0447	270%	Forest Lawn	-6%
4300230	Zone 105	TRUE	100	296.813	297%	TRUE	100	280.73	281%	Forest Lawn	-5%
4300240	Zone 105	TRUE	100	287.263	287%	TRUE	100	271.4133	271%	Forest Lawn	-6%
4300250	Zone 105	TRUE	180	195.225	108%	TRUE	180	184.8709	103%	Forest Lawn	-5%
4300260	Zone 105	TRUE	180	249.653	139%	TRUE	180	235.1497	131%	Forest Lawn	-6%
4300270	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
5000010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000030	Zone 105	TRUE	100	171.742	172%	TRUE	100	163.2976	163%	Forest Lawn	-5%
5000040	Zone 105	TRUE	100	167.395	167%	TRUE	100	159.3713	159%	Forest Lawn	-5%
5000050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000060	Zone 105	TRUE	100	105.499	105%	TRUE	100	100.8872	101%	Forest Lawn	-4%
5000070	Zone 105	FALSE	100	82.793	83%	FALSE	100	79.326	79%	Forest Lawn	-4%
5000080	Zone 105	TRUE	100	192.565	193%	TRUE	100	182.9446	183%	Forest Lawn	-5%
5000090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000110	Zone 105	TRUE	100	115.372	115%	TRUE	100	110.5536	111%	Forest Lawn	-4%
5000120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5100340	Zone 105	TRUE	100	280.67	281%	TRUE	100	264.3428	264%	Forest Lawn	-6%
5100350	Zone 105	TRUE	100	300.1	300%	TRUE	100	295.3987	295%	Forest Lawn	-2%
5100380	Zone 105	TRUE	100	165.727	166%	TRUE	100	156.3628	156%	Forest Lawn	-6%
5100390	Zone 105	TRUE	100	204.008	204%	TRUE	100	191.5349	192%	Forest Lawn	-6%
5100400	Zone 105	TRUE	100	167.592	168%	TRUE	100	157.625	158%	Forest Lawn	-6%
5100430	Zone 105	TRUE	100	148.529	149%	TRUE	100	137.8511	138%	Forest Lawn	-7%
5100440	Zone 105	TRUE	100	211.616	212%	TRUE	100	198.1524	198%	Forest Lawn	-6%
J-441	Zone 105	TRUE	100	112.639	113%	TRUE	100	107.8276	108%	Forest Lawn	-4%
J-442	Zone 105	TRUE	180	254.081	141%	TRUE	180	239.7907	133%	Forest Lawn	-6%
J-443	Zone 105	TRUE	100	154.93	155%	TRUE	100	145.4538	145%	Forest Lawn	-6%
J-482	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
J2221	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2222	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2223	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2224	Zone 105	FALSE	180	158.069	88%	FALSE	180	150.0825	83%	Forest Lawn	-5%
J2225	Zone 105	TRUE	180	197.26	110%	TRUE	180	186.587	104%	Forest Lawn	-5%
J2226	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2227	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2228	Zone 105	FALSE	180	130.032	72%	FALSE	180	123.7501	69%	Forest Lawn	-5%
J2234	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
J-382	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	hydrant DT019	0%
2267	Zone 100	FALSE	300	142.652	48%	FALSE	300	142.6151	48%	Inglewood	0%
321	Zone 105	TRUE	100	300.1	300%	TRUE	100	294.0107	294%	Lacombe Park #1	-2%
2195	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2196	Zone 105	TRUE	100	298.676	299%	TRUE	100	282.5268	283%	Lacombe Park #1	-5%
1000390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000400	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000425	Zone 105	TRUE	100	160.536	161%	TRUE	100	159.5707	160%	Lacombe Park #1	-1%
1000430	Zone 105	TRUE	100	300.1	300%	TRUE	100	292.1592	292%	Lacombe Park #1	-3%
1000435	Zone 105	TRUE	100	154.34	154%	TRUE	100	153.5346	154%	Lacombe Park #1	-1%
1000440	Zone 105	TRUE	100	282.448	282%	TRUE	100	265.3456	265%	Lacombe Park #1	-6%
1000450	Zone 105	TRUE	100	205.25	205%	TRUE	100	201.781	202%	Lacombe Park #1	-2%
1000460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000470	Zone 105	TRUE	100	277.929	278%	TRUE	100	261.2963	261%	Lacombe Park #1	-6%
1100110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1100120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
1600010	Zone 105	TRUE	100	300.1	300%	TRUE	100	282.4355	282%	Lacombe Park #1	-6%
1600020	Zone 105	TRUE	100	300.1	300%	TRUE	100	282.4375	282%	Lacombe Park #1	-6%
1600030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600120	Zone 105	TRUE	100	210.881	211%	TRUE	100	207.173	207%	Lacombe Park #1	-2%
1600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600180	Zone 105	TRUE	100	260.898	261%	TRUE	100	249.9318	250%	Lacombe Park #1	-4%
1600190	Zone 105	TRUE	100	200.805	201%	TRUE	100	197.7814	198%	Lacombe Park #1	-2%
1600200	Zone 105	TRUE	100	145.622	146%	TRUE	100	143.4364	143%	Lacombe Park #1	-2%
1600210	Zone 105	TRUE	100	230.498	230%	TRUE	100	227.0647	227%	Lacombe Park #1	-1%
1600220	Zone 105	TRUE	100	152.164	152%	TRUE	100	149.6343	150%	Lacombe Park #1	-2%
1600230	Zone 105	TRUE	100	131.641	132%	TRUE	100	129.7127	130%	Lacombe Park #1	-1%
1600240	Zone 105	TRUE	100	171.711	172%	TRUE	100	169.0204	169%	Lacombe Park #1	-2%
1600250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600310	Zone 105	TRUE	100	211.554	212%	TRUE	100	208.4212	208%	Lacombe Park #1	-1%
1600320	Zone 105	TRUE	100	219.467	219%	TRUE	100	216.2243	216%	Lacombe Park #1	-1%
1600330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600340	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600350	Zone 105	TRUE	100	194.904	195%	TRUE	100	192.1881	192%	Lacombe Park #1	-1%
1600360	Zone 105	TRUE	100	227.656	228%	TRUE	100	224.5341	225%	Lacombe Park #1	-1%
1600370	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600380	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600390	Zone 105	TRUE	100	285.343	285%	TRUE	100	274.4062	274%	Lacombe Park #1	-4%
1600400	Zone 105	TRUE	100	198.021	198%	TRUE	100	195.0482	195%	Lacombe Park #1	-2%
1600410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1700030	Zone 105	TRUE	100	299.904	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700040	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700050	Zone 105	TRUE	180	267.039	148%	TRUE	180	253.875	141%	Lacombe Park #1	-5%
1700060	Zone 105	TRUE	180	213.419	119%	TRUE	180	209.8974	117%	Lacombe Park #1	-2%
1700070	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700080	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700085	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700090	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700100	Zone 105	TRUE	180	251.567	140%	TRUE	180	240.5675	134%	Lacombe Park #1	-4%
1700110	Zone 105	TRUE	180	211.201	117%	TRUE	180	207.6884	115%	Lacombe Park #1	-2%
1700120	Zone 105	TRUE	180	204.168	113%	TRUE	180	200.672	111%	Lacombe Park #1	-2%
1700130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700150	Zone 105	TRUE	100	161.908	162%	TRUE	100	159.2989	159%	Lacombe Park #1	-2%
1700160	Zone 105	TRUE	100	152.572	153%	TRUE	100	149.9842	150%	Lacombe Park #1	-2%
1700170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700190	Zone 105	TRUE	100	241.658	242%	TRUE	100	232.0416	232%	Lacombe Park #1	-4%
1700200	Zone 105	TRUE	100	164.149	164%	TRUE	100	161.5703	162%	Lacombe Park #1	-2%
1700210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700220	Zone 105	TRUE	100	187.249	187%	TRUE	100	183.5958	184%	Lacombe Park #1	-2%
1700230	Zone 105	TRUE	100	182.889	183%	TRUE	100	179.306	179%	Lacombe Park #1	-2%
1700240	Zone 105	TRUE	100	248.662	249%	TRUE	100	238.6827	239%	Lacombe Park #1	-4%
1700250	Zone 105	TRUE	100	257.595	258%	TRUE	100	246.3645	246%	Lacombe Park #1	-4%
1700260	Zone 105	TRUE	100	300.1	300%	TRUE	100	294.2776	294%	Lacombe Park #1	-2%
1700270	Zone 105	TRUE	100	224.685	225%	TRUE	100	220.4078	220%	Lacombe Park #1	-2%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
1700280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700300	Zone 105	TRUE	100	144.508	145%	TRUE	100	141.4625	141%	Lacombe Park #1	-2%
1700310	Zone 105	TRUE	100	155.824	156%	TRUE	100	152.4747	152%	Lacombe Park #1	-2%
1700320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700340	Zone 105	TRUE	100	300.1	300%	TRUE	100	295.065	295%	Lacombe Park #1	-2%
1700350	Zone 105	TRUE	100	213.873	214%	TRUE	100	209.7259	210%	Lacombe Park #1	-2%
1700360	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800010	Zone 105	TRUE	100	127.051	127%	TRUE	100	124.5151	125%	Lacombe Park #1	-2%
1800020	Zone 105	TRUE	100	136.115	136%	TRUE	100	133.0862	133%	Lacombe Park #1	-2%
1800030	Zone 105	TRUE	100	180.573	181%	TRUE	100	176.9501	177%	Lacombe Park #1	-2%
1800040	Zone 105	TRUE	100	167.982	168%	TRUE	100	164.468	164%	Lacombe Park #1	-2%
1800050	Zone 105	TRUE	100	159.857	160%	TRUE	100	156.2907	156%	Lacombe Park #1	-2%
1800060	Zone 105	TRUE	100	162.497	162%	TRUE	100	158.8239	159%	Lacombe Park #1	-2%
1800070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800090	Zone 105	TRUE	100	241.45	241%	TRUE	100	235.9176	236%	Lacombe Park #1	-2%
1800100	Zone 105	TRUE	100	223.753	224%	TRUE	100	218.6783	219%	Lacombe Park #1	-2%
1800110	Zone 105	TRUE	100	297.355	297%	TRUE	100	278.8404	279%	Lacombe Park #1	-6%
1800120	Zone 105	TRUE	100	288.706	289%	TRUE	100	271.6453	272%	Lacombe Park #1	-6%
1800130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800170	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800180	Zone 105	TRUE	100	299.904	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800190	Zone 105	TRUE	100	299.904	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800220	Zone 105	FALSE	100	94.717	95%	FALSE	100	92.1325	92%	Lacombe Park #1	-3%
1800230	Zone 105	FALSE	100	97.217	97%	FALSE	100	94.3783	94%	Lacombe Park #1	-3%
1800240	Zone 105	TRUE	100	289.445	289%	TRUE	100	273.26	273%	Lacombe Park #1	-6%
1800250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800260	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800320	Zone 105	TRUE	100	197.429	197%	TRUE	100	193.5615	194%	Lacombe Park #1	-2%
1800330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800340	Zone 105	TRUE	100	284.989	285%	TRUE	100	269.8292	270%	Lacombe Park #1	-5%
1800350	Zone 105	TRUE	100	300.1	300%	TRUE	100	296.0074	296%	Lacombe Park #1	-1%
1800360	Zone 105	TRUE	100	188.621	189%	TRUE	100	182.4333	182%	Lacombe Park #1	-3%
1800370	Zone 105	TRUE	100	293.868	294%	TRUE	100	277.2451	277%	Lacombe Park #1	-6%
1800380	Zone 105	TRUE	100	300.1	300%	TRUE	100	284.6378	285%	Lacombe Park #1	-5%
1800390	Zone 105	TRUE	100	173.746	174%	TRUE	100	167.9888	168%	Lacombe Park #1	-3%
1800410	Zone 105	TRUE	100	153.298	153%	TRUE	100	150.4106	150%	Lacombe Park #1	-2%
1800420	Zone 105	TRUE	100	205.454	205%	TRUE	100	201.1924	201%	Lacombe Park #1	-2%
1800430	Zone 105	TRUE	100	180.234	180%	TRUE	100	177.015	177%	Lacombe Park #1	-2%
1800440	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800460	Zone 105	TRUE	100	300.1	300%	TRUE	100	296.5034	297%	Lacombe Park #1	-1%
1800470	Zone 105	TRUE	100	300.1	300%	TRUE	100	299.6109	300%	Lacombe Park #1	0%
1800480	Zone 105	TRUE	100	205.993	206%	TRUE	100	198.7023	199%	Lacombe Park #1	-4%
1800490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800500	Zone 105	TRUE	100	281.98	282%	TRUE	100	266.9628	267%	Lacombe Park #1	-5%
1800510	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800520	Zone 105	TRUE	100	154.022	154%	TRUE	100	149.1489	149%	Lacombe Park #1	-3%
1800530	Zone 105	TRUE	100	154.037	154%	TRUE	100	149.1636	149%	Lacombe Park #1	-3%
1800540	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800550	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800560	Zone 105	TRUE	100	128.595	129%	TRUE	100	125.3249	125%	Lacombe Park #1	-3%
1800570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800580	Zone 105	TRUE	100	255.72	256%	TRUE	100	249.3341	249%	Lacombe Park #1	-2%
1800590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800600	Zone 105	TRUE	100	267.802	268%	TRUE	100	259.4659	259%	Lacombe Park #1	-3%
1800610	Zone 105	TRUE	100	291.032	291%	TRUE	100	275.6458	276%	Lacombe Park #1	-5%
1800620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800640	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800650	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800660	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800670	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
1800680	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800690	Zone 105	FALSE	300	259.99	87%	FALSE	300	252.0763	84%	Lacombe Park #1	-3%
1900010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1900020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000050	Zone 105	TRUE	100	254.866	255%	TRUE	100	245.4695	245%	Lacombe Park #1	-4%
J-5	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J-141	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J2125	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J2126	Zone 105	FALSE	180	128.665	71%	FALSE	180	125.7838	70%	Lacombe Park #1	-2%
2266	Zone 105	TRUE	100	164.562	165%	TRUE	100	158.9065	159%	Lacombe Park #2	-3%
1200750	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200760	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200770	Zone 105	TRUE	100	245.387	245%	TRUE	100	238.0332	238%	Lacombe Park #2	-3%
1200780	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200790	Zone 105	TRUE	100	300.1	300%	TRUE	100	293.9433	294%	Lacombe Park #2	-2%
1200800	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200810	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200820	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200830	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200840	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200850	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200860	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200870	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200890	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200900	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200950	Zone 105	TRUE	100	288.526	289%	TRUE	100	272.3927	272%	Lacombe Park #2	-6%
1200960	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200970	Zone 105	TRUE	100	150.919	151%	TRUE	100	145.7933	146%	Lacombe Park #2	-3%
1200975	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200980	Zone 105	TRUE	100	300.1	300%	TRUE	100	297.3734	297%	Lacombe Park #2	-1%
1200985	Zone 105	TRUE	100	256.709	257%	TRUE	100	248.2381	248%	Lacombe Park #2	-3%
1800400	Zone 105	TRUE	100	124.215	124%	TRUE	100	120.8566	121%	Lacombe Park #2	-3%
351	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600490	Zone 105	TRUE	100	230.559	231%	TRUE	100	227.444	227%	Mission #1	-1%
1600500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600510	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600520	Zone 105	TRUE	100	244.171	244%	TRUE	100	240.7374	241%	Mission #1	-1%
1600530	Zone 105	TRUE	100	234.492	234%	TRUE	100	231.0363	231%	Mission #1	-1%
1800700	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1800710	Zone 105	TRUE	100	252.787	253%	TRUE	100	247.9929	248%	Mission #1	-2%
1800720	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #1	0%
2000060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000070	Zone 105	TRUE	100	223.62	224%	TRUE	100	219.9516	220%	Mission #1	-2%
2000080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000090	Zone 105	TRUE	100	223.37	223%	TRUE	100	219.7179	220%	Mission #1	-2%
2000100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300015	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2400010	Zone 105	TRUE	100	194.637	195%	TRUE	100	190.4589	190%	Mission #1	-2%
2400020	Zone 105	TRUE	100	184.345	184%	TRUE	100	180.0338	180%	Mission #1	-2%
2400030	Zone 105	TRUE	100	132.891	133%	TRUE	100	130.2883	130%	Mission #1	-2%
2400040	Zone 105	TRUE	100	192.529	193%	TRUE	100	188.1557	188%	Mission #1	-2%
2400050	Zone 105	TRUE	100	216.508	217%	TRUE	100	211.7921	212%	Mission #1	-2%
2400060	Zone 105	TRUE	100	165.606	166%	TRUE	100	161.7884	162%	Mission #1	-2%
2400070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
J-142	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
J-388	Zone 105	FALSE	300	127.698	43%	FALSE	300	125.2358	42%	Mission #1	-2%
3	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
1800740	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #2	0%
1800750	Zone 103	TRUE	100	172.301	172%	TRUE	100	172.2273	172%	Mission #2	0%
2100130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100200	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
2100220	Zone 103	FALSE	300	237.384	79%	FALSE	300	237.2202	79%	Mission #2	0%
2100230	Zone 103	TRUE	100	271.714	272%	TRUE	100	269.3844	269%	Mission #2	-1%
2100240	Zone 103	TRUE	100	256.913	257%	TRUE	100	256.7082	257%	Mission #2	0%
2100290	Zone 103	TRUE	100	249.943	250%	TRUE	100	248.1786	248%	Mission #2	-1%
2100300	Zone 103	TRUE	100	295.94	296%	TRUE	100	292.3855	292%	Mission #2	-1%
2100340	Zone 103	TRUE	100	214.213	214%	TRUE	100	212.8513	213%	Mission #2	-1%
2100350	Zone 103	TRUE	100	286.121	286%	TRUE	100	283.1338	283%	Mission #2	-1%
2100360	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100370	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2500010	Zone 103	TRUE	100	226.824	227%	TRUE	100	224.9285	225%	Mission #2	-1%
2600020	Zone 103	TRUE	100	230.535	231%	TRUE	100	229.4283	229%	Mission #2	0%
2600030	Zone 103	TRUE	100	226.796	227%	TRUE	100	225.6918	226%	Mission #2	0%
V-M017	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #2	0%
2100160	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
2100170	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
2100180	Zone 103	FALSE	300	291.761	97%	FALSE	300	283.3341	94%	Mission #3	-3%
2100250	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #3	0%
2100260	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #3	0%
2100270	Zone 103	TRUE	100	297.588	298%	TRUE	100	289.831	290%	Mission #3	-3%
2100320	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
2100390	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
J2163	Zone 103	FALSE	300	221.554	74%	FALSE	300	218.8543	73%	Mission #3	-1%
4400260	Zone 105	TRUE	100	234.143	234%	TRUE	100	221.3342	221%	Pineview	-5%
4400280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400370	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400380	Zone 105	TRUE	100	235.813	236%	TRUE	100	222.8227	223%	Pineview	-6%
4400390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400430	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400440	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400460	Zone 105	TRUE	100	179.213	179%	TRUE	100	170.0432	170%	Pineview	-5%
4400470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400490	Zone 105	TRUE	100	227.67	228%	TRUE	100	215.257	215%	Pineview	-5%
4400500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
10	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100200	Zone 105	TRUE	100	185.58	186%	TRUE	100	177.2681	177%	Sturgeon Heights #1	-4%
5100250	Zone 105	TRUE	100	192.549	193%	TRUE	100	183.4995	183%	Sturgeon Heights #1	-5%
5100300	Zone 105	TRUE	100	203.204	203%	TRUE	100	193.9005	194%	Sturgeon Heights #1	-5%
5100310	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100500	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100503	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100530	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100580	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100590	Zone 105	TRUE	100	284.719	285%	TRUE	100	268.3759	268%	Sturgeon Heights #1	-6%
5100610	Zone 105	TRUE	100	197.158	197%	TRUE	100	186.5264	187%	Sturgeon Heights #1	-5%
5100620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100630	Zone 105	TRUE	100	299.919	300%	TRUE	100	282.9458	283%	Sturgeon Heights #1	-6%
5100650	Zone 105	TRUE	100	267.162	267%	TRUE	100	250.7823	251%	Sturgeon Heights #1	-6%
5100660	Zone 105	TRUE	100	167.226	167%	TRUE	100	158.2933	158%	Sturgeon Heights #1	-5%
5100670	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100680	Zone 105	TRUE	100	143.785	144%	TRUE	100	134.6262	135%	Sturgeon Heights #1	-6%
5100700	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100710	Zone 105	TRUE	100	144.579	145%	TRUE	100	135.4573	135%	Sturgeon Heights #1	-6%
J2143	Zone 105	TRUE	100	143.664	144%	TRUE	100	136.609	137%	Sturgeon Heights #1	-5%
J2152	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5000160	Zone 105	TRUE	100	160.54	161%	TRUE	100	152.7053	153%	Sturgeon Heights #2	-5%
5000170	Zone 105	TRUE	100	214.477	214%	TRUE	100	202.9933	203%	Sturgeon Heights #2	-5%
5000180	Zone 105	TRUE	100	269.414	269%	TRUE	100	254.5354	255%	Sturgeon Heights #2	-6%
5000190	Zone 105	FALSE	300	284.713	95%	FALSE	300	269.0567	90%	Sturgeon Heights #2	-5%
5000200	Zone 105	TRUE	300	300	100%	FALSE	300	294.623	98%	Sturgeon Heights #2	-2%
5000210	Zone 105	TRUE	100	144.133	144%	TRUE	100	135.2963	135%	Sturgeon Heights #2	-6%
5000220	Zone 105	TRUE	100	117.183	117%	TRUE	100	112.3247	112%	Sturgeon Heights #2	-4%
5000230	Zone 105	TRUE	100	247.943	248%	TRUE	100	234.3355	234%	Sturgeon Heights #2	-5%
5000240	Zone 105	TRUE	100	147.47	147%	TRUE	100	138.3007	138%	Sturgeon Heights #2	-6%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
5000250	Zone 105	TRUE	100	180.508	181%	TRUE	100	171.3172	171%	Sturgeon Heights #2	-5%
5000260	Zone 105	TRUE	100	257.166	257%	TRUE	100	243.0571	243%	Sturgeon Heights #2	-5%
5000270	Zone 105	TRUE	100	258.861	259%	TRUE	100	244.4074	244%	Sturgeon Heights #2	-6%
5000280	Zone 105	TRUE	100	155.051	155%	TRUE	100	145.2701	145%	Sturgeon Heights #2	-6%
5100010	Zone 105	TRUE	100	155.487	155%	TRUE	100	148.7649	149%	Sturgeon Heights #2	-4%
5100020	Zone 105	TRUE	100	174.727	175%	TRUE	100	168.1854	168%	Sturgeon Heights #2	-4%
5100030	Zone 105	TRUE	100	290.524	291%	TRUE	100	278.2674	278%	Sturgeon Heights #2	-4%
5100040	Zone 105	TRUE	100	200.585	201%	TRUE	100	191.966	192%	Sturgeon Heights #2	-4%
5100050	Zone 105	TRUE	100	154.433	154%	TRUE	100	147.4837	147%	Sturgeon Heights #2	-4%
5100060	Zone 105	TRUE	100	140.978	141%	TRUE	100	134.7849	135%	Sturgeon Heights #2	-4%
5100070	Zone 105	TRUE	100	232.399	232%	TRUE	100	222.7915	223%	Sturgeon Heights #2	-4%
5100080	Zone 105	TRUE	100	272.35	272%	TRUE	100	259.925	260%	Sturgeon Heights #2	-5%
5100090	Zone 105	TRUE	100	225.045	225%	TRUE	100	214.3273	214%	Sturgeon Heights #2	-5%
5100100	Zone 105	TRUE	100	156.978	157%	TRUE	100	149.882	150%	Sturgeon Heights #2	-5%
5100110	Zone 105	TRUE	100	142.255	142%	TRUE	100	136.0075	136%	Sturgeon Heights #2	-4%
5100120	Zone 105	TRUE	100	178.525	179%	TRUE	100	171.7563	172%	Sturgeon Heights #2	-4%
5100130	Zone 105	TRUE	100	252.988	253%	TRUE	100	242.3365	242%	Sturgeon Heights #2	-4%
5100140	Zone 105	TRUE	100	282.548	283%	TRUE	100	270.0554	270%	Sturgeon Heights #2	-4%
5100150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100210	Zone 105	TRUE	100	168.525	169%	TRUE	100	160.8724	161%	Sturgeon Heights #2	-5%
5100220	Zone 105	TRUE	100	300.1	300%	TRUE	100	297.173	297%	Sturgeon Heights #2	-1%
5100230	Zone 105	TRUE	100	172.151	172%	TRUE	100	163.4313	163%	Sturgeon Heights #2	-5%
5100240	Zone 105	TRUE	100	147.839	148%	TRUE	100	138.9569	139%	Sturgeon Heights #2	-6%
5100270	Zone 105	TRUE	100	157.351	157%	TRUE	100	148.0238	148%	Sturgeon Heights #2	-6%
5100280	Zone 105	TRUE	100	297.292	297%	TRUE	100	281.4876	281%	Sturgeon Heights #2	-5%
5100290	Zone 105	TRUE	100	104.469	104%	TRUE	100	100.258	100%	Sturgeon Heights #2	-4%
5100320	Zone 105	TRUE	100	300.1	300%	TRUE	100	287.7556	288%	Sturgeon Heights #2	-4%
5100330	Zone 105	TRUE	100	146.518	147%	TRUE	100	137.5485	138%	Sturgeon Heights #2	-6%
5100360	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100370	Zone 105	TRUE	100	155.549	156%	TRUE	100	145.5903	146%	Sturgeon Heights #2	-6%
5100410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100420	Zone 105	TRUE	100	153.613	154%	TRUE	100	143.5769	144%	Sturgeon Heights #2	-7%
5100450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100470	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #2	0%
5100540	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100550	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100600	Zone 105	TRUE	100	198.902	199%	TRUE	100	187.8915	188%	Sturgeon Heights #2	-6%
5100640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
1200440	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200500	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200505	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200700	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200710	Zone 105	FALSE	300	226.555	76%	FALSE	300	216.0485	72%	TCC #13	-5%
2194	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200730	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200930	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200940	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
248	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
331	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
2200	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
2269	Zone 104	FALSE	300	116.778	39%	FALSE	300	115.9917	39%	TCC #15	-1%
2270	Zone 104	FALSE	300	199.478	66%	FALSE	300	198.0954	66%	TCC #15	-1%
3900010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900020	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900030	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900040	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900050	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900090	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
wNode_127	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_129	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_130	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_134	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_138	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
5100690	Zone 105	TRUE	300	300	100%	FALSE	300	292.4746	97%	TCC #2	-3%
5100720	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-380	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-381	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-488	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
6200120	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200170	Zone 105	TRUE	300	300	100%	FALSE	300	290.5147	97%	TCC #3	-3%
6200180	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200190	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200290	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200300	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200320	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200330	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200530	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200540	Zone 101	TRUE	300	300	100%	FALSE	300	295.5364	99%	TCC #3	-1%
6200590	Zone 101	FALSE	300	297.218	99%	FALSE	300	274.8008	92%	TCC #3	-8%
wNode_92	Zone 101	FALSE	300	214.236	71%	FALSE	300	198.3183	66%	TCC #3	-7%
5100560	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #4	0%
6200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #4	0%
J2153	Zone 105	FALSE	300	169.268	56%	FALSE	300	158.7385	53%	TCC #4	-6%
3900330	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #5	0%
5100480	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #5	0%
J2145	Zone 105	TRUE	300	300	100%	FALSE	300	291.224	97%	TCC #5	-3%
J2146	Zone 105	FALSE	300	282.733	94%	FALSE	300	262.1783	87%	TCC #5	-7%
J2147	Zone 105	FALSE	300	113.706	38%	FALSE	300	105.5749	35%	TCC #5	-7%
1300080	Zone 105	FALSE	300	72.678	24%	FALSE	300	60.8209	20%	TCC #6	-16%
1300090	Zone 105	FALSE	300	98.46	33%	FALSE	300	83.9112	28%	TCC #6	-15%
1300100	Zone 105	FALSE	300	65.512	22%	FALSE	300	54.8034	18%	TCC #6	-16%
1300110	Zone 105	FALSE	300	237.009	79%	FALSE	300	209.7961	70%	TCC #6	-11%
1300150	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300160	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300170	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300180	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300200	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300230	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300240	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300350	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300360	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200060	Zone 105	TRUE	300	300	100%	FALSE	300	281.4531	94%	TCC #6	-6%
2200070	Zone 105	TRUE	300	300	100%	FALSE	300	296.5937	99%	TCC #6	-1%
2200080	Zone 103	FALSE	300	284.605	95%	FALSE	300	270.1653	90%	TCC #6	-5%
2200090	Zone 105	FALSE	300	262.945	88%	FALSE	300	243.9414	81%	TCC #6	-7%
2200120	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200130	Zone 105	FALSE	300	236.136	79%	FALSE	300	219.4261	73%	TCC #6	-7%
J-398	Zone 105	FALSE	300	59.133	20%	FALSE	300	49.9533	17%	TCC #6	-16%
J2109	Zone 105	TRUE	300	300	100%	FALSE	300	293.7419	98%	TCC #6	-2%
J2236	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
J2239	Zone 103	FALSE	300	107.474	36%	FALSE	300	104.7446	35%	TCC #6	-3%
J2257	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
J2258	Zone 105	FALSE	300	155.974	52%	FALSE	300	145.6017	49%	TCC #6	-7%
J2259	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
40	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
2100280	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
2100330	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
1200935	Zone 105	FALSE	300	277.867	93%	FALSE	300	268.6122	90%	TCC #8	-3%
1200945	Zone 105	FALSE	300	272.278	91%	FALSE	300	263.3155	88%	TCC #8	-3%
1200740	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #9	0%
2243	Zone 105	TRUE	300	300	100%	FALSE	300	284.3715	95%	TCC#1	-5%
6100720	Zone 105	FALSE	300	88.15	29%	FALSE	300	82.2666	27%	TCC#1	-7%
6100900	Zone 105	FALSE	300	197.103	66%	FALSE	300	181.5121	61%	TCC#1	-8%
6100920	Zone 105	FALSE	300	197.722	66%	FALSE	300	181.6333	61%	TCC#1	-8%
6100930	Zone 105	FALSE	300	185.326	62%	FALSE	300	170.5815	57%	TCC#1	-8%
6100940	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#1	0%
6100945	Zone 105	FALSE	300	251.243	84%	FALSE	300	229.3523	76%	TCC#1	-9%
6100950	Zone 105	FALSE	300	110.914	37%	FALSE	300	102.1158	34%	TCC#1	-8%
6100960	Zone 105	FALSE	300	81.243	27%	FALSE	300	74.9688	25%	TCC#1	-8%
J2071	Zone 105	FALSE	300	295.079	98%	FALSE	300	272.3767	91%	TCC#1	-8%
J2072	Zone 105	FALSE	300	147.86	49%	FALSE	300	135.9227	45%	TCC#1	-8%
J2073	Zone 105	FALSE	300	297.893	99%	FALSE	300	275.5319	92%	TCC#1	-8%
J2074	Zone 105	FALSE	300	121.242	40%	FALSE	300	113.9335	38%	TCC#1	-6%
2100185	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#10	0%
2200030	Zone 105	FALSE	300	153.333	51%	FALSE	300	145.5086	49%	TCC#10	-5%
wNode_6	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#10	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
1300190	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#11	0%
J2256	Zone 105	FALSE	300	250.456	83%	FALSE	300	235.0913	78%	TCC#11	-6%
1200350	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
1200380	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
J2129	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
3900190	Zone 105	FALSE	100	97.826	98%	FALSE	100	94.612	95%	The Gardens #1	-3%
5200030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5200040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5200050	Zone 105	TRUE	100	134.536	135%	TRUE	100	128.1002	128%	The Gardens #1	-5%
5200060	Zone 105	TRUE	100	103.478	103%	TRUE	100	100.5894	101%	The Gardens #1	-3%
5200110	Zone 105	TRUE	100	158.449	158%	TRUE	100	149.8996	150%	The Gardens #1	-5%
5200120	Zone 105	TRUE	100	142.291	142%	TRUE	100	132.9021	133%	The Gardens #1	-7%
5200130	Zone 105	TRUE	100	125.027	125%	TRUE	100	119.5617	120%	The Gardens #1	-4%
5200140	Zone 105	TRUE	100	300.1	300%	TRUE	100	285.0022	285%	The Gardens #1	-5%
5200150	Zone 105	TRUE	100	246.196	246%	TRUE	100	230.4616	230%	The Gardens #1	-6%
5200160	Zone 105	TRUE	100	114.658	115%	TRUE	100	109.4452	109%	The Gardens #1	-5%
5600070	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5600080	Zone 105	TRUE	100	199.951	200%	TRUE	100	189.1054	189%	The Gardens #1	-5%
5600410	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5600420	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900030	Zone 105	TRUE	100	300.1	300%	TRUE	100	292.3172	292%	The Gardens #1	-3%
5900040	Zone 105	TRUE	100	300.1	300%	TRUE	100	293.2405	293%	The Gardens #1	-2%
5900080	Zone 105	TRUE	100	133.161	133%	TRUE	100	125.5869	126%	The Gardens #1	-6%
5900090	Zone 105	TRUE	100	125.669	126%	TRUE	100	120.5659	121%	The Gardens #1	-4%
5900100	Zone 105	TRUE	100	157.259	157%	TRUE	100	149.9432	150%	The Gardens #1	-5%
5900110	Zone 105	TRUE	100	135.615	136%	TRUE	100	127.5029	128%	The Gardens #1	-6%
5900120	Zone 105	TRUE	100	130.429	130%	TRUE	100	124.9308	125%	The Gardens #1	-4%
5900130	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900140	Zone 105	TRUE	100	244.352	244%	TRUE	100	230.0309	230%	The Gardens #1	-6%
5900150	Zone 105	TRUE	100	218.695	219%	TRUE	100	206.039	206%	The Gardens #1	-6%
5900160	Zone 105	TRUE	100	216.006	216%	TRUE	100	203.1603	203%	The Gardens #1	-6%
5900170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900190	Zone 105	TRUE	100	143.439	143%	TRUE	100	133.8097	134%	The Gardens #1	-7%
5900200	Zone 105	TRUE	100	142.607	143%	TRUE	100	133.0649	133%	The Gardens #1	-7%
5900210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900220	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900230	Zone 105	TRUE	100	211.07	211%	TRUE	100	198.633	199%	The Gardens #1	-6%
5900240	Zone 105	TRUE	100	217.351	217%	TRUE	100	204.6822	205%	The Gardens #1	-6%
5900250	Zone 105	TRUE	100	146.37	146%	TRUE	100	136.5137	137%	The Gardens #1	-7%
5900260	Zone 105	TRUE	100	146.194	146%	TRUE	100	136.4472	136%	The Gardens #1	-7%
6000010	Zone 105	TRUE	100	194.757	195%	TRUE	100	183.4605	183%	The Gardens #1	-6%
6000020	Zone 105	TRUE	100	116.526	117%	TRUE	100	111.0641	111%	The Gardens #1	-5%
6000030	Zone 105	TRUE	100	101.911	102%	FALSE	100	97.5495	98%	The Gardens #1	-4%
6000040	Zone 105	TRUE	100	233.399	233%	TRUE	100	219.5965	220%	The Gardens #1	-6%
6000050	Zone 105	TRUE	100	150.623	151%	TRUE	100	140.8844	141%	The Gardens #1	-6%
6000070	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
J2164	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5300230	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300240	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300270	Zone 105	TRUE	100	155.121	155%	TRUE	100	149.6352	150%	The Gardens #2	-4%
5300280	Zone 105	TRUE	100	259.486	259%	TRUE	100	249.3081	249%	The Gardens #2	-4%
5300290	Zone 105	TRUE	100	272.859	273%	TRUE	100	261.7647	262%	The Gardens #2	-4%
5300300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300310	Zone 105	TRUE	100	152.225	152%	TRUE	100	146.6167	147%	The Gardens #2	-4%
5300320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500010	Zone 105	TRUE	100	238.335	238%	TRUE	100	229.3007	229%	The Gardens #2	-4%
5500020	Zone 105	TRUE	100	252.321	252%	TRUE	100	243.1568	243%	The Gardens #2	-4%
5500030	Zone 105	TRUE	100	273.083	273%	TRUE	100	263.0709	263%	The Gardens #2	-4%
5500040	Zone 105	TRUE	100	163.366	163%	TRUE	100	157.6909	158%	The Gardens #2	-3%
5500050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500060	Zone 105	TRUE	100	298.159	298%	TRUE	100	287.1234	287%	The Gardens #2	-4%
5500070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500090	Zone 105	TRUE	100	273.569	274%	TRUE	100	263.6334	264%	The Gardens #2	-4%
5500100	Zone 105	TRUE	100	216.628	217%	TRUE	100	208.226	208%	The Gardens #2	-4%
5500110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500120	Zone 105	TRUE	100	287.865	288%	TRUE	100	277.4057	277%	The Gardens #2	-4%
5500130	Zone 105	TRUE	100	221.565	222%	TRUE	100	213.281	213%	The Gardens #2	-4%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
5500140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500170	Zone 105	TRUE	100	300.002	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500210	Zone 105	TRUE	100	125.631	126%	TRUE	100	121.7638	122%	The Gardens #2	-3%
5500220	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500230	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500270	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500280	Zone 105	TRUE	100	191.375	191%	TRUE	100	183.211	183%	The Gardens #2	-4%
5500290	Zone 105	TRUE	100	143.5	144%	TRUE	100	136.1754	136%	The Gardens #2	-5%
5500460	Zone 105	TRUE	100	163.392	163%	TRUE	100	156.8108	157%	The Gardens #2	-4%
5500470	Zone 105	TRUE	100	162.865	163%	TRUE	100	156.3956	156%	The Gardens #2	-4%
5500540	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500550	Zone 105	TRUE	100	172.125	172%	TRUE	100	164.4773	164%	The Gardens #2	-4%
5500700	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500710	Zone 105	TRUE	100	161.938	162%	TRUE	100	154.871	155%	The Gardens #2	-4%
5500840	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500850	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500852	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500854	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500856	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500866	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500868	Zone 105	TRUE	100	140.391	140%	TRUE	100	133.2206	133%	The Gardens #2	-5%
5500870	Zone 105	TRUE	100	204.619	205%	TRUE	100	195.3894	195%	The Gardens #2	-5%
5500872	Zone 105	TRUE	100	191.784	192%	TRUE	100	183.0879	183%	The Gardens #2	-5%
5500874	Zone 105	TRUE	100	217.782	218%	TRUE	100	207.1751	207%	The Gardens #2	-5%
5500876	Zone 105	TRUE	100	154.992	155%	TRUE	100	148.6417	149%	The Gardens #2	-4%
5500878	Zone 105	TRUE	100	144.634	145%	TRUE	100	136.6046	137%	The Gardens #2	-6%
5500880	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500882	Zone 105	TRUE	100	159.176	159%	TRUE	100	150.9104	151%	The Gardens #2	-5%
5500883	Zone 105	TRUE	100	280.207	280%	TRUE	100	263.8709	264%	The Gardens #2	-6%
5500884	Zone 105	TRUE	100	152.84	153%	TRUE	100	145.2692	145%	The Gardens #2	-5%
5500886	Zone 105	TRUE	100	267.966	268%	TRUE	100	253.0701	253%	The Gardens #2	-6%
5500888	Zone 105	TRUE	100	260.936	261%	TRUE	100	246.3037	246%	The Gardens #2	-6%
5600010	Zone 105	TRUE	100	195.282	195%	TRUE	100	188.0703	188%	The Gardens #2	-4%
5600020	Zone 105	TRUE	100	166.329	166%	TRUE	100	160.0254	160%	The Gardens #2	-4%
5600030	Zone 105	TRUE	100	157.111	157%	TRUE	100	150.7457	151%	The Gardens #2	-4%
5600040	Zone 105	TRUE	100	145.568	146%	TRUE	100	137.6023	138%	The Gardens #2	-5%
5600050	Zone 105	TRUE	100	139.047	139%	TRUE	100	130.9477	131%	The Gardens #2	-6%
5600090	Zone 105	TRUE	100	101.525	102%	FALSE	100	97.5555	98%	The Gardens #2	-4%
5600130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600220	Zone 105	TRUE	100	164.564	165%	TRUE	100	156.1109	156%	The Gardens #2	-5%
5600230	Zone 105	TRUE	100	167.604	168%	TRUE	100	158.9002	159%	The Gardens #2	-5%
5600240	Zone 105	TRUE	100	172.157	172%	TRUE	100	163.5459	164%	The Gardens #2	-5%
5600250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600260	Zone 105	TRUE	100	226.578	227%	TRUE	100	213.6418	214%	The Gardens #2	-6%
5600270	Zone 105	TRUE	100	300.1	300%	TRUE	100	289.3643	289%	The Gardens #2	-4%
5600300	Zone 105	TRUE	100	215.814	216%	TRUE	100	203.9381	204%	The Gardens #2	-6%
5600310	Zone 105	TRUE	100	180.37	180%	TRUE	100	171.1405	171%	The Gardens #2	-5%
5600320	Zone 105	TRUE	100	280.455	280%	TRUE	100	264.1527	264%	The Gardens #2	-6%
5600330	Zone 105	TRUE	100	129.678	130%	TRUE	100	124.0705	124%	The Gardens #2	-4%
5600350	Zone 105	TRUE	100	273.153	273%	TRUE	100	258.2348	258%	The Gardens #2	-5%
5600360	Zone 105	TRUE	100	250.359	250%	TRUE	100	235.9906	236%	The Gardens #2	-6%
5600370	Zone 105	TRUE	100	150.19	150%	TRUE	100	142.968	143%	The Gardens #2	-5%
5600380	Zone 105	TRUE	100	155.924	156%	TRUE	100	148.3984	148%	The Gardens #2	-5%
5600400	Zone 105	TRUE	100	163.749	164%	TRUE	100	155.7617	156%	The Gardens #2	-5%
5700010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5700020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5700040	Zone 105	TRUE	100	150.739	151%	TRUE	100	144.8774	145%	The Gardens #2	-4%
5800010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5800020	Zone 105	TRUE	100	150.61	151%	TRUE	100	144.8769	145%	The Gardens #2	-4%
6300025	Zone 105	TRUE	100	229.525	230%	TRUE	100	217.597	218%	The Gardens #2	-5%
J2156	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
6200550	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200560	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200570	Zone 101	TRUE	100	300.1	300%	TRUE	100	280.495	280%	The Gardens #3	-7%
6200575	Zone 101	TRUE	100	221.651	222%	TRUE	100	206.4121	206%	The Gardens #3	-7%
6200600	Zone 101	TRUE	100	287.282	287%	TRUE	100	268.228	268%	The Gardens #3	-7%
6200610	Zone 101	TRUE	100	222.124	222%	TRUE	100	207.8939	208%	The Gardens #3	-6%
6200620	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200680	Zone 101	TRUE	100	240.639	241%	TRUE	100	224.274	224%	The Gardens #3	-7%
6200690	Zone 101	TRUE	100	294.121	294%	TRUE	100	274.1146	274%	The Gardens #3	-7%
6200700	Zone 101	TRUE	100	165.465	165%	TRUE	100	154.7502	155%	The Gardens #3	-6%
6200710	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200720	Zone 101	TRUE	100	300.1	300%	TRUE	100	295.3577	295%	The Gardens #3	-2%
6200730	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200740	Zone 101	TRUE	100	281.371	281%	TRUE	100	260.3829	260%	The Gardens #3	-7%
6200750	Zone 101	TRUE	100	164.012	164%	TRUE	100	152.5758	153%	The Gardens #3	-7%
6200760	Zone 101	TRUE	100	175.434	175%	TRUE	100	161.6672	162%	The Gardens #3	-8%
6200770	Zone 101	TRUE	100	255.579	256%	TRUE	100	234.8443	235%	The Gardens #3	-8%
6200780	Zone 101	TRUE	100	183.61	184%	TRUE	100	168.3866	168%	The Gardens #3	-8%
6200790	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200800	Zone 101	TRUE	100	300.1	300%	TRUE	100	294.6206	295%	The Gardens #3	-2%
6200810	Zone 101	TRUE	100	278.123	278%	TRUE	100	252.163	252%	The Gardens #3	-9%
6200820	Zone 101	TRUE	100	245.301	245%	TRUE	100	224.873	225%	The Gardens #3	-8%
2800010	Zone 104	TRUE	100	231.146	231%	TRUE	100	231.1305	231%	Woodlands	0%
2800020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800040	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800050	Zone 104	TRUE	100	197.685	198%	TRUE	100	197.6728	198%	Woodlands	0%
2800060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800100	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800110	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800130	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800140	Zone 104	TRUE	100	264.824	265%	TRUE	100	260.1778	260%	Woodlands	-2%
2800150	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800160	Zone 104	TRUE	100	208.337	208%	TRUE	100	208.3291	208%	Woodlands	0%
2800170	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800220	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800230	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800240	Zone 105	TRUE	100	200.97	201%	TRUE	100	193.8689	194%	Woodlands	-4%
2800250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800320	Zone 105	TRUE	100	222.647	223%	TRUE	100	214.5726	215%	Woodlands	-4%
2800330	Zone 105	TRUE	100	300.1	300%	TRUE	100	293.4386	293%	Woodlands	-2%
2800340	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800345	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800350	Zone 105	TRUE	180	288.58	160%	TRUE	180	278.352	155%	Woodlands	-4%
2800360	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800370	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800380	Zone 105	TRUE	100	300.1	300%	TRUE	100	288.9685	289%	Woodlands	-4%
2800390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800400	Zone 105	TRUE	100	298.625	299%	TRUE	100	280.7807	281%	Woodlands	-6%
2800410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800420	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800470	Zone 105	TRUE	100	185.458	185%	TRUE	100	176.0923	176%	Woodlands	-5%
2800480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800510	Zone 105	TRUE	100	272.275	272%	TRUE	100	261.7285	262%	Woodlands	-4%

EXISTING SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
2800520	Zone 105	TRUE	100	221.253	221%	TRUE	100	211.8288	212%	Woodlands	-4%
2800530	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800540	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800550	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800560	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800630	Zone 105	TRUE	100	194.347	194%	TRUE	100	182.8912	183%	Woodlands	-6%
2800640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800650	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800660	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800670	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800690	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800710	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2900010	Zone 104	TRUE	100	183.526	184%	TRUE	100	183.5104	184%	Woodlands	0%
2900020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900050	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900060	Zone 104	TRUE	100	174.395	174%	TRUE	100	174.3796	174%	Woodlands	0%
2900070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900100	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900120	Zone 104	TRUE	100	165.192	165%	TRUE	100	165.1772	165%	Woodlands	0%
2900130	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900140	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900150	Zone 104	TRUE	100	274.158	274%	TRUE	100	274.1285	274%	Woodlands	0%
2900160	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900170	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900180	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900190	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900200	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900210	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900220	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900230	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900240	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900250	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2900260	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900270	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-444	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-445	Zone 104	TRUE	100	252.844	253%	TRUE	100	252.8161	253%	Woodlands	0%
J-446	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-447	Zone 105	TRUE	100	213.821	214%	TRUE	100	204.6411	205%	Woodlands	-4%
J2243	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
wNode_27	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%

Appendix D – Detailed Comparison of Fire Flow Availability in the Ultimate System

ULTIMATE SYSTEM - MDD + FF Results

		BEFORE INTENSIFICATION				AFTER INTENSIFICATION					
Junction	Zone	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Fire Flow Availability (%)	Intensification	Change in Fire Flow Availability
2202	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
2272	Zone 105	TRUE	100	192.484	192%	TRUE	100	189.8197	190%	Akinsdale	-1%
4400550	Zone 105	TRUE	100	207.13	207%	TRUE	100	203.7321	204%	Akinsdale	-2%
4400560	Zone 105	TRUE	100	131.914	132%	TRUE	100	130.1158	130%	Akinsdale	-1%
4400570	Zone 105	TRUE	100	184.135	184%	TRUE	100	181.4959	181%	Akinsdale	-1%
4400580	Zone 105	TRUE	100	177.825	178%	TRUE	100	175.3024	175%	Akinsdale	-1%
4400590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400620	Zone 105	TRUE	100	147.925	148%	TRUE	100	145.9758	146%	Akinsdale	-1%
4400630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400650	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4400660	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600050	Zone 105	TRUE	100	166.615	167%	TRUE	100	164.3186	164%	Akinsdale	-1%
4600060	Zone 105	TRUE	100	293.124	293%	TRUE	100	288.5595	289%	Akinsdale	-2%
4600070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600100	Zone 105	TRUE	100	182.787	183%	TRUE	100	180.1906	180%	Akinsdale	-1%
4600110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700030	Zone 105	TRUE	100	262.252	262%	TRUE	100	257.9133	258%	Akinsdale	-2%
4700040	Zone 105	TRUE	100	258.098	258%	TRUE	100	254.0533	254%	Akinsdale	-2%
4700050	Zone 105	TRUE	100	198.999	199%	TRUE	100	196.157	196%	Akinsdale	-1%
4700070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700080	Zone 105	TRUE	100	247.714	248%	TRUE	100	244.0481	244%	Akinsdale	-1%
4700090	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
4700110	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700120	Zone 105	TRUE	100	170.976	171%	TRUE	100	168.7634	169%	Akinsdale	-1%
4700130	Zone 105	TRUE	100	165.217	165%	TRUE	100	163.0481	163%	Akinsdale	-1%
4700140	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4700150	Zone 105	TRUE	100	155.733	156%	TRUE	100	153.7885	154%	Akinsdale	-1%
4700160	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4900020	Zone 105	TRUE	100	155.691	156%	TRUE	100	153.7485	154%	Akinsdale	-1%
4900030	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
4900040	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100050	Zone 105	TRUE	100	226.69	227%	TRUE	100	223.55	224%	Akinsdale	-1%
6100060	Zone 105	TRUE	100	278.632	279%	TRUE	100	274.5252	275%	Akinsdale	-1%
6100070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100110	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
6100120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100130	Zone 105	TRUE	100	276.747	277%	TRUE	100	272.5277	273%	Akinsdale	-2%
6100140	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Akinsdale	0%
6100150	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Akinsdale	0%
6100160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100170	Zone 105	TRUE	100	153.563	154%	TRUE	100	151.5183	152%	Akinsdale	-1%
6100180	Zone 105	TRUE	100	115.969	116%	TRUE	100	114.5559	115%	Akinsdale	-1%
6100190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100250	Zone 105	TRUE	100	287.241	287%	TRUE	100	282.7418	283%	Akinsdale	-2%
6100260	Zone 105	TRUE	100	145.891	146%	TRUE	100	143.8802	144%	Akinsdale	-1%
6100270	Zone 105	TRUE	100	261.048	261%	TRUE	100	257.004	257%	Akinsdale	-2%
6100280	Zone 105	TRUE	100	175.314	175%	TRUE	100	172.8922	173%	Akinsdale	-1%
6100310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100340	Zone 105	TRUE	100	181.027	181%	TRUE	100	178.6254	179%	Akinsdale	-1%
6100350	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100360	Zone 105	TRUE	100	195.493	195%	TRUE	100	192.8004	193%	Akinsdale	-1%
6100370	Zone 105	TRUE	100	119.908	120%	TRUE	100	118.4029	118%	Akinsdale	-1%
6100400	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%

6100420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100430	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100460	Zone 105	TRUE	100	176.295	176%	TRUE	100	173.8726	174%	Akinsdale	-1%
6100470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100490	Zone 105	TRUE	100	164.953	165%	TRUE	100	162.7995	163%	Akinsdale	-1%
6100510	Zone 105	TRUE	100	138.854	139%	TRUE	100	137.0927	137%	Akinsdale	-1%
6100520	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100550	Zone 105	TRUE	100	151.984	152%	TRUE	100	150.1736	150%	Akinsdale	-1%
6100560	Zone 105	TRUE	100	177.795	178%	TRUE	100	175.4286	175%	Akinsdale	-1%
6100570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100580	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
6100650	Zone 105	TRUE	100	271.164	271%	TRUE	100	266.9726	267%	Akinsdale	-2%
6100660	Zone 105	TRUE	100	251.816	252%	TRUE	100	248.1131	248%	Akinsdale	-1%
6100670	Zone 105	TRUE	100	266.368	266%	TRUE	100	262.3632	262%	Akinsdale	-2%
6100680	Zone 105	TRUE	100	208.79	209%	TRUE	100	205.8064	206%	Akinsdale	-1%
J2211	Zone 105	TRUE	100	125.15	125%	TRUE	100	123.5887	124%	Akinsdale	-1%
J2216	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
J2217	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Akinsdale	0%
wNode_88	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
wNode_89	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Akinsdale	0%
wNode_90	Zone 105	TRUE	100	232.487	232%	TRUE	100	229.0644	229%	Akinsdale	-1%
wNode_91	Zone 105	TRUE	100	231.694	232%	TRUE	100	228.2572	228%	Akinsdale	-1%
3800120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3800140	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Braeside #1	0%
3900060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900120	Zone 104	TRUE	100	270.755	271%	TRUE	100	267.6665	268%	Braeside #1	-1%
3900130	Zone 104	TRUE	100	204.28	204%	TRUE	100	201.6519	202%	Braeside #1	-1%
3900270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
3900290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #1	0%
4000020	Zone 104	TRUE	100	213.299	213%	TRUE	100	211.4855	211%	Braeside #1	-1%
361	Zone 104	TRUE	100	168.627	169%	TRUE	100	168.5472	169%	Braeside #2	0%
2268	Zone 104	TRUE	100	175.844	176%	TRUE	100	174.5188	175%	Braeside #2	-1%
3000030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000040	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000070	Zone 104	TRUE	100	205.336	205%	TRUE	100	205.2852	205%	Braeside #2	0%
3000080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000100	Zone 104	TRUE	100	221.508	222%	TRUE	100	220.4085	220%	Braeside #2	0%
3000110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000140	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000150	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000160	Zone 104	TRUE	100	278.291	278%	TRUE	100	278.1377	278%	Braeside #2	0%
3000180	Zone 104	TRUE	100	226.616	227%	TRUE	100	226.4886	226%	Braeside #2	0%
3000190	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000200	Zone 104	TRUE	100	299.407	299%	TRUE	100	299.206	299%	Braeside #2	0%
3000210	Zone 104	TRUE	100	105.696	106%	TRUE	100	105.6448	106%	Braeside #2	0%
3000220	Zone 104	TRUE	100	191.538	192%	TRUE	100	191.4346	191%	Braeside #2	0%
3000230	Zone 104	FALSE	100	82.069	82%	FALSE	100	82.0348	82%	Braeside #2	0%
3000280	Zone 105	TRUE	100	137.83	138%	TRUE	100	135.9265	136%	Braeside #2	-1%
3000290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000300	Zone 105	TRUE	100	122.103	122%	TRUE	100	120.4051	120%	Braeside #2	-1%
3000310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3000320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3100040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200010	Zone 104	TRUE	100	133.176	133%	TRUE	100	133.2454	133%	Braeside #2	0%
3200020	Zone 104	TRUE	100	262.304	262%	TRUE	100	262.1232	262%	Braeside #2	0%
3200030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200040	Zone 104	TRUE	100	285.61	286%	TRUE	100	285.3993	285%	Braeside #2	0%
3200050	Zone 104	TRUE	100	126.812	127%	TRUE	100	126.7404	127%	Braeside #2	0%
3200060	Zone 104	TRUE	100	279.964	280%	TRUE	100	279.7511	280%	Braeside #2	0%
3200070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200080	Zone 104	TRUE	100	284.704	285%	TRUE	100	284.4773	284%	Braeside #2	0%
3200090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3200110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%

3300010	Zone 105	TRUE	100	265.473	265%	TRUE	100	261.531	262%	Braeside #2	-1%
3300020	Zone 105	TRUE	100	173.063	173%	TRUE	100	170.9326	171%	Braeside #2	-1%
3300030	Zone 105	TRUE	100	270.794	271%	TRUE	100	266.7511	267%	Braeside #2	-1%
3300040	Zone 105	TRUE	100	232.967	233%	TRUE	100	229.8517	230%	Braeside #2	-1%
3300050	Zone 105	TRUE	100	168.401	168%	TRUE	100	165.8474	166%	Braeside #2	-2%
3700010	Zone 105	TRUE	100	214.936	215%	TRUE	100	212.6307	213%	Braeside #2	-1%
3700020	Zone 105	TRUE	100	222.471	222%	TRUE	100	219.5226	220%	Braeside #2	-1%
3700030	Zone 105	TRUE	100	267.904	268%	TRUE	100	264.1685	264%	Braeside #2	-1%
3700040	Zone 105	FALSE	100	92.906	93%	FALSE	100	91.7603	92%	Braeside #2	-1%
3700050	Zone 105	TRUE	100	105.779	106%	TRUE	100	104.3393	104%	Braeside #2	-1%
3700060	Zone 105	TRUE	100	159.688	160%	TRUE	100	157.461	157%	Braeside #2	-1%
3700070	Zone 105	TRUE	100	283.391	283%	TRUE	100	279.076	279%	Braeside #2	-2%
3700080	Zone 105	TRUE	100	279.363	279%	TRUE	100	275.5098	276%	Braeside #2	-1%
3800010	Zone 104	TRUE	100	118.225	118%	TRUE	100	118.1515	118%	Braeside #2	0%
3800020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3800030	Zone 104	TRUE	100	292.456	292%	TRUE	100	292.1948	292%	Braeside #2	0%
3800040	Zone 104	TRUE	100	261.444	261%	TRUE	100	261.2222	261%	Braeside #2	0%
3800050	Zone 104	TRUE	100	188.304	188%	TRUE	100	188.1686	188%	Braeside #2	0%
3800080	Zone 104	TRUE	100	283.453	283%	TRUE	100	282.7991	283%	Braeside #2	0%
3800090	Zone 104	TRUE	100	151.674	152%	TRUE	100	151.5626	152%	Braeside #2	0%
3800100	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Braeside #2	0%
3800150	Zone 104	TRUE	100	300.1	300%	TRUE	100	297.5946	298%	Braeside #2	-1%
3800170	Zone 104	FALSE	300	280.496	93%	FALSE	300	278.3088	93%	Braeside #2	-1%
4000010	Zone 104	TRUE	100	224.707	225%	TRUE	100	223.1723	223%	Braeside #2	-1%
4100010	Zone 105	TRUE	100	206.316	206%	TRUE	100	202.7862	203%	Braeside #2	-2%
J-383	Zone 104	TRUE	100	150.252	150%	TRUE	100	149.611	150%	Braeside #2	0%
J-416	Zone 105	TRUE	100	164.349	164%	TRUE	100	162.2754	162%	Braeside #2	-1%
J2241	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Braeside #2	0%
3500050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500110	Zone 105	TRUE	100	203.535	204%	TRUE	100	200.4738	200%	Forest Lawn	-2%
3500120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500160	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
3500170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3500180	Zone 105	TRUE	100	212.639	213%	TRUE	100	209.468	209%	Forest Lawn	-1%
3600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	296.1079	296%	Forest Lawn	-1%
3600050	Zone 105	TRUE	100	300.1	300%	TRUE	100	298.8299	299%	Forest Lawn	0%
3600060	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
3600070	Zone 105	TRUE	100	291.953	292%	TRUE	100	286.5731	287%	Forest Lawn	-2%
3600080	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
3600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
3600100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200015	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200030	Zone 105	TRUE	100	274.504	275%	TRUE	100	269.7253	270%	Forest Lawn	-2%
4200035	Zone 105	TRUE	100	191.774	192%	TRUE	100	188.8867	189%	Forest Lawn	-2%
4200040	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
4200050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200055	Zone 105	TRUE	100	223.473	223%	TRUE	100	220.0253	220%	Forest Lawn	-2%
4200060	Zone 105	TRUE	100	193.574	194%	TRUE	100	190.9281	191%	Forest Lawn	-1%
4200070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4200130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300010	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300020	Zone 105	TRUE	100	225.681	226%	TRUE	100	222.2127	222%	Forest Lawn	-2%
4300050	Zone 105	TRUE	100	171.756	172%	TRUE	100	169.2638	169%	Forest Lawn	-1%
4300060	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300070	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300090	Zone 105	TRUE	100	187.678	188%	TRUE	100	184.9877	185%	Forest Lawn	-1%
4300100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300110	Zone 105	TRUE	100	182.7	183%	TRUE	100	180.0665	180%	Forest Lawn	-1%
4300120	Zone 105	TRUE	100	196.666	197%	TRUE	100	193.8397	194%	Forest Lawn	-1%
4300130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%

4300170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
4300180	Zone 105	TRUE	100	192.769	193%	TRUE	100	190.0152	190%	Forest Lawn	-1%
4300190	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300200	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
4300210	Zone 105	TRUE	180	203.999	113%	TRUE	180	200.7765	112%	Forest Lawn	-2%
4300220	Zone 105	TRUE	100	277.578	278%	TRUE	100	273.196	273%	Forest Lawn	-2%
4300230	Zone 105	TRUE	100	289.426	289%	TRUE	100	284.8265	285%	Forest Lawn	-2%
4300240	Zone 105	TRUE	100	279.07	279%	TRUE	100	274.637	275%	Forest Lawn	-2%
4300250	Zone 105	TRUE	180	185.015	103%	TRUE	180	182.3243	101%	Forest Lawn	-1%
4300260	Zone 105	TRUE	180	239.199	133%	TRUE	180	235.3381	131%	Forest Lawn	-2%
4300270	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
5000010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000030	Zone 105	TRUE	100	163.164	163%	TRUE	100	161.2134	161%	Forest Lawn	-1%
5000040	Zone 105	TRUE	100	158.922	159%	TRUE	100	156.9917	157%	Forest Lawn	-1%
5000050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000060	Zone 105	FALSE	100	99.79	100%	FALSE	100	98.573	99%	Forest Lawn	-1%
5000070	Zone 105	FALSE	100	77.758	78%	FALSE	100	76.8144	77%	Forest Lawn	-1%
5000080	Zone 105	TRUE	100	183.569	184%	TRUE	100	181.2571	181%	Forest Lawn	-1%
5000090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000110	Zone 105	TRUE	100	109.818	110%	TRUE	100	108.4979	108%	Forest Lawn	-1%
5000120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5000150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5100340	Zone 105	TRUE	100	273.501	274%	TRUE	100	269.8949	270%	Forest Lawn	-1%
5100350	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
5100380	Zone 105	TRUE	100	155.677	156%	TRUE	100	153.3818	153%	Forest Lawn	-1%
5100390	Zone 105	TRUE	100	193.144	193%	TRUE	100	190.1684	190%	Forest Lawn	-2%
5100400	Zone 105	TRUE	100	156.961	157%	TRUE	100	154.5173	155%	Forest Lawn	-2%
5100430	Zone 105	TRUE	100	138.662	139%	TRUE	100	136.6009	137%	Forest Lawn	-1%
5100440	Zone 105	TRUE	100	200.366	200%	TRUE	100	197.1587	197%	Forest Lawn	-2%
J-441	Zone 105	TRUE	100	106.642	107%	TRUE	100	105.1573	105%	Forest Lawn	-1%
J-442	Zone 105	TRUE	180	244.202	136%	TRUE	180	240.4132	134%	Forest Lawn	-2%
J-443	Zone 105	TRUE	100	146.485	146%	TRUE	100	144.5842	145%	Forest Lawn	-1%
J-482	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Forest Lawn	0%
J2221	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2222	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2223	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2224	Zone 105	FALSE	180	148.813	83%	FALSE	180	146.6766	81%	Forest Lawn	-1%
J2225	Zone 105	TRUE	180	186.979	104%	TRUE	180	183.999	102%	Forest Lawn	-2%
J2226	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2227	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Forest Lawn	0%
J2228	Zone 105	FALSE	180	123.277	68%	FALSE	180	121.3652	67%	Forest Lawn	-2%
J2234	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Forest Lawn	0%
J-382	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	hydrant DT019	0%
2267	Zone 100	FALSE	300	156.063	52%	FALSE	300	155.9939	52%	Inglewood	0%
321	Zone 105	TRUE	100	293.721	294%	TRUE	100	290.4764	290%	Lacombe Park #1	-1%
2195	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2196	Zone 105	TRUE	100	281.843	282%	TRUE	100	277.1664	277%	Lacombe Park #1	-2%
1000390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000400	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000425	Zone 105	TRUE	100	153.246	153%	TRUE	100	152.5611	153%	Lacombe Park #1	0%
1000430	Zone 105	TRUE	100	297.816	298%	TRUE	100	296.2767	296%	Lacombe Park #1	-1%
1000435	Zone 105	TRUE	100	147.072	147%	TRUE	100	146.4184	146%	Lacombe Park #1	0%
1000440	Zone 105	TRUE	100	272.779	273%	TRUE	100	271.3945	271%	Lacombe Park #1	-1%
1000450	Zone 105	TRUE	100	196.31	196%	TRUE	100	195.2356	195%	Lacombe Park #1	-1%
1000460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1000470	Zone 105	TRUE	100	267.887	268%	TRUE	100	266.5596	267%	Lacombe Park #1	0%
1100110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1100120	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600010	Zone 105	TRUE	100	283.835	284%	TRUE	100	281.9912	282%	Lacombe Park #1	-1%
1600020	Zone 105	TRUE	100	283.905	284%	TRUE	100	282.0334	282%	Lacombe Park #1	-1%
1600030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600090	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600120	Zone 105	TRUE	100	200.116	200%	TRUE	100	198.8428	199%	Lacombe Park #1	-1%

1600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600180	Zone 105	TRUE	100	245.07	245%	TRUE	100	243.3921	243%	Lacombe Park #1	-1%
1600190	Zone 105	TRUE	100	190.809	191%	TRUE	100	189.7117	190%	Lacombe Park #1	-1%
1600200	Zone 105	TRUE	100	136.63	137%	TRUE	100	135.8459	136%	Lacombe Park #1	-1%
1600210	Zone 105	TRUE	100	220.267	220%	TRUE	100	218.751	219%	Lacombe Park #1	-1%
1600220	Zone 105	TRUE	100	142.599	143%	TRUE	100	141.6886	142%	Lacombe Park #1	-1%
1600230	Zone 105	TRUE	100	124.278	124%	TRUE	100	123.5482	124%	Lacombe Park #1	-1%
1600240	Zone 105	TRUE	100	161.83	162%	TRUE	100	160.7733	161%	Lacombe Park #1	-1%
1600250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600310	Zone 105	TRUE	100	201.401	201%	TRUE	100	200.0977	200%	Lacombe Park #1	-1%
1600320	Zone 105	TRUE	100	209.203	209%	TRUE	100	207.7841	208%	Lacombe Park #1	-1%
1600330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600340	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600350	Zone 105	TRUE	100	185.618	186%	TRUE	100	184.5487	185%	Lacombe Park #1	-1%
1600360	Zone 105	TRUE	100	218.223	218%	TRUE	100	216.8091	217%	Lacombe Park #1	-1%
1600370	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600380	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600390	Zone 105	TRUE	100	270.689	271%	TRUE	100	268.8974	269%	Lacombe Park #1	-1%
1600400	Zone 105	TRUE	100	188.166	188%	TRUE	100	186.9793	187%	Lacombe Park #1	-1%
1600410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1600470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1700030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700040	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700050	Zone 105	TRUE	180	250.496	139%	TRUE	180	248.8804	138%	Lacombe Park #1	-1%
1700060	Zone 105	TRUE	180	202.879	113%	TRUE	180	201.5687	112%	Lacombe Park #1	-1%
1700070	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700080	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700085	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700090	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Lacombe Park #1	0%
1700100	Zone 105	TRUE	180	235.627	131%	TRUE	180	234.0916	130%	Lacombe Park #1	-1%
1700110	Zone 105	TRUE	180	200.579	111%	TRUE	180	199.2906	111%	Lacombe Park #1	-1%
1700120	Zone 105	TRUE	180	193.137	107%	TRUE	180	191.8742	107%	Lacombe Park #1	-1%
1700130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700150	Zone 105	TRUE	100	151.175	151%	TRUE	100	150.1099	150%	Lacombe Park #1	-1%
1700160	Zone 105	TRUE	100	142.31	142%	TRUE	100	141.3149	141%	Lacombe Park #1	-1%
1700170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700190	Zone 105	TRUE	100	225.337	225%	TRUE	100	223.674	224%	Lacombe Park #1	-1%
1700200	Zone 105	TRUE	100	153.532	154%	TRUE	100	152.4663	152%	Lacombe Park #1	-1%
1700210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700220	Zone 105	TRUE	100	175.146	175%	TRUE	100	173.6142	174%	Lacombe Park #1	-1%
1700230	Zone 105	TRUE	100	171.176	171%	TRUE	100	169.7054	170%	Lacombe Park #1	-1%
1700240	Zone 105	TRUE	100	231.998	232%	TRUE	100	230.0132	230%	Lacombe Park #1	-1%
1700250	Zone 105	TRUE	100	240.181	240%	TRUE	100	238.0105	238%	Lacombe Park #1	-1%
1700260	Zone 105	TRUE	100	293.054	293%	TRUE	100	290.2565	290%	Lacombe Park #1	-1%
1700270	Zone 105	TRUE	100	212.83	213%	TRUE	100	210.9448	211%	Lacombe Park #1	-1%
1700280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700300	Zone 105	TRUE	100	135.046	135%	TRUE	100	133.982	134%	Lacombe Park #1	-1%
1700310	Zone 105	TRUE	100	145.644	146%	TRUE	100	144.4582	144%	Lacombe Park #1	-1%
1700320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1700340	Zone 105	TRUE	100	293.115	293%	TRUE	100	290.3815	290%	Lacombe Park #1	-1%
1700350	Zone 105	TRUE	100	201.561	202%	TRUE	100	199.823	200%	Lacombe Park #1	-1%
1700360	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800010	Zone 105	TRUE	100	118.579	119%	TRUE	100	117.2717	117%	Lacombe Park #1	-1%
1800020	Zone 105	TRUE	100	126.462	126%	TRUE	100	124.897	125%	Lacombe Park #1	-1%
1800030	Zone 105	TRUE	100	169.411	169%	TRUE	100	167.2297	167%	Lacombe Park #1	-1%
1800040	Zone 105	TRUE	100	157.149	157%	TRUE	100	155.1392	155%	Lacombe Park #1	-1%
1800050	Zone 105	TRUE	100	148.842	149%	TRUE	100	146.8552	147%	Lacombe Park #1	-1%
1800060	Zone 105	TRUE	100	151.249	151%	TRUE	100	149.1886	149%	Lacombe Park #1	-1%
1800070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%

1800080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800090	Zone 105	TRUE	100	230.41	230%	TRUE	100	227.0007	227%	Lacombe Park #1	-1%
1800100	Zone 105	TRUE	100	212.518	213%	TRUE	100	209.7244	210%	Lacombe Park #1	-1%
1800110	Zone 105	TRUE	100	277.868	278%	TRUE	100	273.7041	274%	Lacombe Park #1	-1%
1800120	Zone 105	TRUE	100	269.772	270%	TRUE	100	265.7799	266%	Lacombe Park #1	-1%
1800130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800170	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800220	Zone 105	FALSE	100	89.801	90%	FALSE	100	88.6955	89%	Lacombe Park #1	-1%
1800230	Zone 105	FALSE	100	92.196	92%	FALSE	100	90.9924	91%	Lacombe Park #1	-1%
1800240	Zone 105	TRUE	100	271.796	272%	TRUE	100	266.681	267%	Lacombe Park #1	-2%
1800250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800260	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800270	Zone 105	TRUE	100	300.1	300%	TRUE	100	298.3567	298%	Lacombe Park #1	-1%
1800280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800320	Zone 105	TRUE	100	185.814	186%	TRUE	100	184.0585	184%	Lacombe Park #1	-1%
1800330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800340	Zone 105	TRUE	100	267.831	268%	TRUE	100	263.035	263%	Lacombe Park #1	-2%
1800350	Zone 105	TRUE	100	297.022	297%	TRUE	100	291.6627	292%	Lacombe Park #1	-2%
1800360	Zone 105	TRUE	100	176.763	177%	TRUE	100	174.0109	174%	Lacombe Park #1	-2%
1800370	Zone 105	TRUE	100	276.117	276%	TRUE	100	271.186	271%	Lacombe Park #1	-2%
1800380	Zone 105	TRUE	100	284.317	284%	TRUE	100	279.1611	279%	Lacombe Park #1	-2%
1800390	Zone 105	TRUE	100	162.447	162%	TRUE	100	159.9699	160%	Lacombe Park #1	-2%
1800410	Zone 105	TRUE	100	143.75	144%	TRUE	100	142.5267	143%	Lacombe Park #1	-1%
1800420	Zone 105	TRUE	100	193.587	194%	TRUE	100	191.7993	192%	Lacombe Park #1	-1%
1800430	Zone 105	TRUE	100	169.443	169%	TRUE	100	167.9268	168%	Lacombe Park #1	-1%
1800440	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800460	Zone 105	TRUE	100	297.557	298%	TRUE	100	292.1881	292%	Lacombe Park #1	-2%
1800470	Zone 105	TRUE	100	300.1	300%	TRUE	100	295.3485	295%	Lacombe Park #1	-2%
1800480	Zone 105	TRUE	100	193.45	193%	TRUE	100	190.2113	190%	Lacombe Park #1	-2%
1800490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800500	Zone 105	TRUE	100	265.299	265%	TRUE	100	260.2142	260%	Lacombe Park #1	-2%
1800510	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800520	Zone 105	TRUE	100	144.344	144%	TRUE	100	142.3714	142%	Lacombe Park #1	-1%
1800530	Zone 105	TRUE	100	144.375	144%	TRUE	100	142.4	142%	Lacombe Park #1	-1%
1800540	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800550	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800560	Zone 105	TRUE	100	120.438	120%	TRUE	100	119.1548	119%	Lacombe Park #1	-1%
1800570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800580	Zone 105	TRUE	100	244.046	244%	TRUE	100	240.8764	241%	Lacombe Park #1	-1%
1800590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800600	Zone 105	TRUE	100	256.793	257%	TRUE	100	252.6566	253%	Lacombe Park #1	-2%
1800610	Zone 105	TRUE	100	274.397	274%	TRUE	100	269.788	270%	Lacombe Park #1	-2%
1800620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800630	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1800640	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800650	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800660	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800670	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800680	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Lacombe Park #1	0%
1800690	Zone 105	FALSE	300	248.617	83%	FALSE	300	244.691	82%	Lacombe Park #1	-2%
1900010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
1900020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
2000050	Zone 105	TRUE	100	239.063	239%	TRUE	100	236.9989	237%	Lacombe Park #1	-1%
J-5	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J-141	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J2125	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #1	0%
J2126	Zone 105	FALSE	180	120.133	67%	FALSE	180	118.7706	66%	Lacombe Park #1	-1%
2266	Zone 105	TRUE	100	154.828	155%	TRUE	100	152.3208	152%	Lacombe Park #2	-2%
1200750	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200760	Zone 105	TRUE	100	300.1	300%	TRUE	100	297.9228	298%	Lacombe Park #2	-1%
1200770	Zone 105	TRUE	100	235.53	236%	TRUE	100	230.7918	231%	Lacombe Park #2	-2%
1200780	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200790	Zone 105	TRUE	100	294.965	295%	TRUE	100	289.082	289%	Lacombe Park #2	-2%
1200800	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%

1200810	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200820	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200830	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200840	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200850	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200860	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200870	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200890	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200900	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200950	Zone 105	TRUE	100	271.59	272%	TRUE	100	266.1082	266%	Lacombe Park #2	-2%
1200960	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Lacombe Park #2	0%
1200970	Zone 105	TRUE	100	141.651	142%	TRUE	100	139.4347	139%	Lacombe Park #2	-2%
1200975	Zone 105	TRUE	100	300.1	300%	TRUE	100	297.7266	298%	Lacombe Park #2	-1%
1200980	Zone 105	TRUE	100	299.285	299%	TRUE	100	293.2898	293%	Lacombe Park #2	-2%
1200985	Zone 105	TRUE	100	244.965	245%	TRUE	100	240.5827	241%	Lacombe Park #2	-2%
1800400	Zone 105	TRUE	100	116.3	116%	TRUE	100	114.7018	115%	Lacombe Park #2	-1%
351	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600490	Zone 105	TRUE	100	221.077	221%	TRUE	100	219.6476	220%	Mission #1	-1%
1600500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600510	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1600520	Zone 105	TRUE	100	234.659	235%	TRUE	100	233.1042	233%	Mission #1	-1%
1600530	Zone 105	TRUE	100	224.563	225%	TRUE	100	223.0359	223%	Mission #1	-1%
1800700	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
1800710	Zone 105	TRUE	100	243.351	243%	TRUE	100	241.0096	241%	Mission #1	-1%
1800720	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #1	0%
2000060	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000070	Zone 105	TRUE	100	213.191	213%	TRUE	100	211.6217	212%	Mission #1	-1%
2000080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000090	Zone 105	TRUE	100	212.965	213%	TRUE	100	211.4056	211%	Mission #1	-1%
2000100	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2000110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300015	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2300040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
2400010	Zone 105	TRUE	100	185.553	186%	TRUE	100	184.0415	184%	Mission #1	-1%
2400020	Zone 105	TRUE	100	175.155	175%	TRUE	100	173.6464	174%	Mission #1	-1%
2400030	Zone 105	TRUE	100	126.495	126%	TRUE	100	125.4922	125%	Mission #1	-1%
2400040	Zone 105	TRUE	100	183.314	183%	TRUE	100	181.714	182%	Mission #1	-1%
2400050	Zone 105	TRUE	100	206.513	207%	TRUE	100	204.4751	204%	Mission #1	-1%
2400060	Zone 105	TRUE	100	157.317	157%	TRUE	100	155.8981	156%	Mission #1	-1%
2400070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
J-142	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #1	0%
J-388	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #1	0%
3	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
1800740	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #2	0%
1800750	Zone 103	TRUE	100	172.944	173%	TRUE	100	172.3748	172%	Mission #2	0%
2100130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100200	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100220	Zone 103	FALSE	300	209.826	70%	FALSE	300	208.8926	70%	Mission #2	0%
2100230	Zone 103	TRUE	100	259.994	260%	TRUE	100	258.1775	258%	Mission #2	-1%
2100240	Zone 103	TRUE	100	230.615	231%	TRUE	100	228.9175	229%	Mission #2	-1%
2100290	Zone 103	TRUE	100	245.077	245%	TRUE	100	243.8326	244%	Mission #2	-1%
2100300	Zone 103	TRUE	100	288.495	288%	TRUE	100	286.7523	287%	Mission #2	-1%
2100340	Zone 103	TRUE	100	218.305	218%	TRUE	100	218.0268	218%	Mission #2	0%
2100350	Zone 103	TRUE	100	284.429	284%	TRUE	100	282.9203	283%	Mission #2	-1%
2100360	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2100370	Zone 103	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Mission #2	0%
2500010	Zone 103	TRUE	100	225.963	226%	TRUE	100	225.0191	225%	Mission #2	0%
2600020	Zone 103	TRUE	100	232.426	232%	TRUE	100	231.4536	231%	Mission #2	0%
2600030	Zone 103	TRUE	100	229.309	229%	TRUE	100	228.3781	228%	Mission #2	0%
V-M017	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #2	0%
2100160	Zone 103	FALSE	300	226.853	76%	FALSE	300	224.7556	75%	Mission #3	-1%
2100170	Zone 103	FALSE	300	235.173	78%	FALSE	300	227.1082	76%	Mission #3	-3%
2100180	Zone 103	FALSE	300	264.45	88%	FALSE	300	255.5909	85%	Mission #3	-3%
2100250	Zone 103	TRUE	100	273.727	274%	TRUE	100	266.5811	267%	Mission #3	-3%
2100260	Zone 103	TRUE	100	300.1	300%	TRUE	100	294.3211	294%	Mission #3	-2%
2100270	Zone 103	TRUE	100	271.3	271%	TRUE	100	262.6432	263%	Mission #3	-3%
2100320	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
2100390	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	Mission #3	0%
J2163	Zone 103	FALSE	300	172.346	57%	FALSE	300	171.0056	57%	Mission #3	-1%
4400260	Zone 105	TRUE	100	223.548	224%	TRUE	100	220.1716	220%	Pineview	-2%
4400280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%

4400300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400330	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400370	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400380	Zone 105	TRUE	100	225.153	225%	TRUE	100	221.7271	222%	Pineview	-2%
4400390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400420	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400430	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400440	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400460	Zone 105	TRUE	100	169.305	169%	TRUE	100	166.8846	167%	Pineview	-1%
4400470	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
4400490	Zone 105	TRUE	100	217.018	217%	TRUE	100	213.7453	214%	Pineview	-2%
4400500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Pineview	0%
10	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100200	Zone 105	TRUE	100	178.686	179%	TRUE	100	177.2473	177%	Sturgeon Heights #1	-1%
5100250	Zone 105	TRUE	100	185.327	185%	TRUE	100	183.7904	184%	Sturgeon Heights #1	-1%
5100300	Zone 105	TRUE	100	196.796	197%	TRUE	100	195.5184	196%	Sturgeon Heights #1	-1%
5100310	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100500	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100503	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #1	0%
5100530	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100580	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100590	Zone 105	TRUE	100	281.547	282%	TRUE	100	279.045	279%	Sturgeon Heights #1	-1%
5100610	Zone 105	TRUE	100	188.724	189%	TRUE	100	186.4731	186%	Sturgeon Heights #1	-1%
5100620	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100630	Zone 105	TRUE	100	298.03	298%	TRUE	100	295.213	295%	Sturgeon Heights #1	-1%
5100650	Zone 105	TRUE	100	260.132	260%	TRUE	100	256.1252	256%	Sturgeon Heights #1	-2%
5100660	Zone 105	TRUE	100	158.626	159%	TRUE	100	156.5593	157%	Sturgeon Heights #1	-1%
5100670	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100680	Zone 105	TRUE	100	135.776	136%	TRUE	100	134.3593	134%	Sturgeon Heights #1	-1%
5100700	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5100710	Zone 105	TRUE	100	136.652	137%	TRUE	100	135.2388	135%	Sturgeon Heights #1	-1%
J2143	Zone 105	TRUE	100	137.52	138%	TRUE	100	136.5116	137%	Sturgeon Heights #1	-1%
J2152	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #1	0%
5000160	Zone 105	TRUE	100	152.308	152%	TRUE	100	150.6702	151%	Sturgeon Heights #2	-1%
5000170	Zone 105	TRUE	100	205.721	206%	TRUE	100	203.3848	203%	Sturgeon Heights #2	-1%
5000180	Zone 105	TRUE	100	262.519	263%	TRUE	100	259.387	259%	Sturgeon Heights #2	-1%
5000190	Zone 105	FALSE	300	278.922	93%	FALSE	300	275.4937	92%	Sturgeon Heights #2	-1%
5000200	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #2	0%
5000210	Zone 105	TRUE	100	136.083	136%	TRUE	100	134.6271	135%	Sturgeon Heights #2	-1%
5000220	Zone 105	TRUE	100	111.808	112%	TRUE	100	110.6672	111%	Sturgeon Heights #2	-1%
5000230	Zone 105	TRUE	100	240.193	240%	TRUE	100	237.3939	237%	Sturgeon Heights #2	-1%
5000240	Zone 105	TRUE	100	139.307	139%	TRUE	100	137.8072	138%	Sturgeon Heights #2	-1%
5000250	Zone 105	TRUE	100	171.919	172%	TRUE	100	170.0191	170%	Sturgeon Heights #2	-1%
5000260	Zone 105	TRUE	100	249.915	250%	TRUE	100	247.0154	247%	Sturgeon Heights #2	-1%
5000270	Zone 105	TRUE	100	251.723	252%	TRUE	100	248.8317	249%	Sturgeon Heights #2	-1%
5000280	Zone 105	TRUE	100	146.848	147%	TRUE	100	145.3448	145%	Sturgeon Heights #2	-1%
5100010	Zone 105	TRUE	100	150.079	150%	TRUE	100	149.0579	149%	Sturgeon Heights #2	-1%
5100020	Zone 105	TRUE	100	168.738	169%	TRUE	100	167.5017	168%	Sturgeon Heights #2	-1%
5100030	Zone 105	TRUE	100	286.174	286%	TRUE	100	283.2867	283%	Sturgeon Heights #2	-1%
5100040	Zone 105	TRUE	100	193.483	193%	TRUE	100	191.6715	192%	Sturgeon Heights #2	-1%
5100050	Zone 105	TRUE	100	148.796	149%	TRUE	100	147.7352	148%	Sturgeon Heights #2	-1%
5100060	Zone 105	TRUE	100	135.419	135%	TRUE	100	134.4528	134%	Sturgeon Heights #2	-1%
5100070	Zone 105	TRUE	100	226.508	227%	TRUE	100	224.6271	225%	Sturgeon Heights #2	-1%
5100080	Zone 105	TRUE	100	267.123	267%	TRUE	100	264.5472	265%	Sturgeon Heights #2	-1%
5100090	Zone 105	TRUE	100	217.941	218%	TRUE	100	215.8385	216%	Sturgeon Heights #2	-1%
5100100	Zone 105	TRUE	100	151.329	151%	TRUE	100	150.237	150%	Sturgeon Heights #2	-1%
5100110	Zone 105	TRUE	100	136.699	137%	TRUE	100	135.7278	136%	Sturgeon Heights #2	-1%
5100120	Zone 105	TRUE	100	172.541	173%	TRUE	100	171.2827	171%	Sturgeon Heights #2	-1%
5100130	Zone 105	TRUE	100	248.011	248%	TRUE	100	246.0226	246%	Sturgeon Heights #2	-1%
5100140	Zone 105	TRUE	100	278.816	279%	TRUE	100	276.4973	276%	Sturgeon Heights #2	-1%
5100150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100210	Zone 105	TRUE	100	161.069	161%	TRUE	100	159.6	160%	Sturgeon Heights #2	-1%
5100220	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100230	Zone 105	TRUE	100	163.574	164%	TRUE	100	161.8947	162%	Sturgeon Heights #2	-1%
5100240	Zone 105	TRUE	100	140.028	140%	TRUE	100	138.6532	139%	Sturgeon Heights #2	-1%
5100270	Zone 105	TRUE	100	149.712	150%	TRUE	100	148.3008	148%	Sturgeon Heights #2	-1%
5100280	Zone 105	TRUE	100	293.604	294%	TRUE	100	290.3167	290%	Sturgeon Heights #2	-1%

5100290	Zone 105	FALSE	100	99.131	99%	FALSE	100	98.1943	98%	Sturgeon Heights #2	-1%
5100320	Zone 105	TRUE	100	300.1	300%	TRUE	100	297.7399	298%	Sturgeon Heights #2	-1%
5100330	Zone 105	TRUE	100	138.54	139%	TRUE	100	137.1488	137%	Sturgeon Heights #2	-1%
5100360	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100370	Zone 105	TRUE	100	147.172	147%	TRUE	100	145.5139	146%	Sturgeon Heights #2	-1%
5100410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100420	Zone 105	TRUE	100	145.036	145%	TRUE	100	143.3518	143%	Sturgeon Heights #2	-1%
5100450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100470	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Sturgeon Heights #2	0%
5100540	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100550	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
5100600	Zone 105	TRUE	100	190.499	190%	TRUE	100	188.6153	189%	Sturgeon Heights #2	-1%
5100640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Sturgeon Heights #2	0%
1200440	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200500	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200505	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200700	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #13	0%
1200710	Zone 105	FALSE	300	216.137	72%	FALSE	300	209.1969	70%	TCC #13	-3%
2194	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200730	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200930	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
1200940	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #14	0%
248	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
331	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
2200	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
2269	Zone 104	FALSE	300	114.261	38%	FALSE	300	113.1974	38%	TCC #15	-1%
2270	Zone 104	FALSE	300	190.761	64%	FALSE	300	188.8082	63%	TCC #15	-1%
3900010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900020	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900030	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900040	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900050	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
3900090	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #15	0%
wNode_127	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_129	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_130	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_134	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
wNode_138	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #16	0%
5100690	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
5100720	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-380	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-381	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
J-488	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #2	0%
6200120	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200170	Zone 105	TRUE	300	300	100%	FALSE	300	295.2068	98%	TCC #3	-2%
6200180	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200190	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200290	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200300	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200320	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200330	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200530	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200540	Zone 101	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #3	0%
6200590	Zone 101	FALSE	300	283.223	94%	FALSE	300	277.2093	92%	TCC #3	-2%
wNode_92	Zone 101	FALSE	300	201.445	67%	FALSE	300	195.8004	65%	TCC #3	-3%
5100560	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #4	0%
6200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #4	0%
J2153	Zone 105	FALSE	300	158.994	53%	FALSE	300	155.798	52%	TCC #4	-2%
3900330	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #5	0%
5100480	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #5	0%
J2145	Zone 105	TRUE	300	300	100%	FALSE	300	295.0625	98%	TCC #5	-2%
J2146	Zone 105	FALSE	300	275.681	92%	FALSE	300	265.0659	88%	TCC #5	-4%
J2147	Zone 105	FALSE	300	108.655	36%	FALSE	300	103.5411	35%	TCC #5	-5%
1300080	Zone 105	FALSE	300	68.612	23%	FALSE	300	57.6396	19%	TCC #6	-16%
1300090	Zone 105	FALSE	300	93.09	31%	FALSE	300	79.8709	27%	TCC #6	-14%
1300100	Zone 105	FALSE	300	61.881	21%	FALSE	300	51.875	17%	TCC #6	-16%
1300110	Zone 105	FALSE	300	222.682	74%	FALSE	300	200.8063	67%	TCC #6	-10%
1300150	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300160	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300170	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300180	Zone 105	TRUE	300	300	100%	FALSE	300	297.4132	99%	TCC #6	-1%
1300200	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300230	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300240	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%

1300350	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
1300360	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200020	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200060	Zone 105	FALSE	300	295.257	98%	FALSE	300	276.8181	92%	TCC #6	-6%
2200070	Zone 105	TRUE	300	300	100%	FALSE	300	292.5157	98%	TCC #6	-2%
2200080	Zone 103	FALSE	300	276.241	92%	FALSE	300	262.9122	88%	TCC #6	-5%
2200090	Zone 105	FALSE	300	254.696	85%	FALSE	300	239.4139	80%	TCC #6	-6%
2200120	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2200130	Zone 105	FALSE	300	227.895	76%	FALSE	300	214.8245	72%	TCC #6	-6%
J-398	Zone 105	FALSE	300	55.872	19%	FALSE	300	47.0754	16%	TCC #6	-16%
J2109	Zone 105	TRUE	300	300	100%	FALSE	300	288.5872	96%	TCC #6	-4%
J2236	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
J2239	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
J2257	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
J2258	Zone 105	FALSE	300	146.314	49%	FALSE	300	138.9943	46%	TCC #6	-5%
J2259	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #6	0%
2	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
40	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
2100280	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
2100330	Zone 103	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #7	0%
1200935	Zone 105	FALSE	300	269.876	90%	FALSE	300	264.9913	88%	TCC #8	-2%
1200945	Zone 105	FALSE	300	264.595	88%	FALSE	300	259.7212	87%	TCC #8	-2%
1200740	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC #9	0%
2243	Zone 105	TRUE	300	300	100%	FALSE	300	292.5958	98%	TCC#1	-2%
6100720	Zone 105	FALSE	300	82.962	28%	FALSE	300	80.011	27%	TCC#1	-4%
6100900	Zone 105	FALSE	300	187.672	63%	FALSE	300	180.4301	60%	TCC#1	-4%
6100920	Zone 105	FALSE	300	188.599	63%	FALSE	300	180.5336	60%	TCC#1	-4%
6100930	Zone 105	FALSE	300	176.3	59%	FALSE	300	168.9729	56%	TCC#1	-4%
6100940	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#1	0%
6100945	Zone 105	FALSE	300	242.874	81%	FALSE	300	231.7436	77%	TCC#1	-5%
6100950	Zone 105	FALSE	300	104.958	35%	FALSE	300	99.8896	33%	TCC#1	-5%
6100960	Zone 105	FALSE	300	76.261	25%	FALSE	300	72.5995	24%	TCC#1	-5%
J2071	Zone 105	FALSE	300	286.323	95%	FALSE	300	279.3737	93%	TCC#1	-2%
J2072	Zone 105	FALSE	300	138.366	46%	FALSE	300	134.8652	45%	TCC#1	-3%
J2073	Zone 105	FALSE	300	290.095	97%	FALSE	300	282.5964	94%	TCC#1	-3%
J2074	Zone 105	FALSE	300	115.132	38%	FALSE	300	112.0288	37%	TCC#1	-3%
2100185	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#10	0%
2200030	Zone 105	FALSE	300	145.056	48%	FALSE	300	139.9303	47%	TCC#10	-4%
wNode_6	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#10	0%
1300190	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#11	0%
J2256	Zone 105	FALSE	300	239.728	80%	FALSE	300	228.8037	76%	TCC#11	-5%
1200350	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
1200380	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
J2129	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	TCC#12	0%
3900190	Zone 105	FALSE	100	98.223	98%	FALSE	100	97.0922	97%	The Gardens #1	-1%
5200030	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5200040	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5200050	Zone 105	TRUE	100	126.915	127%	TRUE	100	125.3857	125%	The Gardens #1	-1%
5200060	Zone 105	FALSE	100	98.91	99%	FALSE	100	97.9405	98%	The Gardens #1	-1%
5200110	Zone 105	TRUE	100	146.611	147%	TRUE	100	144.1917	144%	The Gardens #1	-2%
5200120	Zone 105	TRUE	100	131.505	132%	TRUE	100	129.4686	129%	The Gardens #1	-2%
5200130	Zone 105	TRUE	100	117.753	118%	TRUE	100	115.9791	116%	The Gardens #1	-2%
5200140	Zone 105	TRUE	100	286.884	287%	TRUE	100	280.7263	281%	The Gardens #1	-2%
5200150	Zone 105	TRUE	100	229.741	230%	TRUE	100	225.1639	225%	The Gardens #1	-2%
5200160	Zone 105	TRUE	100	107.268	107%	TRUE	100	105.6115	106%	The Gardens #1	-2%
5600070	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5600080	Zone 105	TRUE	100	186.373	186%	TRUE	100	183.3035	183%	The Gardens #1	-2%
5600410	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5600420	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900010	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900030	Zone 105	TRUE	100	295.688	296%	TRUE	100	289.8058	290%	The Gardens #1	-2%
5900040	Zone 105	TRUE	100	296.998	297%	TRUE	100	290.8765	291%	The Gardens #1	-2%
5900080	Zone 105	TRUE	100	123.91	124%	TRUE	100	122.1298	122%	The Gardens #1	-1%
5900090	Zone 105	TRUE	100	118.689	119%	TRUE	100	116.9433	117%	The Gardens #1	-1%
5900100	Zone 105	TRUE	100	146.646	147%	TRUE	100	144.5132	145%	The Gardens #1	-1%
5900110	Zone 105	TRUE	100	125.821	126%	TRUE	100	124.0043	124%	The Gardens #1	-1%
5900120	Zone 105	TRUE	100	123.146	123%	TRUE	100	121.3515	121%	The Gardens #1	-1%
5900130	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900140	Zone 105	TRUE	100	228.64	229%	TRUE	100	224.3759	224%	The Gardens #1	-2%
5900150	Zone 105	TRUE	100	203.659	204%	TRUE	100	200.1437	200%	The Gardens #1	-2%
5900160	Zone 105	TRUE	100	200.453	200%	TRUE	100	196.7714	197%	The Gardens #1	-2%
5900170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900190	Zone 105	TRUE	100	132.006	132%	TRUE	100	129.9099	130%	The Gardens #1	-2%
5900200	Zone 105	TRUE	100	131.238	131%	TRUE	100	129.1599	129%	The Gardens #1	-2%

5900210	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5900220	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #1	0%
5900230	Zone 105	TRUE	100	195.832	196%	TRUE	100	192.3497	192%	The Gardens #1	-2%
5900240	Zone 105	TRUE	100	202.141	202%	TRUE	100	198.7551	199%	The Gardens #1	-2%
5900250	Zone 105	TRUE	100	134.83	135%	TRUE	100	132.6935	133%	The Gardens #1	-2%
5900260	Zone 105	TRUE	100	134.781	135%	TRUE	100	132.671	133%	The Gardens #1	-2%
6000010	Zone 105	TRUE	100	181.364	181%	TRUE	100	178.2876	178%	The Gardens #1	-2%
6000020	Zone 105	TRUE	100	109.143	109%	TRUE	100	107.5402	108%	The Gardens #1	-1%
6000030	Zone 105	FALSE	100	95.405	95%	FALSE	100	94.0934	94%	The Gardens #1	-1%
6000040	Zone 105	TRUE	100	219.604	220%	TRUE	100	215.8037	216%	The Gardens #1	-2%
6000050	Zone 105	TRUE	100	140.221	140%	TRUE	100	138.1595	138%	The Gardens #1	-1%
6000070	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
J2164	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #1	0%
5300230	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300240	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300270	Zone 105	TRUE	100	147.019	147%	TRUE	100	145.3671	145%	The Gardens #2	-1%
5300280	Zone 105	TRUE	100	248.037	248%	TRUE	100	244.6343	245%	The Gardens #2	-1%
5300290	Zone 105	TRUE	100	259.743	260%	TRUE	100	256.0858	256%	The Gardens #2	-1%
5300300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5300310	Zone 105	TRUE	100	143.644	144%	TRUE	100	142.0308	142%	The Gardens #2	-1%
5300320	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500010	Zone 105	TRUE	100	225.658	226%	TRUE	100	222.9389	223%	The Gardens #2	-1%
5500020	Zone 105	TRUE	100	238.191	238%	TRUE	100	235.3874	235%	The Gardens #2	-1%
5500030	Zone 105	TRUE	100	258.519	259%	TRUE	100	255.2669	255%	The Gardens #2	-1%
5500040	Zone 105	TRUE	100	153.701	154%	TRUE	100	152.0272	152%	The Gardens #2	-1%
5500050	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500060	Zone 105	TRUE	100	282.15	282%	TRUE	100	278.3137	278%	The Gardens #2	-1%
5500070	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500080	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500090	Zone 105	TRUE	100	257.597	258%	TRUE	100	254.3925	254%	The Gardens #2	-1%
5500100	Zone 105	TRUE	100	202.972	203%	TRUE	100	200.4906	200%	The Gardens #2	-1%
5500110	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500120	Zone 105	TRUE	100	270.372	270%	TRUE	100	267.5892	268%	The Gardens #2	-1%
5500130	Zone 105	TRUE	100	206.308	206%	TRUE	100	203.9574	204%	The Gardens #2	-1%
5500140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500190	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500210	Zone 105	TRUE	100	119.349	119%	TRUE	100	118.0931	118%	The Gardens #2	-1%
5500220	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500230	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500270	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500280	Zone 105	TRUE	100	176.412	176%	TRUE	100	174.0445	174%	The Gardens #2	-1%
5500290	Zone 105	TRUE	100	132.702	133%	TRUE	100	131.0785	131%	The Gardens #2	-1%
5500460	Zone 105	TRUE	100	151.001	151%	TRUE	100	149.0819	149%	The Gardens #2	-1%
5500470	Zone 105	TRUE	100	150.673	151%	TRUE	100	148.7889	149%	The Gardens #2	-1%
5500540	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500550	Zone 105	TRUE	100	157.68	158%	TRUE	100	155.4724	155%	The Gardens #2	-1%
5500700	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500710	Zone 105	TRUE	100	148.41	148%	TRUE	100	146.3323	146%	The Gardens #2	-1%
5500840	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500850	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500852	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
5500854	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500856	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	The Gardens #2	0%
5500866	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5500868	Zone 105	TRUE	100	129.304	129%	TRUE	100	127.7297	128%	The Gardens #2	-1%
5500870	Zone 105	TRUE	100	187.024	187%	TRUE	100	184.3938	184%	The Gardens #2	-1%
5500872	Zone 105	TRUE	100	175.399	175%	TRUE	100	172.9119	173%	The Gardens #2	-1%
5500874	Zone 105	TRUE	100	198.981	199%	TRUE	100	196.0177	196%	The Gardens #2	-1%
5500876	Zone 105	TRUE	100	142.744	143%	TRUE	100	140.9259	141%	The Gardens #2	-1%
5500878	Zone 105	TRUE	100	132.628	133%	TRUE	100	130.8666	131%	The Gardens #2	-1%
5500880	Zone 105	TRUE	100	300.1	300%	TRUE	100	293.9927	294%	The Gardens #2	-2%
5500882	Zone 105	TRUE	100	145.023	145%	TRUE	100	142.6913	143%	The Gardens #2	-2%
5500883	Zone 105	TRUE	100	256.016	256%	TRUE	100	250.8804	251%	The Gardens #2	-2%
5500884	Zone 105	TRUE	100	139.778	140%	TRUE	100	137.6525	138%	The Gardens #2	-2%
5500886	Zone 105	TRUE	100	246.595	247%	TRUE	100	242.113	242%	The Gardens #2	-2%
5500888	Zone 105	TRUE	100	239.344	239%	TRUE	100	235.0162	235%	The Gardens #2	-2%
5600010	Zone 105	TRUE	100	184.332	184%	TRUE	100	182.1932	182%	The Gardens #2	-1%
5600020	Zone 105	TRUE	100	156.149	156%	TRUE	100	154.2736	154%	The Gardens #2	-1%
5600030	Zone 105	TRUE	100	146.566	147%	TRUE	100	144.6767	145%	The Gardens #2	-1%

5600040	Zone 105	TRUE	100	135.05	135%	TRUE	100	133.3184	133%	The Gardens #2	-1%
5600050	Zone 105	TRUE	100	128.079	128%	TRUE	100	126.302	126%	The Gardens #2	-1%
5600090	Zone 105	FALSE	100	94.616	95%	FALSE	100	93.3641	93%	The Gardens #2	-1%
5600130	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600140	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600150	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600160	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600170	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600220	Zone 105	TRUE	100	151.466	151%	TRUE	100	149.0898	149%	The Gardens #2	-2%
5600230	Zone 105	TRUE	100	154.294	154%	TRUE	100	151.8901	152%	The Gardens #2	-2%
5600240	Zone 105	TRUE	100	158.439	158%	TRUE	100	156.0184	156%	The Gardens #2	-2%
5600250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5600260	Zone 105	TRUE	100	209.092	209%	TRUE	100	205.4515	205%	The Gardens #2	-2%
5600270	Zone 105	TRUE	100	286.54	287%	TRUE	100	281.1312	281%	The Gardens #2	-2%
5600300	Zone 105	TRUE	100	198.696	199%	TRUE	100	195.399	195%	The Gardens #2	-2%
5600310	Zone 105	TRUE	100	165.794	166%	TRUE	100	163.1862	163%	The Gardens #2	-2%
5600320	Zone 105	TRUE	100	258.835	259%	TRUE	100	253.7801	254%	The Gardens #2	-2%
5600330	Zone 105	TRUE	100	121.519	122%	TRUE	100	119.8171	120%	The Gardens #2	-1%
5600350	Zone 105	TRUE	100	252.397	252%	TRUE	100	247.854	248%	The Gardens #2	-2%
5600360	Zone 105	TRUE	100	230.309	230%	TRUE	100	226.1289	226%	The Gardens #2	-2%
5600370	Zone 105	TRUE	100	138.689	139%	TRUE	100	136.6872	137%	The Gardens #2	-1%
5600380	Zone 105	TRUE	100	144.091	144%	TRUE	100	141.999	142%	The Gardens #2	-1%
5600400	Zone 105	TRUE	100	150.654	151%	TRUE	100	148.3739	148%	The Gardens #2	-2%
5700010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5700020	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5700040	Zone 105	TRUE	100	141.624	142%	TRUE	100	139.9343	140%	The Gardens #2	-1%
5800010	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #2	0%
5800020	Zone 105	TRUE	100	141.715	142%	TRUE	100	140.0647	140%	The Gardens #2	-1%
6300025	Zone 105	TRUE	100	207.428	207%	TRUE	100	204.0927	204%	The Gardens #2	-2%
J2156	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	The Gardens #2	0%
6200550	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200560	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200570	Zone 101	TRUE	100	289.212	289%	TRUE	100	283.2383	283%	The Gardens #3	-2%
6200575	Zone 101	TRUE	100	207.737	208%	TRUE	100	204.0597	204%	The Gardens #3	-2%
6200600	Zone 101	TRUE	100	274.296	274%	TRUE	100	268.9795	269%	The Gardens #3	-2%
6200610	Zone 101	TRUE	100	208.553	209%	TRUE	100	204.8696	205%	The Gardens #3	-2%
6200620	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200680	Zone 101	TRUE	100	225.038	225%	TRUE	100	220.7058	221%	The Gardens #3	-2%
6200690	Zone 101	TRUE	100	279.857	280%	TRUE	100	273.3511	273%	The Gardens #3	-2%
6200700	Zone 101	TRUE	100	151.83	152%	TRUE	100	149.0438	149%	The Gardens #3	-2%
6200710	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200720	Zone 101	TRUE	100	300.1	300%	TRUE	100	297.0392	297%	The Gardens #3	-1%
6200730	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200740	Zone 101	TRUE	100	264.388	264%	TRUE	100	258.0502	258%	The Gardens #3	-2%
6200750	Zone 101	TRUE	100	149.308	149%	TRUE	100	146.3192	146%	The Gardens #3	-2%
6200760	Zone 101	TRUE	100	158.606	159%	TRUE	100	154.9892	155%	The Gardens #3	-2%
6200770	Zone 101	TRUE	100	237.198	237%	TRUE	100	231.5757	232%	The Gardens #3	-2%
6200780	Zone 101	TRUE	100	165.442	165%	TRUE	100	161.4124	161%	The Gardens #3	-2%
6200790	Zone 101	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	The Gardens #3	0%
6200800	Zone 101	TRUE	100	300.1	300%	TRUE	100	296.7131	297%	The Gardens #3	-1%
6200810	Zone 101	TRUE	100	257.079	257%	TRUE	100	249.6272	250%	The Gardens #3	-3%
6200820	Zone 101	TRUE	100	226.34	226%	TRUE	100	220.8474	221%	The Gardens #3	-2%
2800010	Zone 104	TRUE	100	232.298	232%	TRUE	100	232.2737	232%	Woodlands	0%
2800020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800040	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800050	Zone 104	TRUE	100	199.287	199%	TRUE	100	199.2695	199%	Woodlands	0%
2800060	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800100	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800110	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800120	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800130	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800140	Zone 104	TRUE	100	257.046	257%	TRUE	100	255.6723	256%	Woodlands	-1%
2800150	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800160	Zone 104	TRUE	100	209.722	210%	TRUE	100	209.0763	209%	Woodlands	0%
2800170	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800180	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800190	Zone 105	TRUE	100	288.074	288%	TRUE	100	284.7037	285%	Woodlands	-1%
2800200	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800210	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800220	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%

2800230	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800240	Zone 105	TRUE	100	189.743	190%	TRUE	100	187.7367	188%	Woodlands	-1%
2800250	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800260	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800270	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800280	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800290	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800300	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800310	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800320	Zone 105	TRUE	100	211.684	212%	TRUE	100	209.3299	209%	Woodlands	-1%
2800330	Zone 105	TRUE	100	296.289	296%	TRUE	100	291.2086	291%	Woodlands	-2%
2800340	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800345	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800350	Zone 105	TRUE	180	278.164	155%	TRUE	180	275.6073	153%	Woodlands	-1%
2800360	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800370	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800380	Zone 105	TRUE	100	286.664	287%	TRUE	100	282.3577	282%	Woodlands	-2%
2800390	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800400	Zone 105	TRUE	100	284.045	284%	TRUE	100	278.3984	278%	Woodlands	-2%
2800410	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800420	Zone 105	TRUE	180	300.1	167%	TRUE	180	300.0999	167%	Woodlands	0%
2800450	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800460	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800470	Zone 105	TRUE	100	174.383	174%	TRUE	100	171.6759	172%	Woodlands	-2%
2800480	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800490	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800500	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800510	Zone 105	TRUE	100	262.286	262%	TRUE	100	259.1174	259%	Woodlands	-1%
2800520	Zone 105	TRUE	100	211.768	212%	TRUE	100	208.9993	209%	Woodlands	-1%
2800530	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800540	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800550	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800560	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800570	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800590	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800600	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800610	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800630	Zone 105	TRUE	100	181.34	181%	TRUE	100	178.0171	178%	Woodlands	-2%
2800640	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800650	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2800660	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800670	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800690	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2800710	Zone 105	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2900010	Zone 104	TRUE	100	183.622	184%	TRUE	100	183.594	184%	Woodlands	0%
2900020	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900030	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900050	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900060	Zone 104	TRUE	100	174.416	174%	TRUE	100	174.3889	174%	Woodlands	0%
2900070	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900080	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900090	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900100	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900110	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900120	Zone 104	TRUE	100	164.622	165%	TRUE	100	164.5931	165%	Woodlands	0%
2900130	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900140	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900150	Zone 104	TRUE	100	273.336	273%	TRUE	100	273.2869	273%	Woodlands	0%
2900160	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900170	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900180	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900190	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900200	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900210	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900220	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900230	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900240	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900250	Zone 104	TRUE	300	300	100%	TRUE	300	299.9999	100%	Woodlands	0%
2900260	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
2900270	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-444	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-445	Zone 104	TRUE	100	248.868	249%	TRUE	100	248.8119	249%	Woodlands	0%
J-446	Zone 105	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
J-447	Zone 105	TRUE	100	203.659	204%	TRUE	100	201.0274	201%	Woodlands	-1%
J2243	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%
wNode_27	Zone 104	TRUE	100	300.1	300%	TRUE	100	300.0999	300%	Woodlands	0%

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