Appendix F

Capacity Requirements & Peak Day Planning

2018 OR IRP Final

Appendix F - Introduction

The purpose of this document is to illustrate the flexibility of Cascade's system, and to identify where Cascade needs to pick up incremental transportation rights.

Cascade can realign the transportation Maximum Daily Delivery Obligation(s) (MDDOs) in the Company's contracts to citygates in the same zone on the Northwest Pipeline (NWP). GTN has demand tap (citygate) specific MDDOs where they cannot be realigned. GTN does have a few contracts that can be delivered to any of the demand taps.

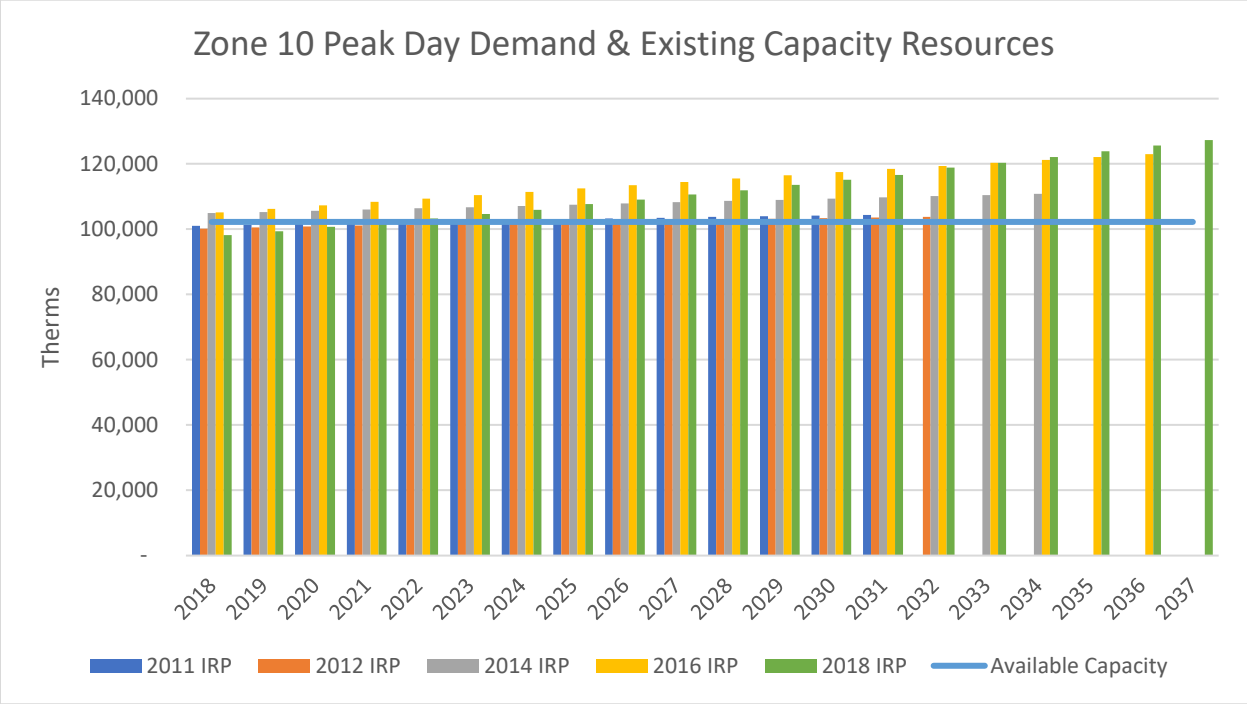
In the first series of charts, below, the Company compares the forecasted demand at the zonal level in the past four IRPs to the current available transportation capacity. The Company also aggregates the gates by zone, by state, and finally the entire system. This is shown in the second series of charts which analyzes each of the citygates in Oregon and Washington. In these charts, the green bars indicate what the Company forecasts demand to be in a peak day environment for a 20-year time horizon. The orange line shows how many therms can contractually be moved to that area with location-specific MDDOs. The gray line shows the total amount of therms that are utilized by realigning certain contracts that do not specify a fixed location where the therms need to go, and adding those MDDOs to the fixed contracts. These flexible contracts are assigned using the Company's optimization software, SENDOUT. Finally, the blue line illustrates how much demand Cascade can serve by adding incremental transportation agreements to its existing transportation portfolio. The space between the blue line and gray line, if any, shows exactly how much additional transport the Company believes will need to be acquired, and when it needs to be picked up.

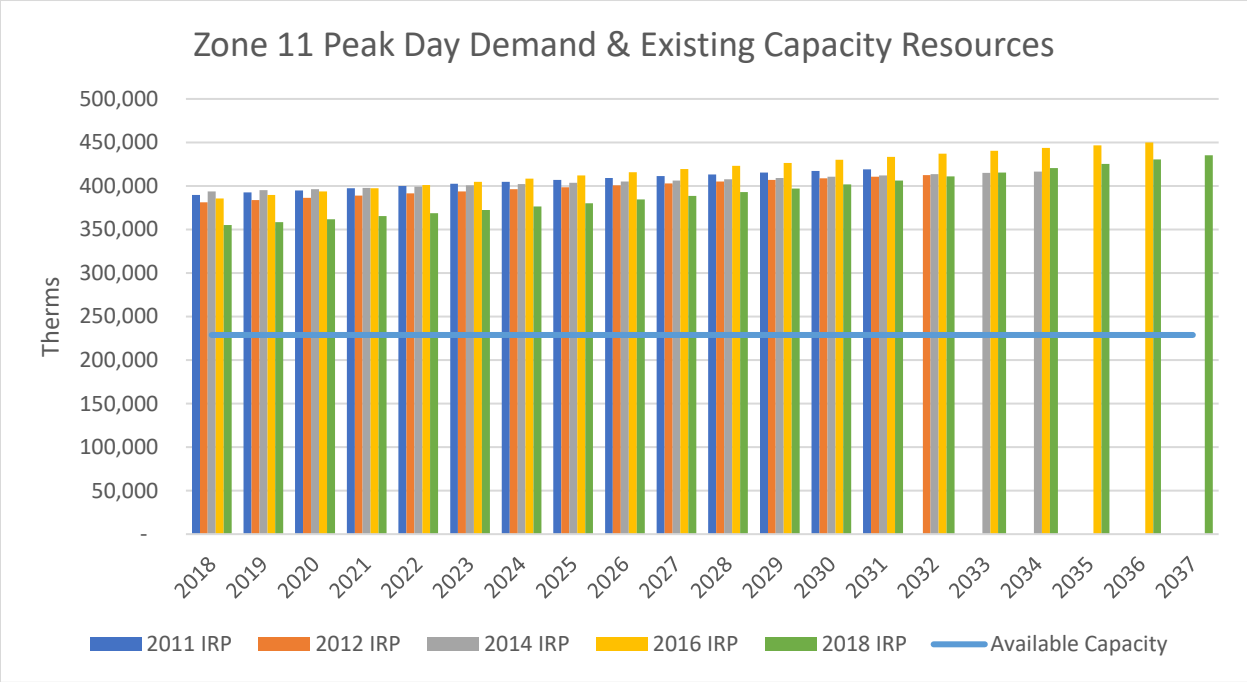
As mentioned above, Cascade has the ability to realign certain MDDOs on the zonal level to help serve demand in areas where there is not a direct contract to that citygate. To that end, certain citygates within Northwest Pipeline (NWP) will utilize MDDOs above or below their contracted level. Some examples of this are shown below:

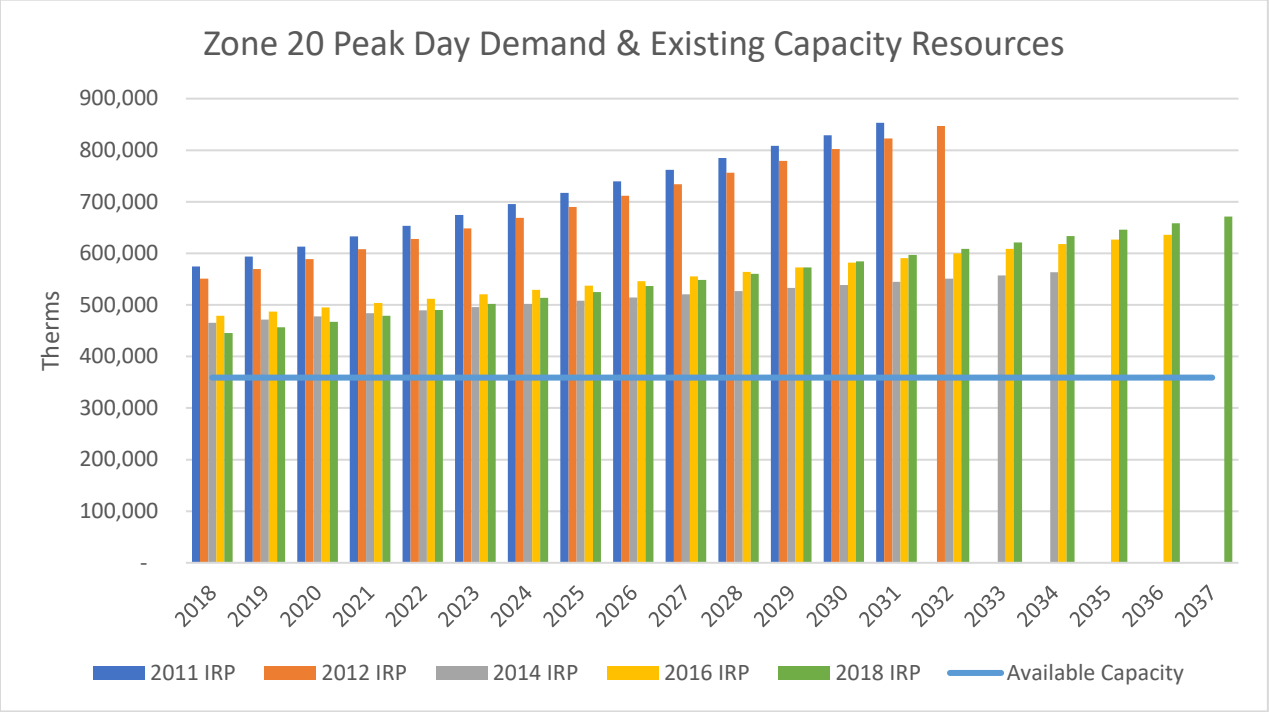
Citygates where Utilized MDDOs are below contracted MDDOs: This occurs when the Company has the capacity to send more gas to a citygate than what they project is needed over the 20-year planning horizon. Ideally, this transportation capacity is moved to another citygate within that zone, but in certain situations these MDDOs are unable to be utilized if they are not needed elsewhere. Examples include: Pendleton and Umatilla.

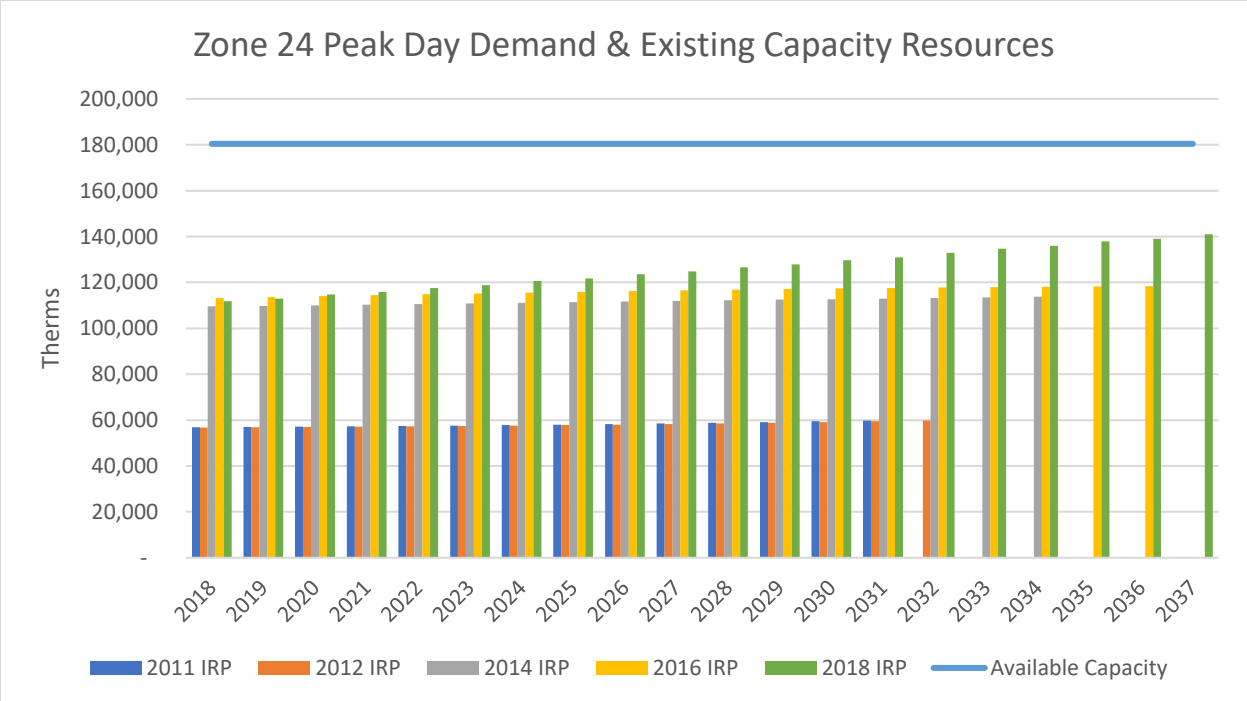
Citygates where Utilized MDDOs are above Contracted MDDOs: This occurs when the Company projects that there is not enough capacity in existing contracts to serve projected demand over the 20-year planning horizon, but there is excess capacity at a citygate within the same zone. It is important to distinguish that this is not an acquisition of additional capacity, but a realignment of excess capacity within the same zone. Examples include: Bend Loop and Redmond.

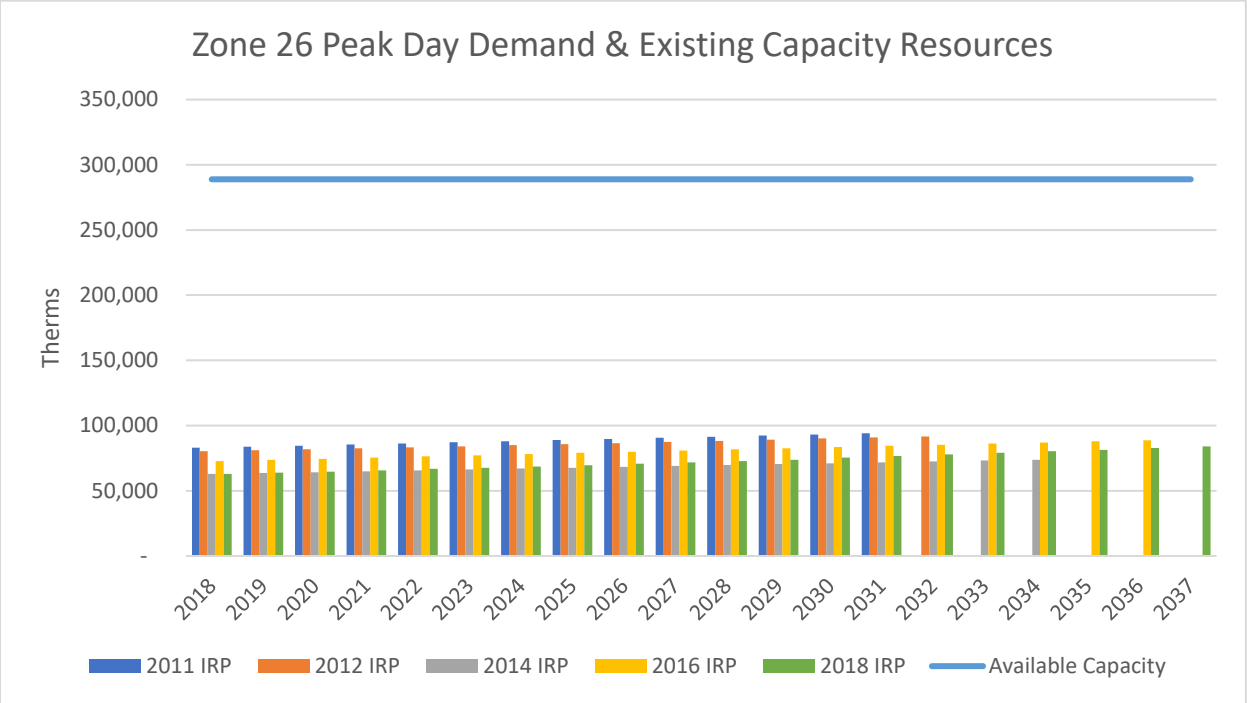
Citygates where Utilized MDDOs are both above and below contracted MDDOs: In certain situations, a citygate may start the planning horizon with excess capacity, but grow to a point where Cascade expects a shortfall with current contracts. In these circumstances, the Company illustrates the citygate first sharing the excess MDDOs with other locations that need it, but later pulling capacity from other areas with excess transportation contracts. Examples include: Nyssa-Ontario.

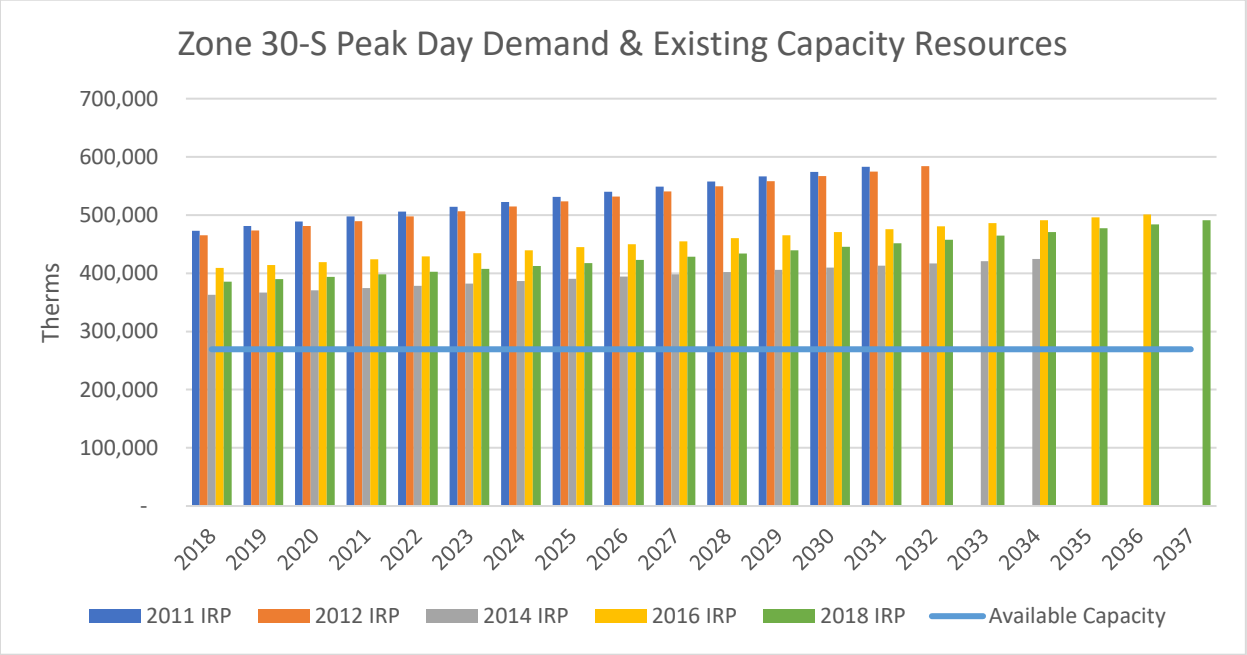

Zone 10 Peak Day Demand & Existing Capacity Resources
Therms
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

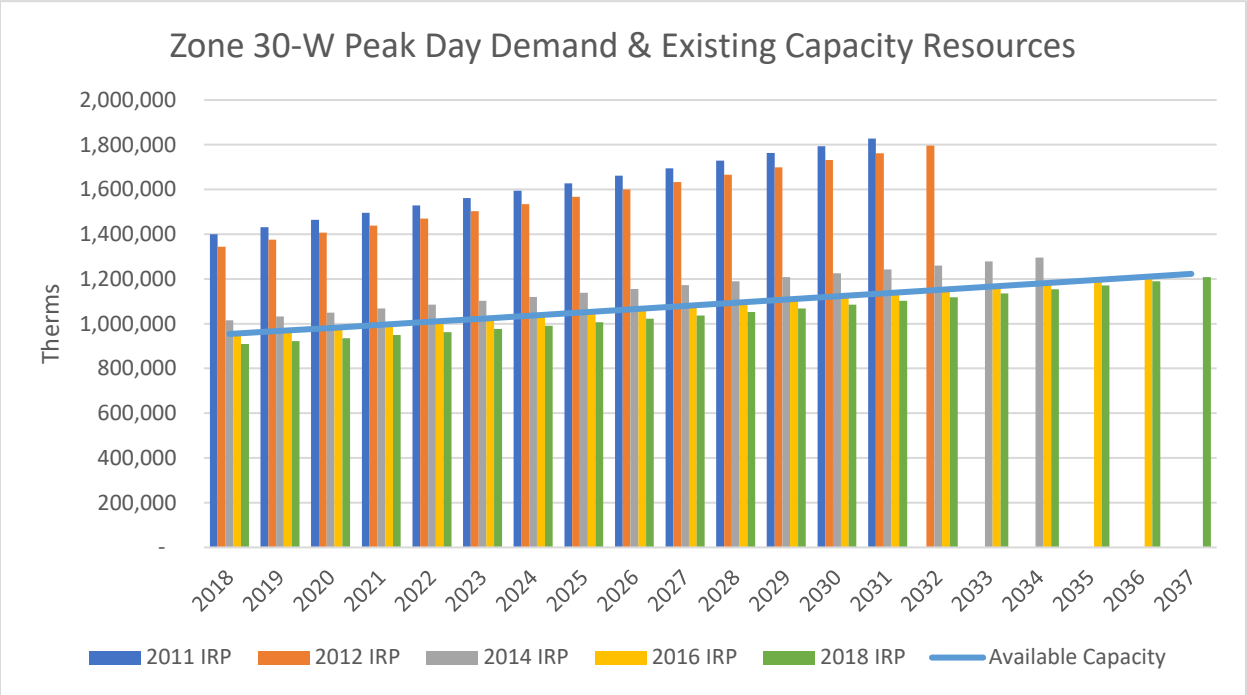

Zone 11 Peak Day Demand & Existing Capacity Resources
Therms
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

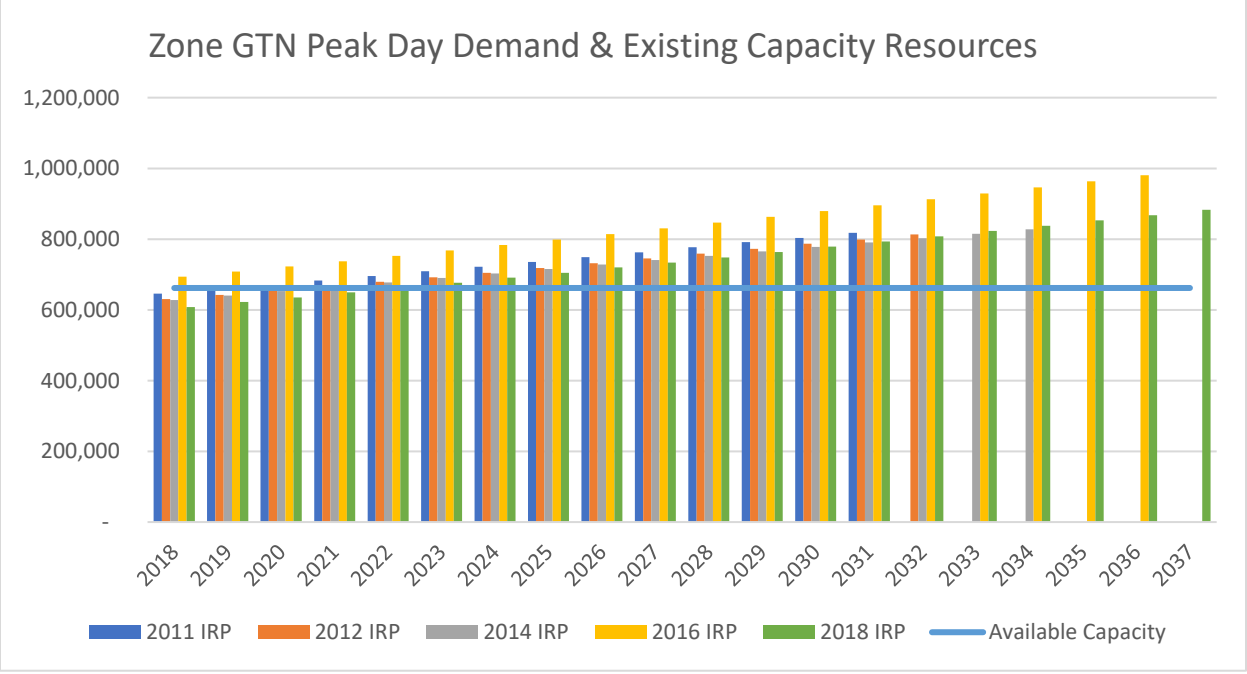

Zone 20 Peak Day Demand & Existing Capacity Resources
Therms
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

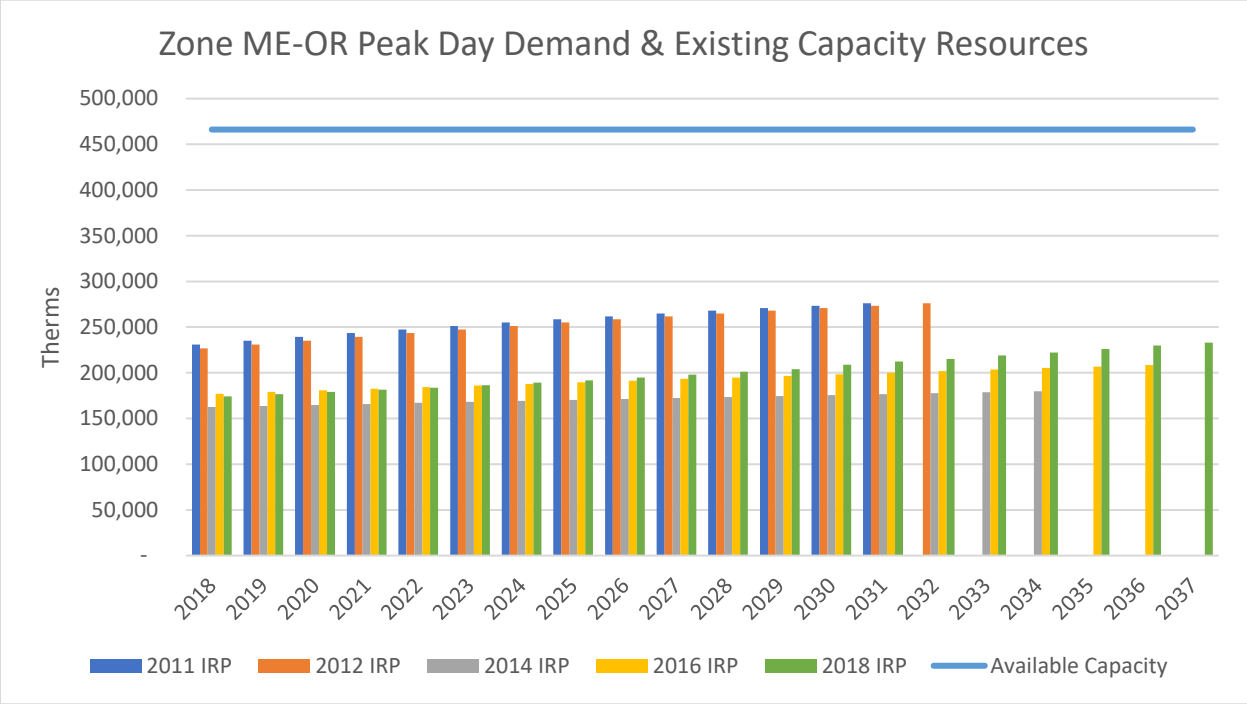

Zone 24 Peak Day Demand & Existing Capacity Resources
Therms
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

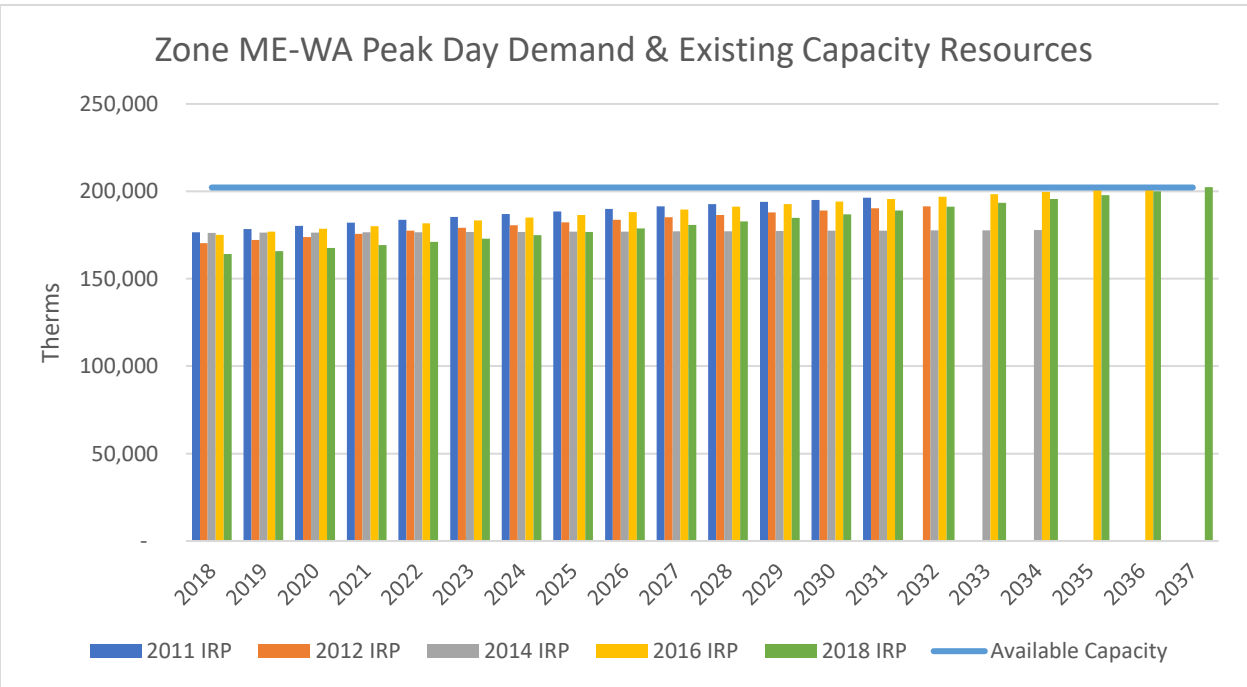

Zone 26 Peak Day Demand & Existing Capacity Resources
Therms
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

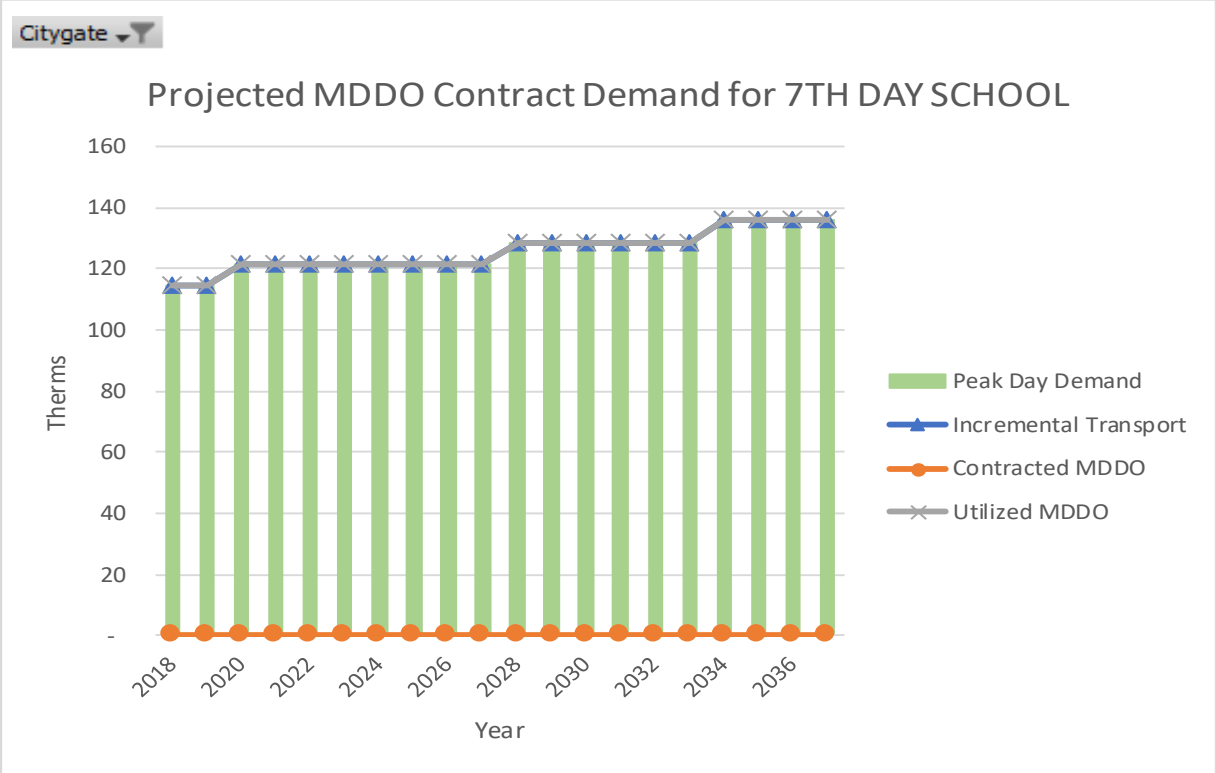

Zone 30-S Peak Day Demand & Existing Capacity Resources
Therms
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

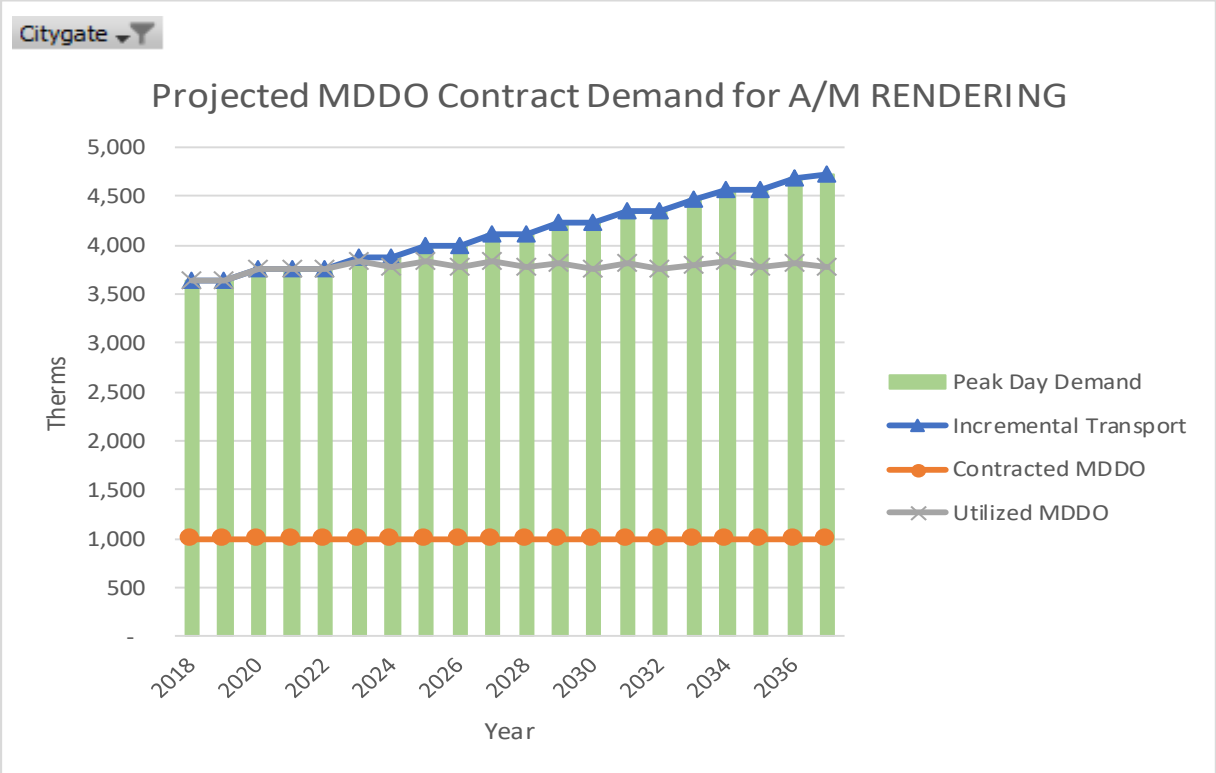

Zone 30-W Peak Day Demand & Existing Capacity Resources
Therms
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

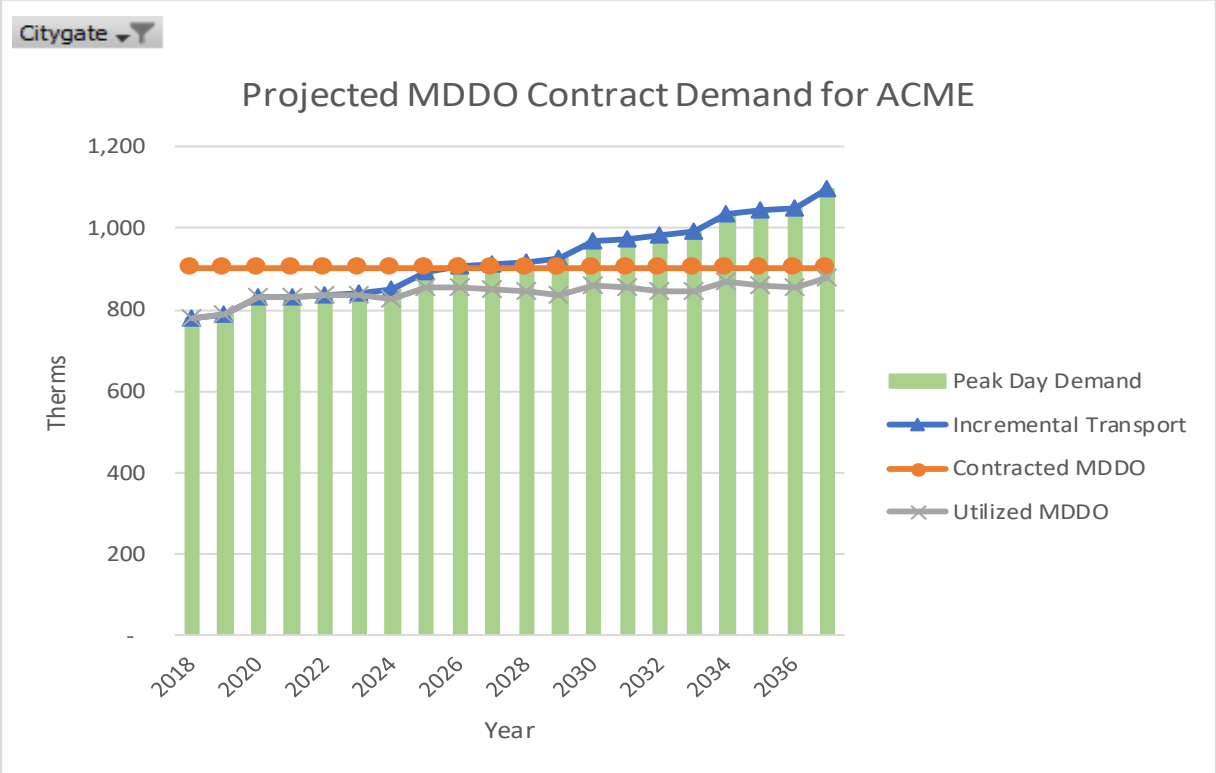

Zone GTN Peak Day Demand & Existing Capacity Resources
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

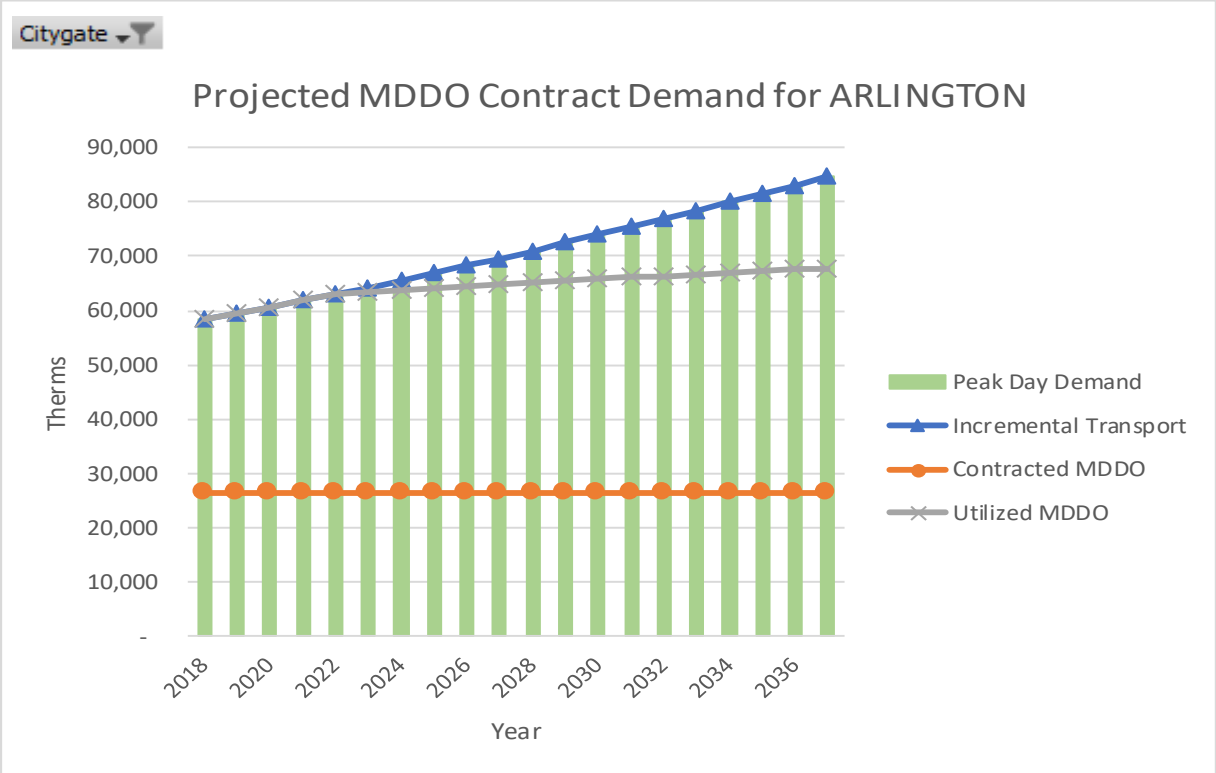

Zone ME-OR Peak Day Demand & Existing Capacity Resources
Therms
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

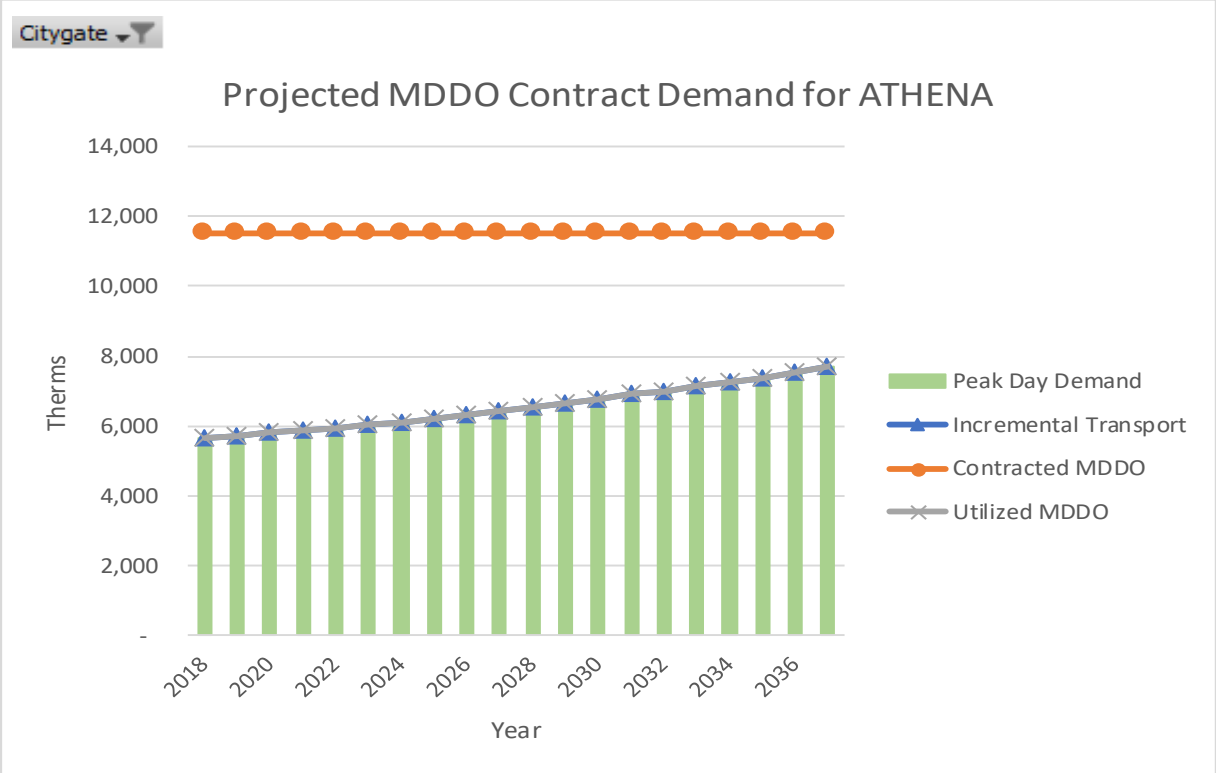

Zone ME-WA Peak Day Demand & Existing Capacity Resources
Therms
250,000
200,000
150,000
100,000
50,000
-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2011 IRP
2012 IRP
2014 IRP
2016 IRP
2018 IRP
Available Capacity

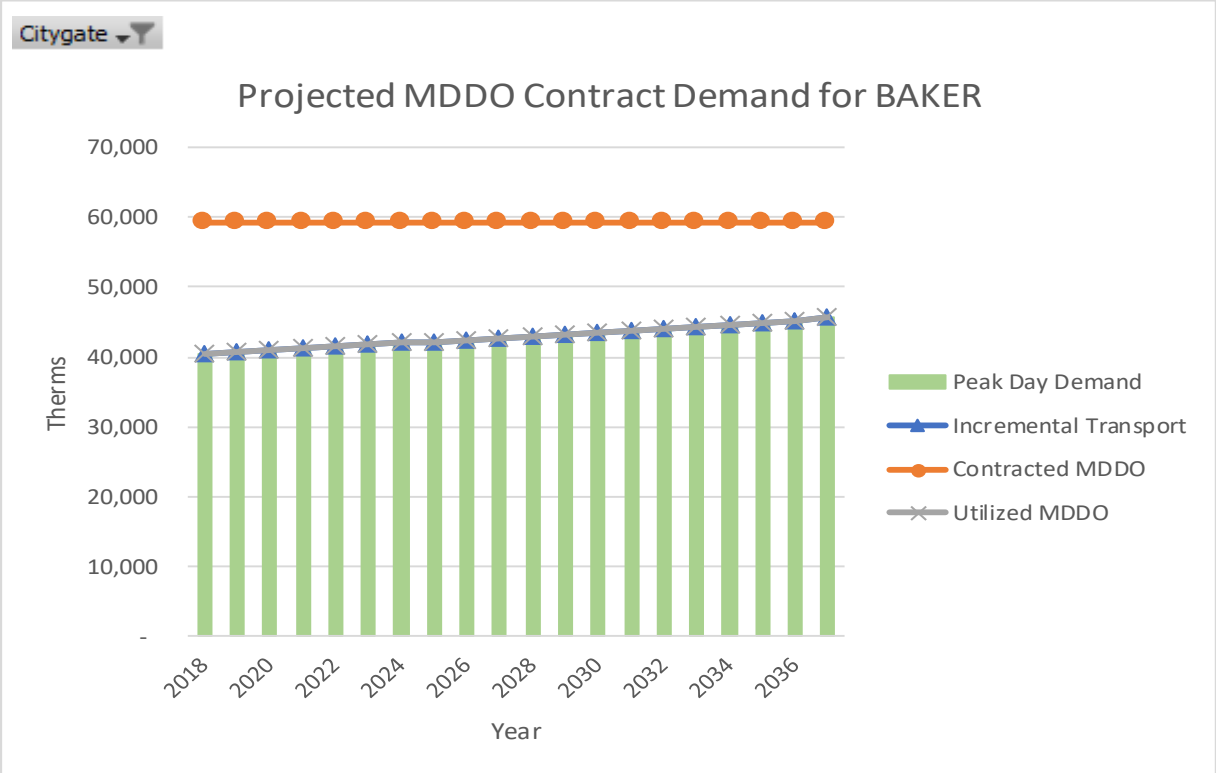

Citygate
Projected MDDO Contract Demand for 7TH DAY SCHOOL
160
140
120
100
80
60
40
20
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

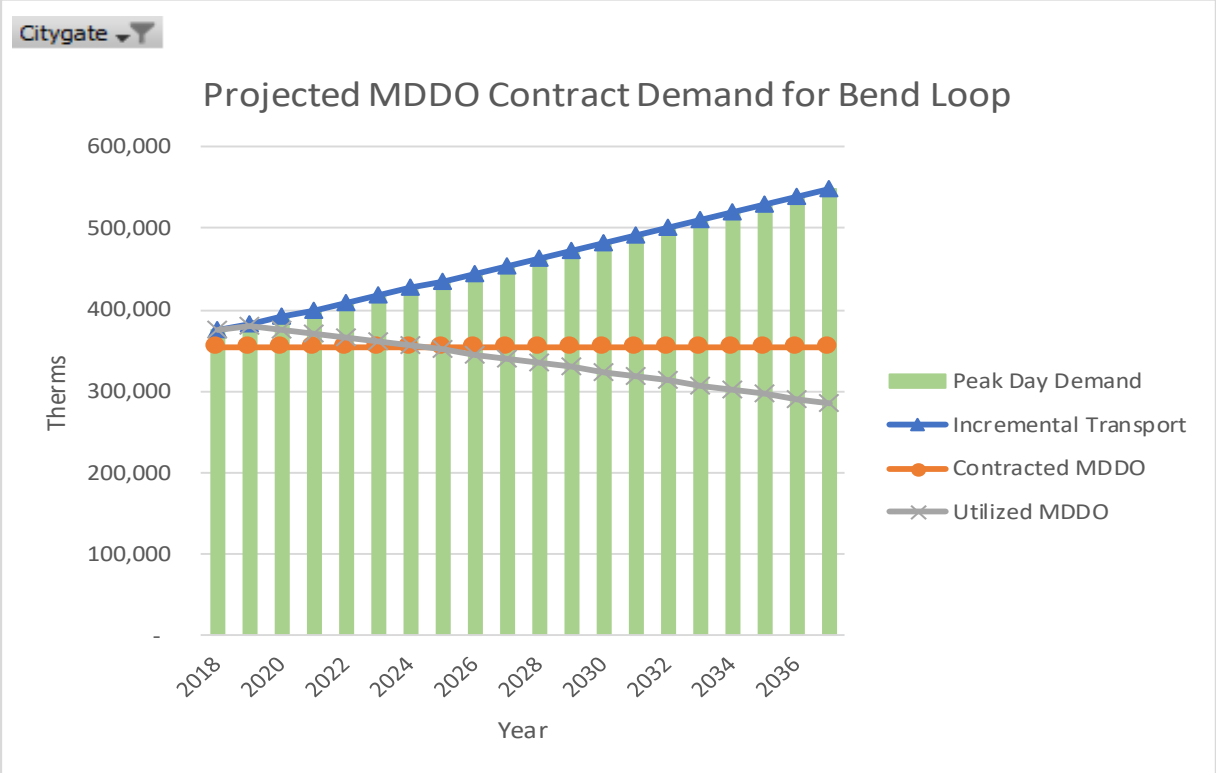

Citygate
Projected MDDO Contract Demand for A/M RENDERING
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

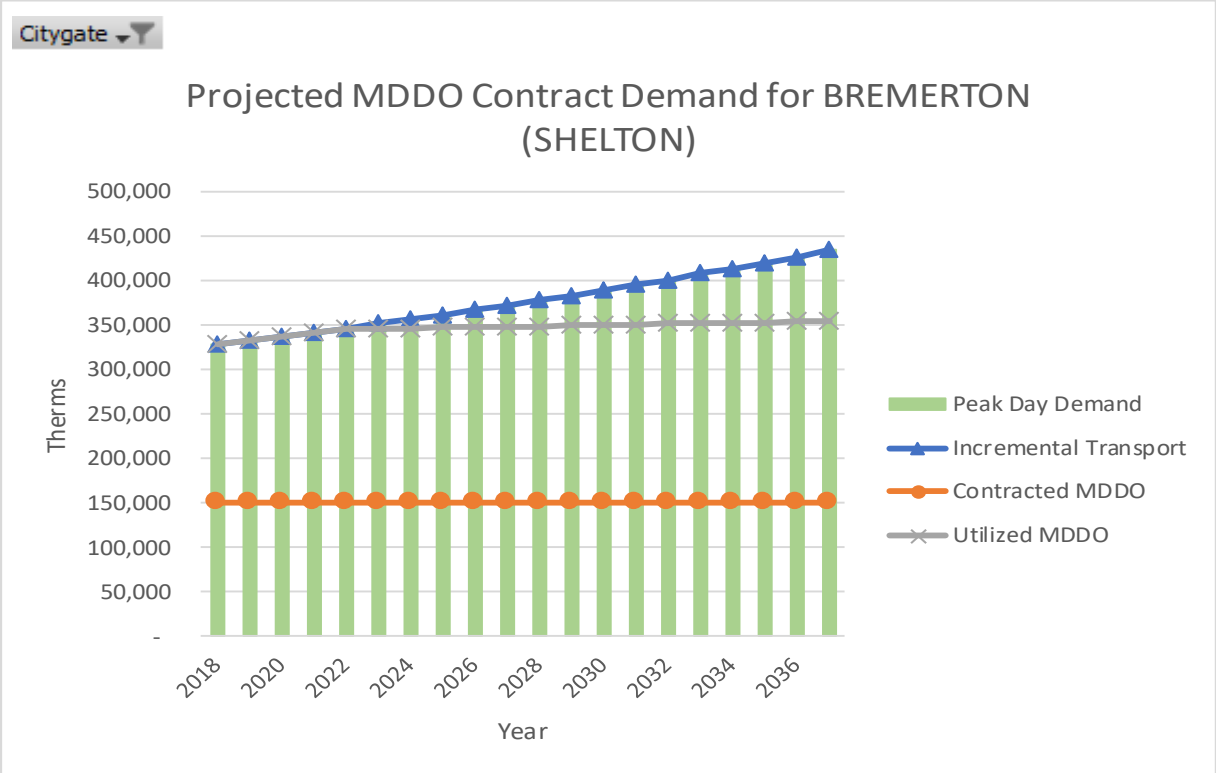

Citygate
Projected MDDO Contract Demand for ACME
1,200
1,000
800
600
400
200
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

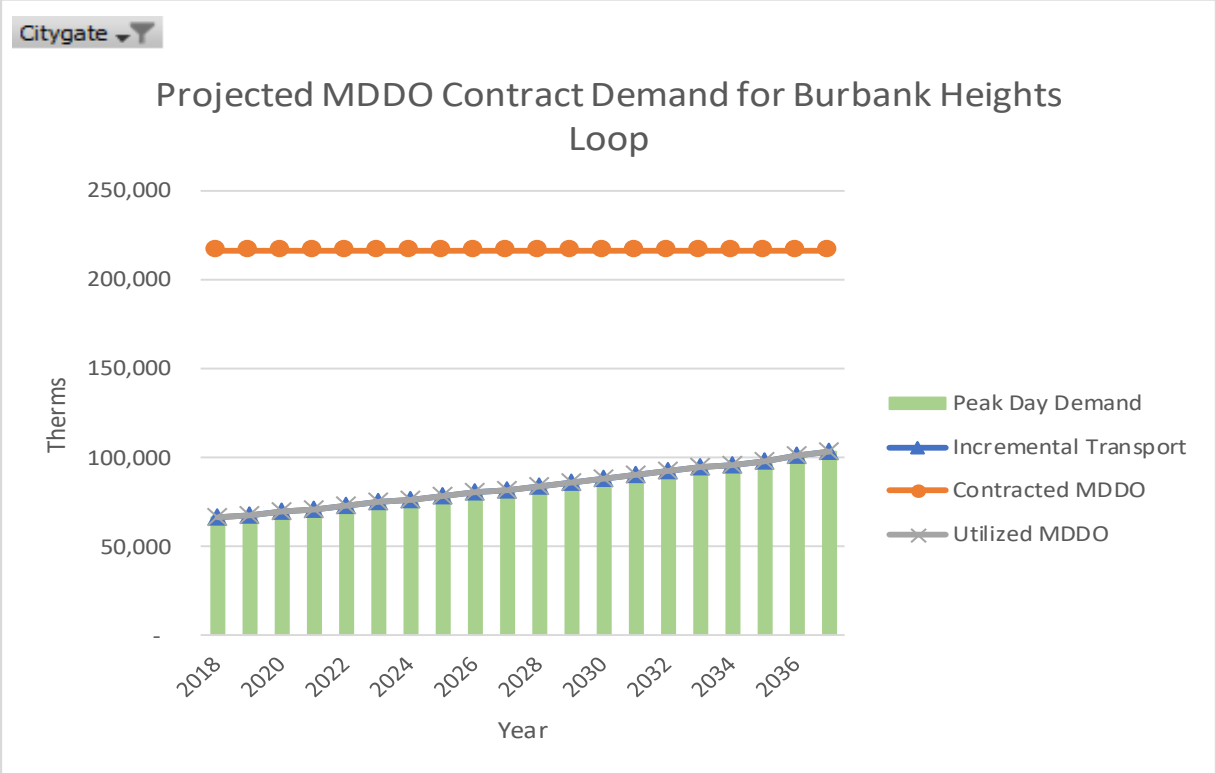

Citygate
Projected MDDO Contract Demand for ARLINGTON
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

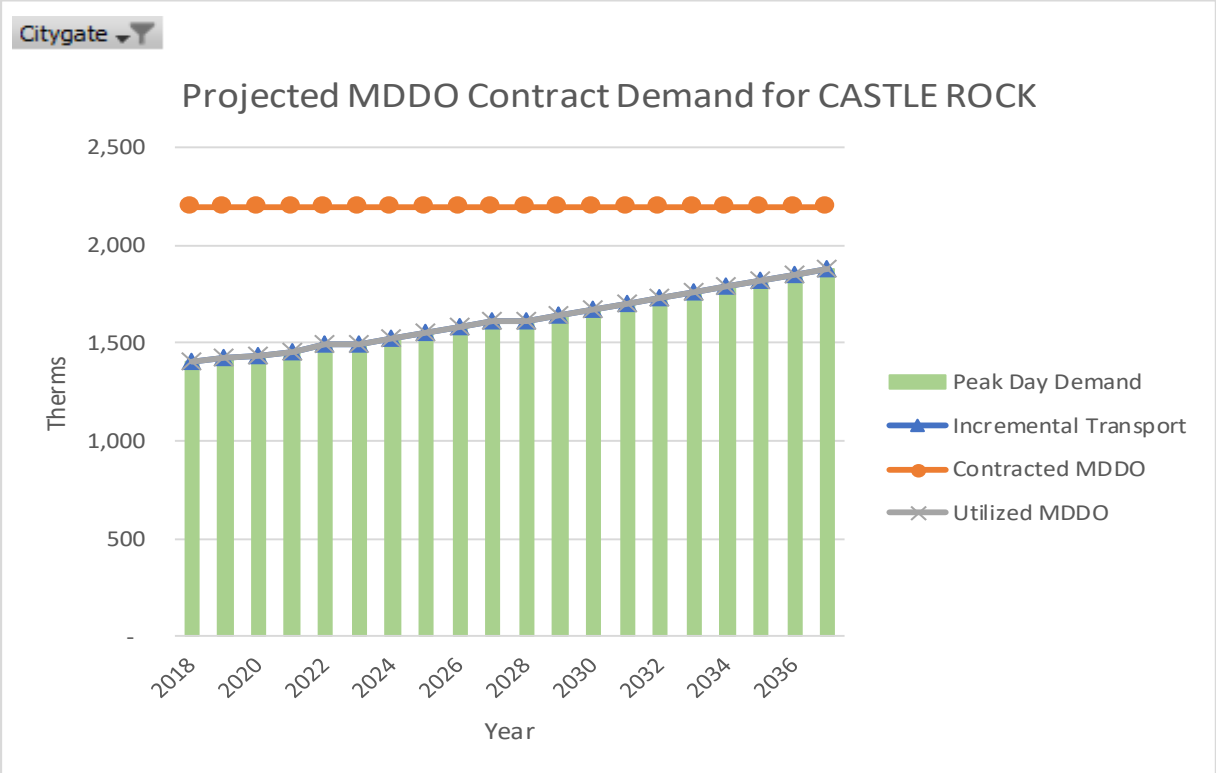

Citygate
Projected MDDO Contract Demand for ATHENA
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

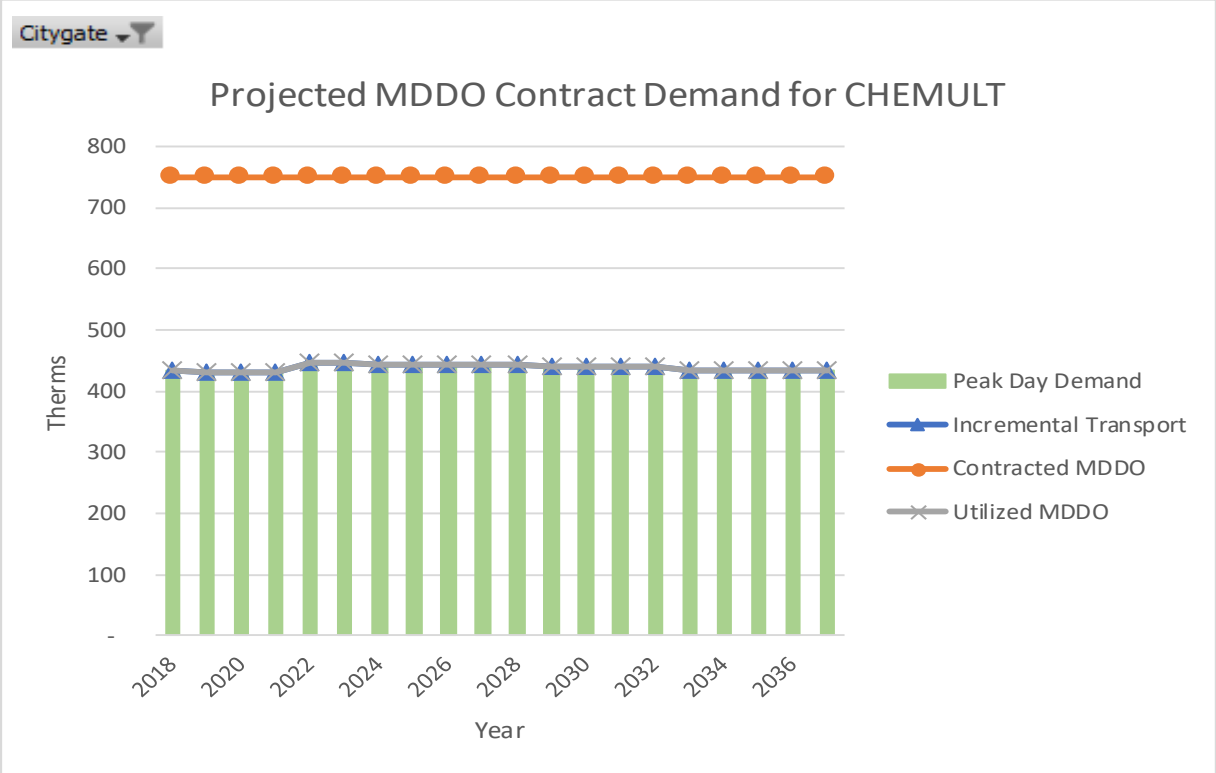

Citygate
Projected MDDO Contract Demand for BAKER
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

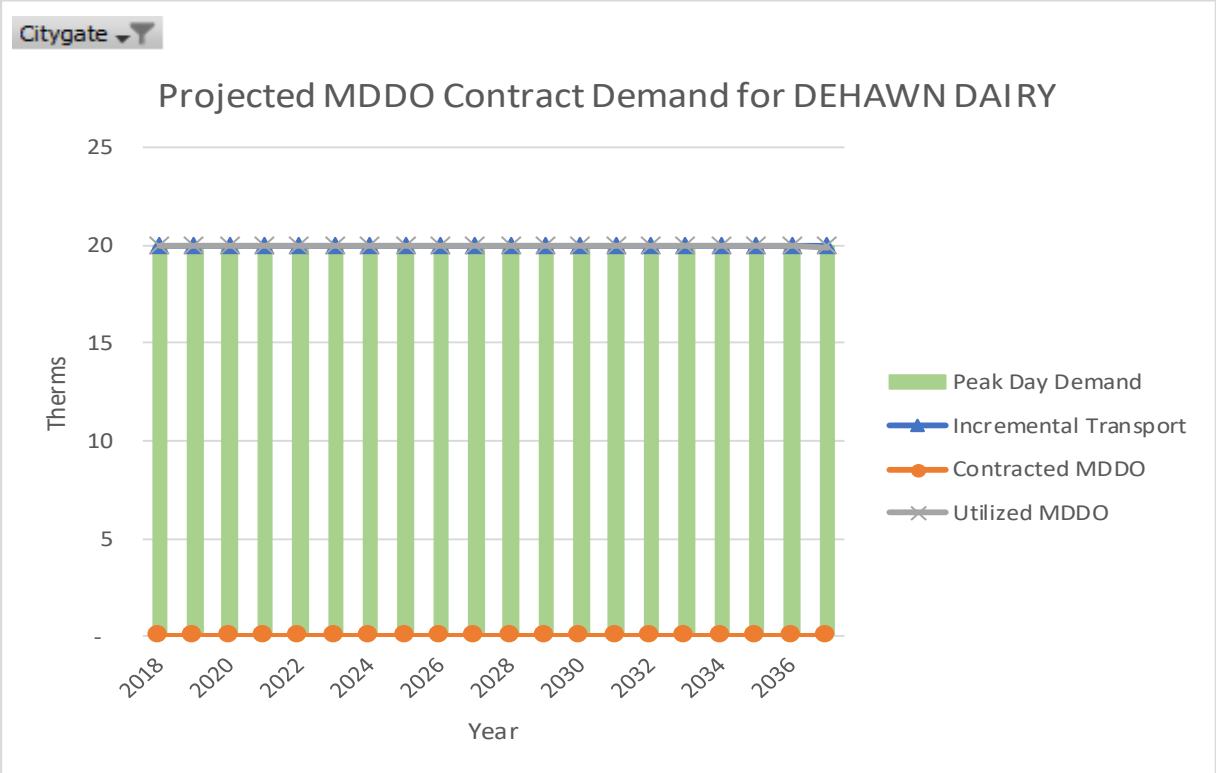

Citygate
Projected MDDO Contract Demand for Bend Loop
600,000
500,000
400,000
300,000
200,000
100,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

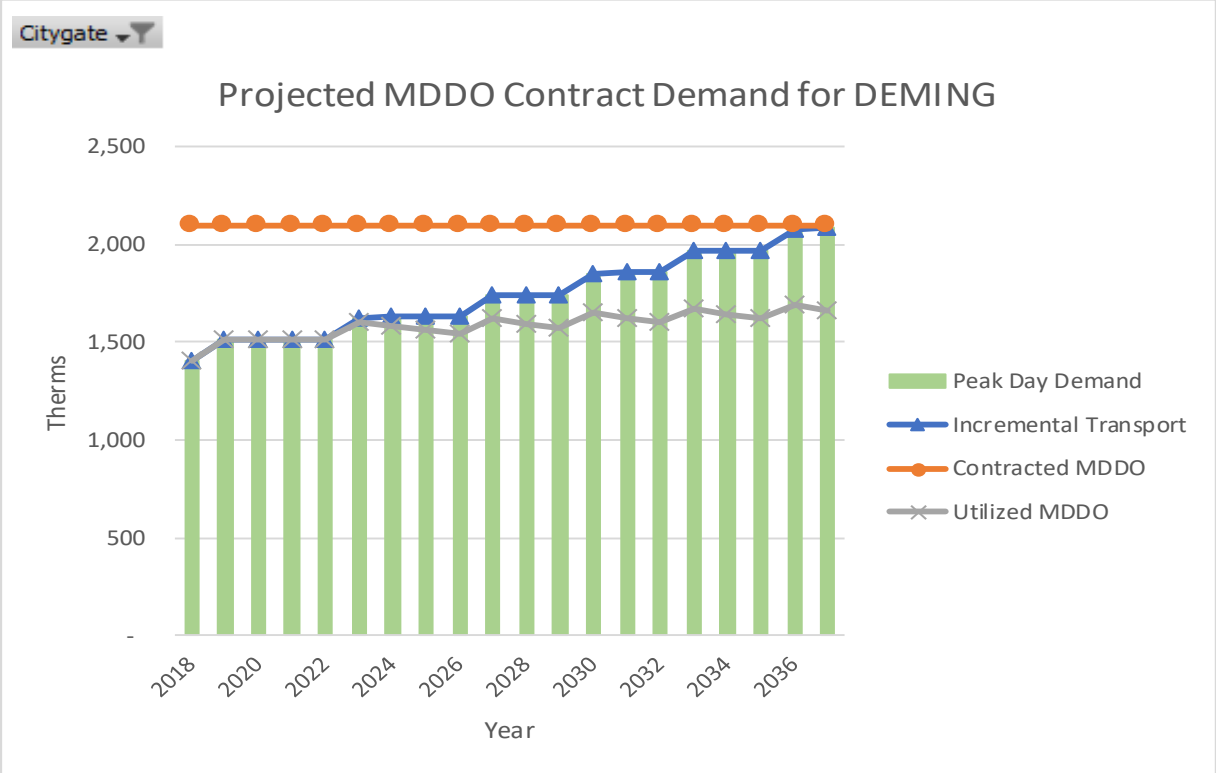

Citygate
Projected MDDO Contract Demand for BREMERTON (SHELTON)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

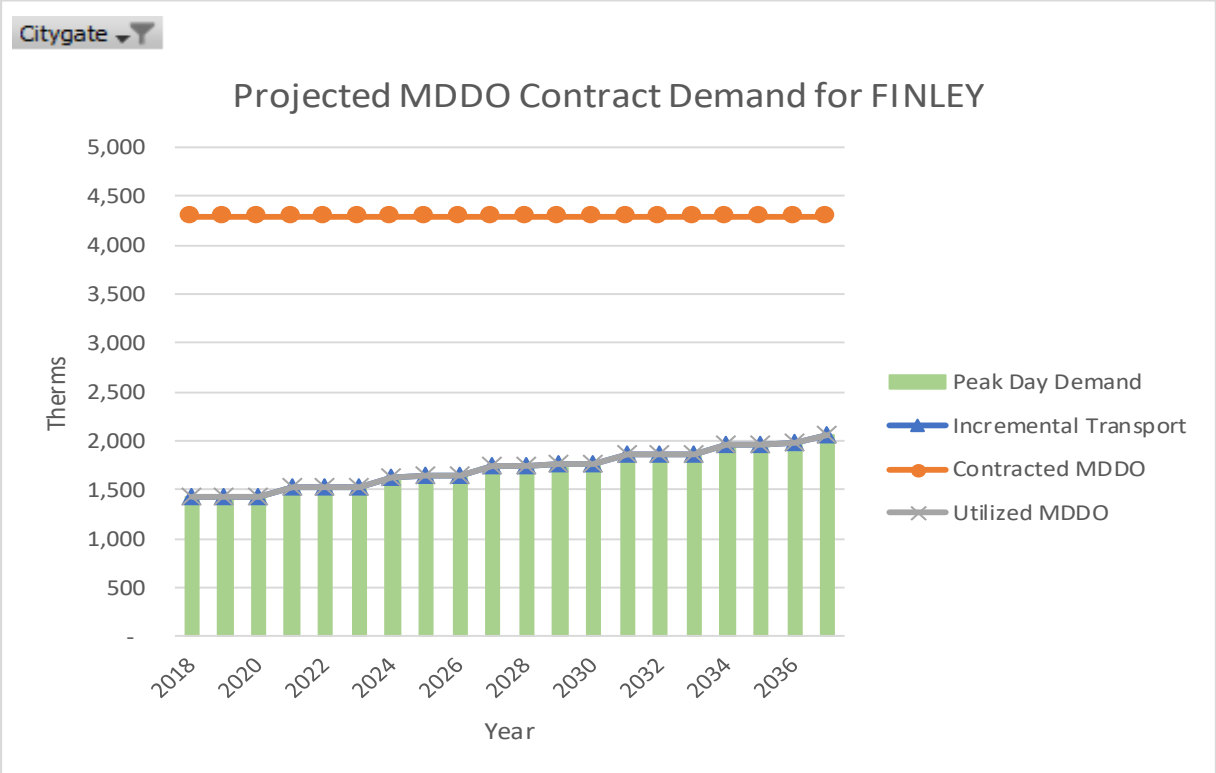

Citygate
Projected MDDO Contract Demand for Burbank Heights Loop
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

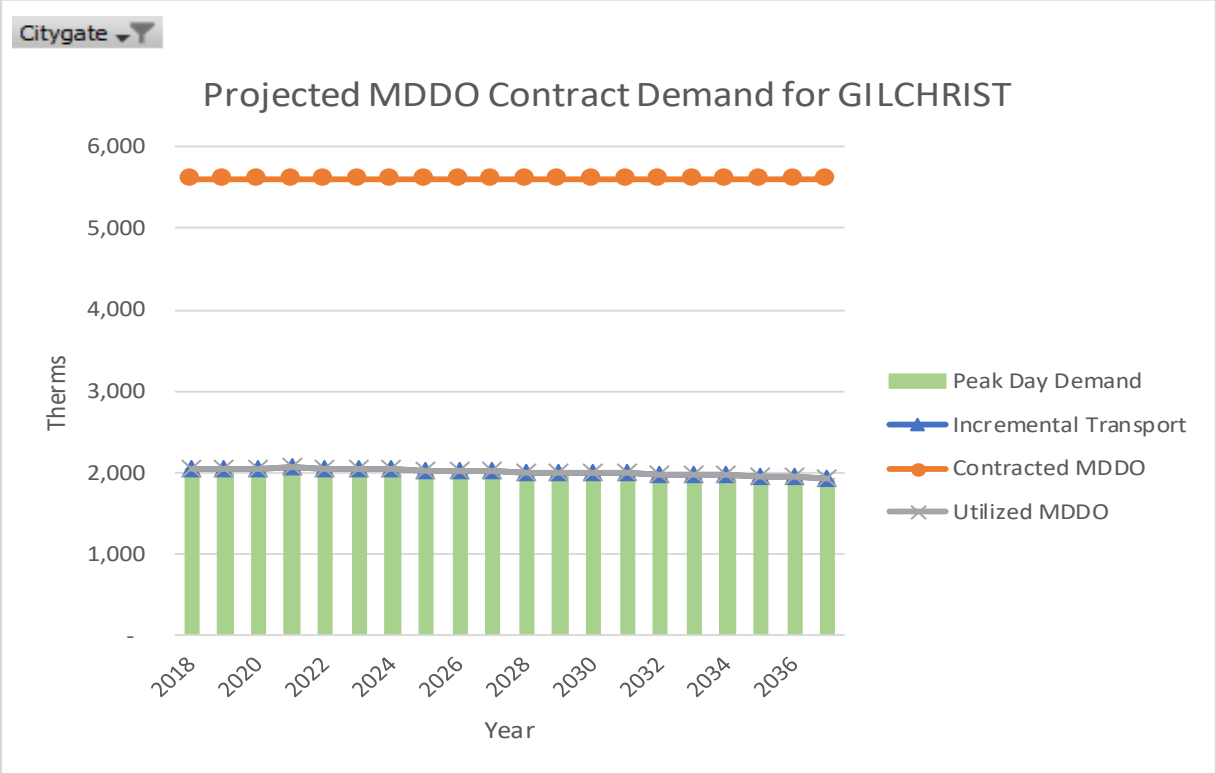

Citygate
Projected MDDO Contract Demand for CASTLE ROCK
2,500
2,000
1,500
1,000
500
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

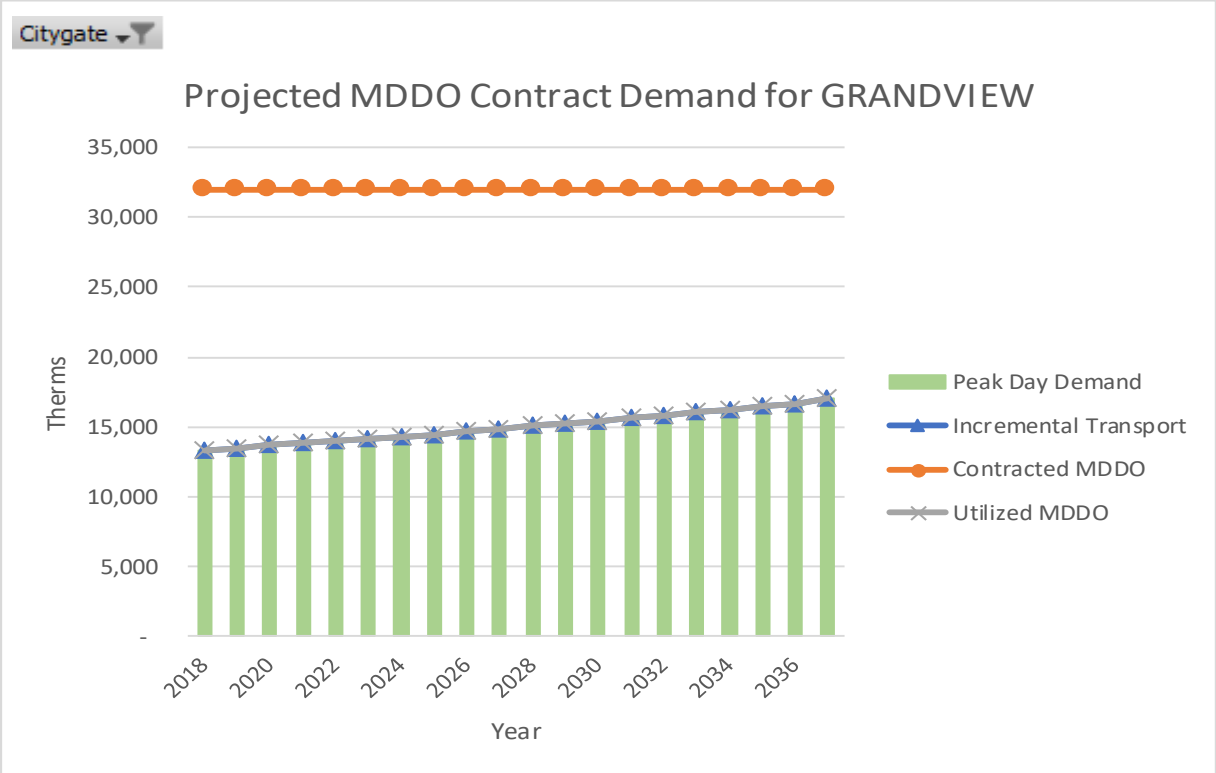

Citygate
Projected MDDO Contract Demand for CHEMULT
800
700
600
500
400
300
200
100
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

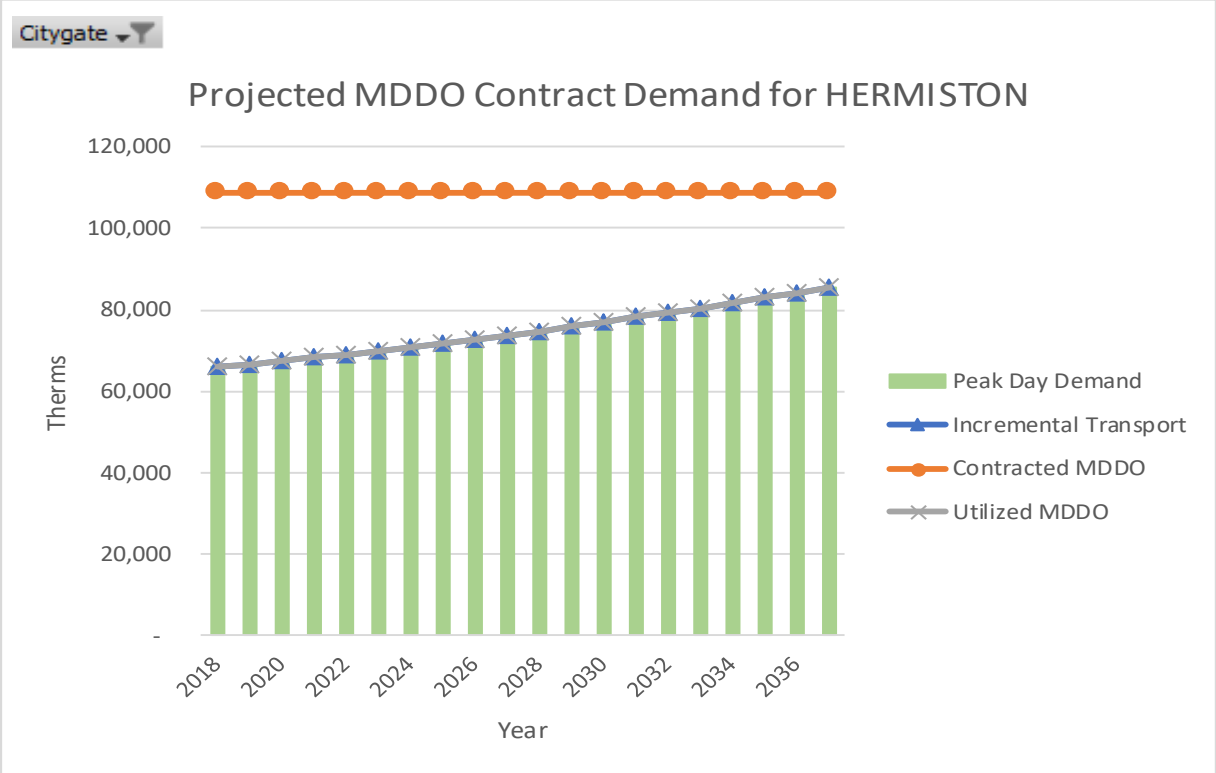

Citygate
Projected MDDO Contract Demand for DEHAWN DAIRY
25
20
15
10
5
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

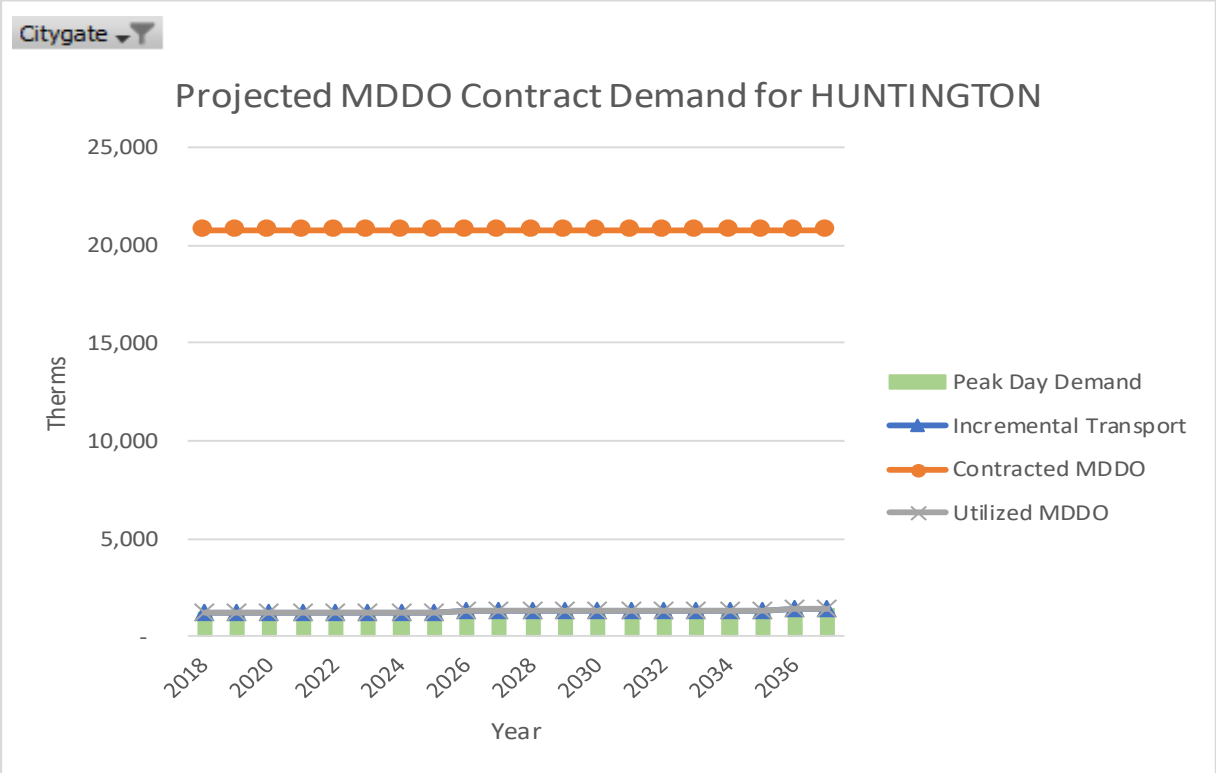

Citygate
Projected MDDO Contract Demand for DEMING
2,500
2,000
1,500
1,000
500
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

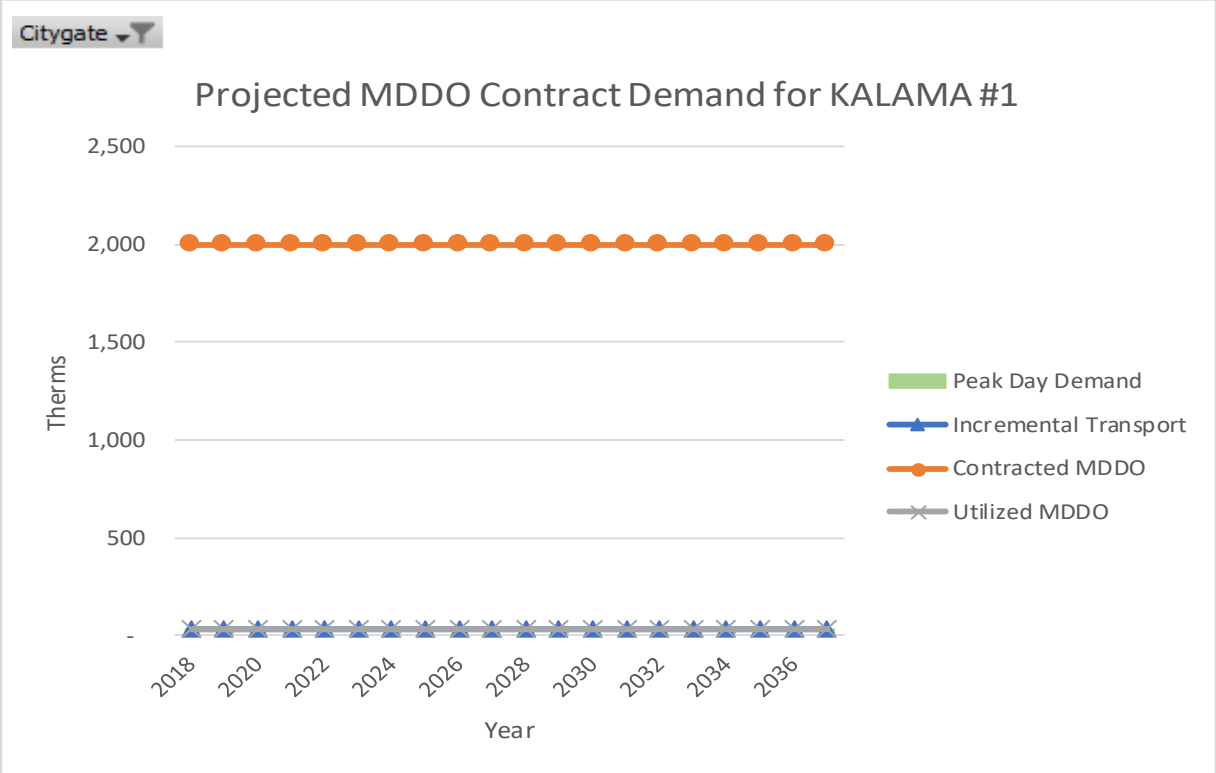

Citygate
Projected MDDO Contract Demand for FINLEY
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

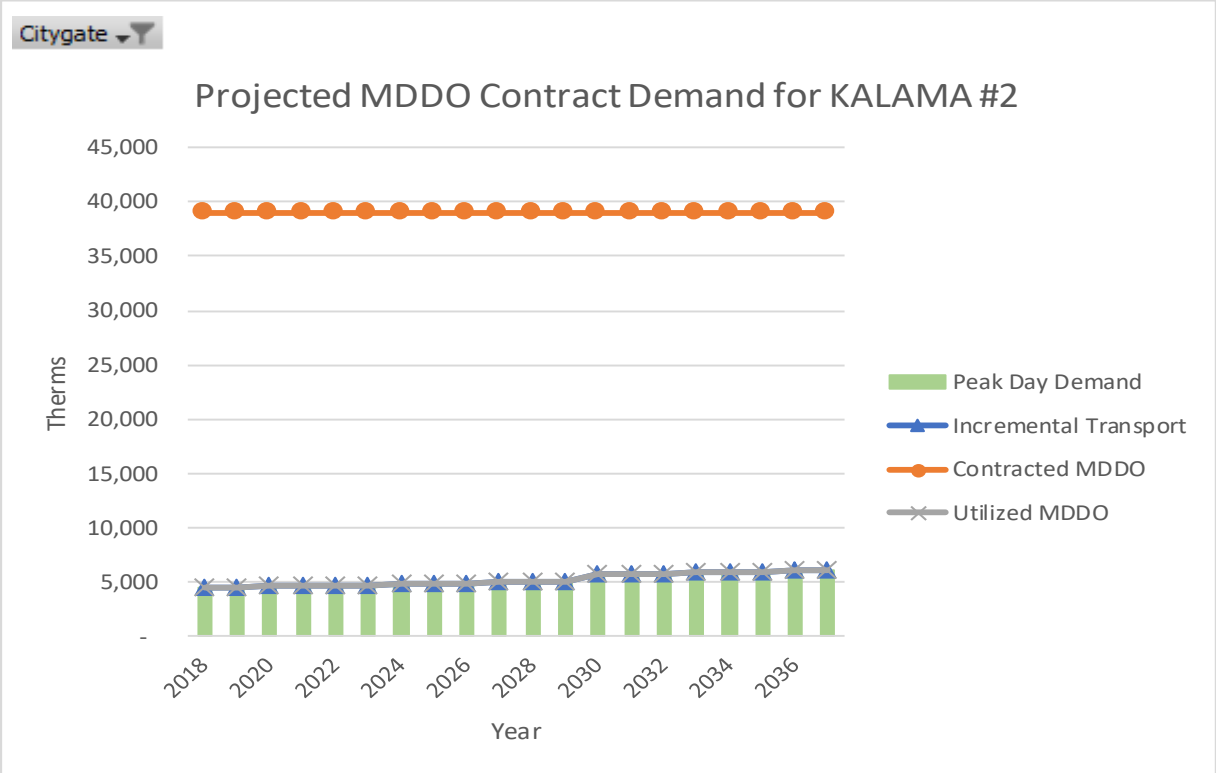

Citygate
Projected MDDO Contract Demand for GILCHRIST
6,000
5,000
4,000
3,000
2,000
1,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

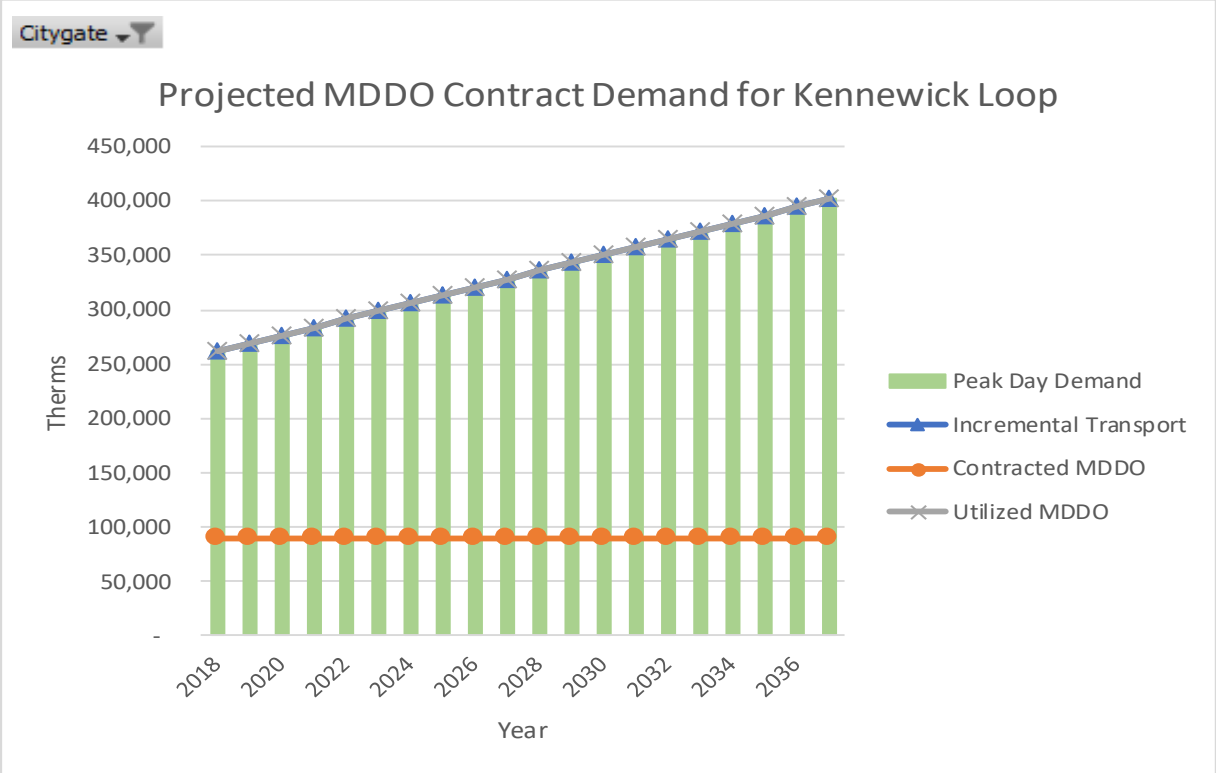

Citygate
Projected MDDO Contract Demand for GRANDVIEW
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

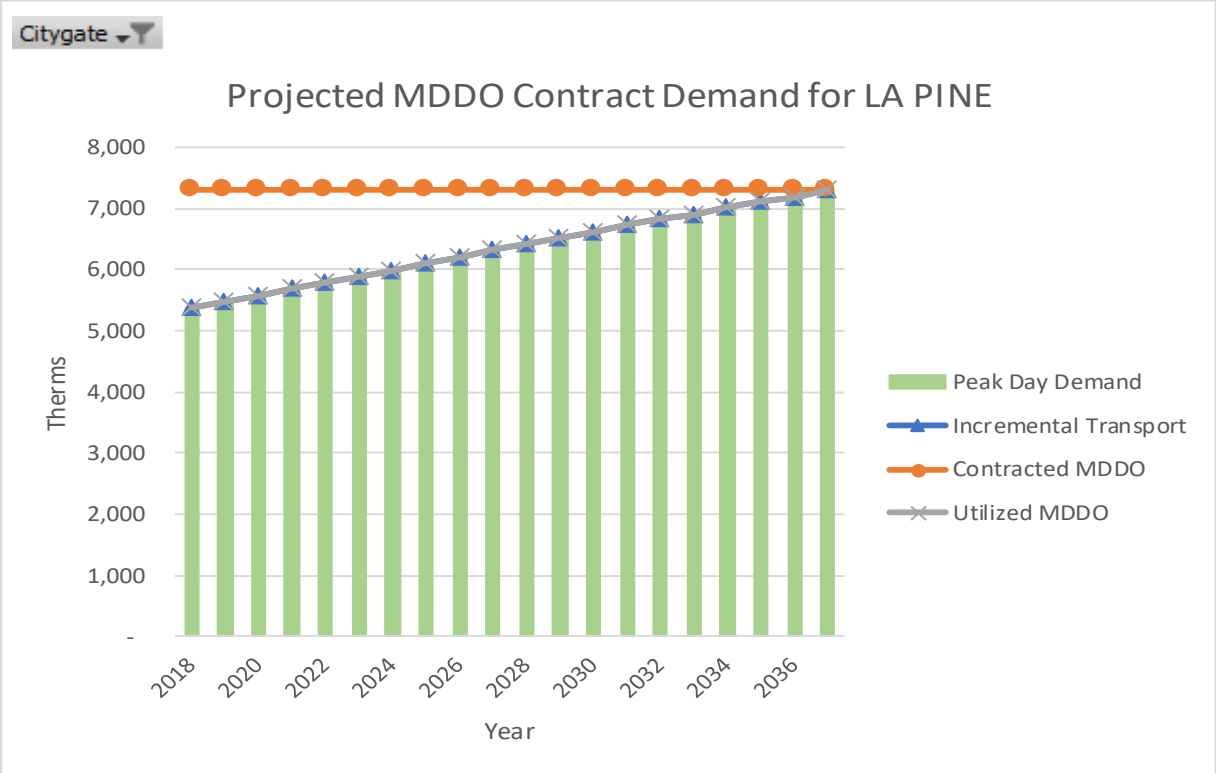

Citygate
Projected MDDO Contract Demand for HERMISTON
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

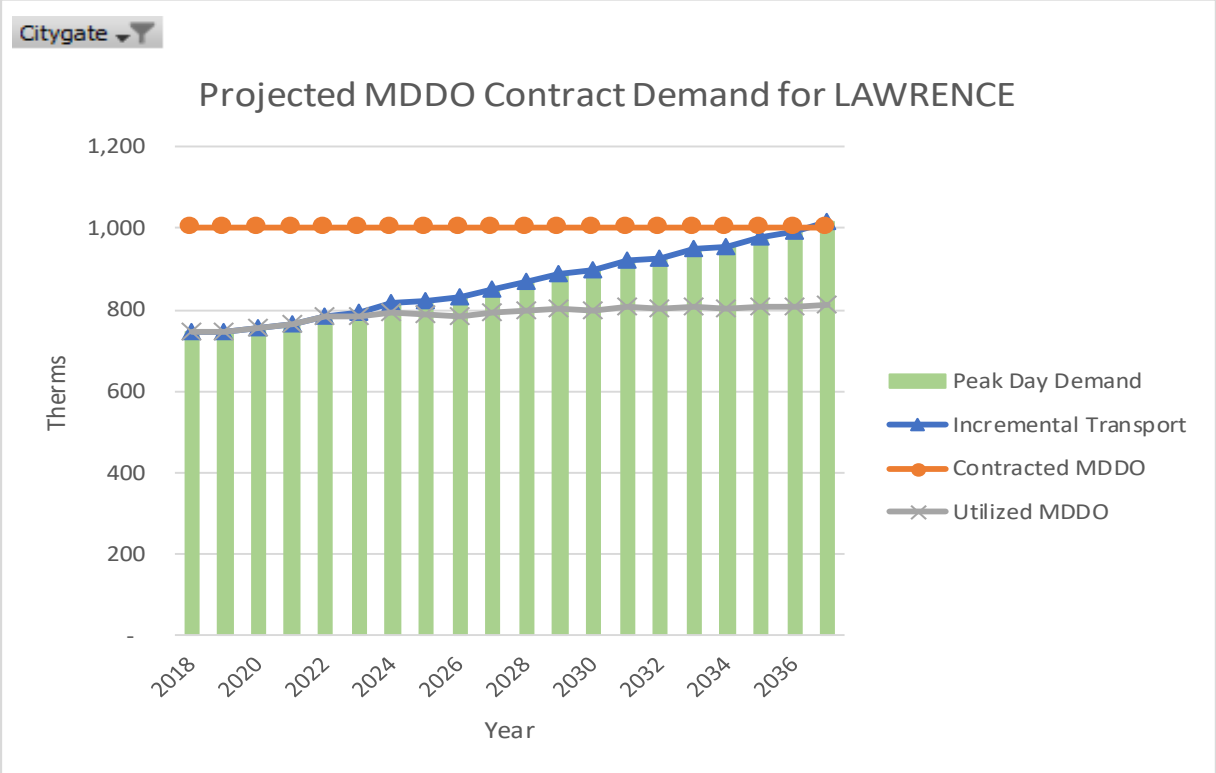

Citygate
Projected MDDO Contract Demand for HUNTINGTON
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

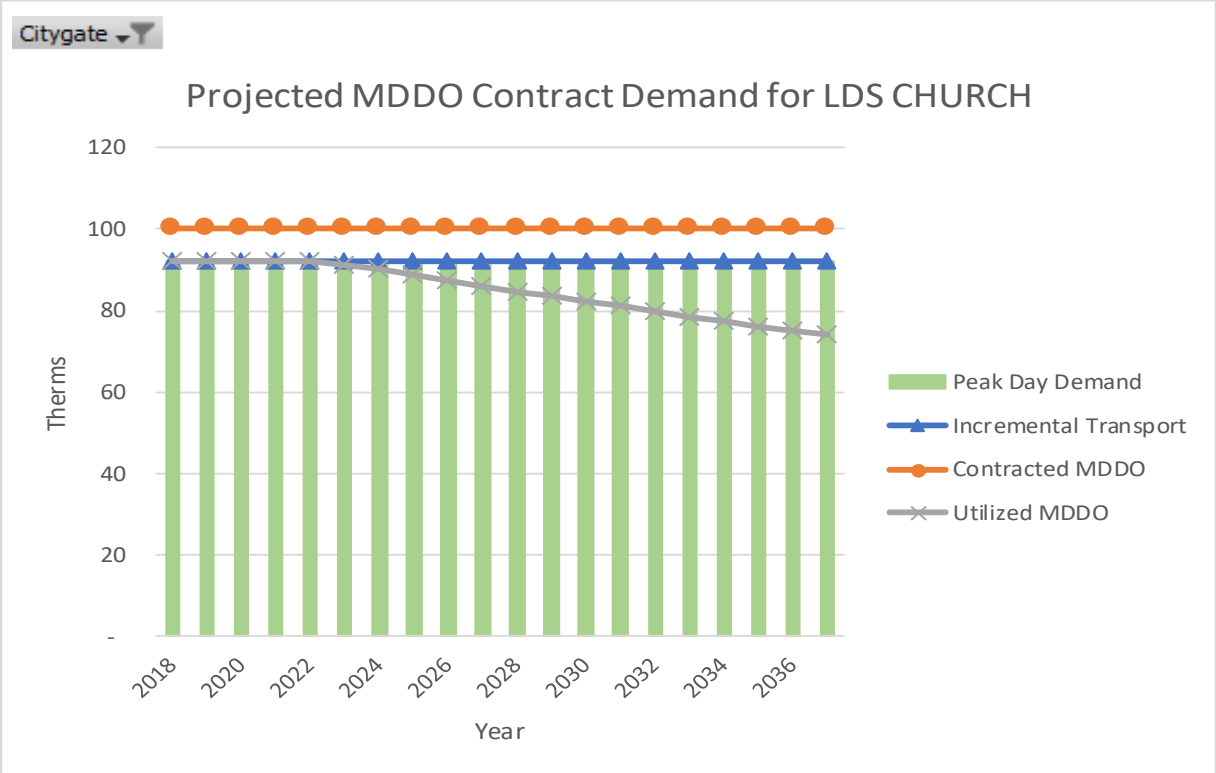

Citygate
Projected MDDO Contract Demand for KALAMA #1
2,500
2,000
1,500
1,000
500
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

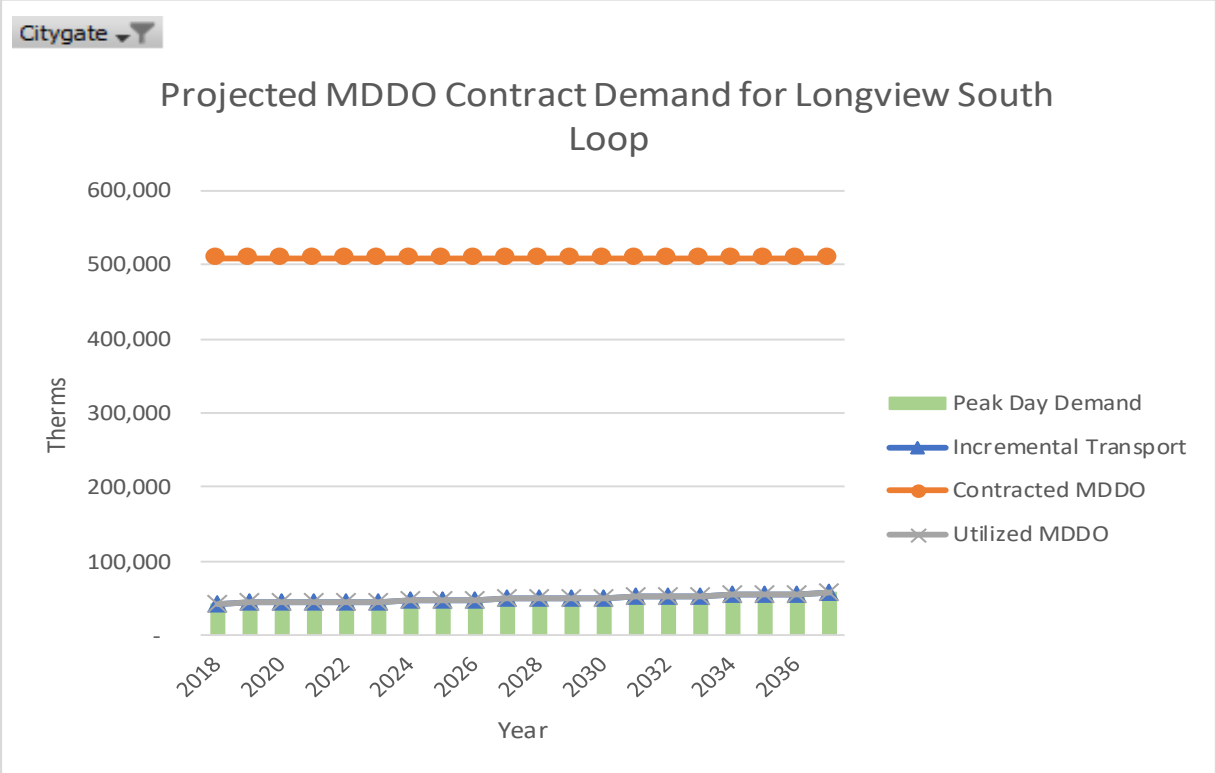

Citygate
Projected MDDO Contract Demand for KALAMA #2
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

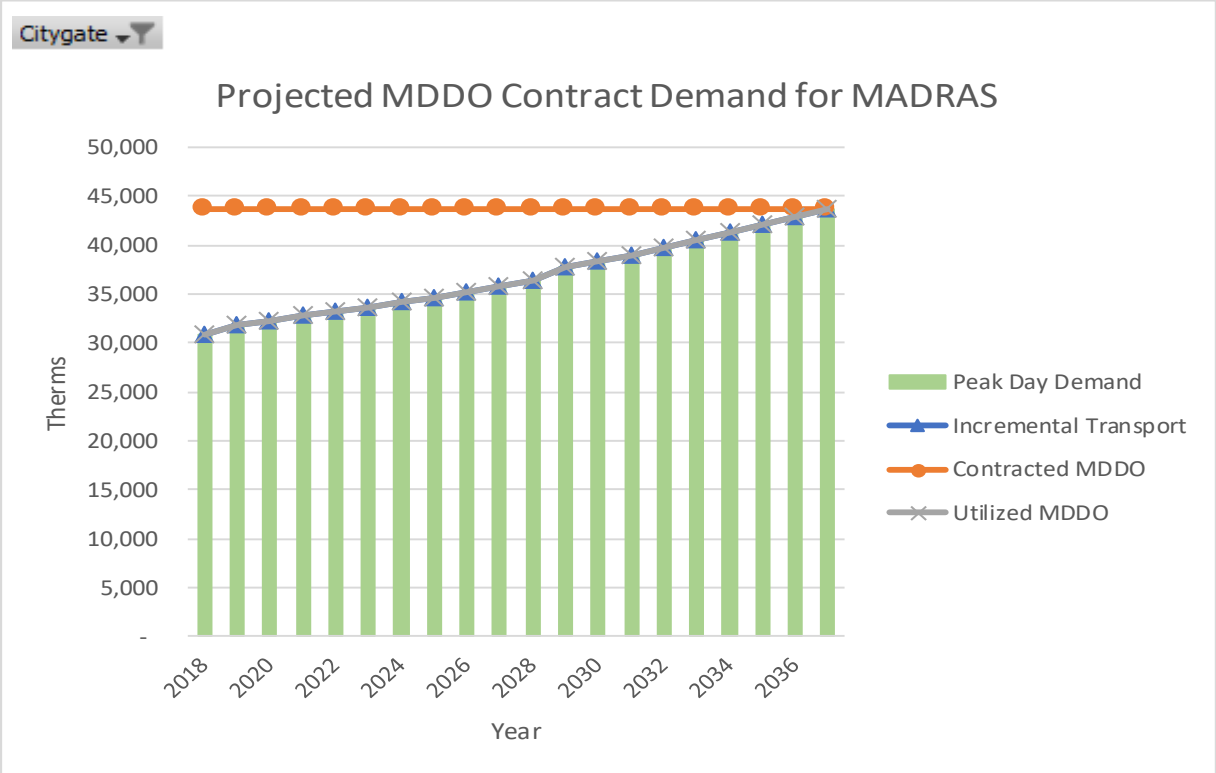

Citygate
Projected MDDO Contract Demand for Kennewick Loop
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

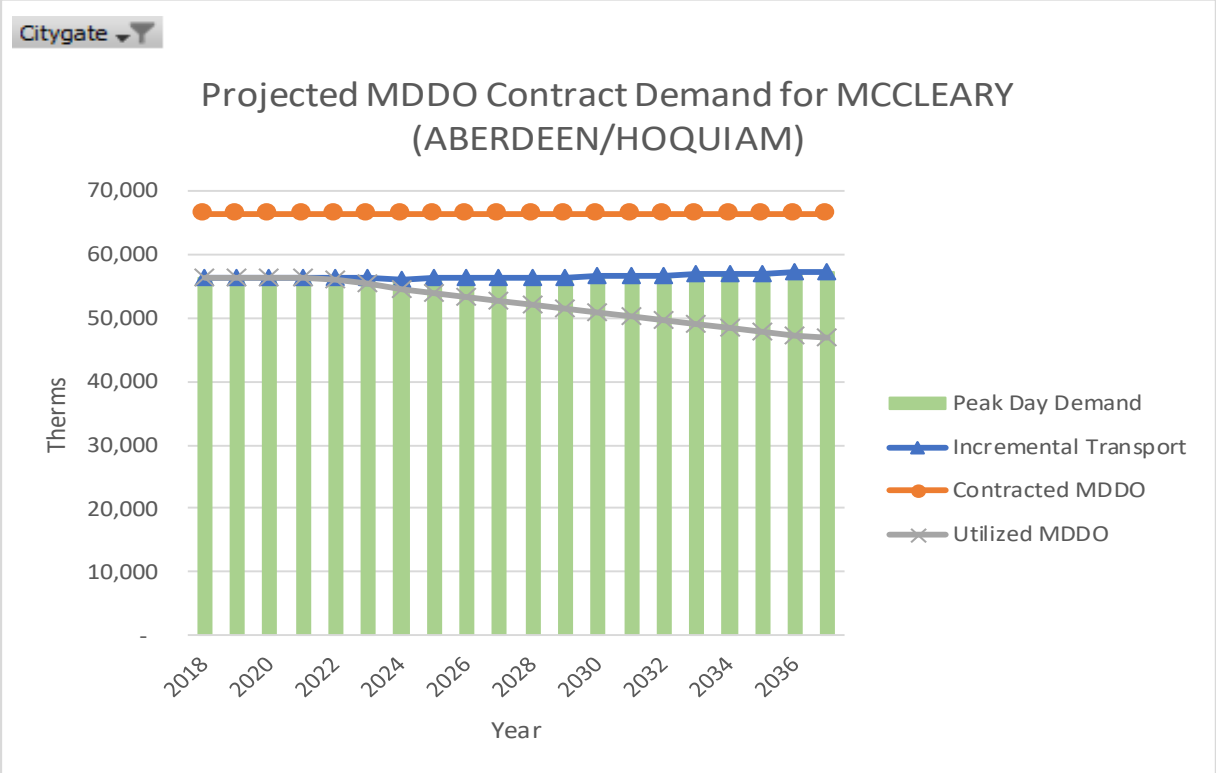

Citygate
Projected MDDO Contract Demand for LA PINE
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

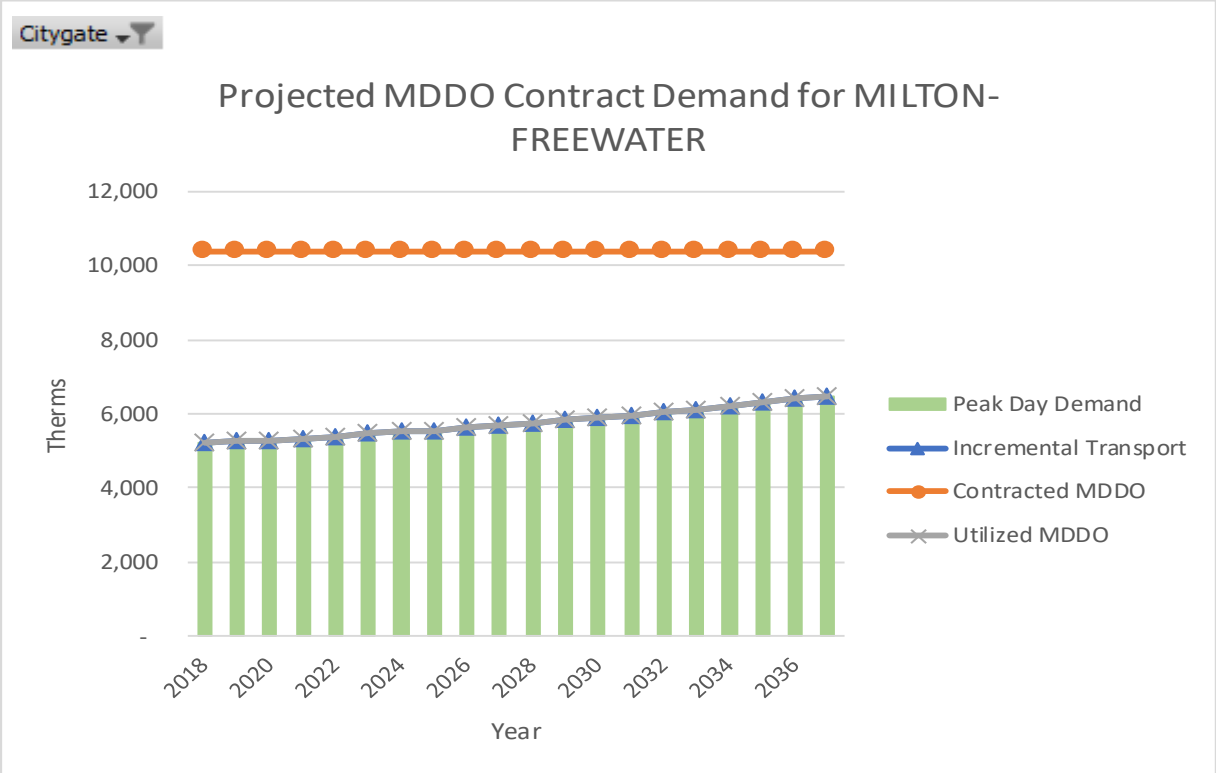

Citygate
Projected MDDO Contract Demand for LAWRENCE
1,200
1,000
800
600
400
200
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

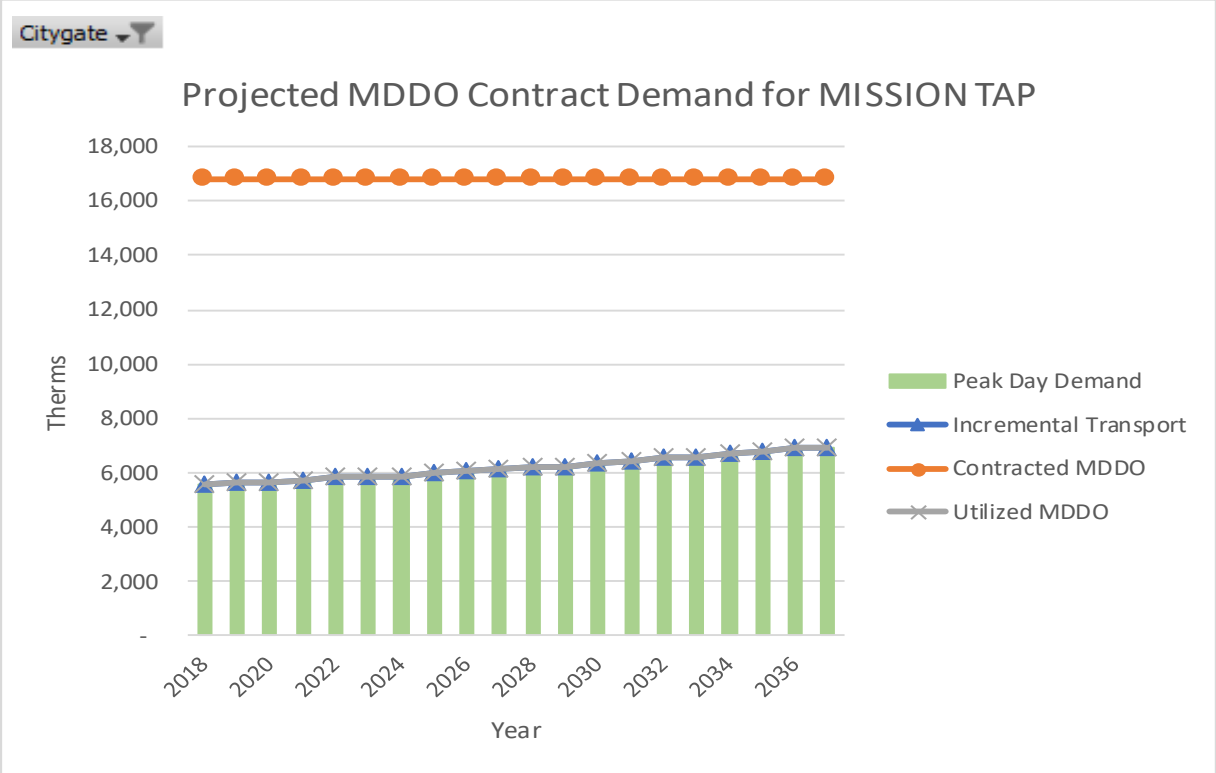

Citygate
Projected MDDO Contract Demand for LDS CHURCH
120
100
80
60
40
20
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

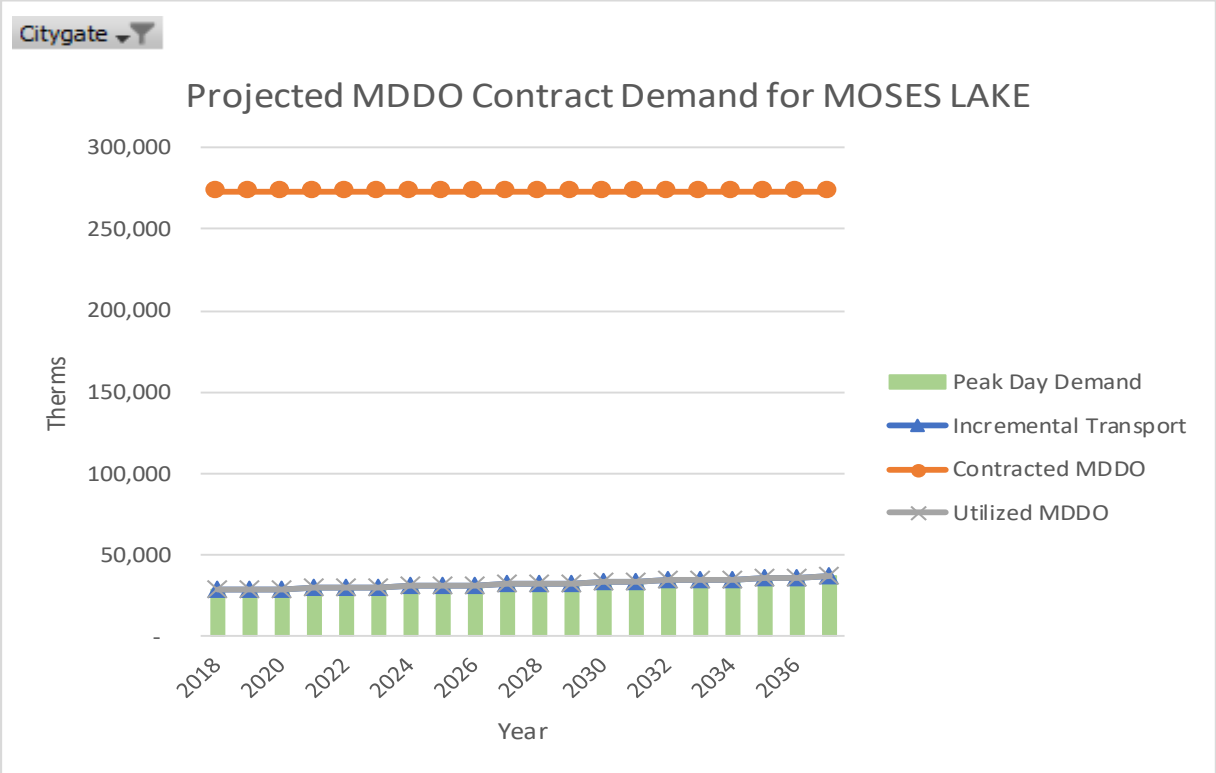

Citygate
Projected MDDO Contract Demand for Longview South Loop
600,000
500,000
400,000
300,000
200,000
100,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

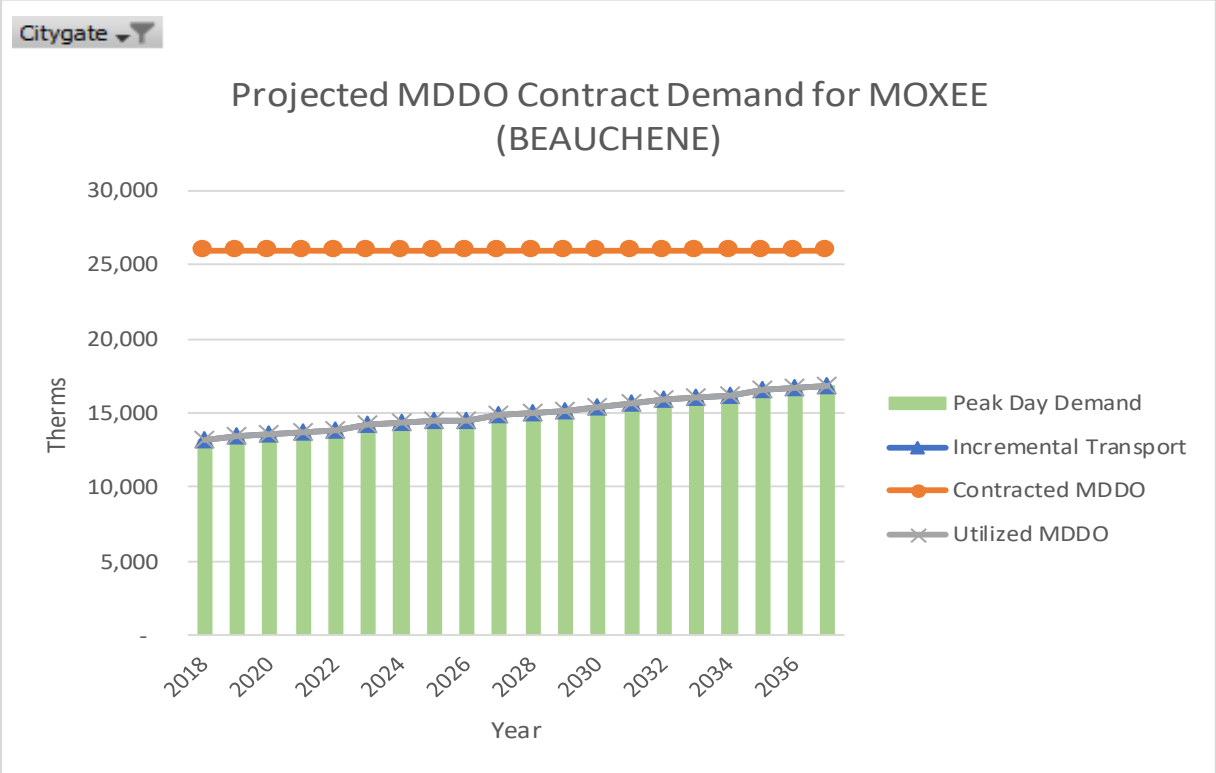

Citygate
Projected MDDO Contract Demand for MADRAS
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

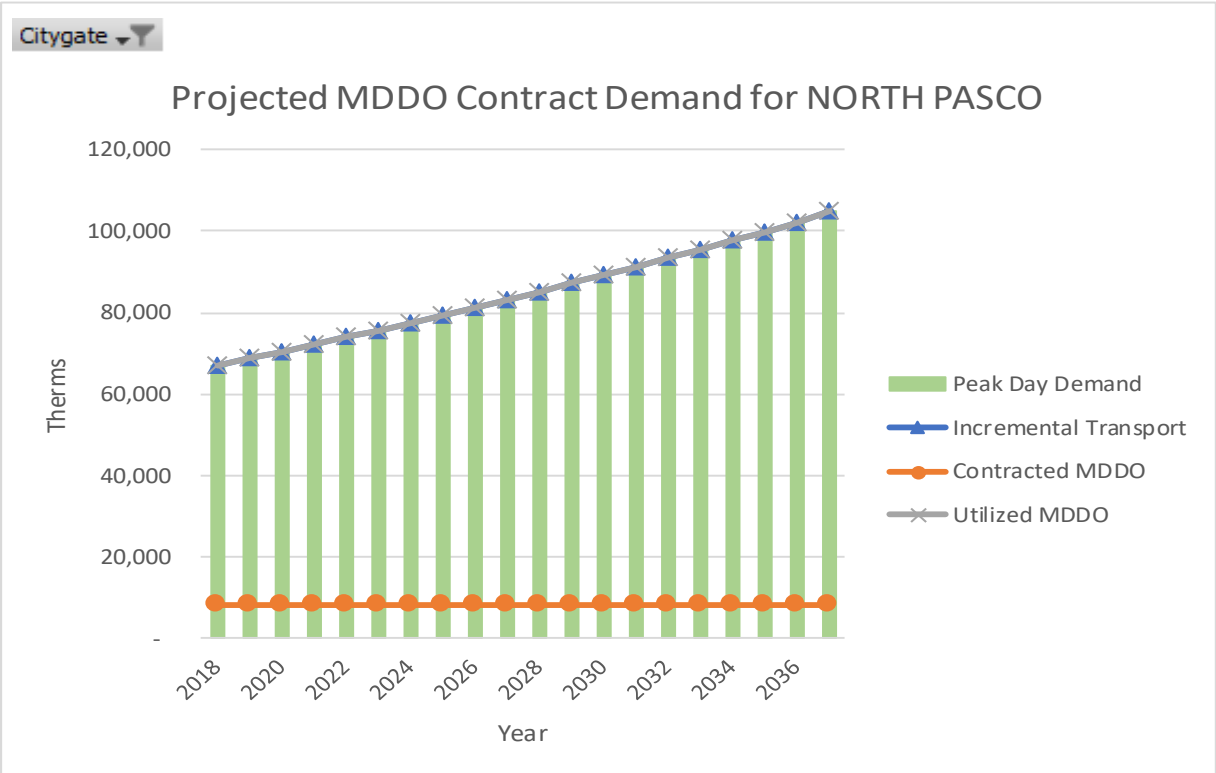

Citygate
Projected MDDO Contract Demand for MCCLEARY (ABERDEEN/HOQUIAM)
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

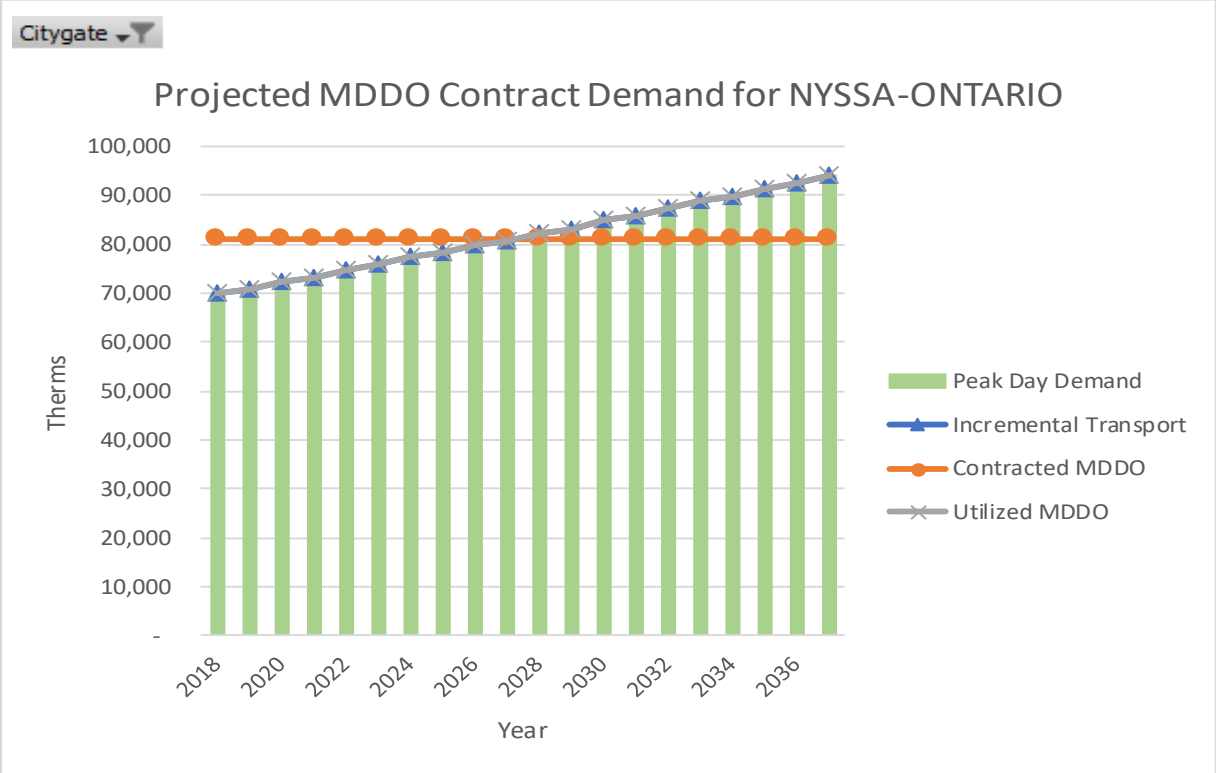

Citygate
Projected MDDO Contract Demand for MILTON-FREEWATER
12,000
10,000
8,000
6,000
4,000
2,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

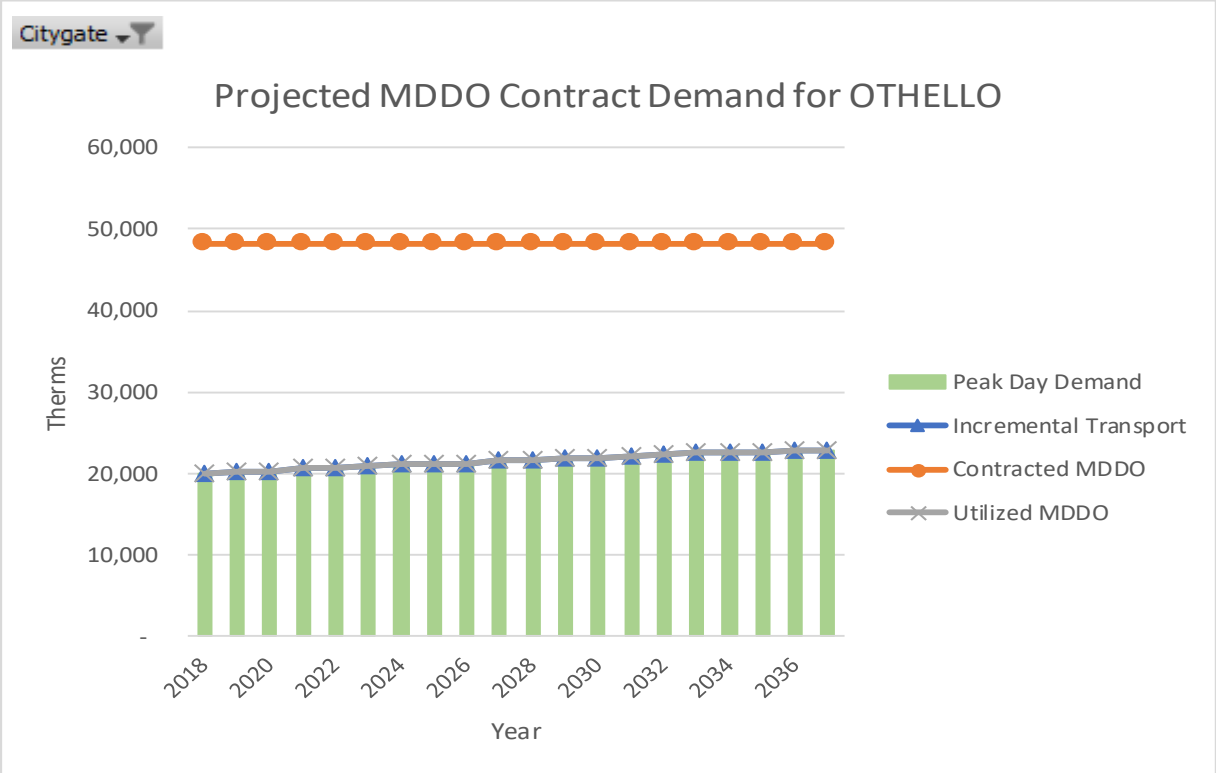

Citygate
Projected MDDO Contract Demand for MISSION TAP
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

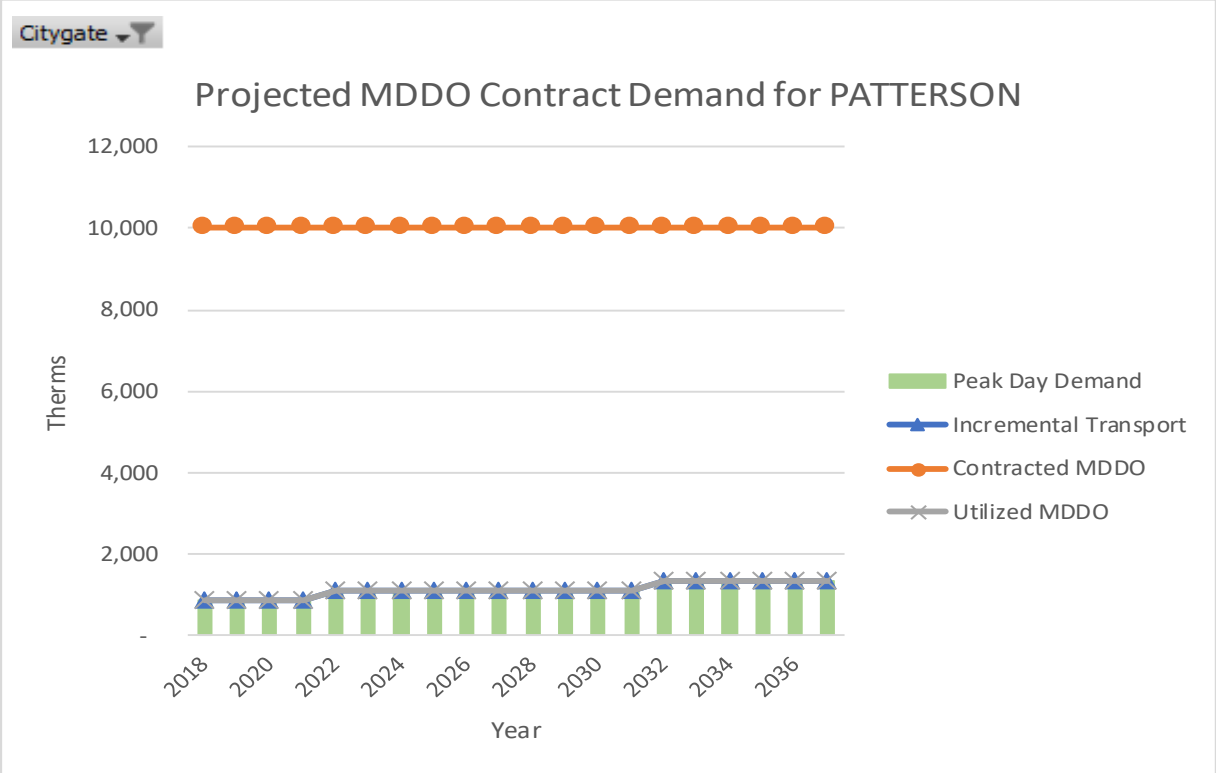

Citygate
Projected MDDO Contract Demand for MOSES LAKE
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

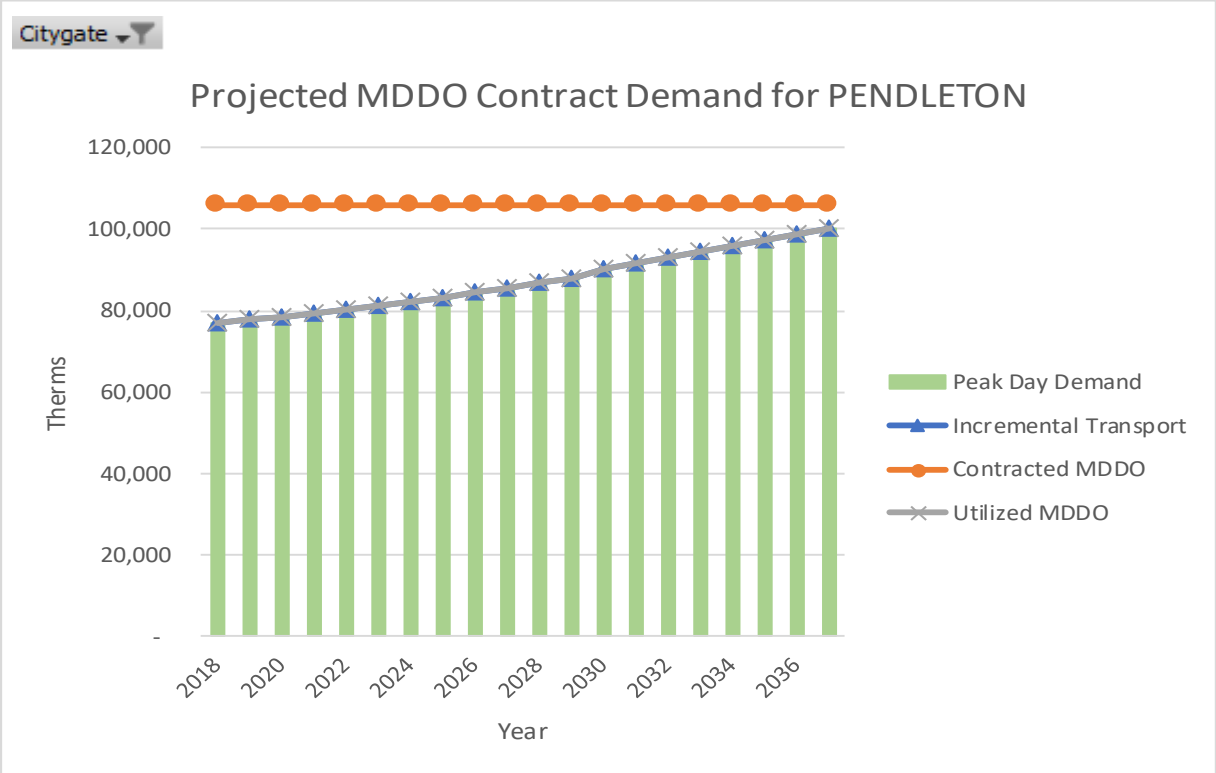

Citygate
Projected MDDO Contract Demand for MOXEE (BEAUCHENE)
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

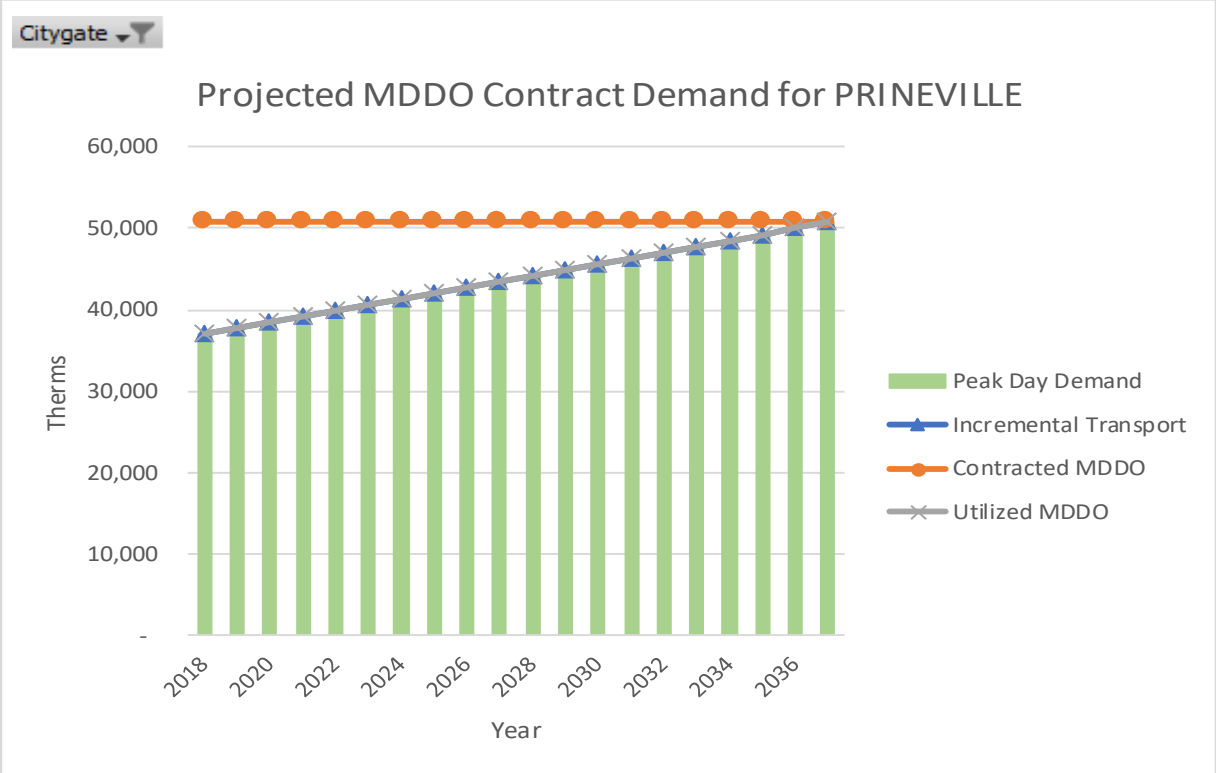

Citygate
Projected MDDO Contract Demand for NORTH PASCO
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

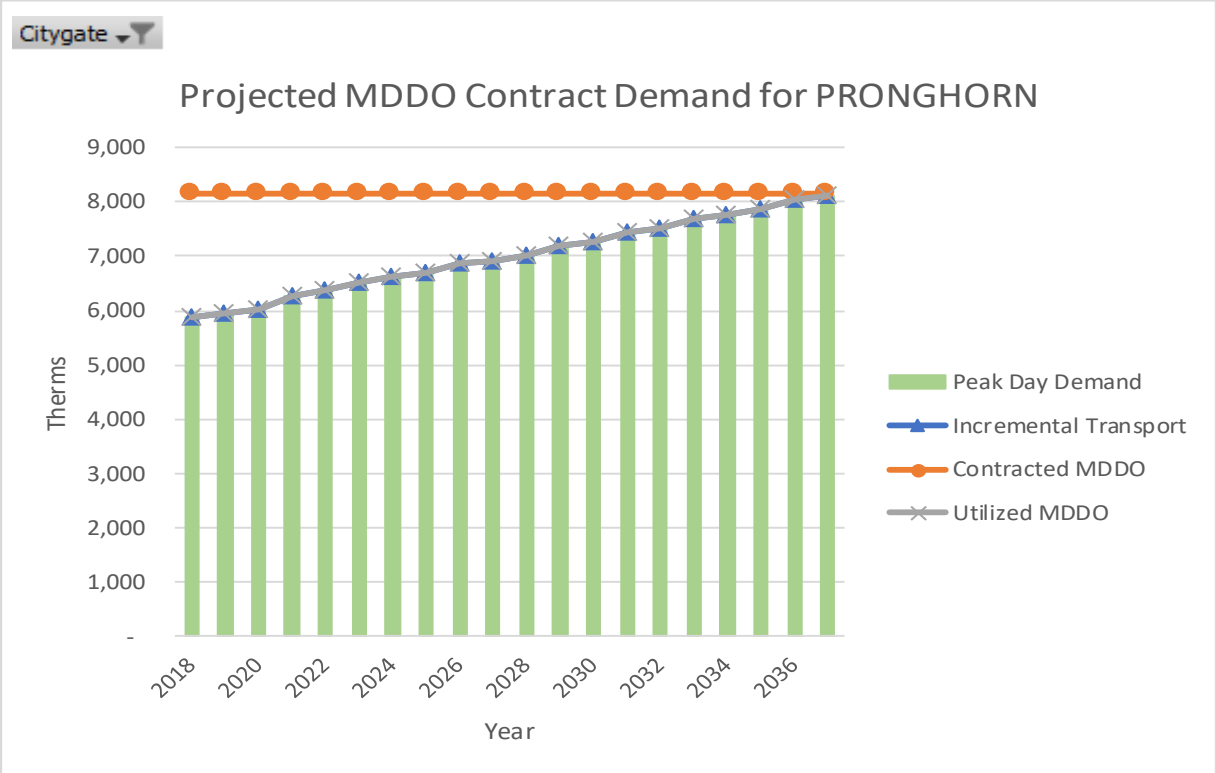

Citygate
Projected MDDO Contract Demand for NYSSA-ONTARIO
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

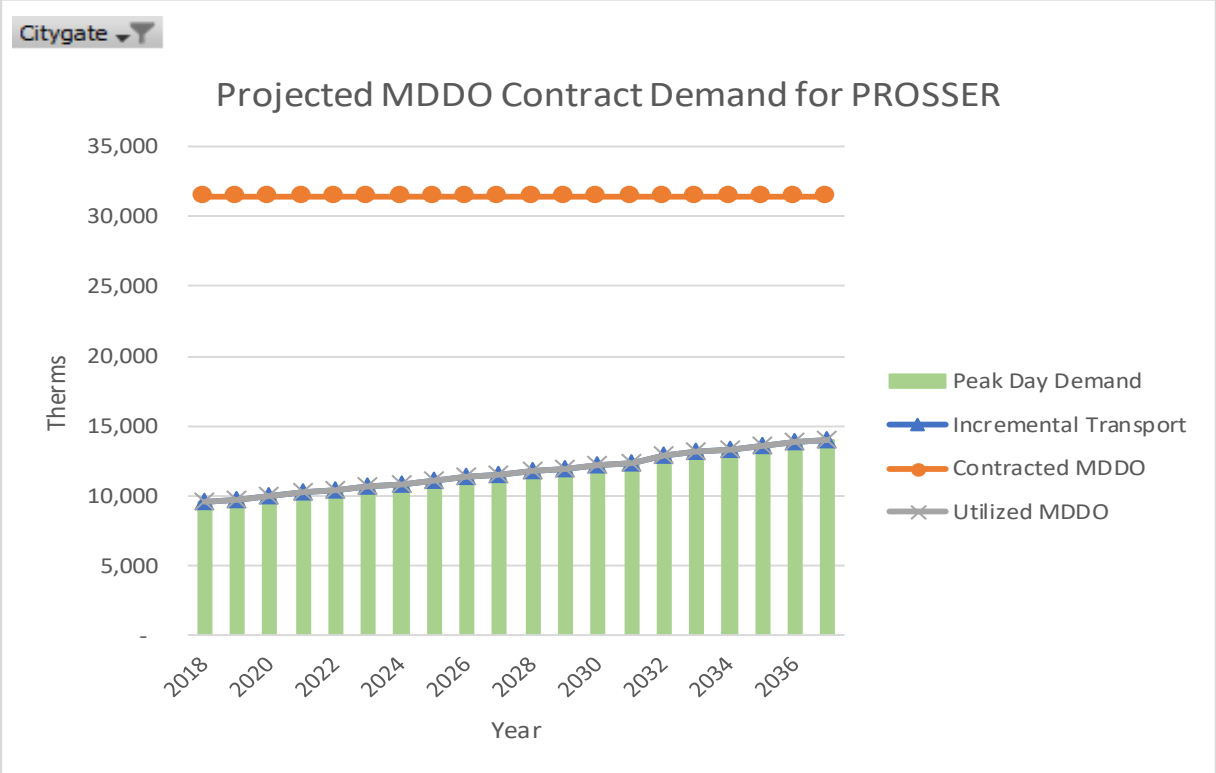

Citygate
Projected MDDO Contract Demand for OTHELLO
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for PATTERSON
12,000
10,000
8,000
6,000
4,000
2,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for PENDLETON
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for PRINEVILLE
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for PRONGHORN
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for PROSSER
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
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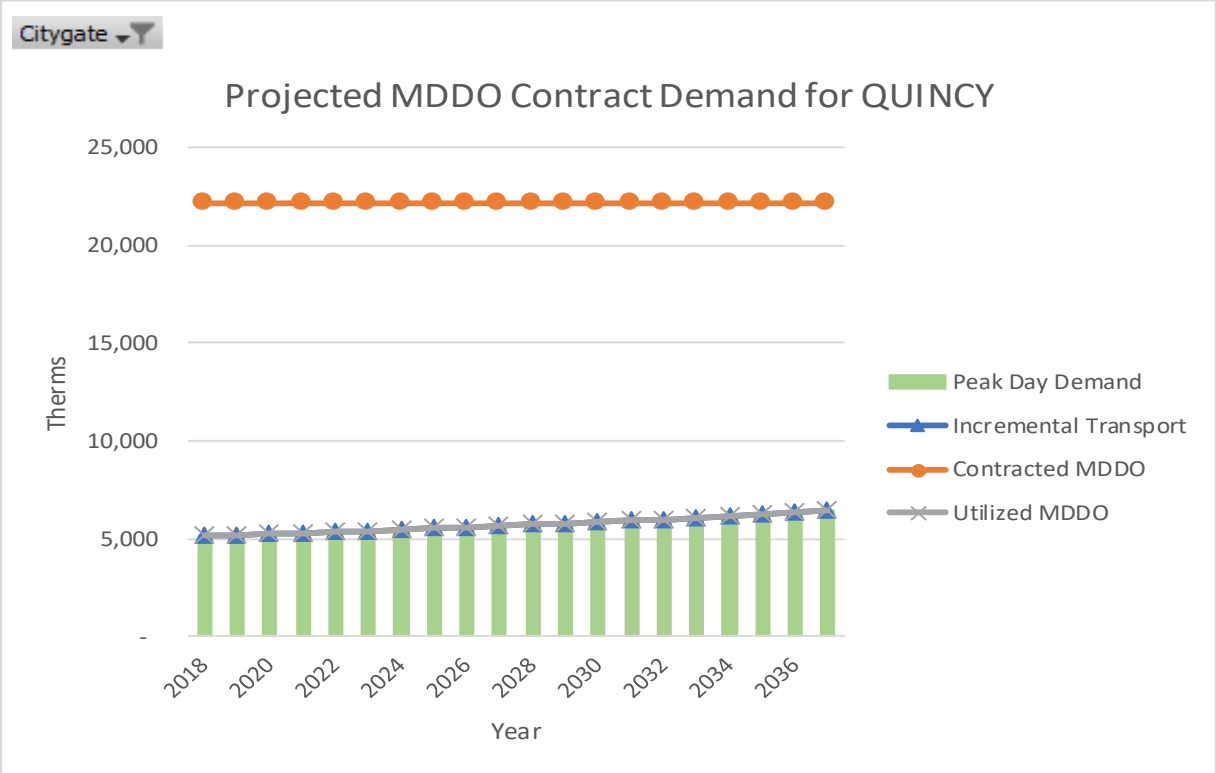
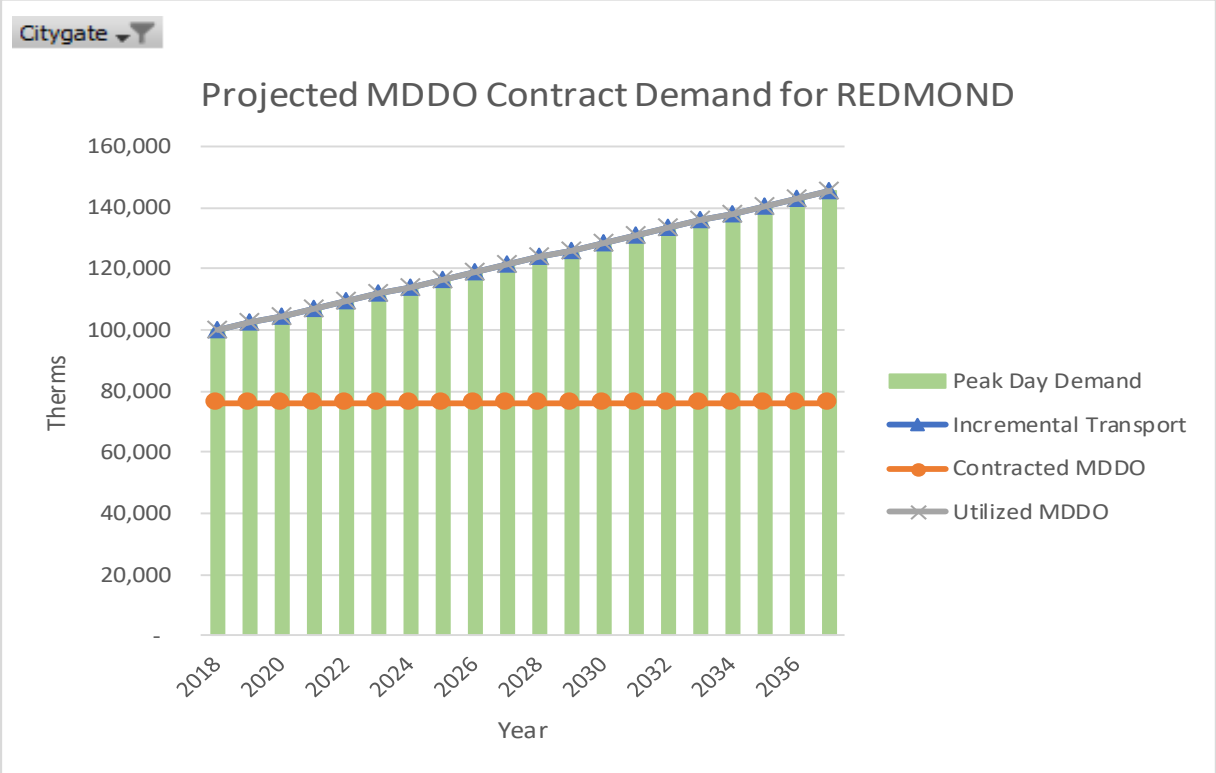
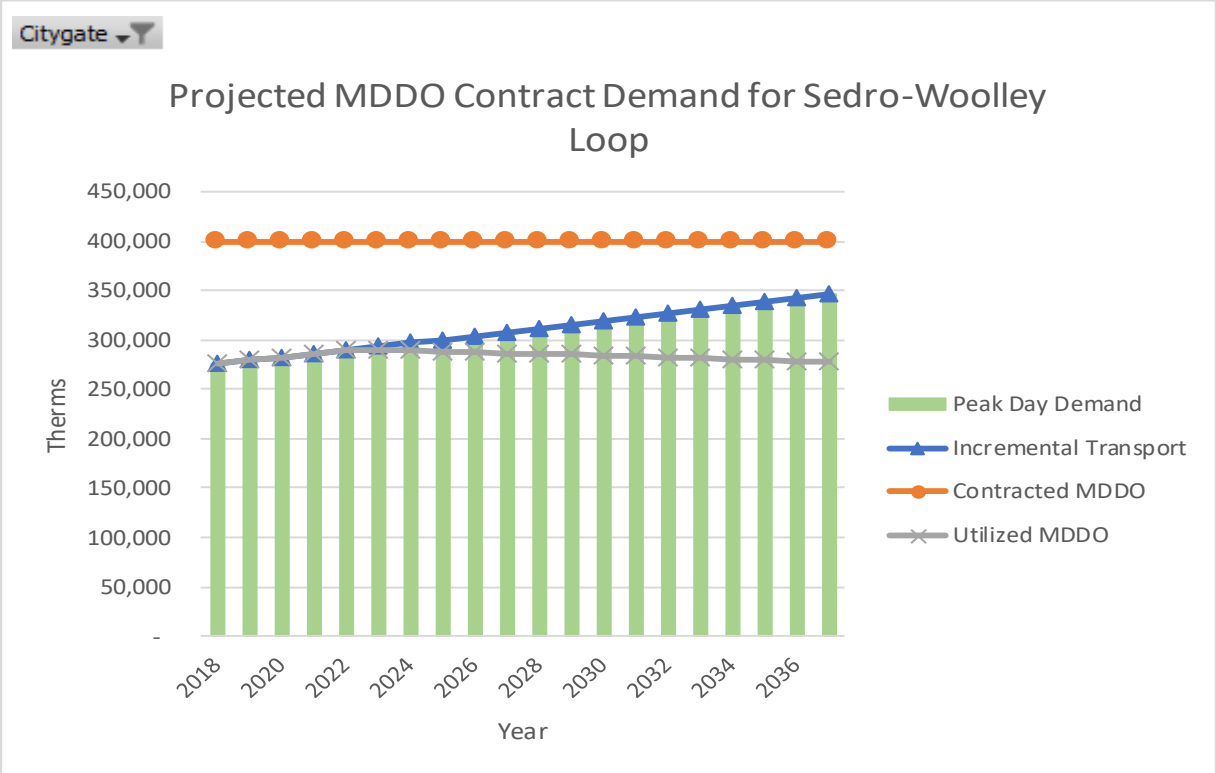
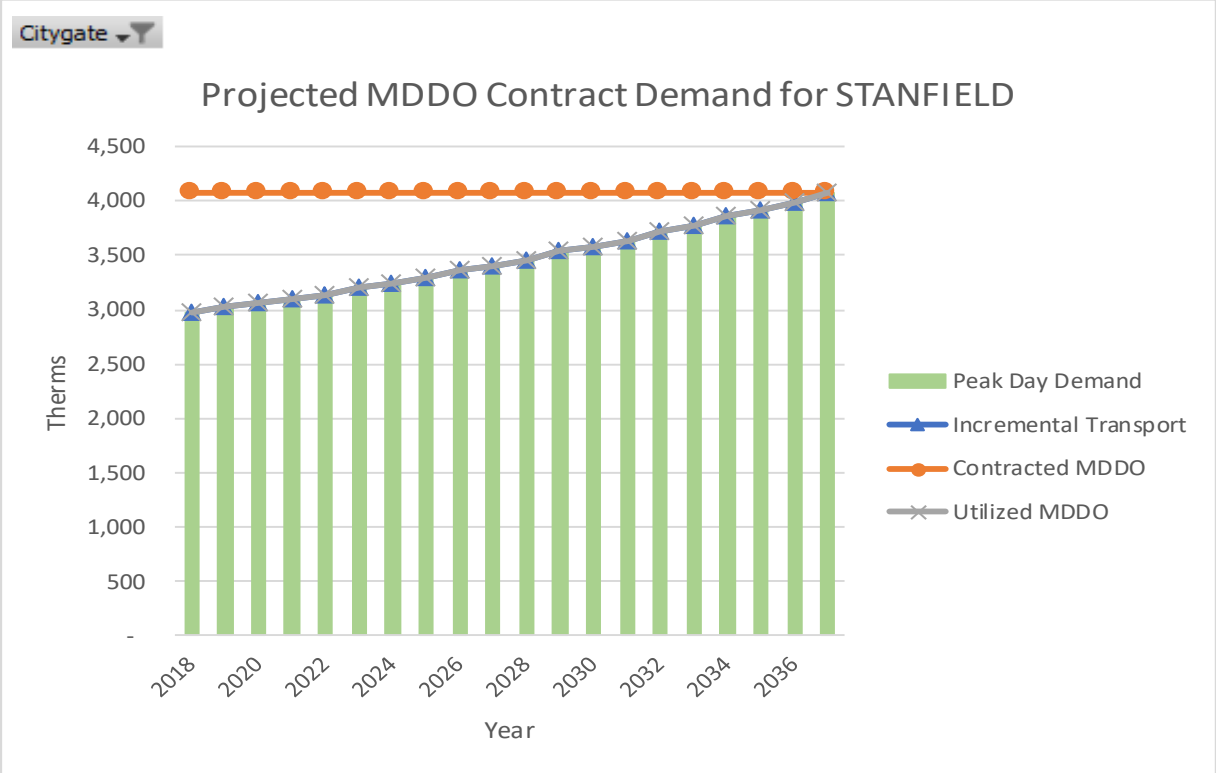
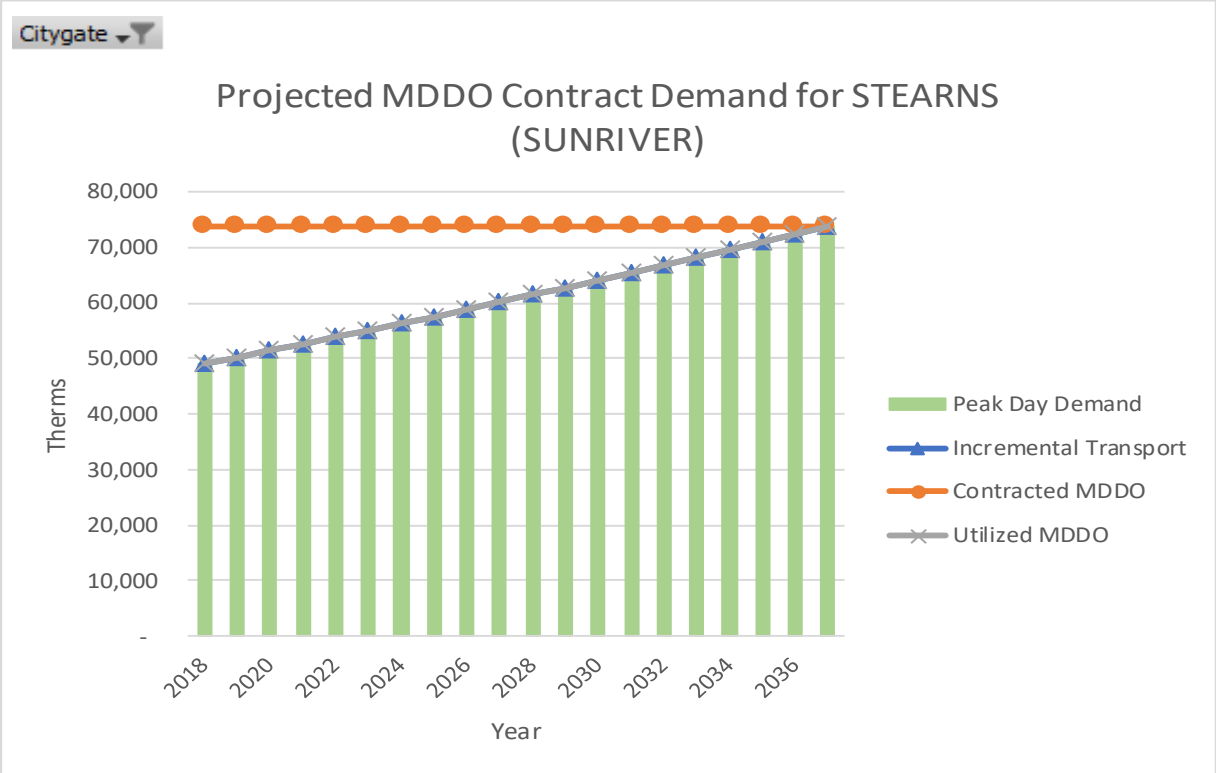
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

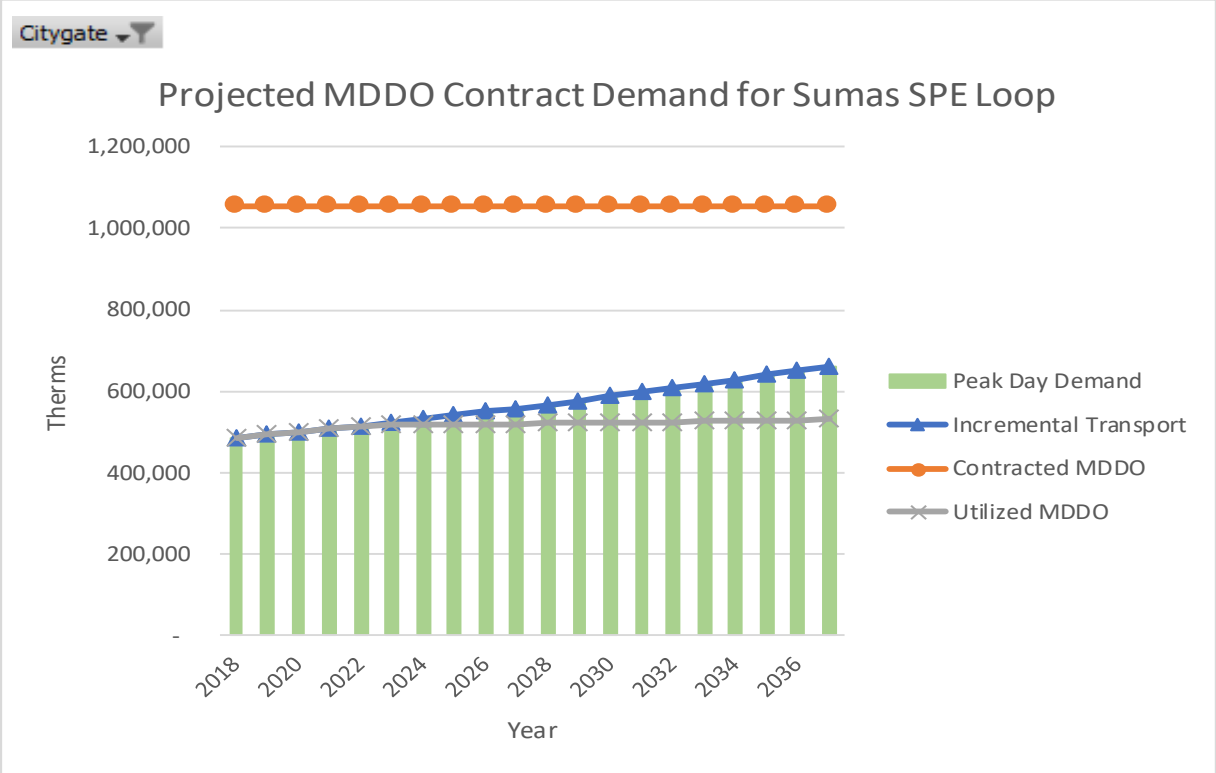

Citygate
Projected MDDO Contract Demand for QUINCY
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

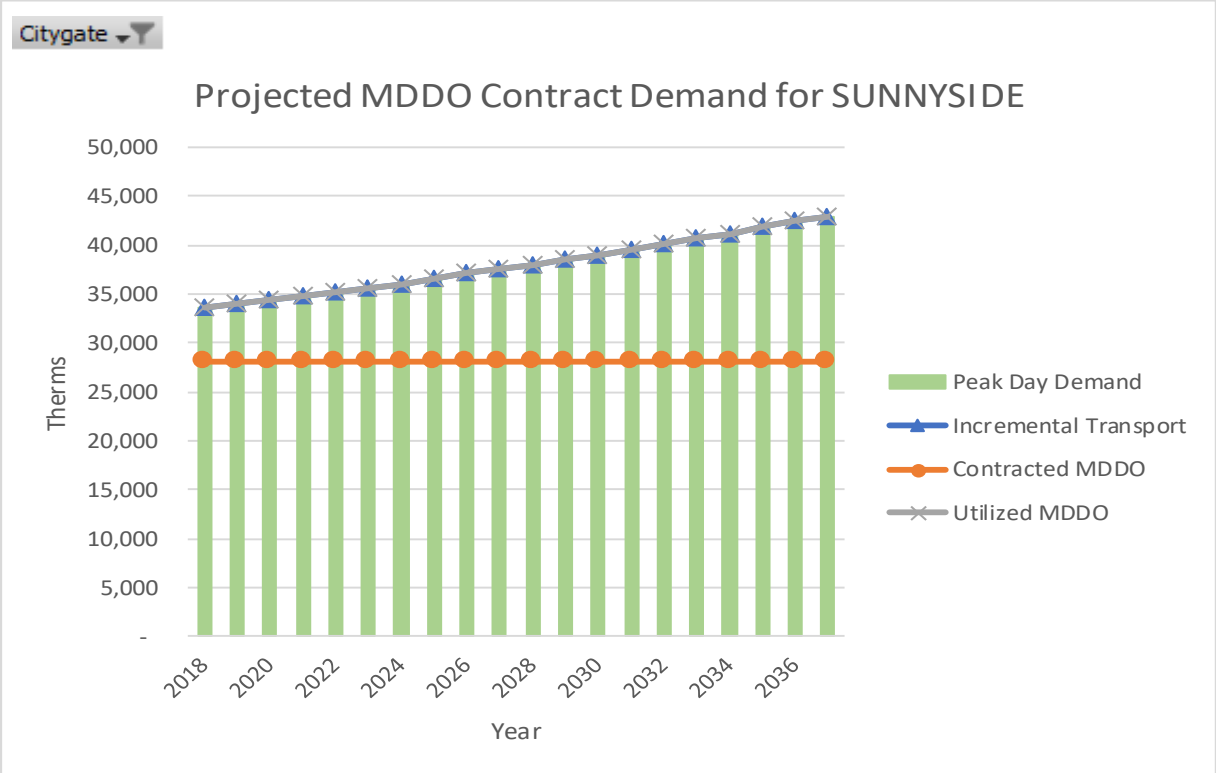

Citygate
Projected MDDO Contract Demand for REDMOND
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

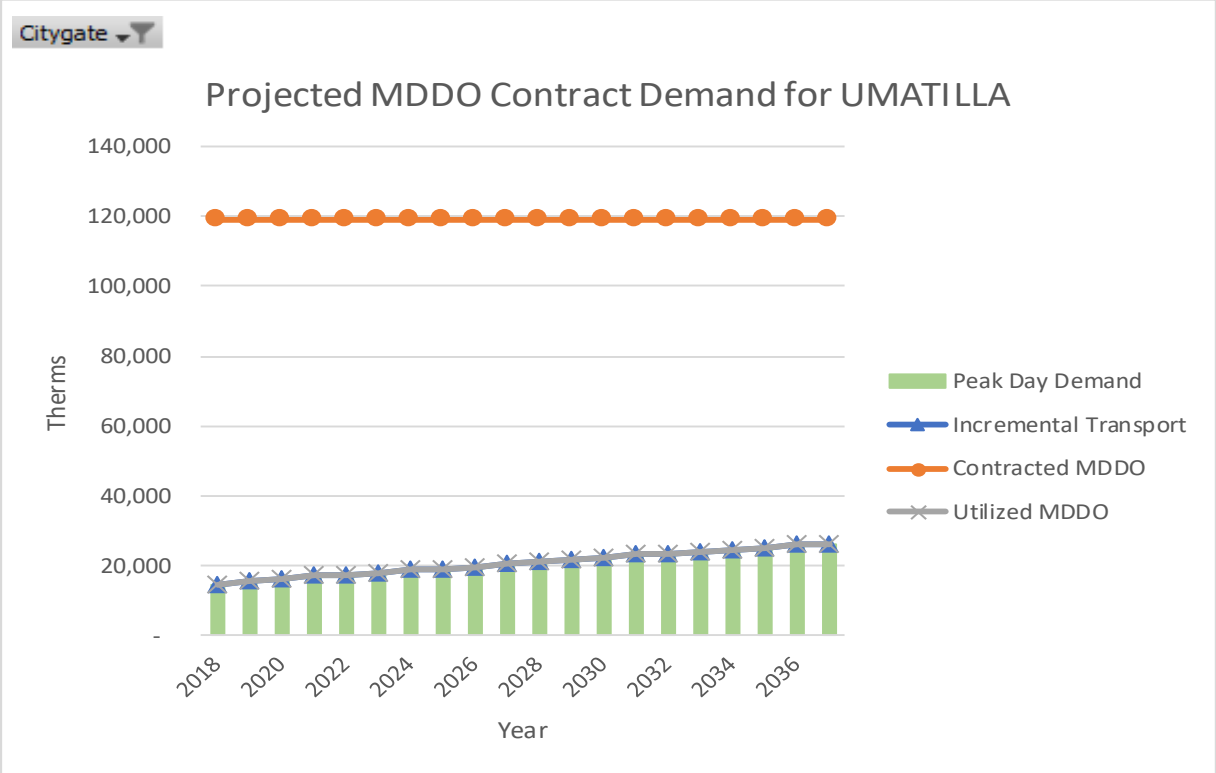

Citygate
Projected MDDO Contract Demand for Sedro-Woolley Loop
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

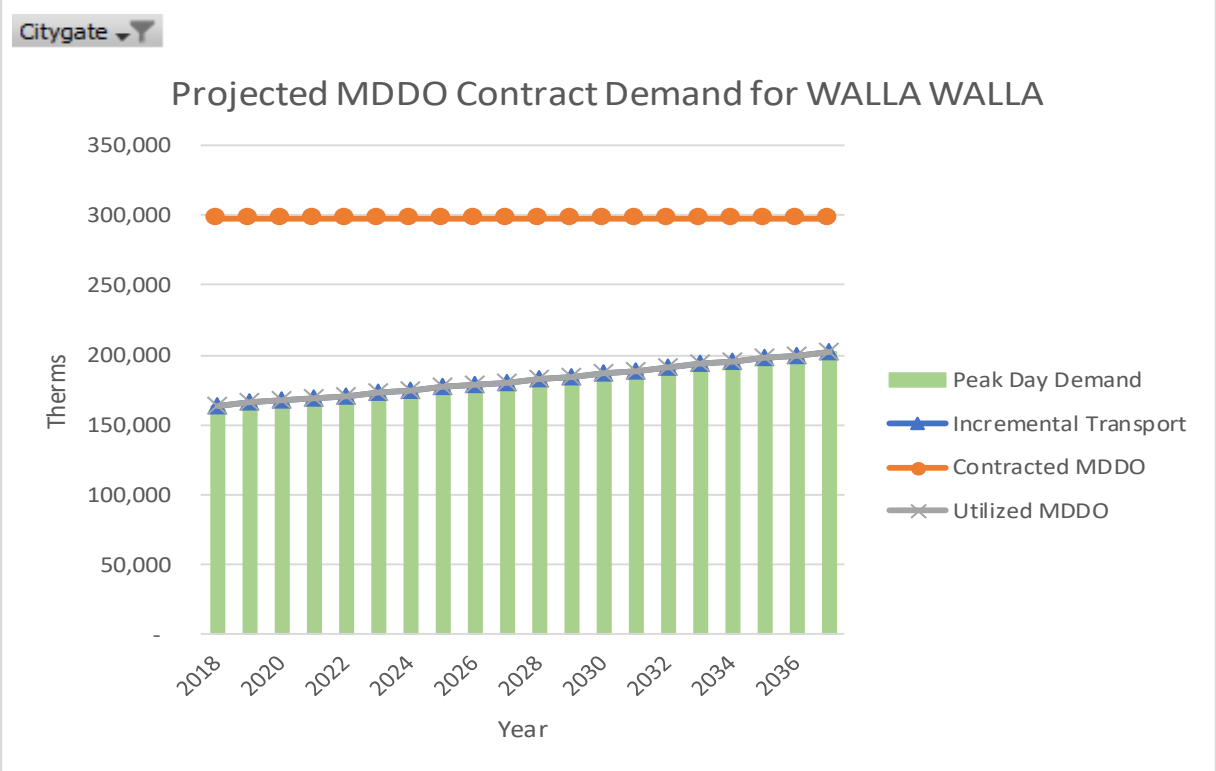

Citygate
Projected MDDO Contract Demand for STANFIELD
Therms
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
-
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

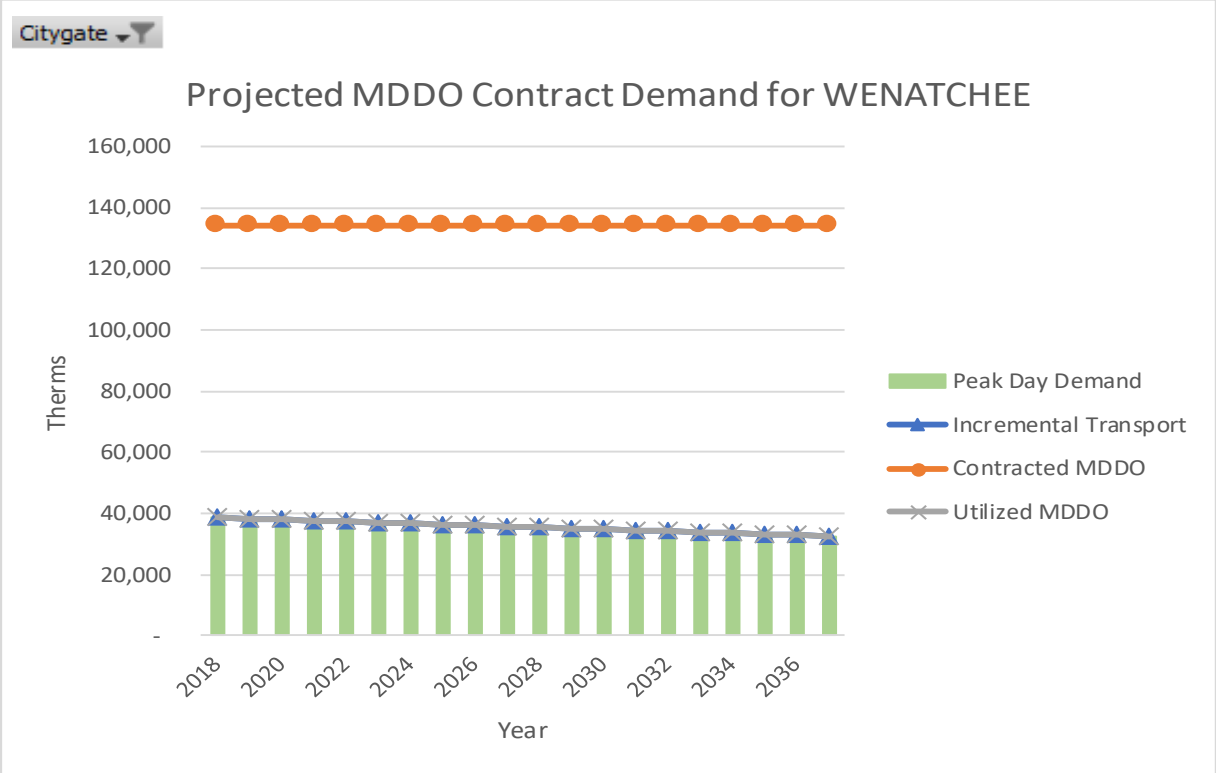

Citygate
Projected MDDO Contract Demand for STEARNS (SUNRIVER)
Therms
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

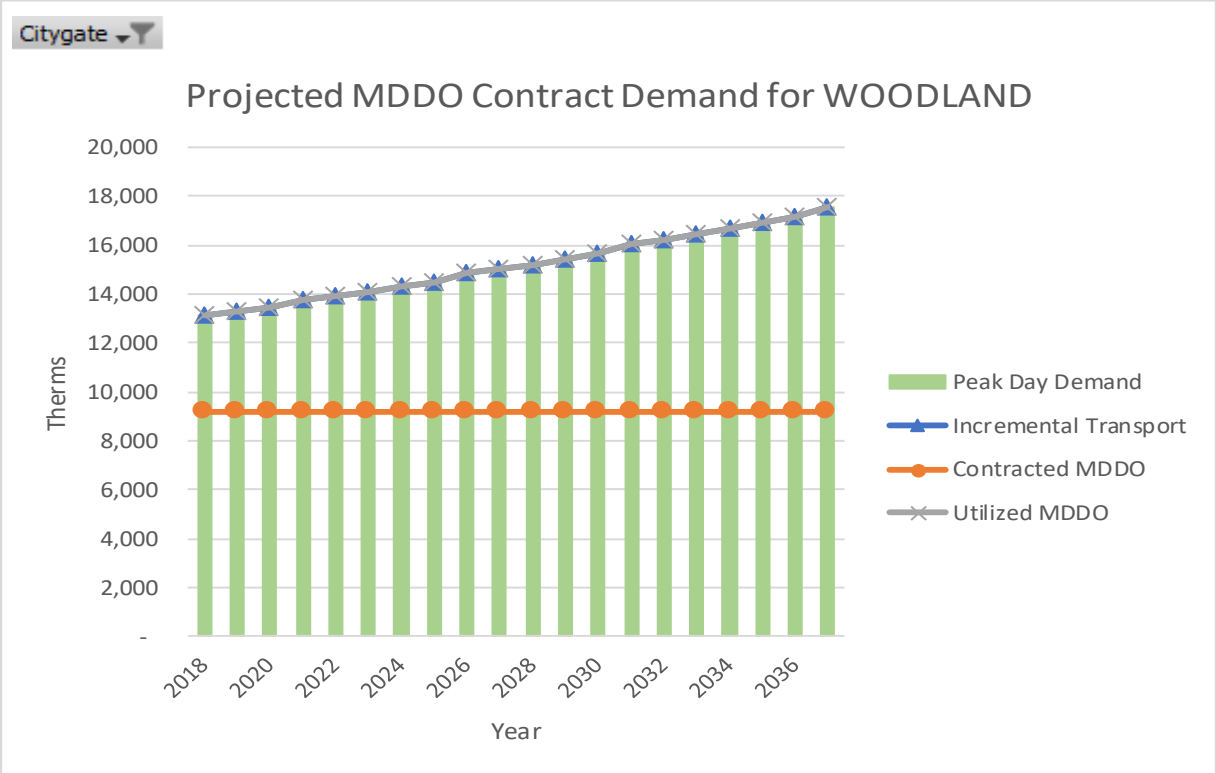

Citygate
Projected MDDO Contract Demand for Sumas SPE Loop
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

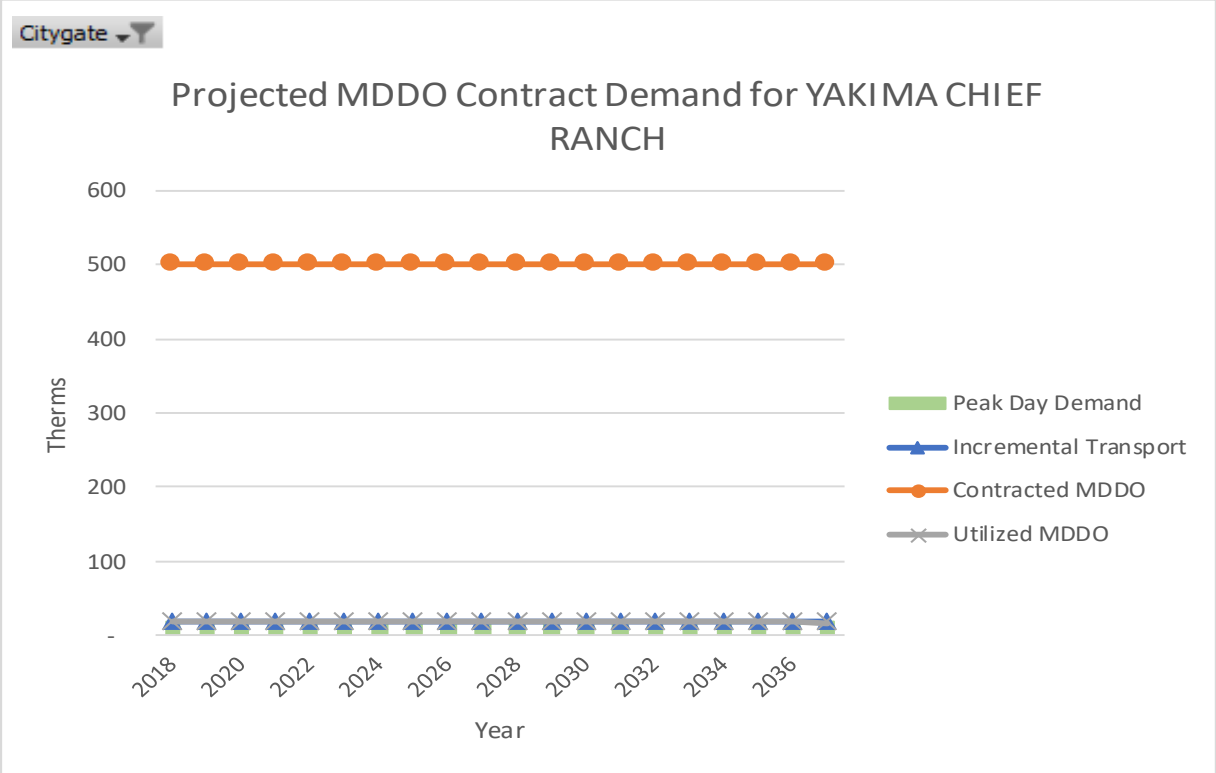

Citygate
Projected MDDO Contract Demand for SUNNYSIDE
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

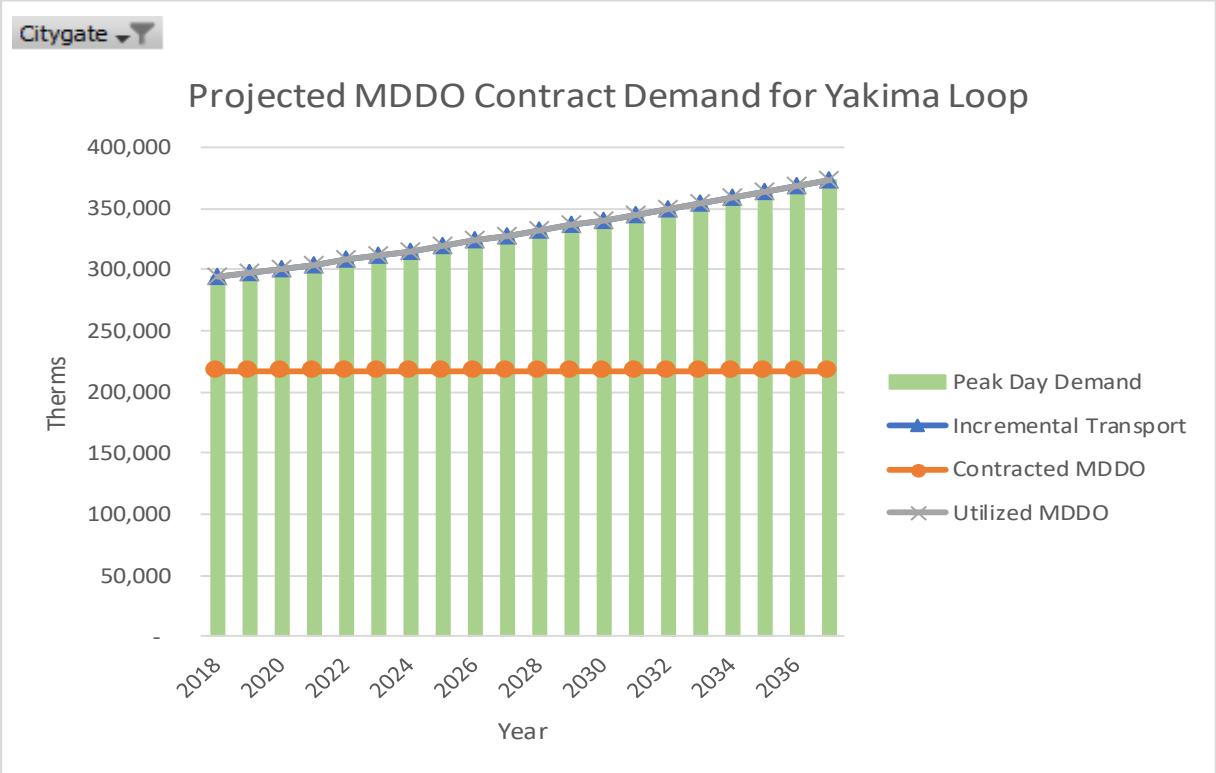

Citygate
Projected MDDO Contract Demand for UMATILLA
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

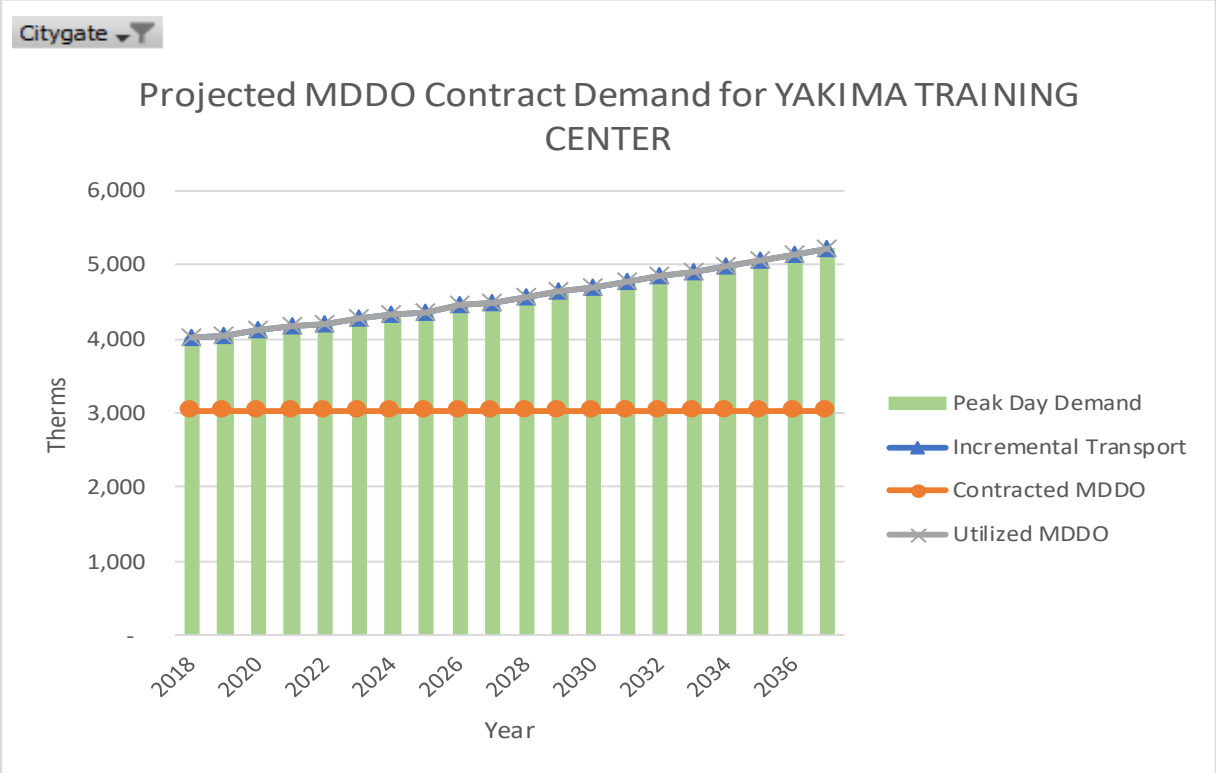

Citygate
Projected MDDO Contract Demand for WALLA WALLA
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

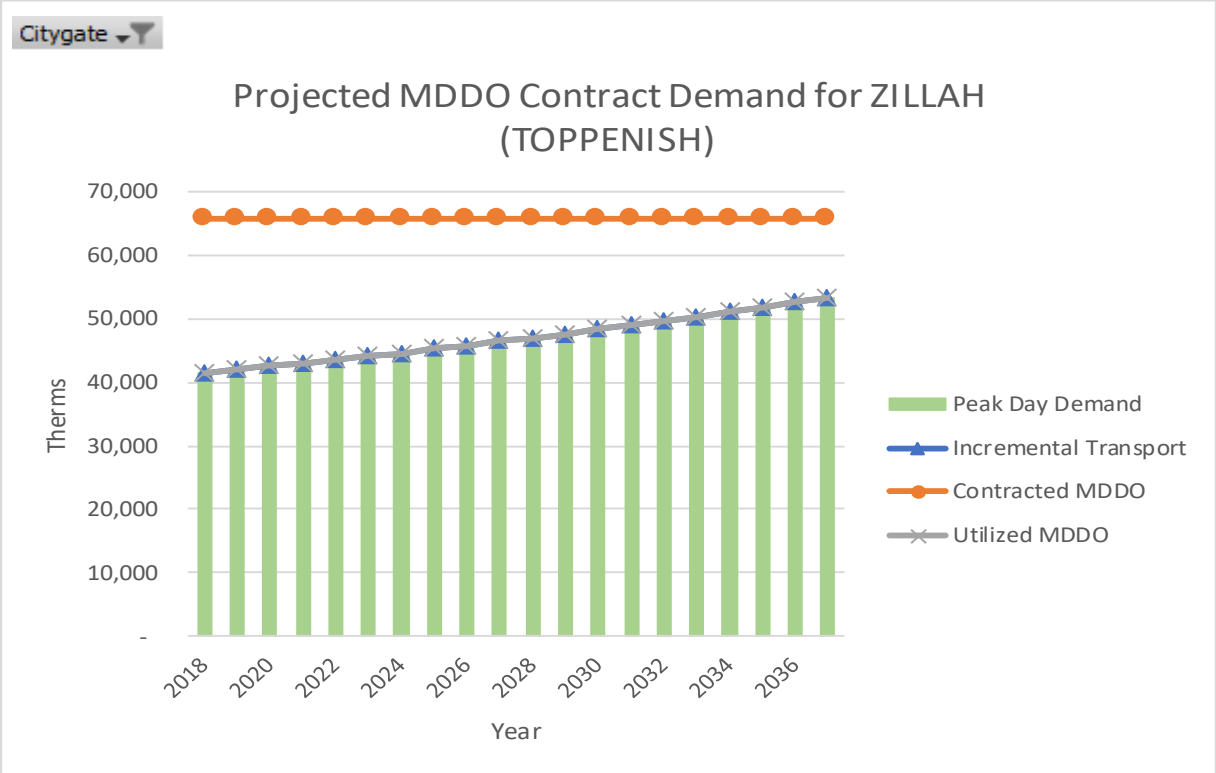

Citygate
Projected MDDO Contract Demand for WENATCHEE
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

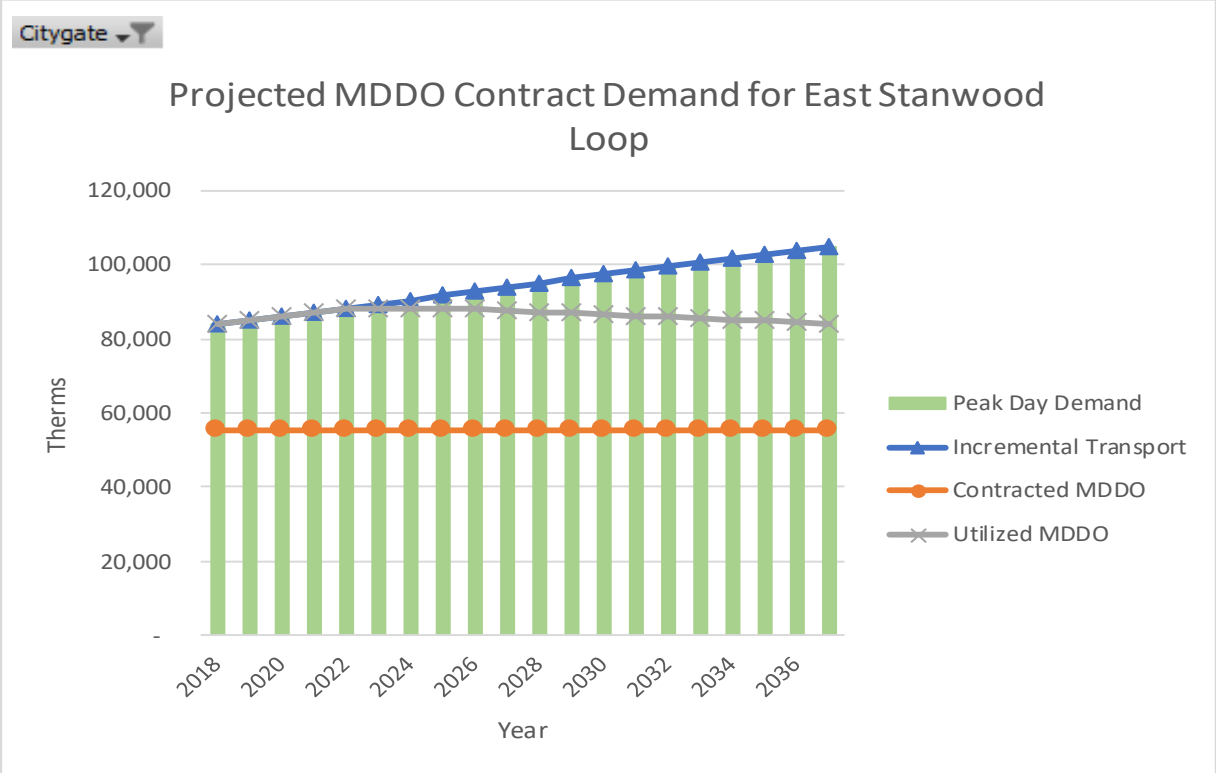

Citygate
Projected MDDO Contract Demand for WOODLAND
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

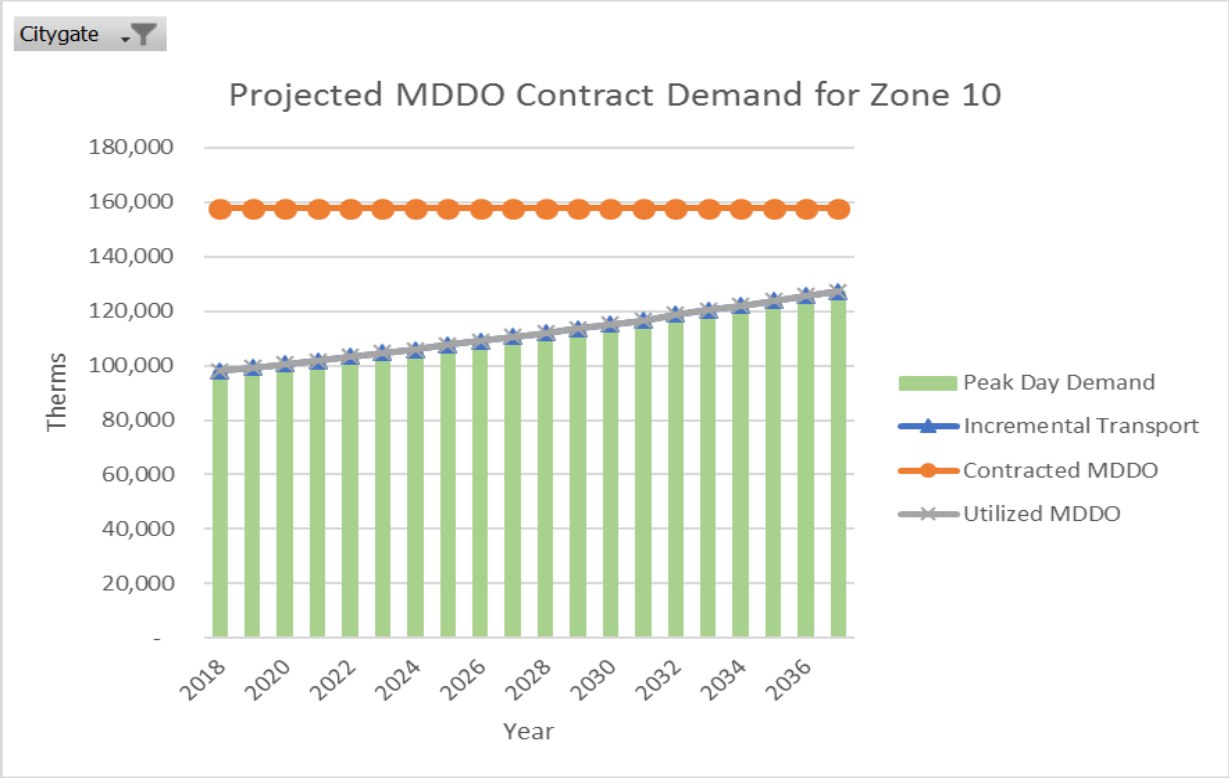

Citygate
Projected MDDO Contract Demand for YAKIMA CHIEF RANCH
600
500
400
300
200
100
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

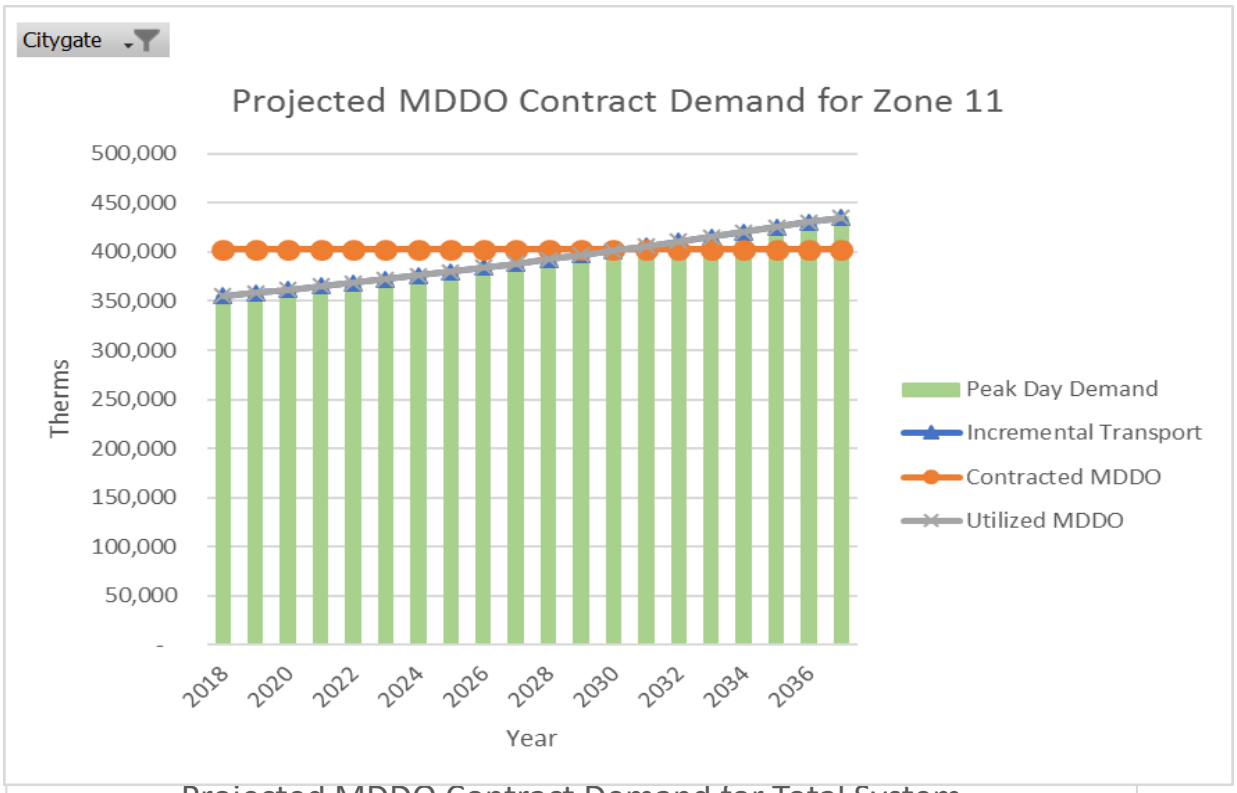

Citygate
Projected MDDO Contract Demand for Yakima Loop
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for YAKIMA TRAINING CENTER
6,000
5,000
4,000
3,000
2,000
1,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for ZILLAH (TOPPENISH)
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

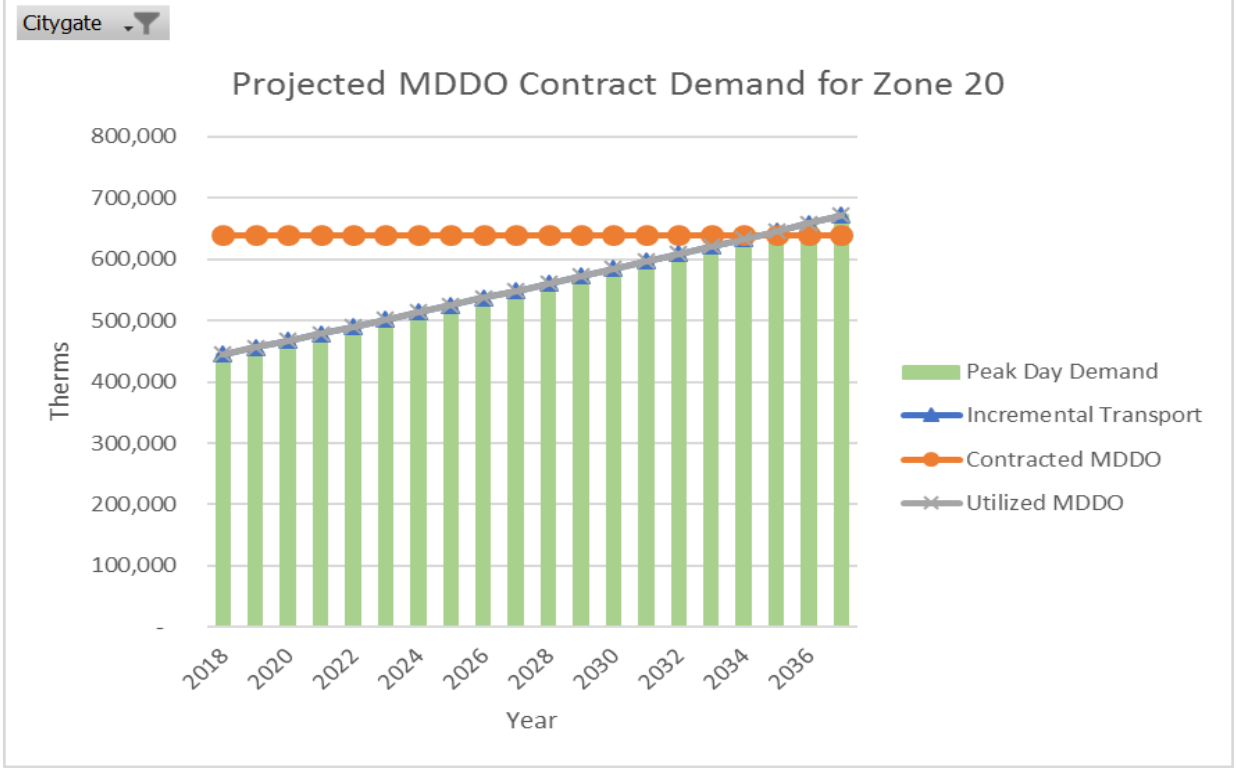

Citygate
Projected MDDO Contract Demand for East Stanwood Loop
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

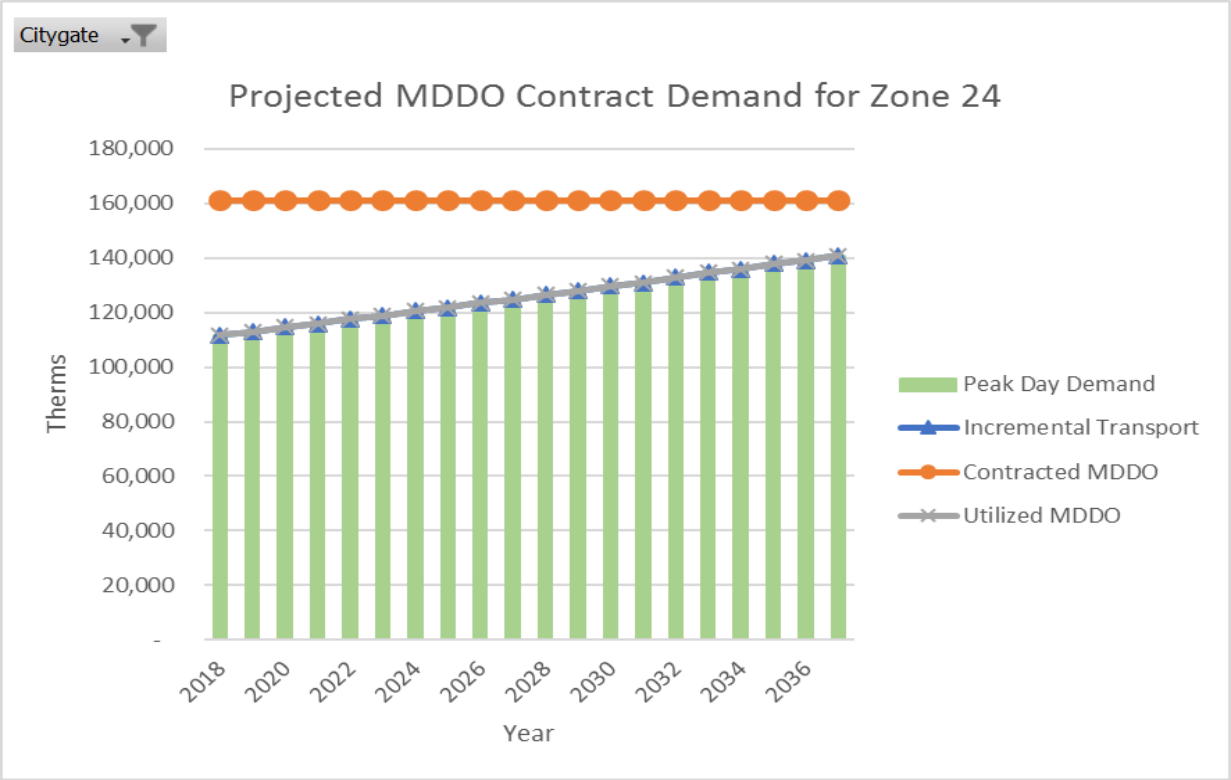

Citygate
Projected MDDO Contract Demand for Zone 10
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

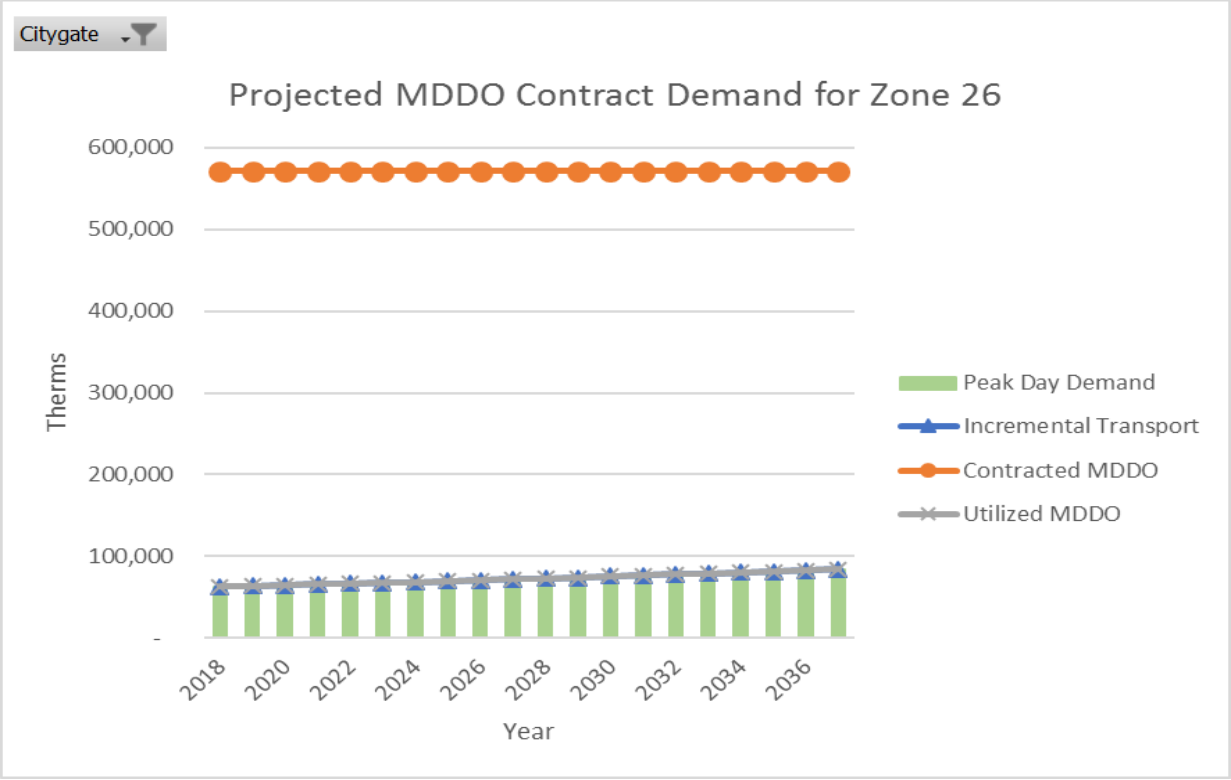


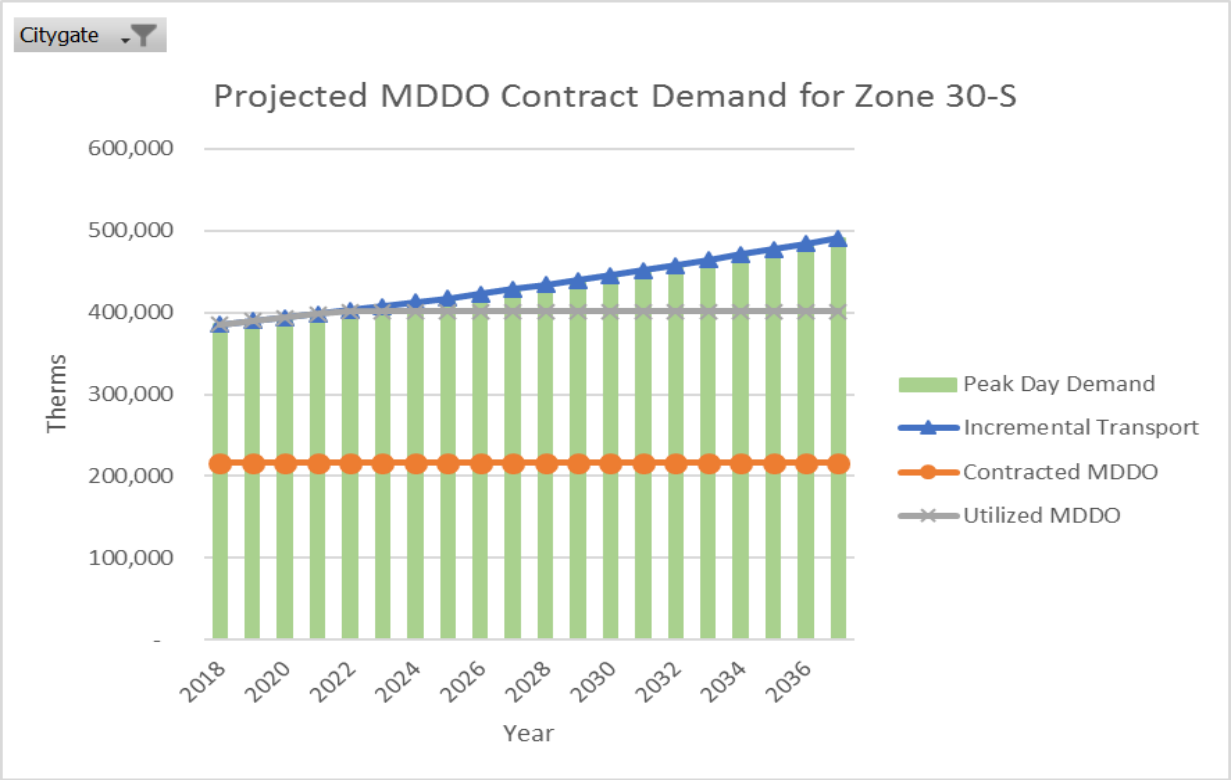
Projected MDDO Contract Demand for Total System

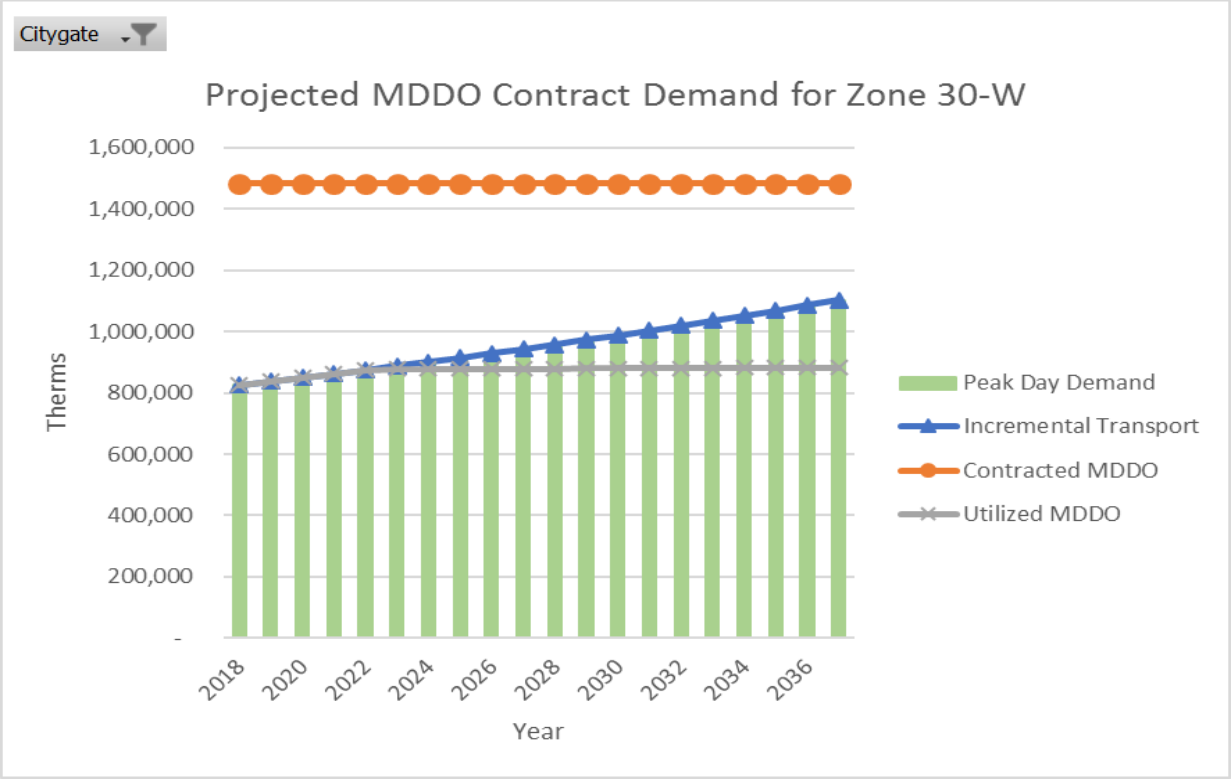
6,000,000

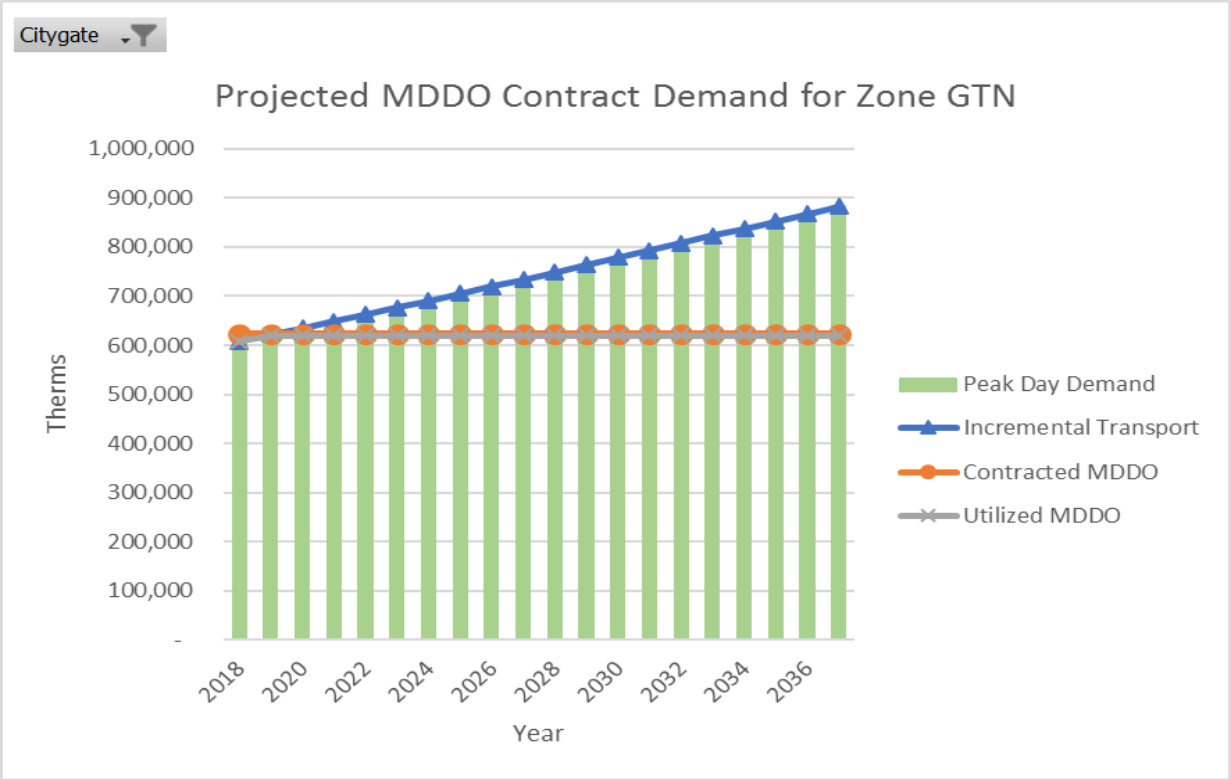


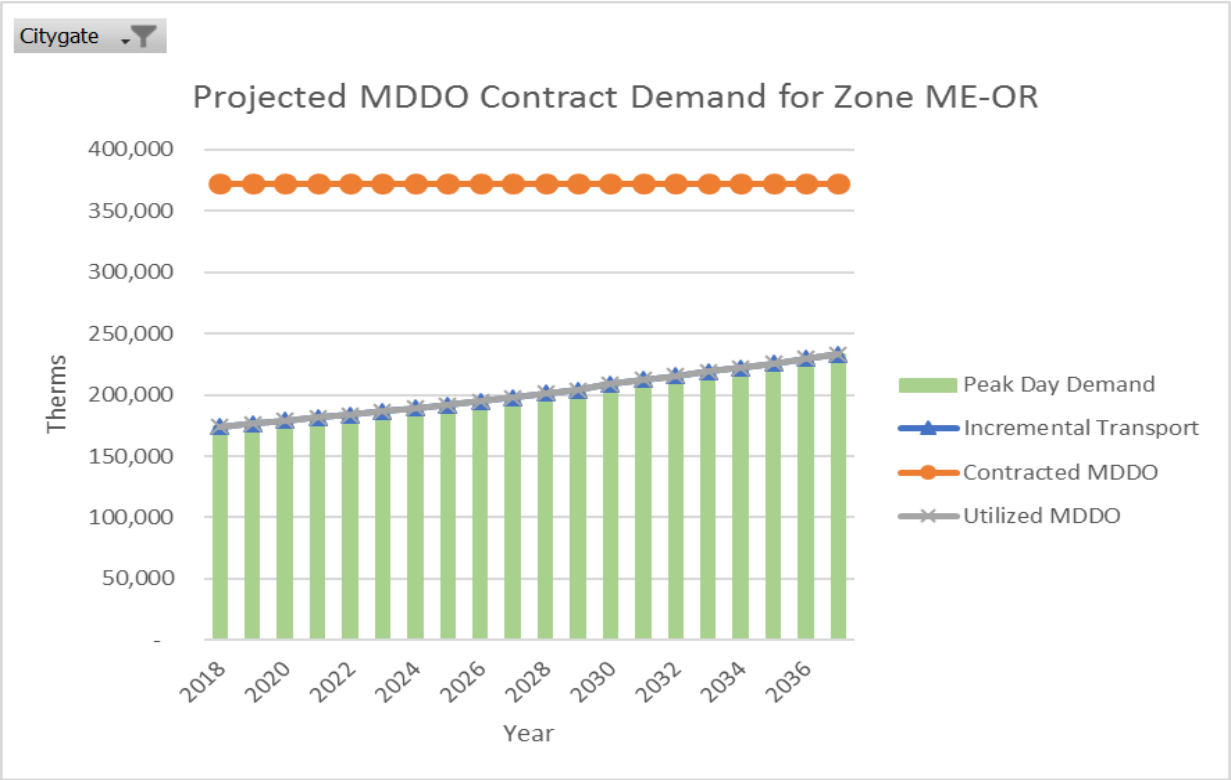

Citygate
Projected MDDO Contract Demand for Zone 24
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

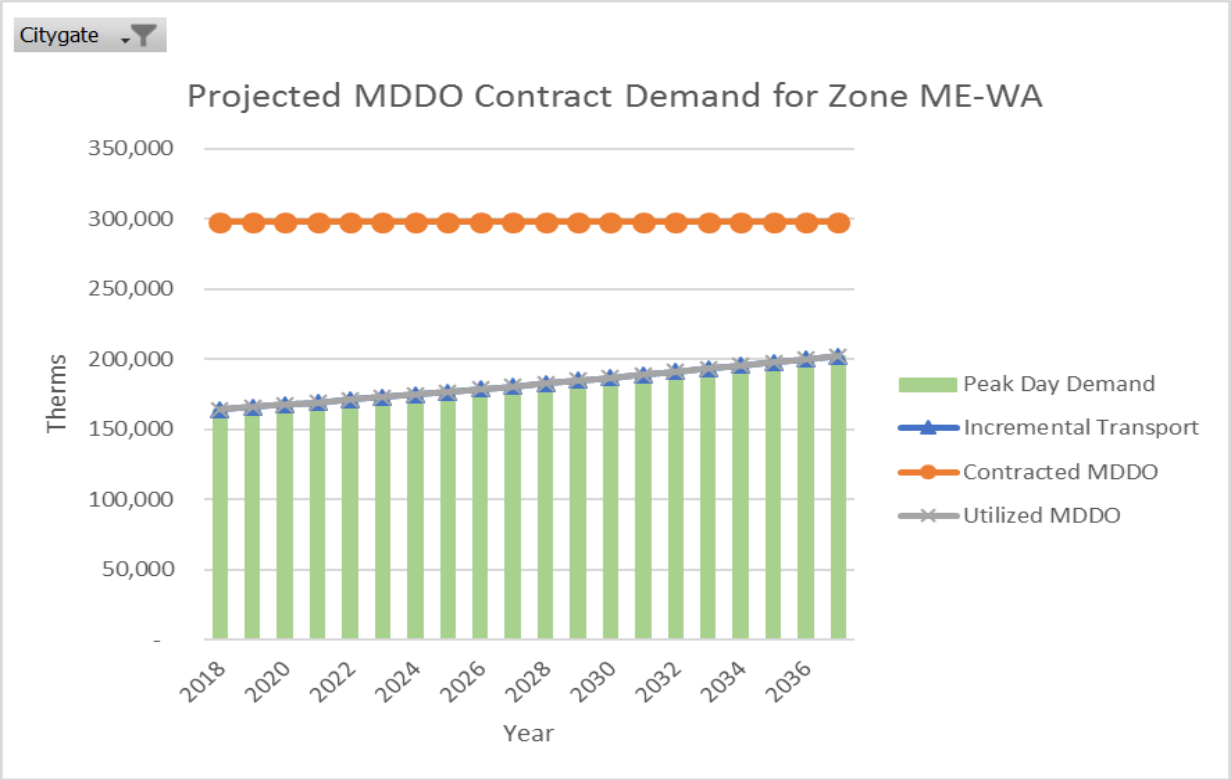

Citygate
Projected MDDO Contract Demand for Zone 26
600,000
500,000
400,000
300,000
200,000
100,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

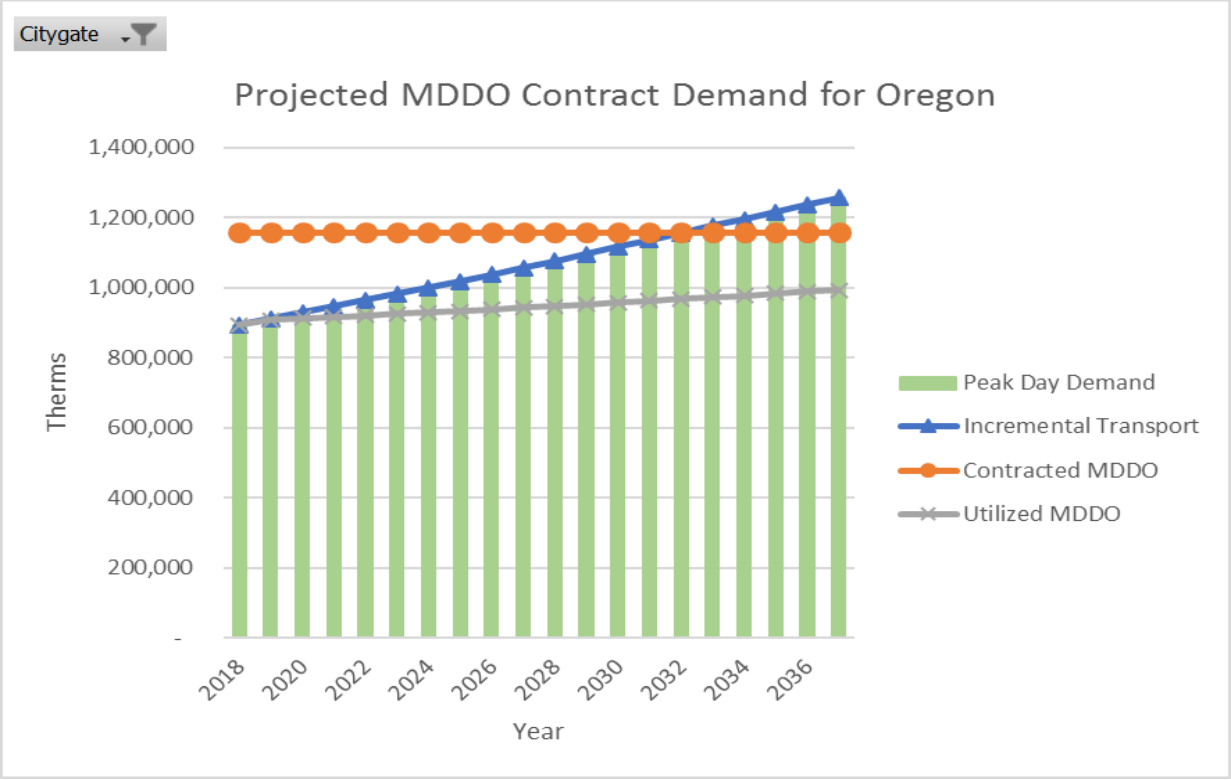

Citygate
Projected MDDO Contract Demand for Zone 30-S
600,000
500,000
400,000
300,000
200,000
100,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

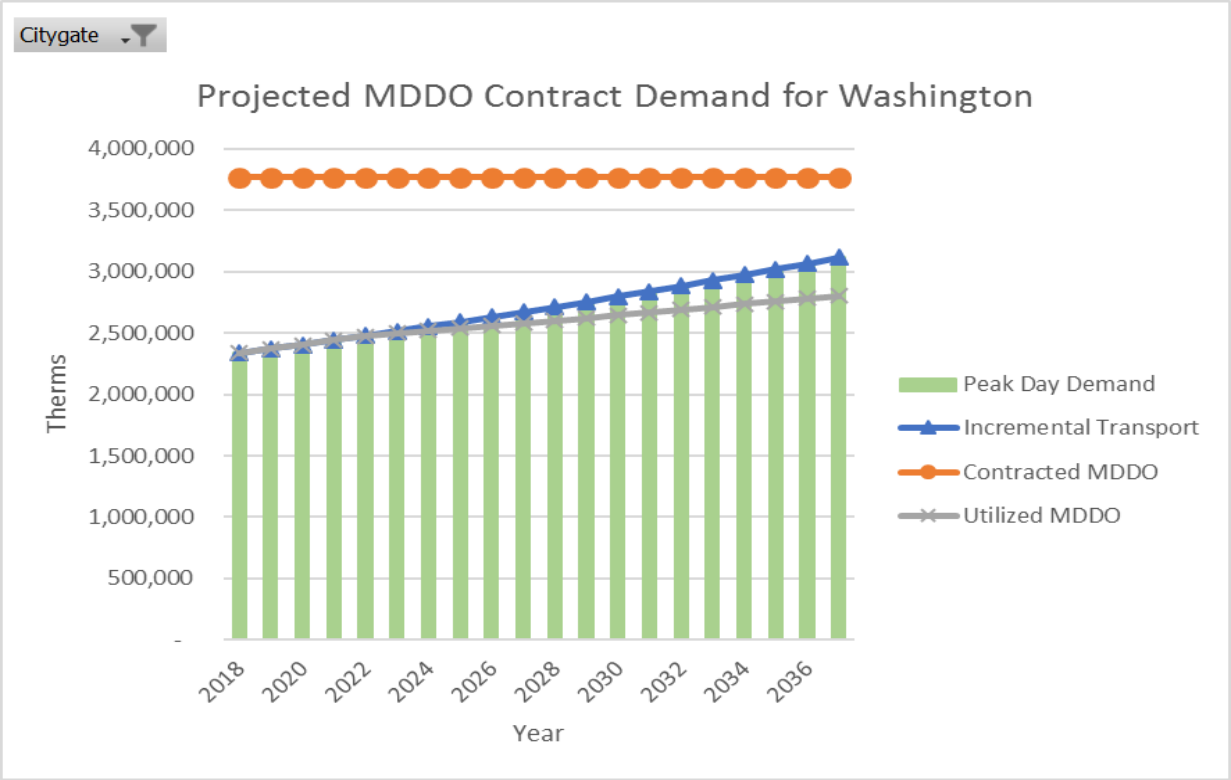

Citygate
Projected MDDO Contract Demand for Zone 30-W
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO

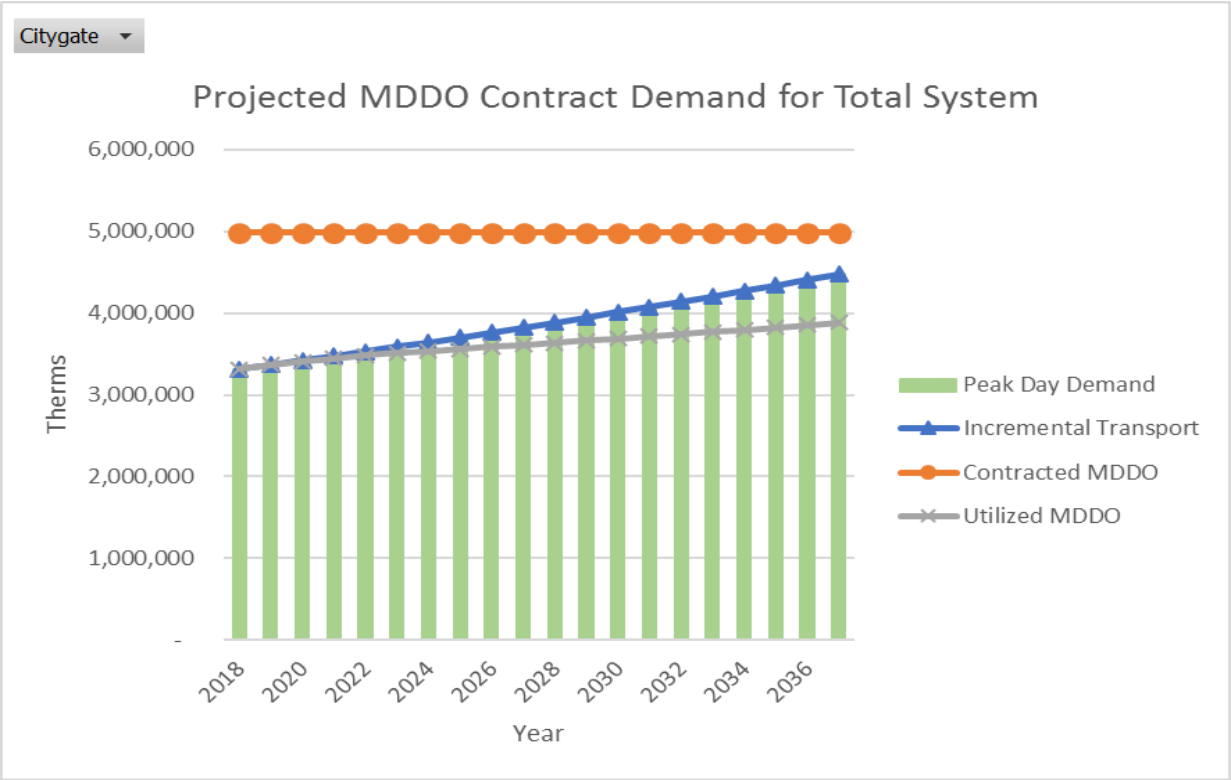

Citygate
Projected MDDO Contract Demand for Zone GTN
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for Zone ME-OR
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for Zone ME-WA
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for Oregon
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for Washington
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO


Citygate
Projected MDDO Contract Demand for Total System
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
Therms
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
Year
Peak Day Demand
Incremental Transport
Contracted MDDO
Utilized MDDO