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*2027 Electric and Natural Gas Integrated Resource Plans*

# Technical Advisory Committee Meeting No. 9 Agenda

**Friday, May 15, 2026**

**Virtual Meeting – 1:00 pm to 4:00 pm Pacific Time**

| Topic | State | Audience |
|---|---|---|
| • Introduction and Questions from TAC 8 | | |
| • Natural Gas Availability & Resiliency Cost | All | Gas |
| • IRP Generation Option Transmission Planning Studies | WA/ID | Transmission |
| • Distribution System Planning within the IRP | WA/ID | Distribution |
| • Building Electrification Impact on T&D system | WA/ID | T&D |
| • Gas Distribution Update | All | Gas |

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**Microsoft Teams meeting**
**Join:** https://teams.microsoft.com/meet/231641854299121?p=gjHr4s5ncoqiGdE2wR
Meeting ID: 231 641 854 299 121
Passcode: Xb7c27VY

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Need help? | System reference
**Dial in by phone**
+1 509-931-1514,,467658217# United States, Spokane
Find a local number
Phone conference ID: 467 658 217#

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# Introductions 2027 Electric & Gas Integrated Resource Planning

TAC 9 – May 15, 2026

John Lyons, Ph.D. – Senior Resource Policy Analyst

# TAC 9 Agenda

- Introduction and Questions from TAC 8
- Natural Gas Availability & Resiliency Cost
- IRP Generation Option Transmission Planning Studies WA/ID
- Distribution System Planning within the IRP
- Building Electrification Impact on T&D System
- Gas Distribution Update

# Meeting Guidelines

- IRP team is in office Monday – Wednesday; also available by email, phone and Teams for questions and comments
- Stakeholder feedback responses shared with TAC at meetings, in Teams and in Appendix
- Working IRP data posted to Teams
- All TAC meetings will be virtual on Teams
- Draft TAC presentations emailed three days before each meeting
- Final TAC presentations, meeting notes and recordings posted on IRP page

# Virtual TAC Meeting Reminders

- Please mute mics unless speaking or asking a question
- Raise hand or use the chat box for questions or comments
- Respect the pause
- Please try not to speak over the presenter or a speaker
- Please state your name before commenting for the note taker
- This is a public advisory meeting – presentations and comments will be documented and recorded

| TAC 10 – Wednesday, May 27, 2025 (9:00 – 12:00 PDT) | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| CEIP Update | WA | Electric |
| CETA Interim/Energy Compliance Report | WA | Electric |
| Load Forecast Update | All | E & G |

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| TAC 11 Technical Modeling Workshop – Rescheduling, TBD | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| PRiSM Model Tour | All | E & G |
| Aurora Resource Adequacy Model Tour | WA/ID | Electric |
| New Resource Cost Model | All | E & G |

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| TAC 12 Wednesday, July 15, 2026 (13:00 – 16:00 PDT) | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| Load & Resource Balance Methodology | WA/ID | Electric |
| Loss of Load Probability | WA/ID | Electric |
| Non-Energy Impacts | All | E & G |
| Draft Preferred Resource Strategy Results | All | E & G |

| TAC 13 – Monday, August 17, 2026 (13:00 – 16:00 PDT) | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| ETO Energy Savings | OR | Gas |
| Preferred Resource Strategy Results | All | E & G |
| Oregon Non-Pipe Alternatives | OR | Gas |
| IRP/Progress Report Outlines | All | E & G |
| Next Steps | All | E & G |



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| TAC 14 – Thursday, September 17, 2026 (13:00 – 16:00 PDT) | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| Portfolio Scenario Analysis | All | E & G |
| Avoided Cost | All | Electric |
| Resource Adequacy Results | WA/ID | Electric |
| CBI Forecast and Results/Energy Burden | WA/OR | E & G |
| Final Report Overview and Comment Plan | All | E & G |
| Action Items | All | E & G |

| Electric Transmission & Distribution 5-Year Plan – October 7, 2026 (10:00 – 12:00 PDT) | | |
|---|---|---|
| **Topic** | **State** | **Audience** |
| Electric Trans Transmission & Distribution 5-Year Plan | WA/OR | Electric |



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# Other Key 2027 IRP Dates

- Oct 15, 2026 – Draft Electric IRP Released to TAC
- Nov TBD 2026 – Virtual Public Meeting
  - Noon-1pm
  - 6-7pm
- Jan 1, 2027 – Final Electric IRP Filed
- Feb 15, 2027 – Draft Gas IRP Released to TAC
- Apr 1, 2027 – Final Gas IRP Filed

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# Natural Gas Availability & Resiliency Cost

TAC 9 – May 15, 2026

Michael Brutocao – Natural Gas Planning Manager

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# Comparing LNG and Propane Storage Technologies

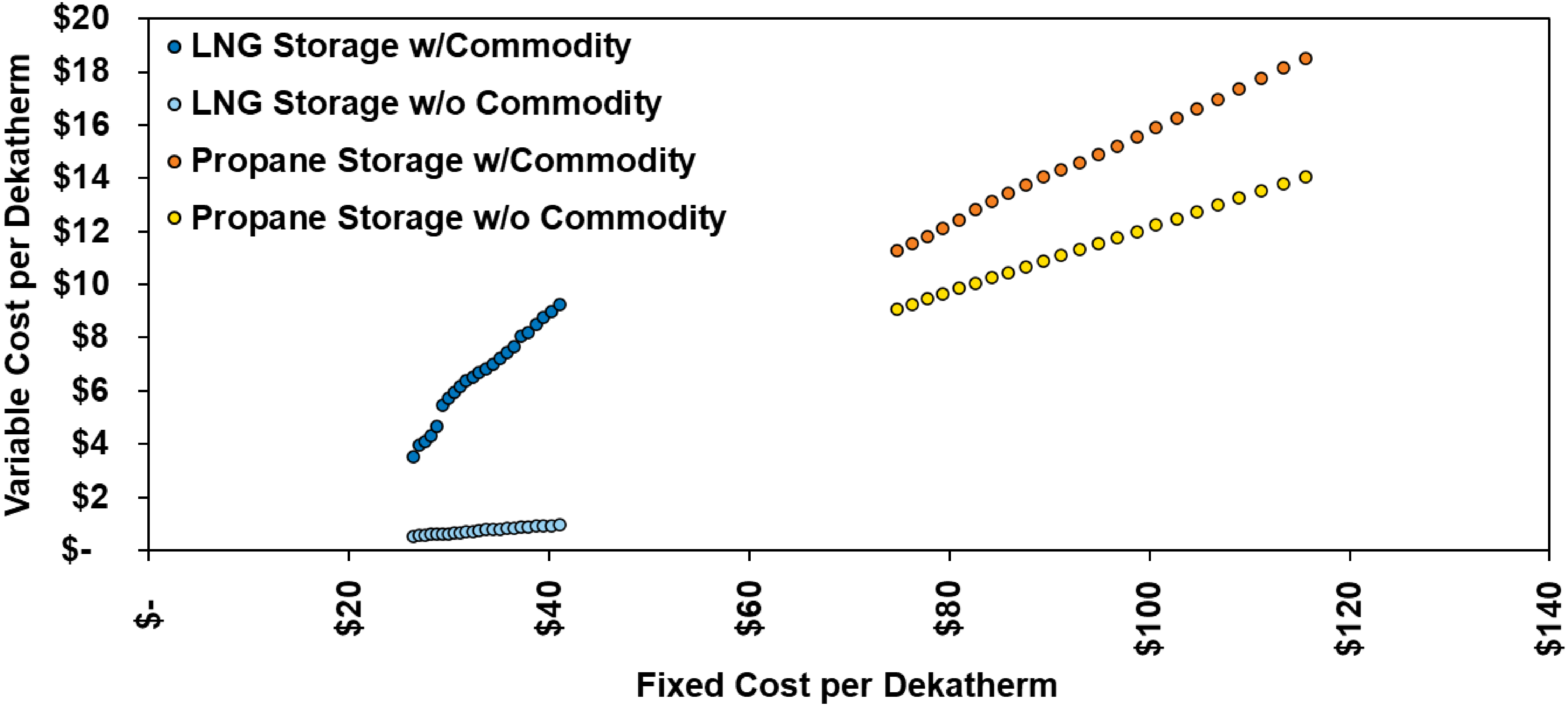
| | LNG | Propane |
|---|---|---|
| **Cost:** | Much higher upfront capital cost | Much lower upfront capital cost |
| **Staffing:** | Greater operational complexity, requiring more, higher skilled workers | Simpler operations, requiring fewer people |
| **Sizing:** | Scalable at large increments<br>Best for broader, system-level deficits | Scalable at small increments<br>Best for local, isolated constraints |
| **Duration:** | Multi-day supply capability<br>Can only cycle a few times per year | Can provide supply for just a few hours<br>Can cycle many times per year |
| **Value:** | • Reliability<br>• Peak Shaving<br>• Price Arbitrage<br>• Core Resource | • Reliability<br>• Peak Shaving |
| **Summary:** | LNG requires significant capital investment; however, it can meet multi-day, interstate-level pipeline outages and benefits from seasonal price arbitrage. Preferred when pipeline expansion is constrained | Propane storage requires much less capital investment; however, it is relatively more expensive and only covers deficits for a short time. Preferred in smaller, isolated, high-risk areas. |

# Draft Storage Size, Operating Characteristics, and Costs

| | LNG | | Propane | |
|---|---|---|---|---|
| Resource Life (Years): | 50 | | 20 | |
| Storage Capacity (dth/day): | 1,037,000 | | 30,000 | |
| Withdrawal Capacity (dth/day): | 103,700 (10 days) | | 103,700 (~7 hours) | |
| Injection Capacity (dth/day): | 7,007 (148 days) | | 203 (148 days) | |
| CapEx + Pipeline + Utility Interconnect + Installation & Owner's Cost: | $289M | | $15.3M | |
| | Annual | Per Dekatherm | Annual | Per Dekatherm |
| Levelized CapEx*: | $25.3M | $24.39 | $1.7M | $56.96 |
| **Fixed O&M** | | | | |
| Maintenance*: | $272K | $0.26 | $153K | $5.10 |
| FTE Equivalent*: | $1.91M | $1.84 | $381K | $12.70 |
| **Variable O&M** | | | | |
| Electricity: | $568K | $0.55 | $272K | $9.07 |
| Commodity + Transport: | $4.7M** | $4.51** | $88K | $2.95 |

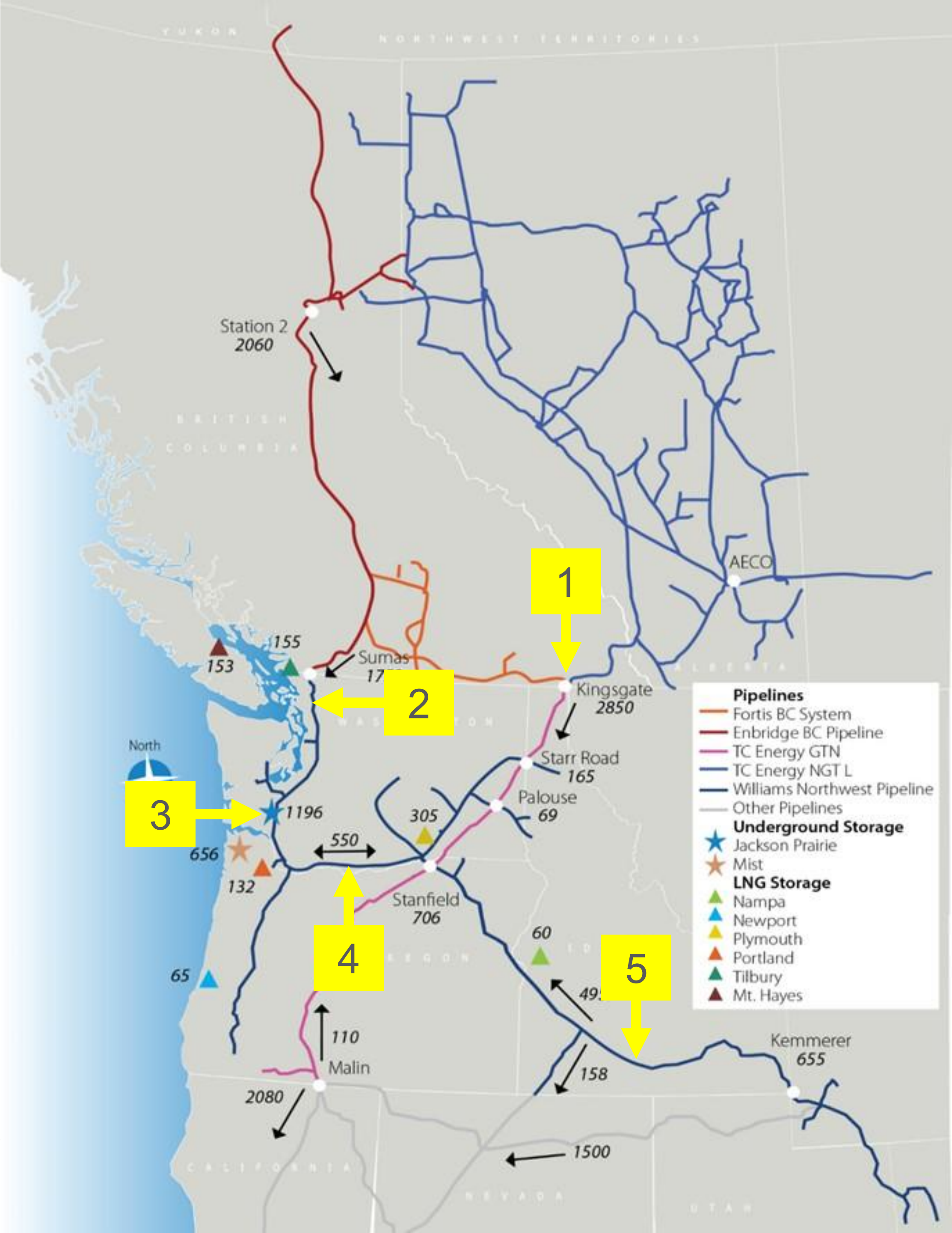
*Per dekatherm costs assume 1 cycle per year
**Provided for illustrative purposes only; actual natural gas commodity and transport costs will be inferred within model

# Draft LNG & Propane Storage Costs



# Draft Resiliency Scenario

- Pipeline capacity contracts determine how much gas Avista can move from one location to another along interstate pipelines and play an integral role in Avista's ability to reliably serve customers.
- Sometimes, however, pipelines are unable to provide these contracted capacities. Storage facilities like Jackson Prairie can likewise experience similar issues.
- On an average day, serving customer load would not be an issue, but what happens when less-than-contracted capacities are available while Avista customers are experiencing a cold snap?
- The Resiliency scenario seeks to answer this question through a stochastic analysis by which pipeline and storage outages occur at the following points:
    1. AECO
    2. Sumas
    3. Jackson Prairie
    4. Columbia River
    5. Rockies



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# Integrated Resource Plan (IRP) Transmission Planning Studies

Dean Spratt, Transmission Planning

Technical Advisory Committee Meeting

May 15, 2026

# FERC Standards of Conduct

- Non-public transmission information can not be shared with Avista Merchant Function employees
- There are Avista Merchant Function employees attending today
- We will not be sharing any non-public transmission information. Avista's OASIS is where this information is made public

# Agenda

- Introduction to Avista System Planning
  - Useful information about Transmission Planning
  - Overview of recent and planned Avista projects
- Generation Interconnection Study Process
  - Integrated Resource Plan (IRP) requests
  - Large Generation Interconnection Queue
  - Third year into the Cluster Study process
- Transmission System Expansion
  - Projects to increase system capacity and interconnectivity

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# Introduction to Avista System Planning

Avista's System Planning Group includes:

- Distribution and Gas Planning
- Transmission Planning
  - Focus on reliable electric service
    - Federal, regional, state, and local compliance
    - Regional system coordination
  - Provide transmission service and system analysis
    - Planning for load growth and a changing generation mix as well as dispatch
    - Interconnection of any type of generation or load
      - We are ambivalent about type (must perform though)



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# Information About Transmission Planning

- Our focus is the Bulk Electric System (BES)
  - Avista’s 115kV and 230kV facilities (>100kV)
- Identify issues where Avista’s BES won’t reliably deliver power to our customers
- Then we develop plans to fix it
  - “Corrective Action Plans”
  - Mandated and described per the NERC TPL-001 Standards
- We live in the world of NERC Mandatory Standards
  - Energy Policy Act of 2005

# NERC Standard TPL-001-5.1

- Describes system scenarios and outage conditions that must be studied
  - P0: everything online and available
  - P1: single facility outages, like a transformer
  - P2, P4, P5 & P7: multiple facility outages
  - P3 & P6: overlapping combination of two facilities

| Category | Initial Condition | Event [1] | Fault Type [2] | BES Level [3] | Interruption of Firm Transmission Service Allowed [4] | Non-Consequential Load Loss Allowed |
|---|---|---|---|---|---|---|
| P0 No Contingency | Norma… | | | | | |
| P1 Single Contingency | Norma… | | | | | |
| P2 Single Contingency | Norma… | | | | | |

| Category | Initial Condition | Event [1] | Fault Type [2] | BES Level [3] | Interruption of Firm Transmission Service Allowed [4] | Non-Consequential Load Loss Allowed |
|---|---|---|---|---|---|---|
| **P3** Multiple Contingency | Loss of generator unit followed by System adjustments[9] | Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Transformer[5] 4. Shunt Device[6] | 3Ø | EHV, HV | No[9] | No[12] |
| | | 5. Single pole of a DC line | SLG | | | |
| **P4** Multiple Contingency *(Fault plus stuck breaker[10])* | Normal System | Loss of multiple elements caused by a stuck breaker[10] (non-Bus-tie Breaker) attempting to clear a Fault on one of the following: 1. Generator 2. Transmission Circuit 3. Transformer[5] 4. Shunt Device[6] 5. Bus Section | SLG | EHV | No[9] | No |
| | | | | HV | Yes | Yes |
| | | 6. Loss of multiple elements caused by a stuck breaker[10] (Bus-tie Breaker) attempting to clear a Fault on the associated bus | SLG | EHV, HV | Yes | Yes |

| Category | Initial Condition | Event [1] | Fault Type [2] | BES Level [3] | Interruption of Firm Transmission Service Allowed [4] | Non-Consequential Load Loss Allowed |
|---|---|---|---|---|---|---|
| **P5** Multiple Contingency *(Fault plus non-redundant component of a Protection System failure to operate)* | Norm… | Delayed Fault Clearing due to the … | | | | |
| **P6** Multiple Contingency *(Two overlapping singles)* | Loss of one of the following followed by System adjustments.[9] 1. Transmission Circuit 2. Transformer[5] 3. Shunt Device[6] 4. Single pole of a DC line | Loss of one of the … 1. Transmission C… 2. Transformer[5] 3. Shunt Device[6] / 4. Single pole of a… | | | | |

| Category | Initial Condition | … | Interruption of … | Non-… |
|---|---|---|---|---|
| **P7** Multiple Contingency *(Common Structure)* | Normal System | … 5. Bus Section | | |

**Table 1 – Steady State & Stability Performance Extreme Events**

**Steady State & Stability**

For all extreme events evaluated:

a. Simulate the removal of all elements that Protection Systems and automatic controls are expected to disconnect for each Contingency.
b. Simulate Normal Clearing unless otherwise specified.

**Steady State**

1. Loss of a single generator, Transmission Circuit, single pole of a DC Line, shunt device, or transformer forced out of service followed by another single generator, Transmission Circuit, single pole of a different DC Line, shunt device, or transformer forced out of service prior to System adjustments.
2. Local area events affecting the Transmission System such as:
   a. Loss of a tower line with three or more circuits.[11]
   b. Loss of all Transmission lines on a common Right-of-Way[11].
   c. Loss of a switching station or substation (loss of one voltage level plus transformers).
   d. Loss of all generating units at a generating station.
   e. Loss of a large Load or major Load center.
3. Wide area events affecting the Transmission System based on System topology such as:
   a. Loss of two generating stations resulting from conditions such as:
      i. Loss of a large gas pipeline into a region or multiple regions that have significant gas-fired generation.

**Stability**

1. With an initial condition of a single generator, Transmission circuit, single pole of a DC line, shunt device, or transformer forced out of service, apply a 3Ø fault on another single generator, Transmission circuit, single pole of a different DC line, shunt device, or transformer prior to System adjustments.
2. Local or wide area events affecting the Transmission System such as:
   a. 3Ø fault on generator with stuck breaker[10] resulting in Delayed Fault Clearing.
   b. 3Ø fault on Transmission circuit with stuck breaker[10] resulting in Delayed Fault Clearing.
   c. 3Ø fault on transformer with stuck breaker[10] resulting in Delayed Fault Clearing.
   d. 3Ø fault on bus section with stuck breaker[10] resulting in Delayed Fault Clearing.
   e. 3Ø fault on generator with failure of a non-redundant component of a Protection System[13] resulting in Delayed Fault Clearing.
   f. 3Ø fault on Transmission circuit with failure of a non-redundant component of a Protection System[13] resulting in Delayed Fault Clearing.

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# TPL-001-5.1, cont.

- A couple of NERC directives for the above faults
  - “The System shall remain stable”
    - Cascading and uncontrolled islanding shall not occur
  - “Applicable Facility Ratings shall not be exceeded”
    - Equipment ratings, voltage, fault duty, etc.
  - “An objective of the planning process is to minimize the likelihood and magnitude of Non-Consequential Load Loss following planning events”

# Two Approaches to Reliability Issues

- Transmission Operations (TO) are guided by *significantly* different standards than Transmission Planning (TP)

- TO standards provide *flexibility* that TP standards do not allow
  - Operators can push system limits to ***SAVE*** the interconnected system
    - Shed load, overload equipment, etc. – all short term
    - The planned system should give them the tools to do this
    - The standards continue to define this balance

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# Standards are a Roadmap

- Western Systems Coordinating Council (WSCC)
  - Ensure that disturbances in one system do not spread to other systems.
    - Operating agreement with 40 electric power systems established in 1967

- Western Electricity Coordinating Council (WECC)
  - Responsible for coordinating and promoting electric system reliability established in 2002

- North American Electric Reliability Council (NERC)
  - Ensure the reliability of the North American bulk power system reformed in 2006; Corporation in 2007
    - Established as a voluntary organization in 1968



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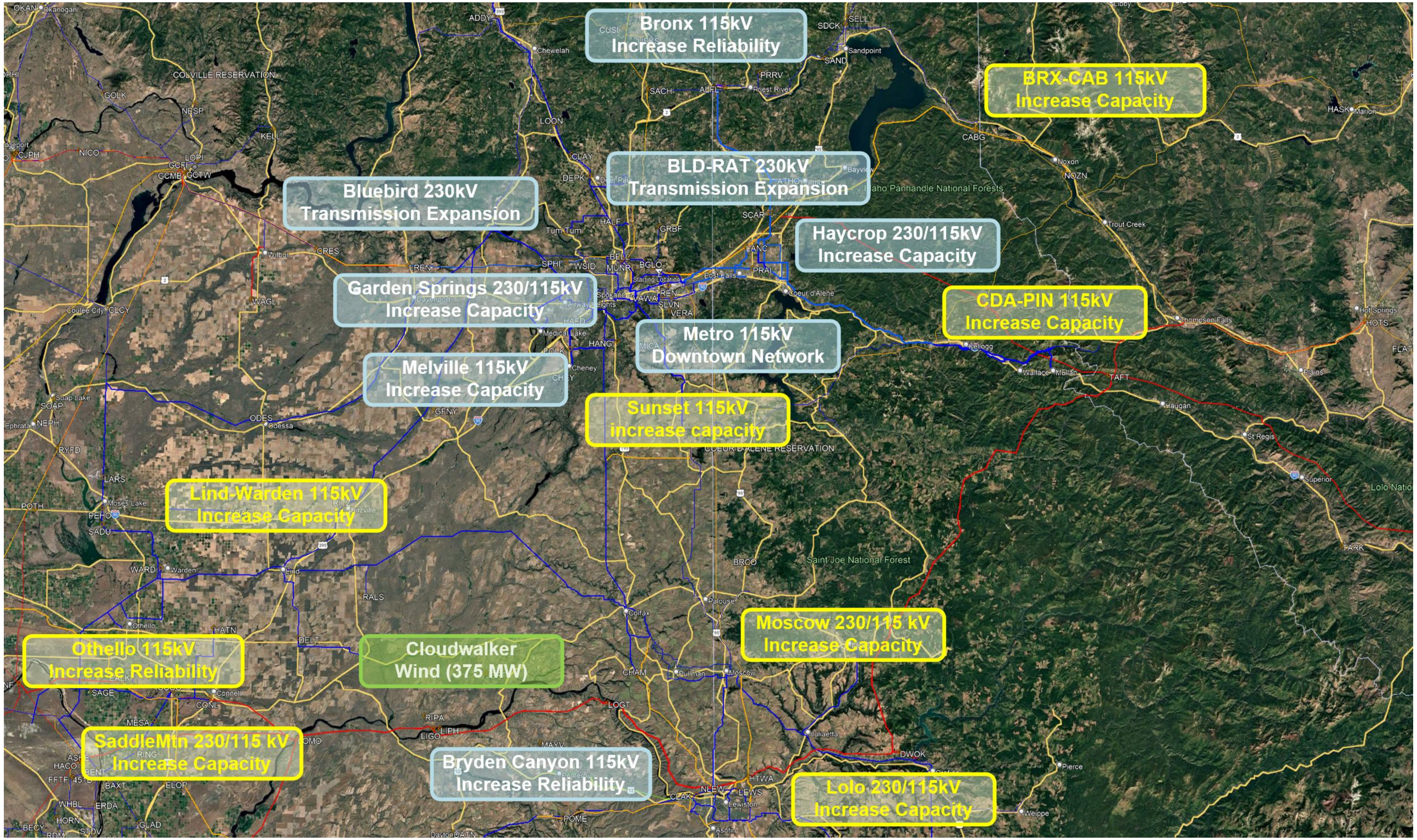
# Transmission System Reinforcements

Planned (2027-2037)

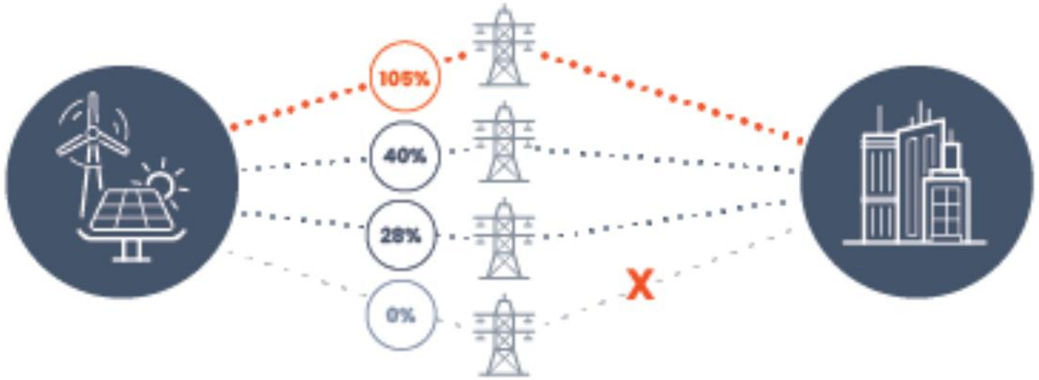
Completed Reinforcements

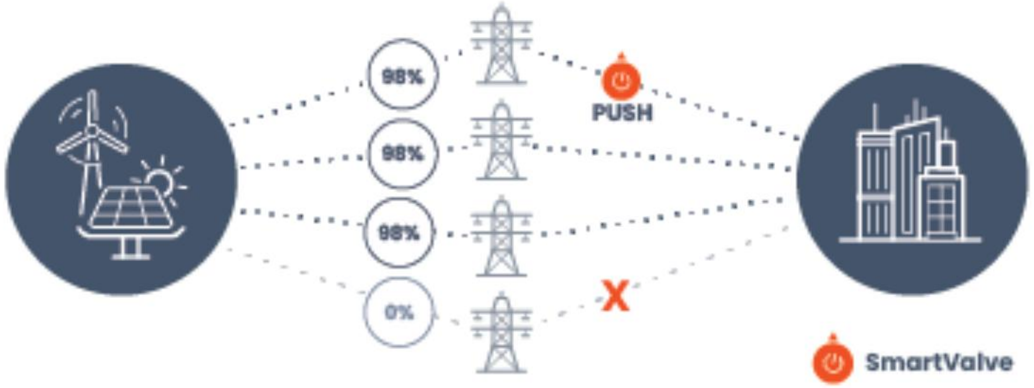
Planned Renewables



# Non-Wire Alternatives are Considered

- We are documenting this with more clarity
- Non-wire options require robust wires to perform
  - Avista is working on the transmission fundamentals



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# Evaluated Battery Energy Storage System (BESS) for T-1-1

- TPL-001-5 ~ Verify T-1-1 for Long-lead Equipment
  - Concurrent transformer outages
    - Shawnee 230/115 kV outage followed by a concurrent outage of Moscow 230/115 kV transformer, results in load shedding under heavy load conditions
  - Could we mitigate performance issues with storage?
    - Yes… but… System would require a 125MW battery
      - Typical charge is 8 hours, discharge for 12 to 16 hours, but a transformer outage is weeks to months
    - A third transformer is a better solution
      - Robust performance and much less $$$$

| Line | Item Number | Description | Need-By | Deliver-To | Unit | Quantity | Qty Delivered | Qty Cancelled | Open Quantity | Price | Amount (USD) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | Auto transformer, 168/224/280MVA, 236.5 - 115.5 - 13.8kV per Avista specification S-1221 Part I rev 2 & Part II dated 11/26/2025. 10% Order Initiation | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 504853 USD | 504,853.00 |
| 2 | | Auto transformer, 168/224/280MVA, 236.5 - 115.5 - 13.8kV per Avista specification S-1221 Part I rev 2 & Part II dated 11/26/2025. 40% Approval Drawings | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 2019421.2 USD | 2,019,421.20 |
| 3 | | Auto transformer, 168/224/280MVA, 236.5 - 115.5 - 13.8kV per Avista specification S-1221 Part I rev 2 & Part II dated 11/26/2025. 40% Notice to Proceed | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 2019421.2 USD | 2,019,421.20 |
| 4 | | Auto transformer, 168/224/280MVA, 236.5 - 115.5 - 13.8kV per Avista specification S-1221 Part I rev 2 & Part II dated 11/26/2025. 10% Delivery | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 504853 USD | 504,853.00 |
| 5 | | Auto transformer, 168/224/280MVA, 236.5 - 115.5 - 13.8kV per Avista specification S-1221 Part I rev 2 & Part II dated 11/26/2025. Price Adjustment | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 0 USD | 0.00 |
| 6 | | Freight & Rigging Allowance | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 400355 USD | 400,355.00 |
| 7 | | Field Services (rail inspection, warranty validation, assembly, vacuum fill, testing) | 09/27/2028 00:00:00 | One Time Ship To | Each | 1 | 0 | 0 | 1 | 275200 USD | 275,200.00 |
| | | | | | | | | | | Total | 5,724,103.40 |

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# Generation Interconnection Study Process

- Process for Generation Requests
  - External developers
    - Enter via the Open Access Transmission Tariff (OATT) process
  - Internal IRP requests
    - Feasibility Study… then continue through the OATT process
    - AVA Merchant MUST follow the OATT just like external parties
  - Typical process:
    - Hold a scoping meeting to discuss particulars
    - Outline a study plan
    - Augment WECC approved cases for our integration studies
    - Analyze the system against the standards
    - Publish findings and recommendations

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# Transition to Cluster Study Process

- Challenges with Serial Interconnections
  - Large serial queues become difficult to process efficiently
    - Slow "first-come, first-served" study process
  - Interdependency of projects becomes complicated
    - Studying single projects is inefficient compared to studying projects in a group
    - Projects that do not reach commercial operation may cause re-studies
    - System Upgrade allocation
  - The serial process was difficult for the developers and the utility

- Transition to Cluster Study process in 2022
  - Multiple request studied in tandem
    - More efficient "first-ready, first-served" cluster study process

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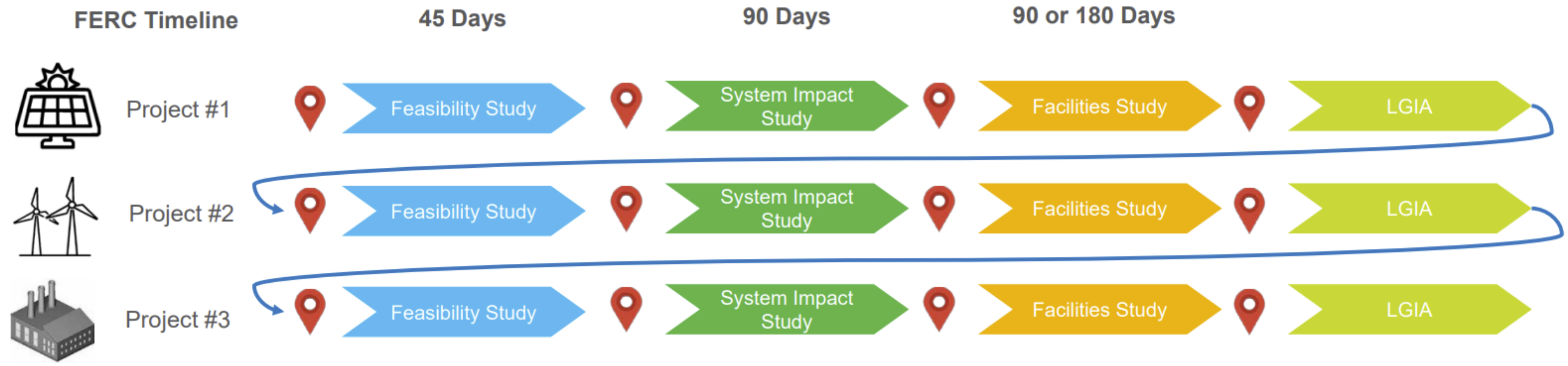
# Serial Process was Complex and Slow




## Two-Phase Cluster Study Process

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# Current Interconnection Queue

- Project in **bold** is currently under construction
- Thirteen new projects (2,460MW) in the 2026 Cluster Study cycle

| Serial or Cluster | Output (MW) | Type | County | State | Point of Interconnection | Model |
|---|---|---|---|---|---|---|
| Q59 | 60 | Solar/Storage | Adams | WA | Roxboro 115kV Station | No |
| Q97 | 100 | Solar/Storage | Nez Perce | ID | Lolo 230kV Station | No |
| TCS-03 | 80 | Solar/Storage | Adams | WA | Warden 115kV Station | No |
| **TCS-14** | **375** | **Wind/Storage** | **Garfield** | **WA** | **Dry Creek 230kV Station** | **Yes** |
| CS23-06 | 220 | Wind | Whitman | WA | Shawnee - Thornton 230kV Line | No |
| CS23-12 | 199 | Storage | Franklin | WA | Saddle Mountain - Walla Walla 230kV | No |
| CS23-13 | 40 | Solar | Lincoln | WA | Davenport 115kV Station | No |
| CS23-14 | 40 | Solar | Spokane | WA | North Fairchild 115kV Line Tap | No |
| CS24-01 | 1.0 | Solar | Adams | WA | South Othello 13kV feeder | No |
| CS24-02 | 0.5 | Storage | Spokane | WA | Third & Hatch 13kV feeder | No |
| CS24-07 | 2 | Solar | Adams | WA | Othello 13kV feeder | No |
| CS24-14 | 40 | Solar | Spokane | WA | South Fairchild 115kV Line Tap | No |
| CS24-15 | 300 | Wind/Storage | Lincoln | WA | Bluebird 230kV Station | No |
| CS25-03 | 100 | Storage | Spokane | WA | Northeast 115kV Station | No |
| CS25-04 | 102 | Thermal | Kootenai | ID | Rathdrum 115kV Station | No |
| CS25-05 | 102 | Thermal | Kootenai | ID | Rathdrum 115kV Station | No |
| CS25-07 | 199 | Wind | Whitman | WA | Thornton 230kV Station | No |
| CS25-08 | 250 | Storage | Spokane | WA | Boulder 230kV Station | No |
| CS25-09 | 375 | Solar/Storage | Adams | WA | Saddle Mountain - Wanapum 230kV | No |
| CS25-11 | 300 | Wind | Garfield | WA | Dry Creek - Talbot 230kV | No |
| CS25-15 | 200 | Wind | Spokane | WA | Benewah 230kV Station | No |
| CS25-17 | 200 | Wind | Spokane | WA | Bluebird 230kV Station | No |
| **total** | **3,286** | | | | | |

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# Generation Integration Cost Estimates

- Potential Integration at new locations on Avista's Transmission System

| POI Station or Area | Requested (MW) | POI Voltage | Cost Estimate ($ million) |
|---|---|---|---|
| Big Bend area near Lind | 100 | 230kV | 156.0 |
| " " | 200/300 | 230kV | 227.4 |
| Big Bend area near Odessa | 100/200 | 230kV | 144.9 |
| Big Bend area near Othello | 100/200 | 230kV | 223.6 |
| Big Bend area near Prescott | 300/600/900 | 230kV | 301.7 |
| Coeur d'Alene area near Greensferry | 350 | 230kV | 23.6 |
| " " | 450 | 230kV | 27.8 |
| " " | 600 | 230kV | 31.7 |
| Coeur d'Alene area near Stateline | 350 | 230kV | 27.8 |
| " " | 450 | 230kV | 39.2 |
| Lewiston/Clarkston area rural east | 100/200/300 | 230kV | 1.9 |
| Lewiston/Clarkston area rural south | 300 | 230kV | 47.4 |
| " " | 600 | 230kV | 59.2 |
| " " | 900 | 230kV | 70.0 |
| Sandpoint Area near Bronx | 50/100 | 115kV | 1.6 |
| West Plains area rural north | 300 | 230kV | 6.4 |
| " " | 500 | 230kV | 9.5 |
| West Plains area near Four Lakes | 100/200 | 115kV | 1.6 |



Preliminary estimates are given as -25% to +75%

# Generation Integration Cost Estimates, con't

- Potential Integration at existing locations on Avista's Transmission System

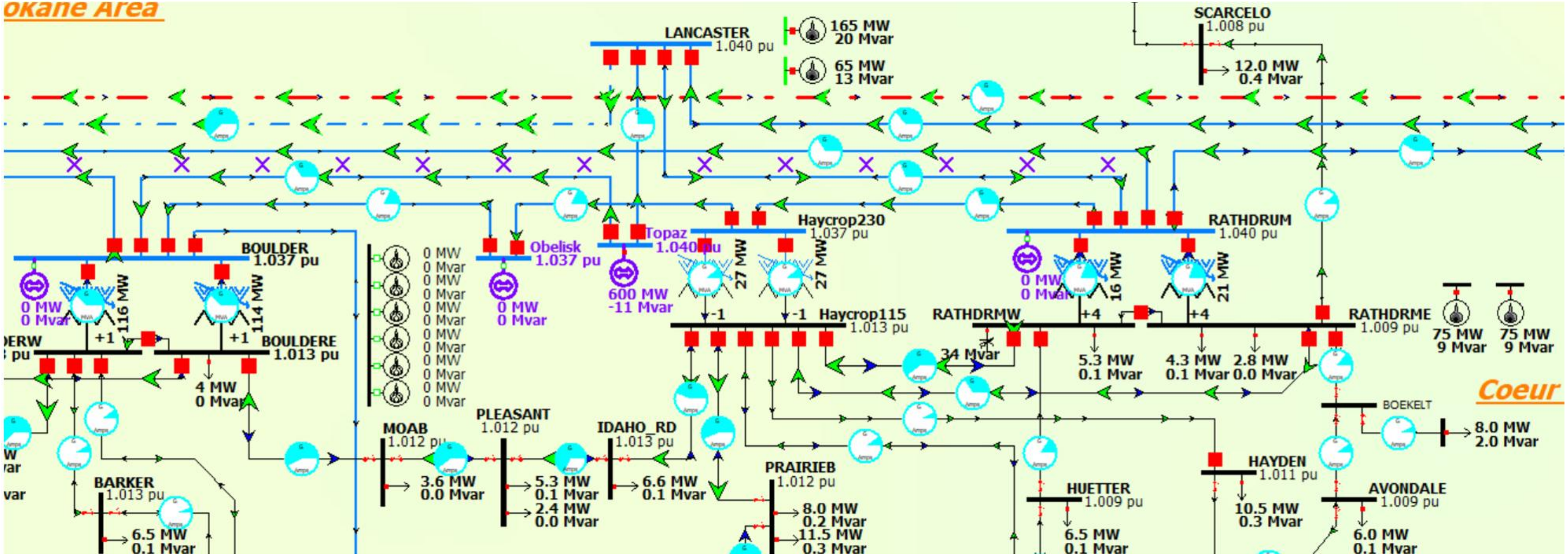
| POI Station or Area | Requested (MW) | POI Voltage | Cost Estimate ($ million) |
|---|---|---|---|
| Coeur d'Alene area at Rathdrum Station | 100/200 | 230kV | 5.5 |
| Colville Area at Kettle Falls Station | 60 | 115kV | 1.6 |
| " " | 120 | 115kV | 33.5 |
| Palouse area at Thornton Station | 100/200/300 | 230kV | 1.9 |
| Spokane area at Northeast Station | 100 | 115kV | 1.2 |
| " " | 200 | 115kV | 9.2 |
| Spokane Valley area at Boulder Station | 100/200 | 230kV | 2.5 |



Preliminary estimates are given as -25% to +75%

# Kootenai County: 350/450/600MW

- Multiple Generation Integration alternatives were evaluated
  - Avista and the Bonneville Power Administration (BPA) have a robust transmission corridor through this area



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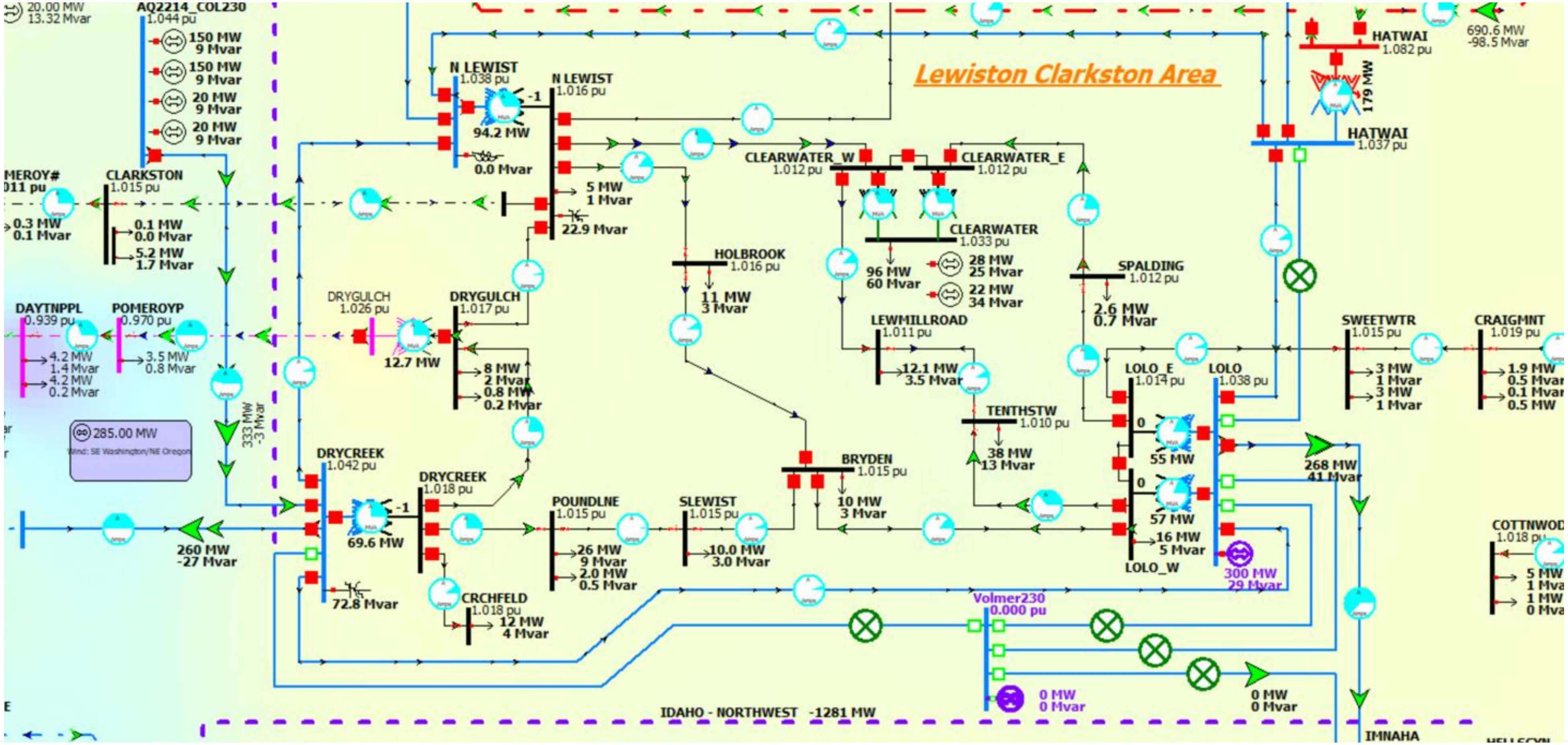
# Lewiston-Clarkston: 100/200/300MW

- Multiple Generation Integration alternatives were evaluated



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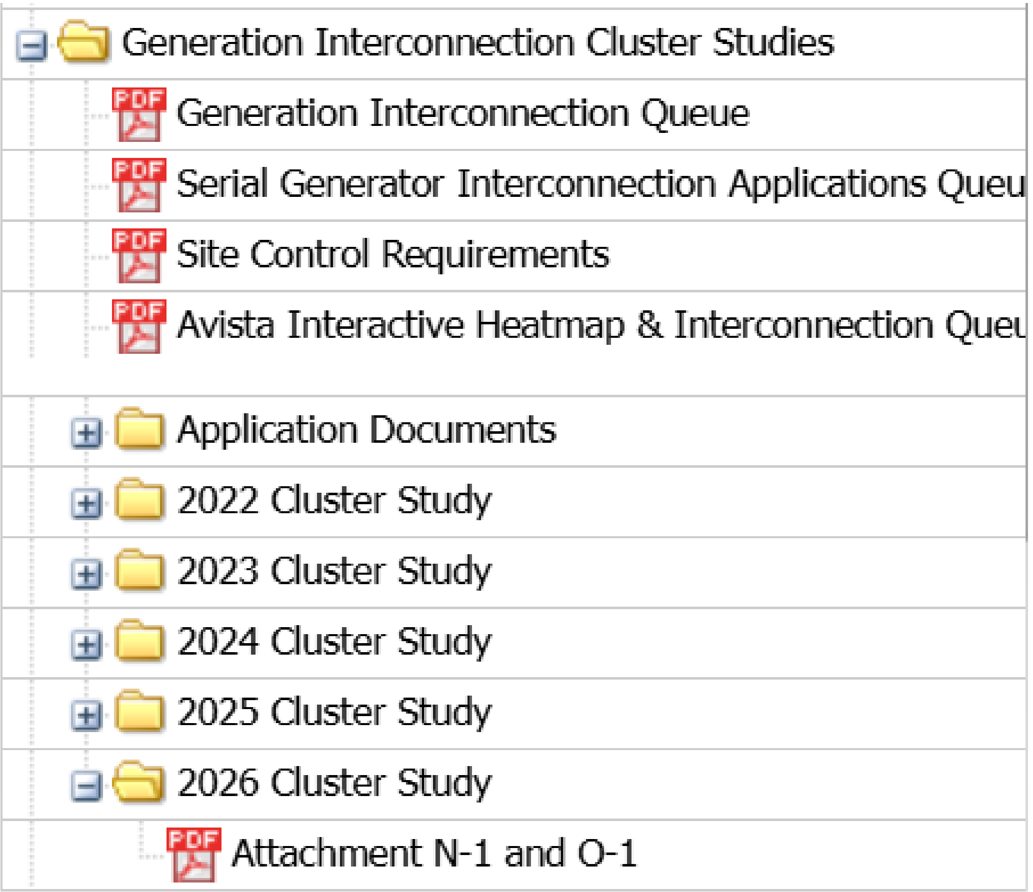
# Transmission System Expansion Projects (TSEP)

- Avista is evaluating and advancing several major projects to increase capacity and interconnectivity:
  - Idaho Crossing Capacity Increase (ID-NW Path 14)
    - Conceptual projects to reinforce system ties, plus increase capacity and reliability on the ties connecting northern and southern Idaho
  - Idaho to Washington (I2W) Capacity Increase (West of Lancaster Constraint)
    - Conceptual projects that would enable increased generation to serve the Spokane and Coeur d'Alene load centers, in addition increased capacity at the system seams both east and west of Avista's service territory
  - Montana to Northwest Capacity Increase (MT-NW Path 8)
    - Conceptual projects to increase capacity and reliability on the ties connecting eastern Montana and northern Idaho
  - North Plains Connector
    - Avista signed MOU for up to 10% of the planned 3000MW project capacity
    - Avista's 300MW capacity aligns with existing transmission rights from Montana
    - The project is expected to reach commercial operation in December 2032

# Wrap-up and Questions

- Refer to Avista's Open Access Same-time Information System (OASIS) link for further information regarding System Planning and the Interconnection Process at:

- https://www.oasis.oati.com/avat/



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# Distribution Planning

TAC 9 – May 15, 2026

Erik Lee – Distribution System Planning Engineer

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# Agenda

- Distribution Planning Overview
- Distribution System Overview
- Distribution System Assessment
- 2025 Distribution System Assessment Results
- Current Projects, Small Generators & Large Loads
- Nonwires Solution Screening Process Draft
- Process Enhancement Focus Areas

# Distribution Planning Overview

- 3 Planning Engineers & 1 Modeling & Tools Engineer
- System Assessment & Project Development
- Generation Interconnection Studies
- Large Load Studies
- Operational Support
  - Extreme Weather Events
- Curate System Planning Standards, Policies, & Procedures
- Load Forecasting, Load Modeling, Facility Modeling Expertise

***We Interface With…***

| | | | |
|---|---|---|---|
| Substation Design | Distribution Design & Standards | Project Management | System Protection |
| Transmission Planning | Distribution Operations | Asset Management | Real Estate |
| Environmental | SCADA | Customer Solutions (EE, Products & Services) | Avista Lab |
| ETS (IT/IS) | NLR (NREL) | Other Utilities | Local Universities |

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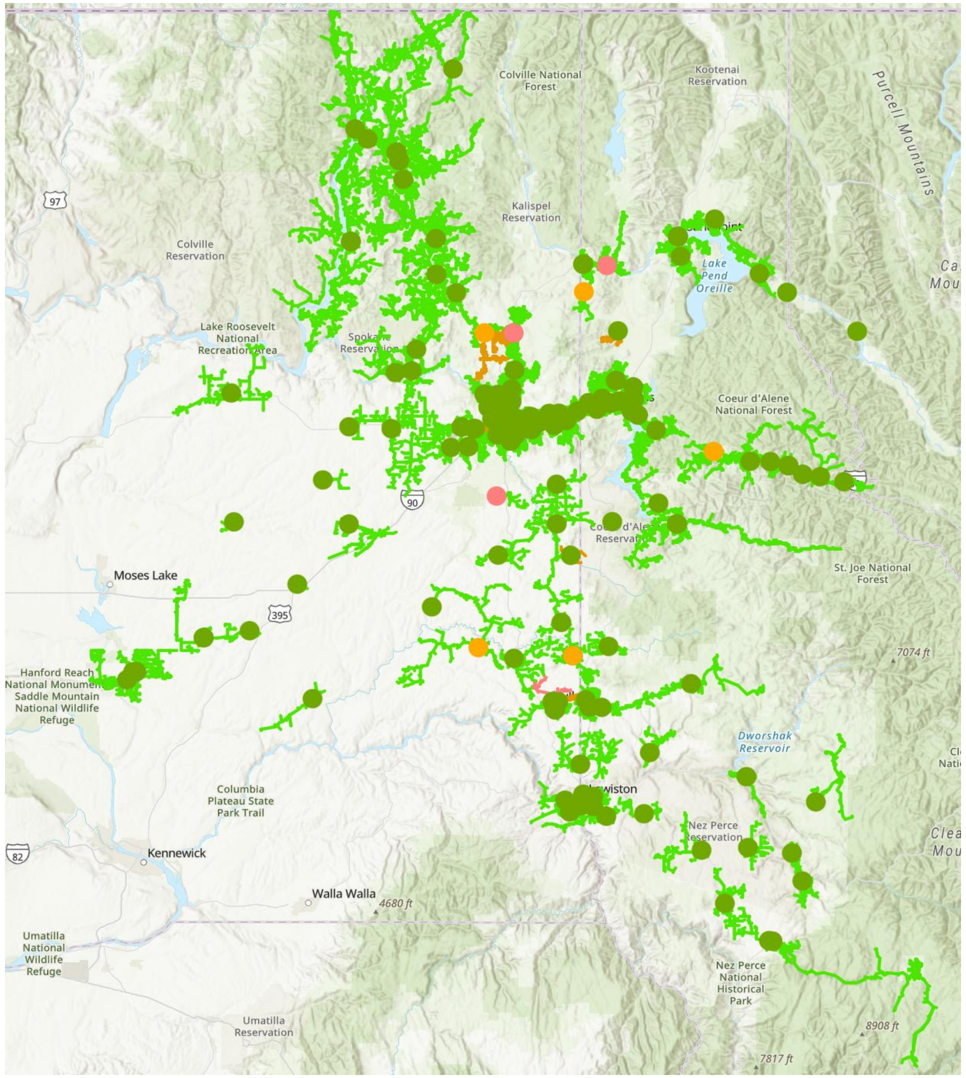
# Distribution System Overview

- 4 Regions, 13 Operational Areas
- 132 Distribution Substations (WA, ID, MT)
- 394 'Avista' Feeders
- 32 'Foreign' Feeders (Fed From Avista Substations & Transformers)
- ~433,000 Service Points
- ~53 MW Installed Rooftop Solar (Rated)

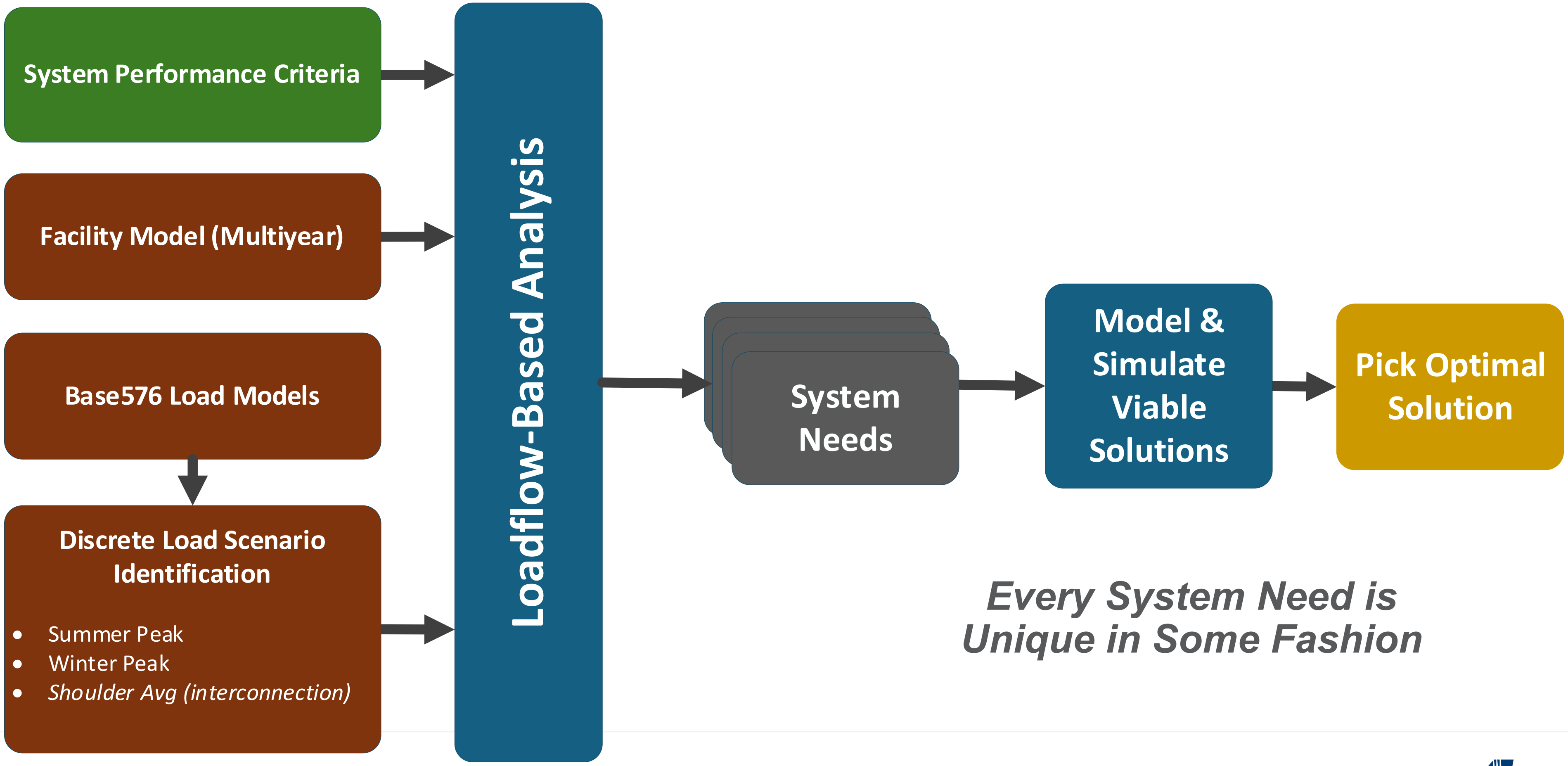


# Distribution System Assessment

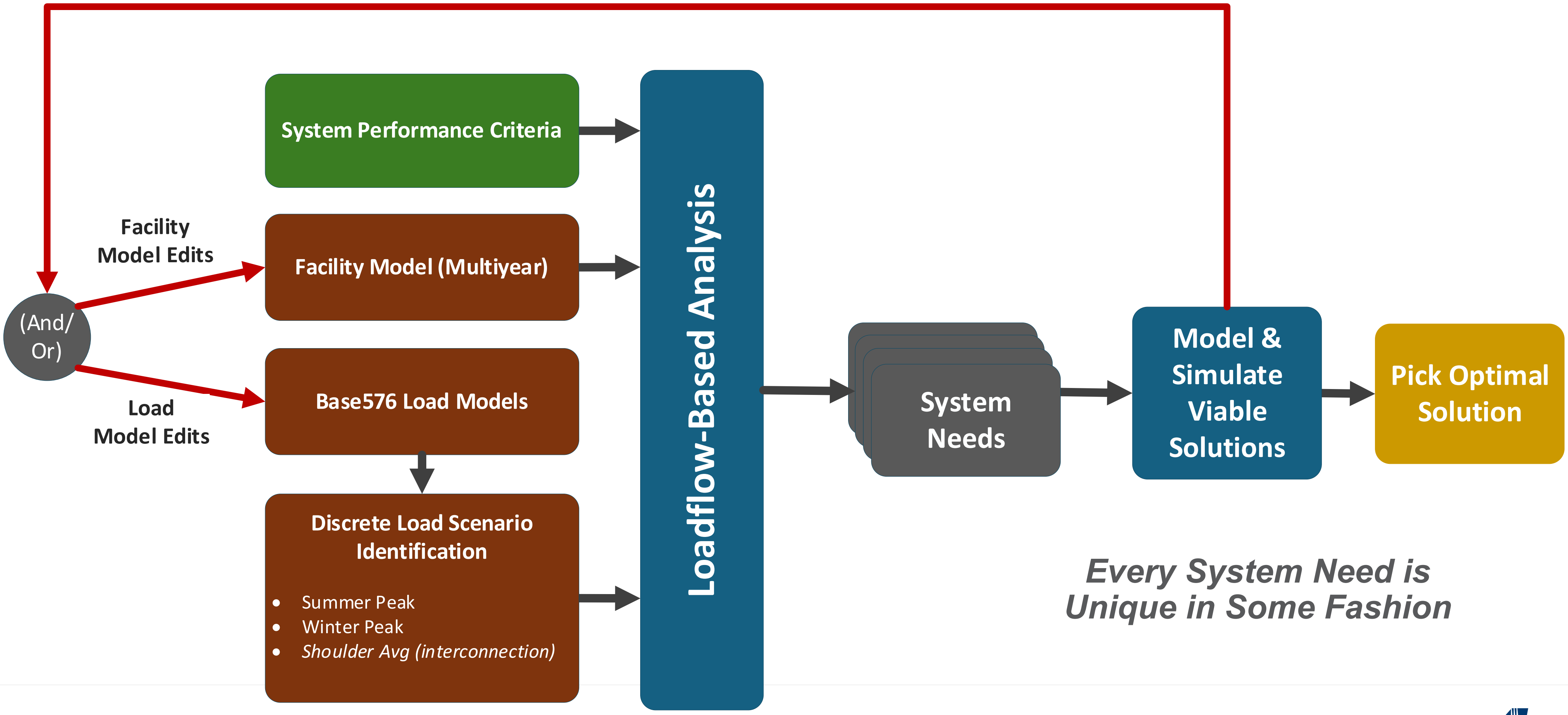
- Large Bi-Annual, Whole-Team Analytical Effort
- Analyze Planning Model Using our Planning Criteria to Identify ‘System Needs’
- Formal System Assessment Report
  - Posted on OASIS
  - Transmission & Distribution
- Maps
  - DER Hosting Capacity Map (External)
  - System Planning Map (Internal)


***System Assessment/Planning Model***

# Distribution System Assessment – Process



# Distribution System Assessment – Process



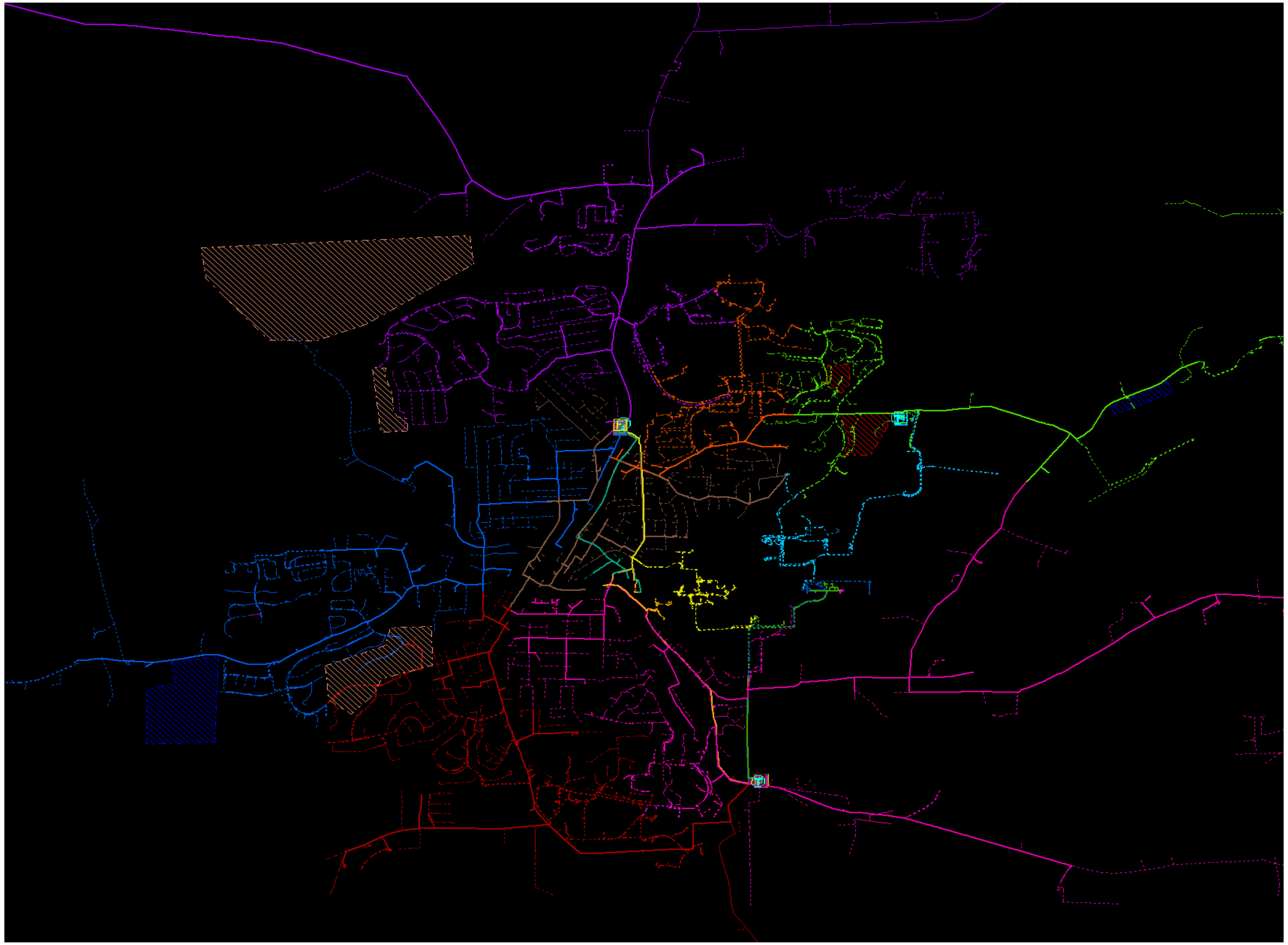

***Every System Need is Unique in Some Fashion***

# Distribution System Performance Criteria

| Category[2] | Outage[3] | Thermal Performance | Voltage Performance[4] | Regulator Performance | Current Imbalance |
|---|---|---|---|---|---|
| D0 - No Contingency | None | *< 80% Continuous[7]* | 118V < Volt < 127V | -12 < tap < +12 | Line loading > 90%: 5%<br>Line loading > 80%: 10%<br>Line loading >70%: 15%<br>Line loading < 70%: 20% |
| D1 - Feeder Contingency | Loss of one of the following:<br>1. Feeder Lockout<br>2. Generator Outage/Off<br>3. Automatic Transfer Switch Operation | < 95% Continuous | 114V[8] < Volt < 127V<br>< 4V Deviation[9] | -15 < tap < +15 | Line loading > 90%: 10%<br>Line loading < 90%: NA |
| D2 – Multiple Contingency (Common Structure[10]) | Loss of one of the following:<br>1. Loss of two feeders on common structure<br>2. Loss of three feeders on common structure | < 95% Continuous | 114V< Volt < 127V | | None |
| D3 - Substation Contingency | Loss of one of the following:<br>1. Feeder Regulator<br>2. Feeder Breaker<br>3. Substation Transformer | < 95% Continuous | 114V< Volt < 127V | -15 < tap < +15 | None |

# Facility Model

- ~500k Nodes
- Snapshot in time from Weekly-Built As-Operated Model
- Manual Rigorous QA Process
  - Connectivity
  - Powerflow convergence
  - Visual Verification
- Hand-Model Approved Solutions in the Year We Expect Them to Become Operational



***Synergi Electric – Pullman WA***



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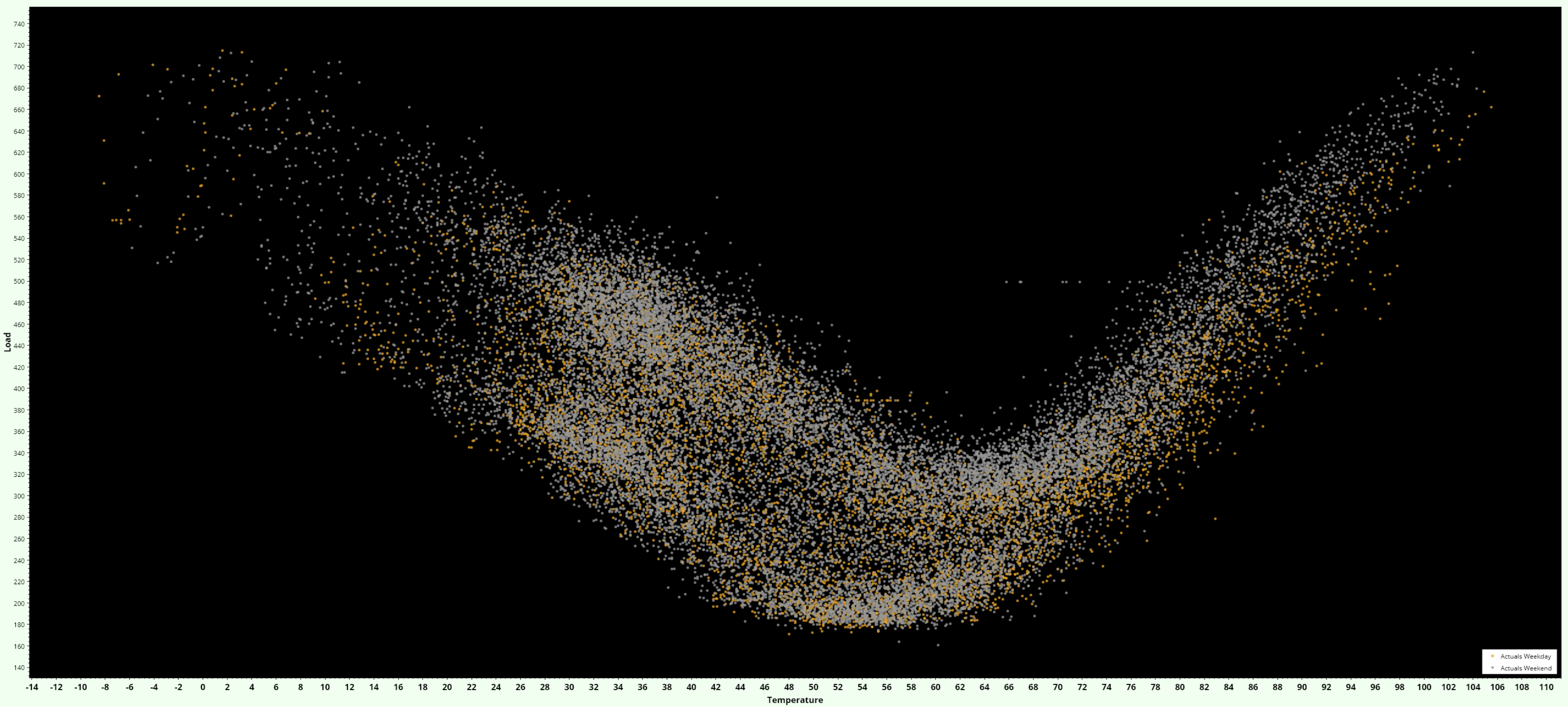
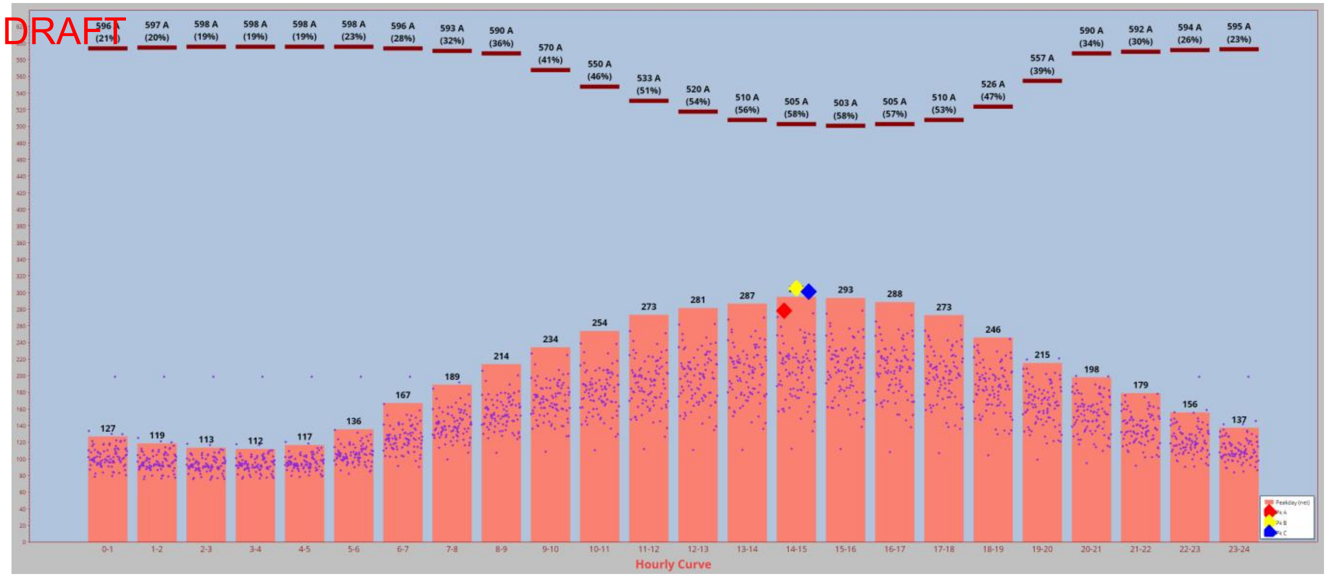
# Load Modeling: Load Response to Temperature

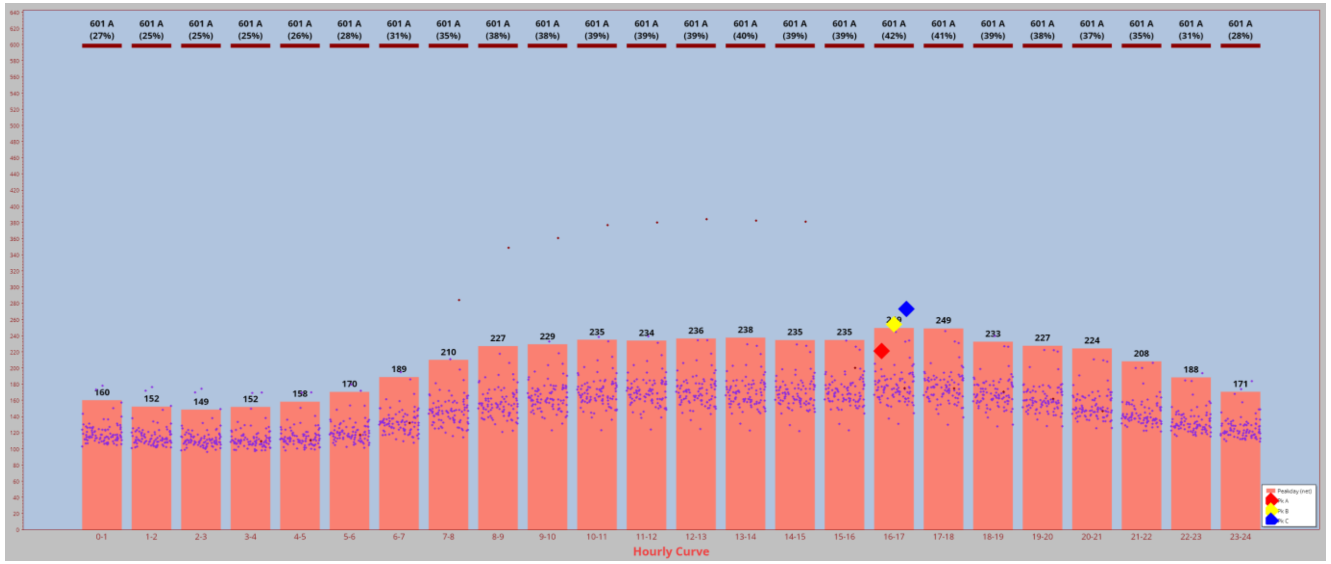


# Load Modeling & Forecasting

- Develop 576 1-in-10 Weather Year-Aligned Feeder Load Models
  - 576 = 24 hr x 12-month x2 (weekday & weekend)
- Identify Summer & Winter Peaks (By Percent Loading)
  - Point-In-Time Powerflow Analysis
- Perform Multiple Regression-Based Load Forecasting per Feeder
- Perform Cleanup of 'Known Developments' GIS Data Layer




***Summer***




***Winter (High Load Factor)***

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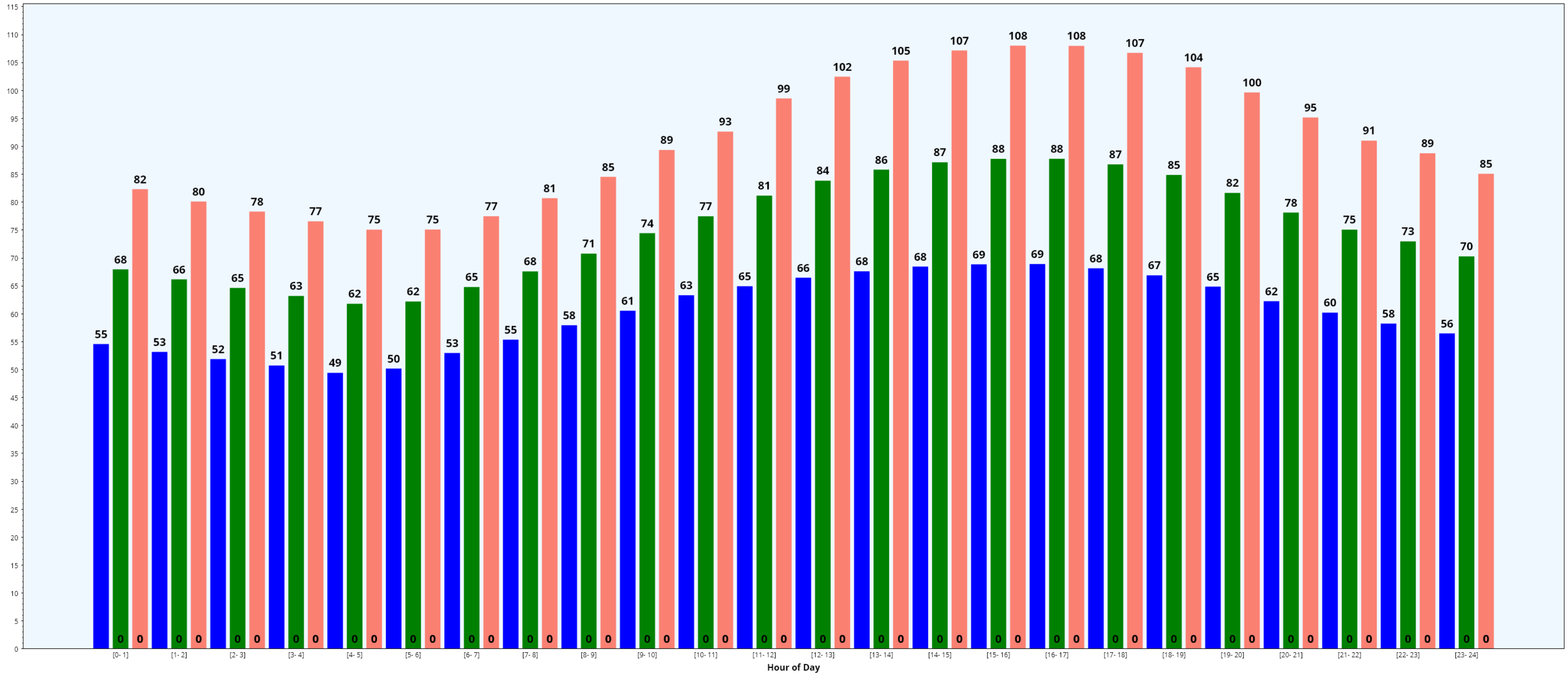
# 1-in-10 Temperature Curve – July, Lewiston/Clarkston



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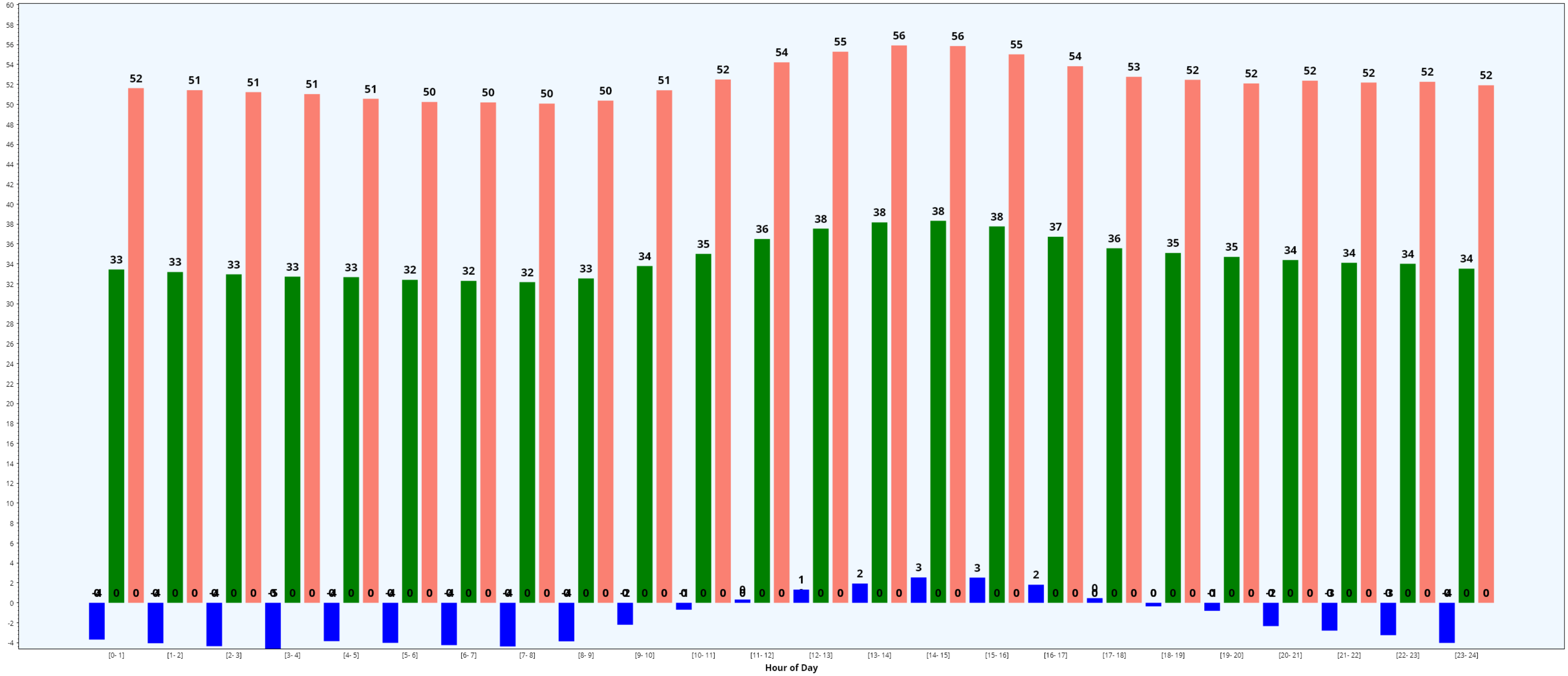
# 1-in-10 Temperature Curve – Jan, Lewiston/Clarkston



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# 2025 Assessment: D0 (Normal State) Capacity Constraints

| NAME | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| K34 | 100% | 102% | 103% | 105% | 106% | 107% | 108% | 109% | 110% | 111% | 111% |
| MLN12 | 99% | 100% | 101% | 102% | 102% | 103% | 103% | 103% | 103% | 104% | 104% |
| PDL - XFMR #1 | 94% | 95% | 96% | 97% | 97% | 98% | 98% | 99% | 99% | 99% | 99% |
| SPAS_SP_12 | 97% | 98% | 98% | 98% | 98% | 98% | 98% | 98% | 98% | 98% | 98% |
| TUR116 | 93% | 94% | 94% | 95% | 95% | 95% | 95% | 96% | 96% | 96% | 96% |
| CDA124 | 89% | 79% | 82% | 85% | 87% | 89% | 90% | 91% | 92% | 93% | 94% |
| PRV - XFMR #1 | 92% | 92% | 92% | 93% | 93% | 93% | 93% | 93% | 93% | 94% | 94% |
| SPA - XFMR #1 | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% |
| KAM1291 | 91% | 92% | 92% | 92% | 92% | 92% | 93% | 93% | 93% | 93% | 93% |
| GRV - XFMR #1 | 90% | 90% | 91% | 91% | 91% | 92% | 92% | 92% | 92% | 92% | 92% |
| SIP - XFMR #3 | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% |
| SIP12F1 | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% |
| MLN - XFMR #2 | 88% | 89% | 89% | 90% | 90% | 90% | 91% | 91% | 91% | 91% | 91% |
| K34 | 82% | 83% | 85% | 86% | 87% | 88% | 89% | 89% | 90% | 91% | 91% |
| ROS - XFMR #2 | 91% | 91% | 91% | 91% | 91% | 91% | 91% | 91% | 91% | 91% | 91% |
| MIS - XFMR #1 | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% |
| SOT - XFMR #1 | 82% | 83% | 85% | 86% | 86% | 87% | 87% | 88% | 88% | 89% | 89% |
| GLN12F2 | 75% | 78% | 81% | 84% | 86% | 83% | 85% | 86% | 87% | 88% | 89% |
| INT12F1 | 83% | 84% | 85% | 86% | 86% | 87% | 87% | 87% | 88% | 88% | 88% |
| BEA12F5 | 74% | 76% | 79% | 81% | 82% | 84% | 85% | 86% | 87% | 87% | 88% |
| TVW132 | 64% | 68% | 72% | 75% | 78% | 81% | 83% | 84% | 86% | 87% | 88% |
| DIA - XFMR #1 | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% |
| SLW - XFMR #1 | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% | 88% |
| NE12F1 | 71% | 71% | 72% | 86% | 86% | 86% | 86% | 87% | 87% | 87% | 87% |
| DEP - XFMR #2 | 76% | 78% | 80% | 81% | 83% | 84% | 85% | 85% | 86% | 87% | 87% |
| PDL1201 | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% |
| TKO411 | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% |
| SPL361 | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% | 87% |

| NAME | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOL1266 | 82% | 86% | 91% | 95% | 75% | 77% | 78% | 79% | 85% | 86% | 86% |
| CFD1210 | 85% | 85% | 85% | 85% | 85% | 85% | 86% | 86% | 86% | 86% | 86% |
| COB - XFMR #1 | 85% | 85% | 85% | 85% | 85% | 85% | 85% | 85% | 85% | 85% | 85% |
| DRV12F3 | 78% | 79% | 81% | 82% | 82% | 83% | 84% | 84% | 84% | 85% | 85% |
| PDL1203 | 75% | 77% | 79% | 80% | 81% | 82% | 83% | 83% | 84% | 84% | 85% |
| CGC332 | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% |
| 3HT12F4 | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 83% | 83% |
| TEN - XFMR #2 | 92% | 94% | 95% | 96% | 97% | 98% | 98% | 82% | 82% | 82% | 83% |
| COB12F2 | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% |
| BLA - XFMR #1 | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% | 83% |
| DEP12F1 | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% |
| AVD151 | 71% | 73% | 75% | 77% | 78% | 79% | 80% | 81% | 81% | 82% | 82% |
| CDA124 | 66% | 69% | 72% | 74% | 76% | 77% | 79% | 80% | 81% | 81% | 82% |
| F&C - XFMR #2 | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% | 82% |
| CDA125 | 66% | 69% | 71% | 73% | 75% | 77% | 78% | 79% | 80% | 81% | 81% |
| MEA12F1 | 73% | 75% | 76% | 77% | 78% | 79% | 80% | 80% | 81% | 81% | 81% |
| SLW - XFMR #2 | 74% | 75% | 77% | 78% | 78% | 79% | 80% | 80% | 81% | 81% | 81% |
| SUN12F4 | 66% | 69% | 72% | 74% | 75% | 77% | 78% | 79% | 80% | 81% | 81% |
| SRK12F1 | 0% | 0% | 0% | 0% | 0% | 0% | 76% | 77% | 79% | 80% | 81% |
| DRV - XFMR #1 | 77% | 78% | 79% | 79% | 80% | 80% | 80% | 80% | 81% | 81% | 81% |
| SUN12F2 | 65% | 68% | 71% | 73% | 75% | 76% | 78% | 79% | 80% | 80% | 81% |
| DEP - XFMR #2 | 70% | 72% | 74% | 75% | 76% | 77% | 78% | 79% | 80% | 80% | 81% |
| NMO522 | 38% | 38% | 38% | 38% | 38% | 38% | 80% | 80% | 80% | 80% | 80% |
| IDR - XFMR #1 | 79% | 80% | 81% | 82% | 78% | 79% | 79% | 80% | 80% | 80% | 80% |
| PAL - XFMR #2 | 79% | 79% | 79% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| DIA - XFMR #1 | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| CHE12F1 | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| MIS - XFMR #1 | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| IDR253 | 80% | 82% | 83% | 85% | 76% | 77% | 78% | 78% | 79% | 79% | 80% |

# Lewiston-Clarkston 2035 Pre-Project (Summer)

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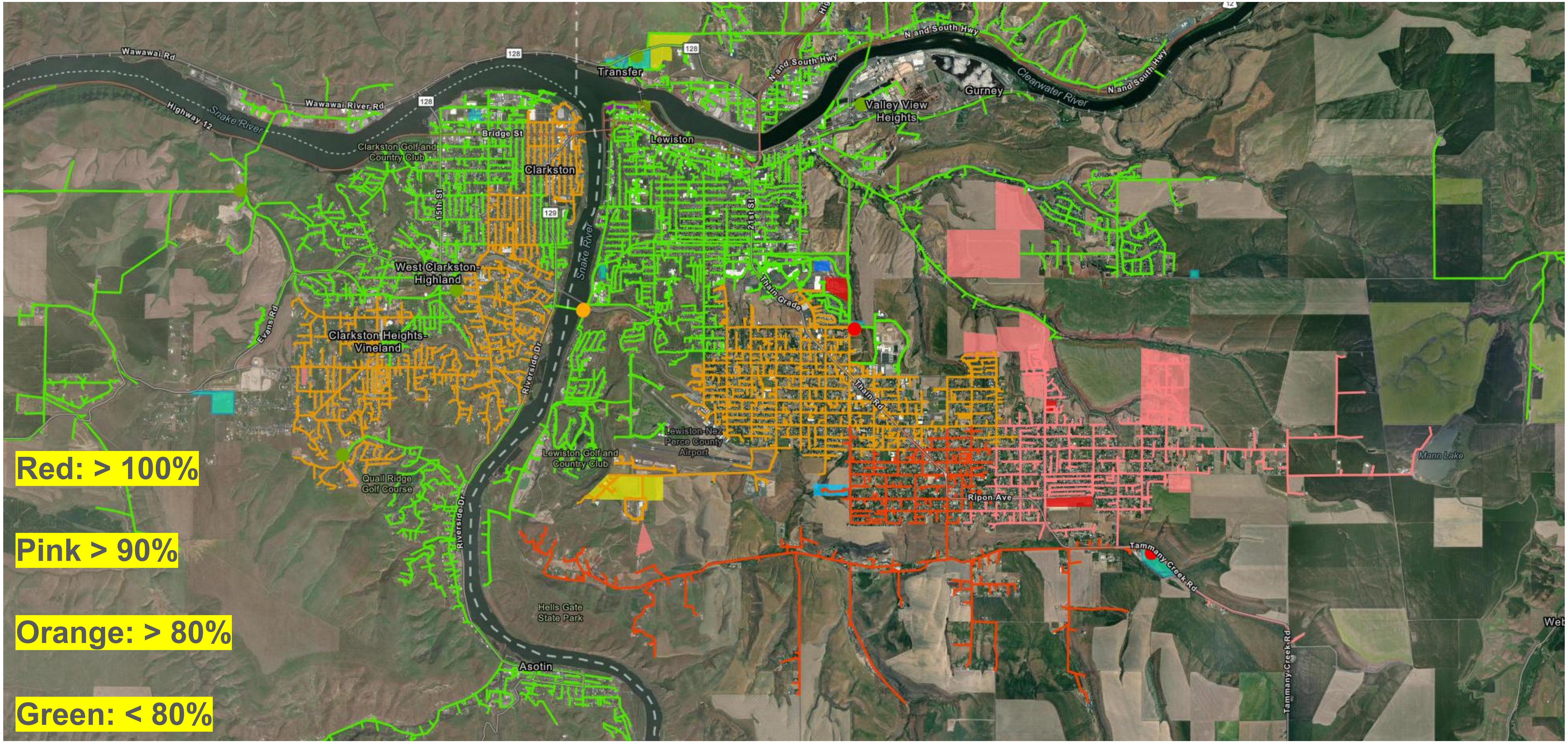




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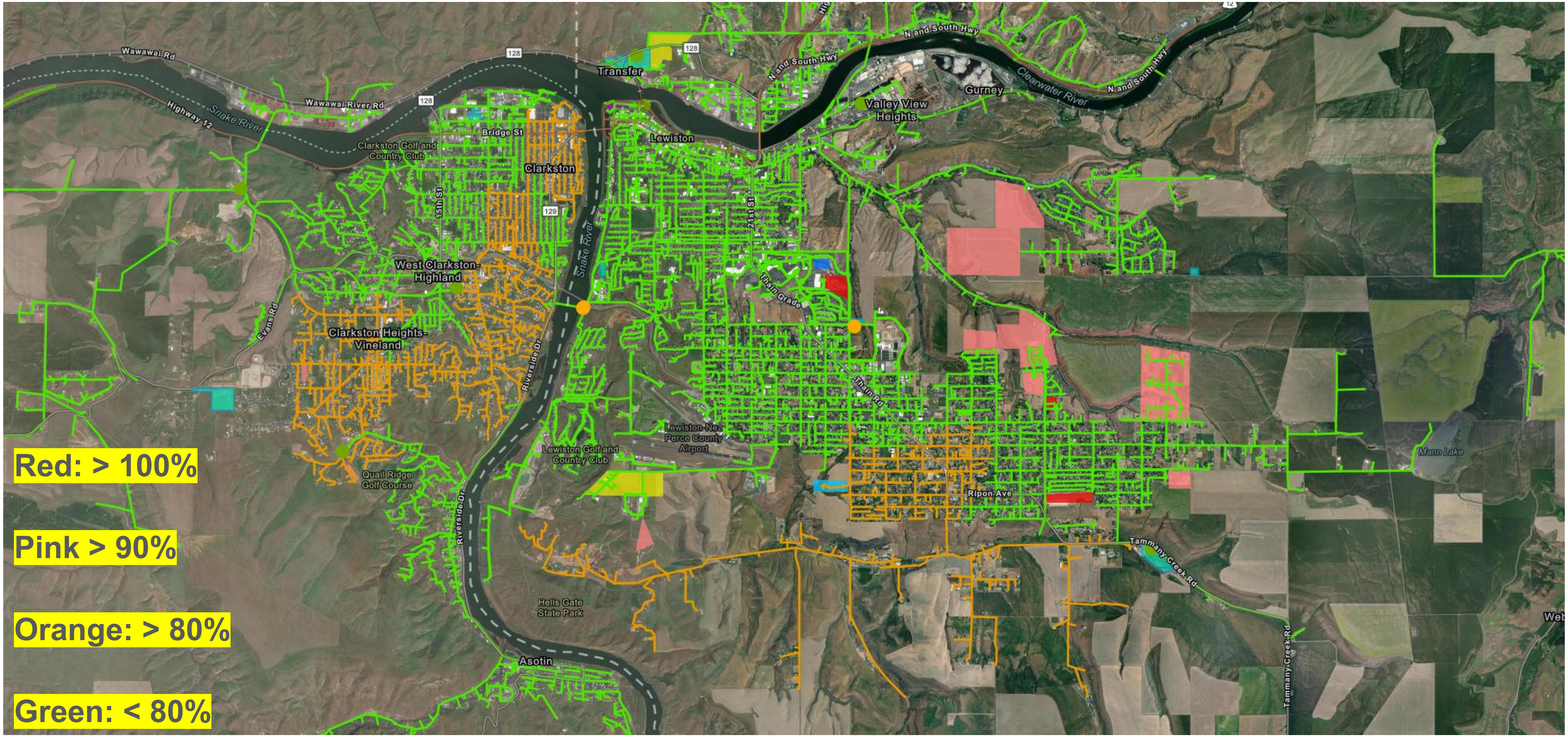
# Lewiston-Clarkston 2035 Post-Project (Summer)



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# Current Projects w/Scope & Cost Estimate (2025 System Assessment)

| Name | Scope | Cost Estimate |
|---|---|---|
| Lewiston Capacity Mitigation | New station, existing station upgrades, and feeder reconductors. | $13M |
| Bryden Canyon / South Lewiston | Transmission Reinforcement & Station with Distribution | $18M |
| Critchfield Mitigation | Feeder Balancing | $10K |
| Bunker Hill Capacity Mitigation | Station Expansion, dedicated feeder addition. | $4M |
| Pleasantview Capacity Mitigation | Station Expansion | $8M |
| Orin Capacity Mitigation | New Station, distribution buildout. | $9M |
| Spangle Capacity Mitigation | Add Cooling | $10k |
| Priest River Capacity Mitigation | Transformer Upgrade | $2.7M |
| Downriver Capacity Mitigation | Phase Balance | $10k |

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# Small Generator Queue (Distribution)

- 100 kW – 20 MW

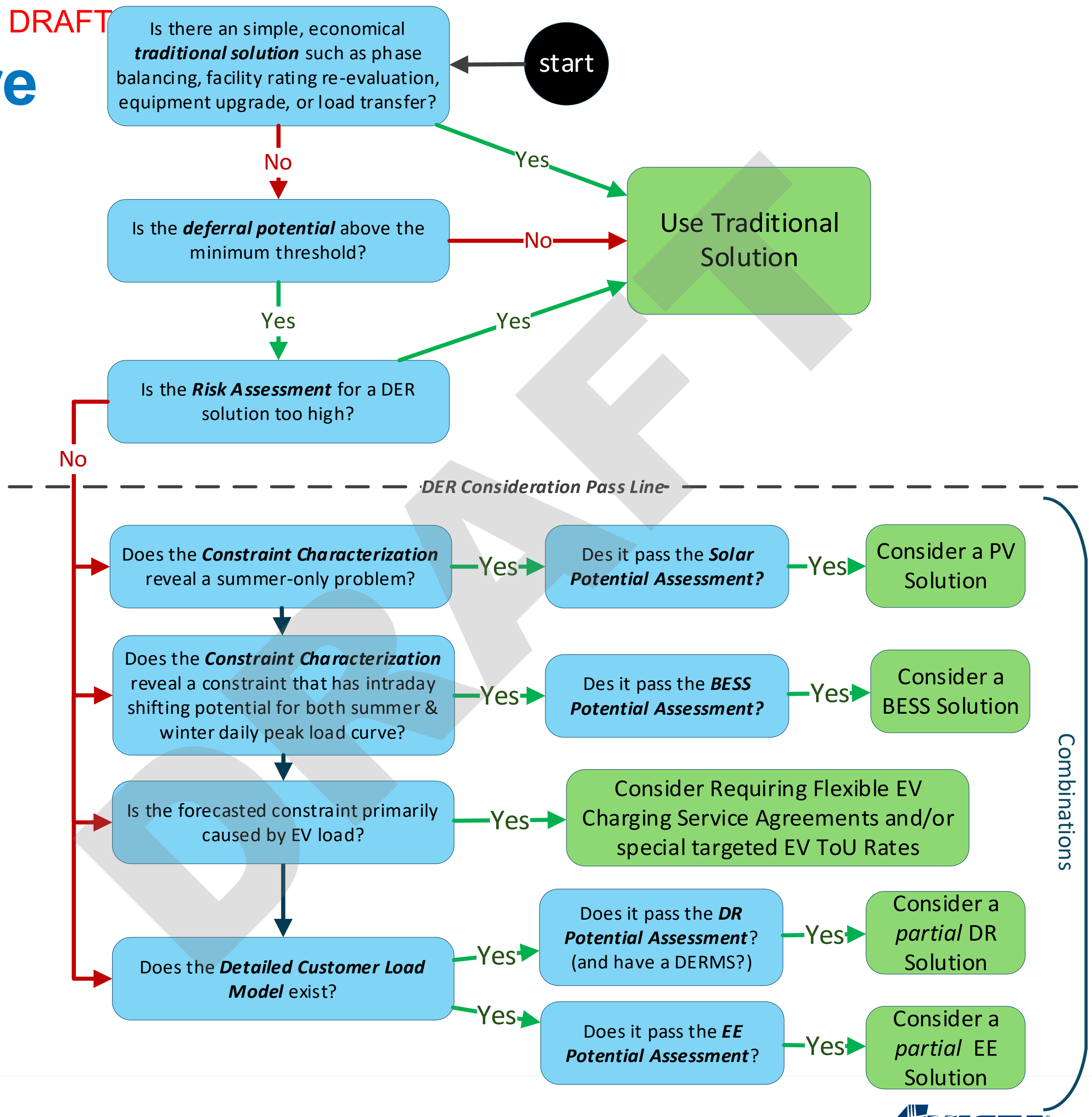
| Name | Area | Size |
|---|---|---|
| CS24-02 | Spokane | 0.5 MW Microgrid |
| FT #15 | Pullman | 0.2 MW Rooftop PV |
| CS26-03 | Spokane | 2 MW PV + BESS |
| CS26-06 | Stevens Co./ Little Falls | 1.1 MW Microgrid |

# Large Loads

- Distribution & Transmission Impact Studies (June 1st 2025)
  - 1.6MW – 25MW Distribution
  - 20MW+ Transmission
- Identify System Constraints and Propose Solutions
  - No Constraints
  - Distribution, Transmission, or Substation Construction Required
- Present Findings in a Report to Customer
  - Present construction solution and estimated project costs
- Proceed with Construction & Service Agreement
  - Hand off construction and design to construction services
- 11 Studies Currently in Progress Across all Stages

# Nonwires Screening Procedure [*In Development*]

- Provide a Consistent, Clearly Defined Screening Process to Ensure Transparency While Maintaining Planning Efficiency
- ***Most Utilities Still Struggling With This***
- Ideal Candidates Experience Low/No Load Growth Yet Still Violate our Criteria
  - But Also Lower on our Priority List!





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# Future Enhancement Focus: End-Use Customer Load Model Work

- Build on the DER Potential Study
- Enabler For Scenario Analysis
  - Impacts From Electrification, Cooling, etc. – any predicted change in adoption, shape, magnitude of end-use loads
- Emphasis on EV & Electrification
- Constraint Characterization
- Improved Load & DER Hosting Capacity

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# Questions & Discussion

Distribution Planning | May 2026 TAC Meeting

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# T&D Costs of Electrification

## TAC 9 – May 15, 2026

Robert Hughes Resource Planning Analyst

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# What makes up this cost?

Incremental increases in demand due to electrification will require additional investments in the transmission and distribution system beyond traditional load growth.

Estimated to be $304 per kW (compared to $316 in the 2025 IRP). Costs (2025$) include:

- Feeders: 10MW/Feeder, 4 feeders per substation
- Transmission/Distribution lines: ($550k for Distribution, $1.4M - $2M for Transmission
- Switching stations: 115/230 kV  $14.5M - $18.5M
- Service Transformers: $20k per Transformer
- Line Extensions: $1M - $1.1M
- Buried/Overhead line costs: 10% adder for buried
- Substation and Support FTE: 3-5 additional employees

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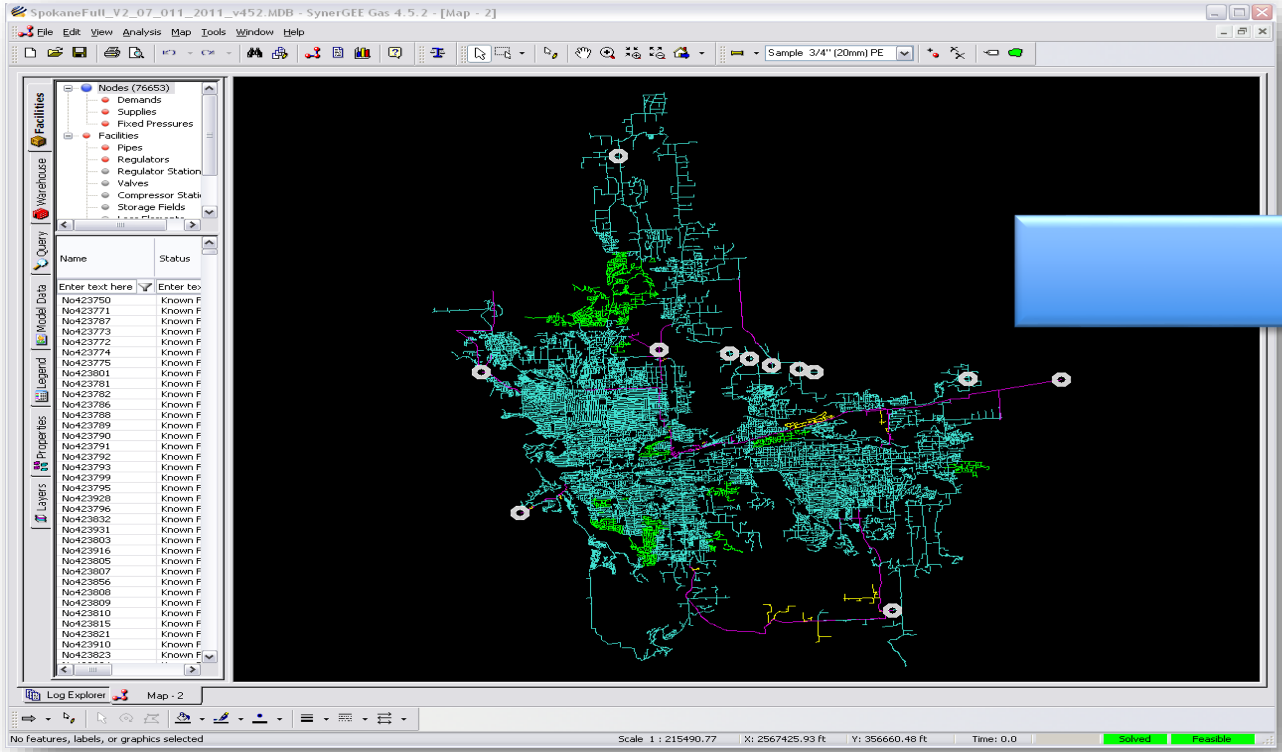
# Gas Distribution System Planning

**Terrence Browne PE, Principal Gas Planning Engineer**

**Natural Gas Technical Advisory Committee**
**May 15, 2026**

# Mission

- Using technology to plan and design a safe, reliable, and economical distribution system

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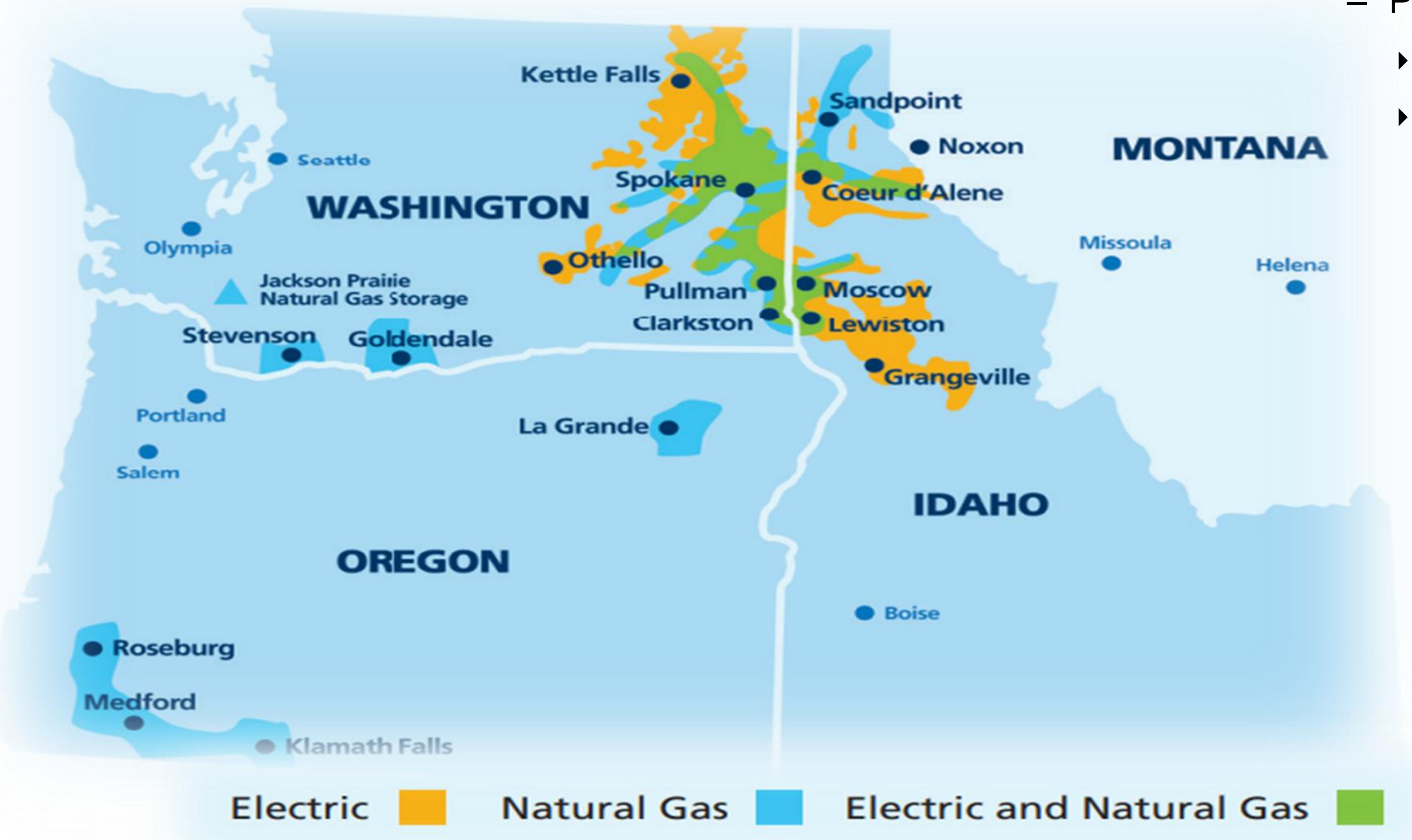
# Service Territory and Customer Overview

- Serves electric and natural gas customers in eastern Washington and northern Idaho, and natural gas customers in southern and eastern Oregon
  - Population of service area 1.7 million
    - 418,784 electric customers
    - 380,857 natural gas customers



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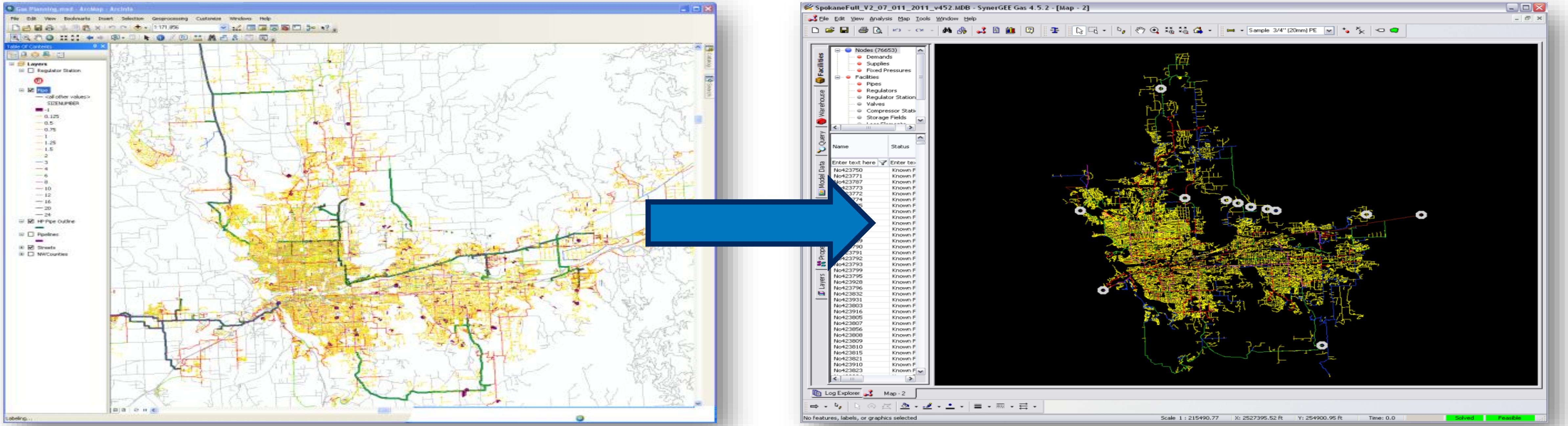
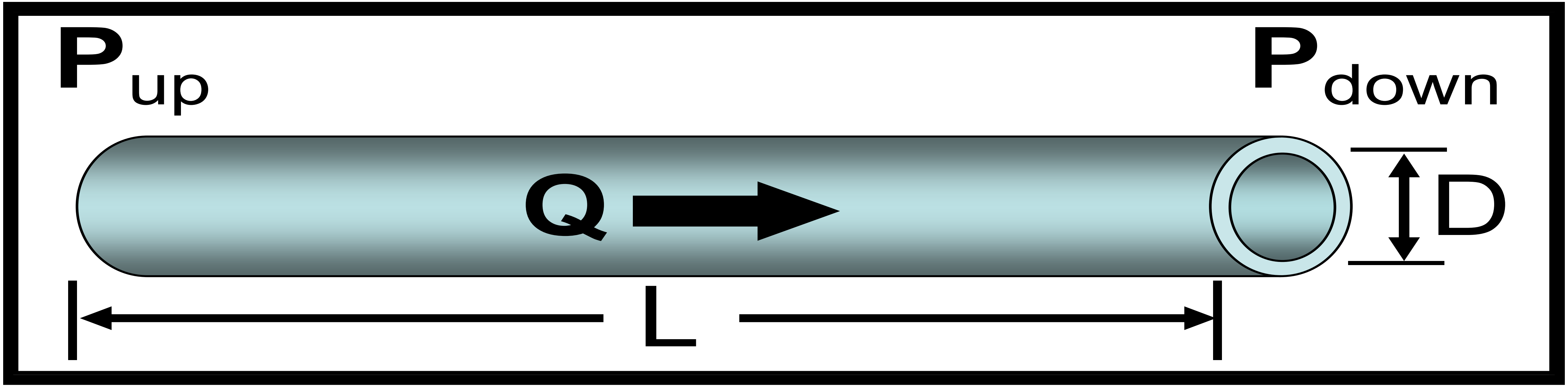
# Our Planning Models

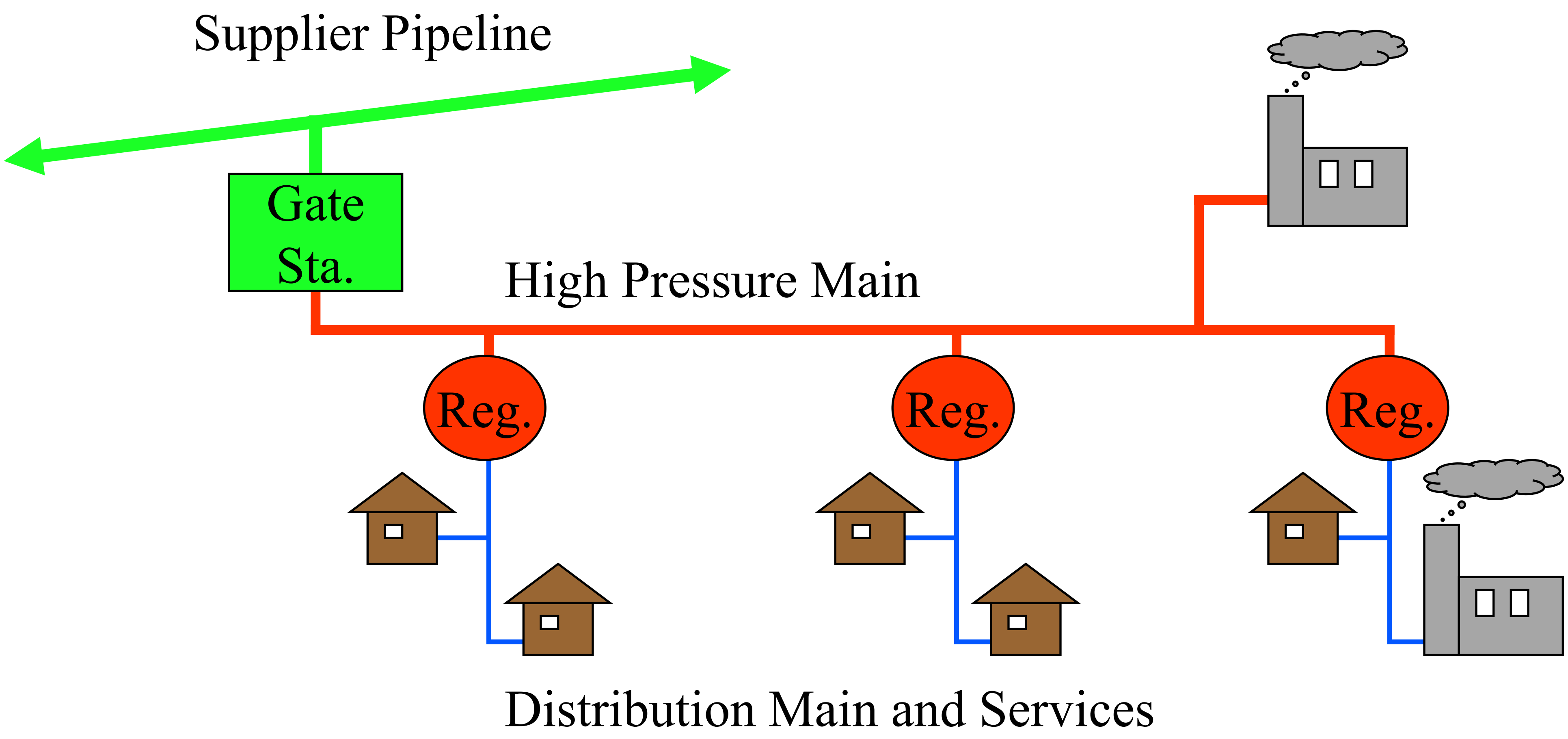
- 8,000 miles of distribution main
- 120 cities
- ~8 load study models



# 5 Variables for Any Given Pipe



# Scope of Gas Distribution Planning



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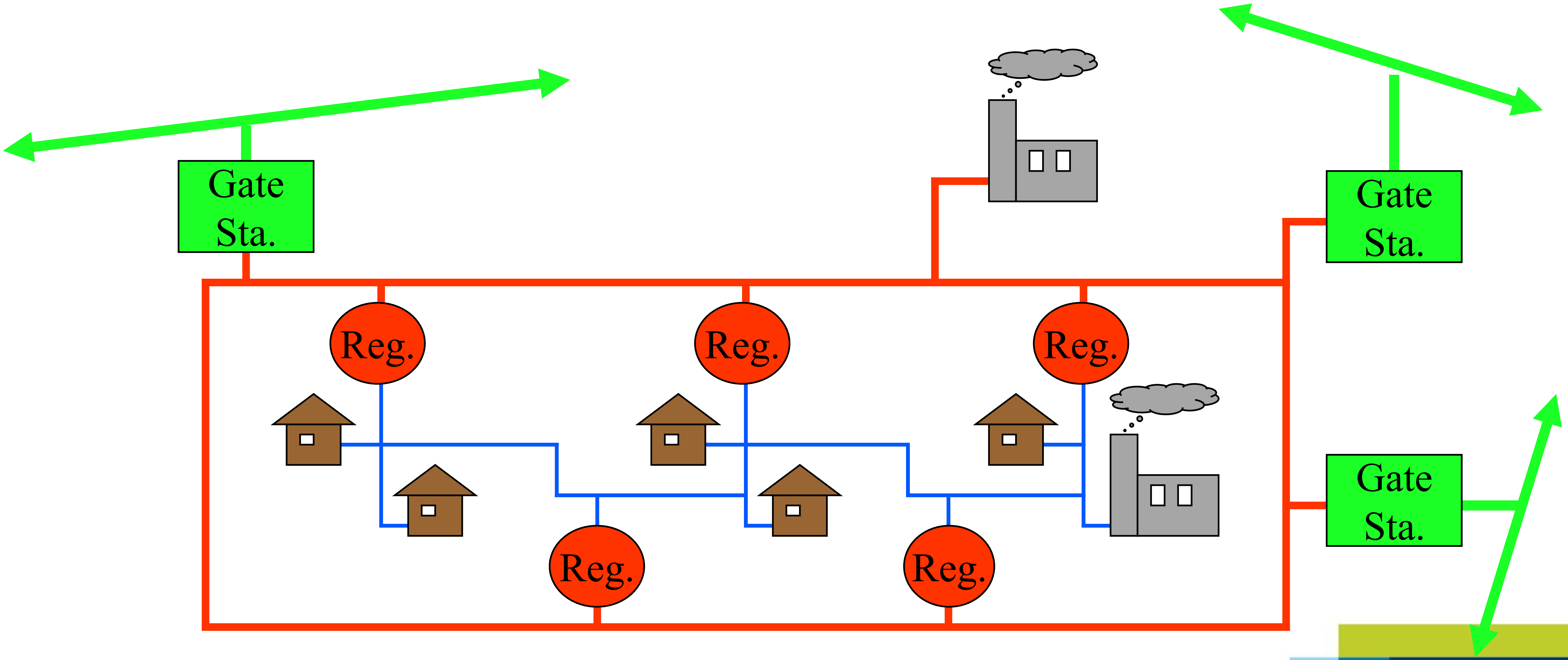
# Scope of Gas Distrib. Planning cont.



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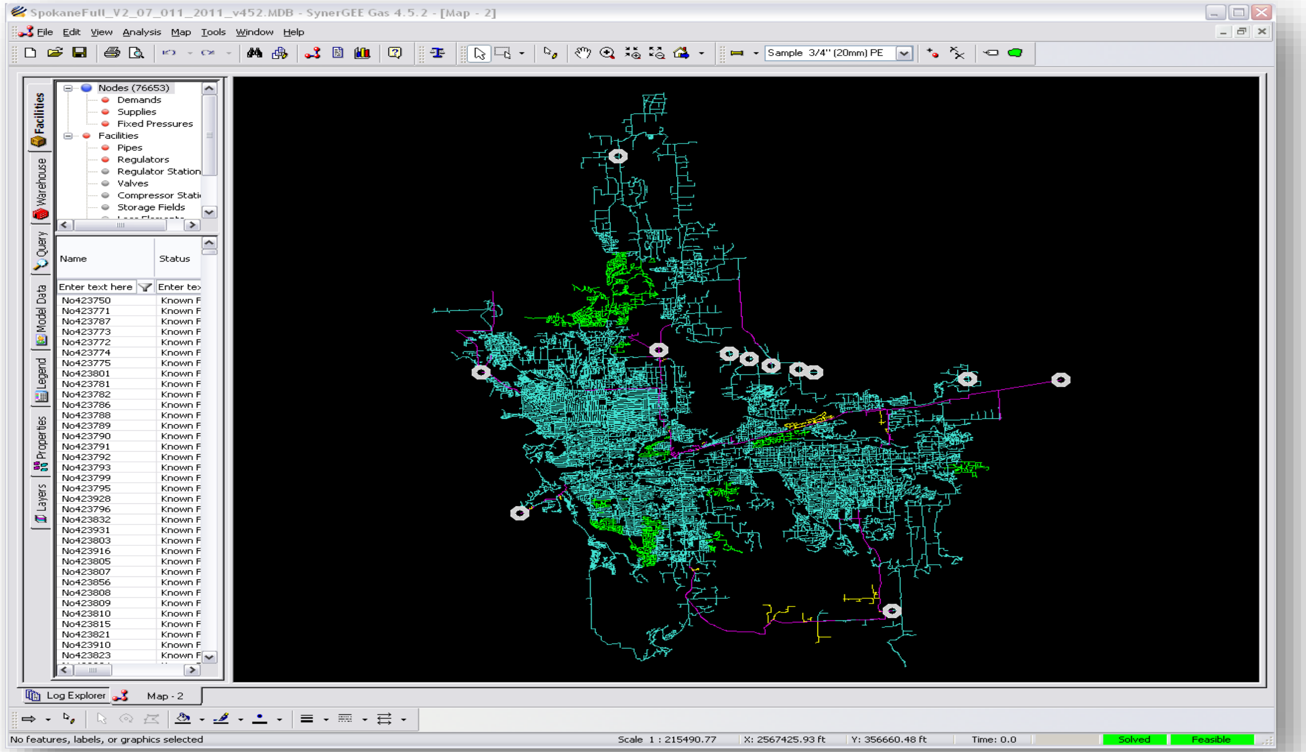
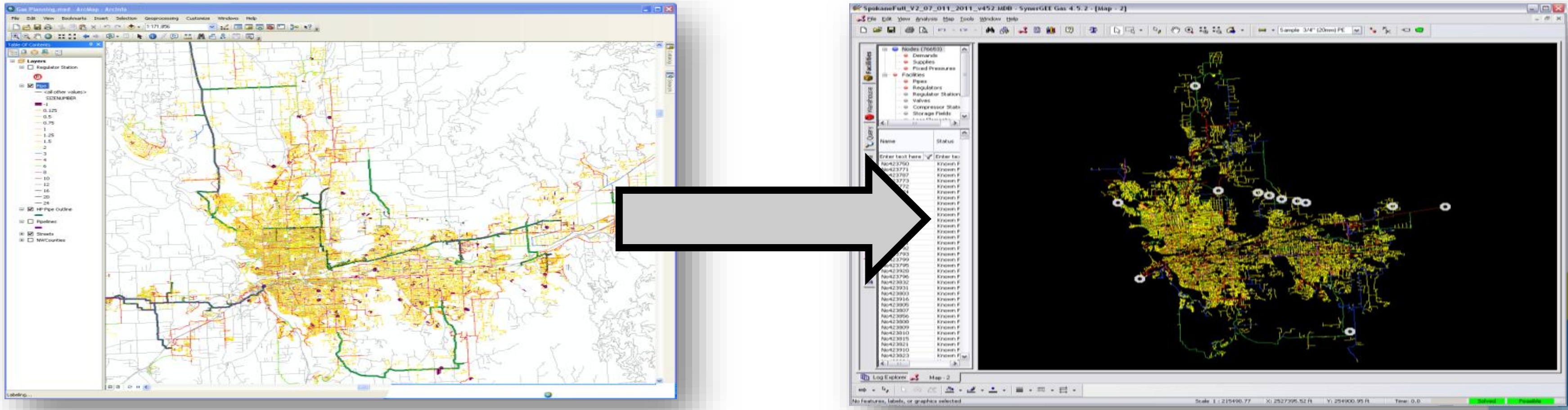
# SynerGi (SynerGEE, Stoner) Load Study

- Simulate distribution behavior
- Identify low pressure areas
- Test reinforcements
- Measure reliability



# Creating a Pipeline Model

- Elements
  - Pipes, regulators, valves
  - Attributes: Length, internal diameter, roughness
- Nodes
  - Sources, usage points, pipe ends
  - Attributes: Flow, pressure



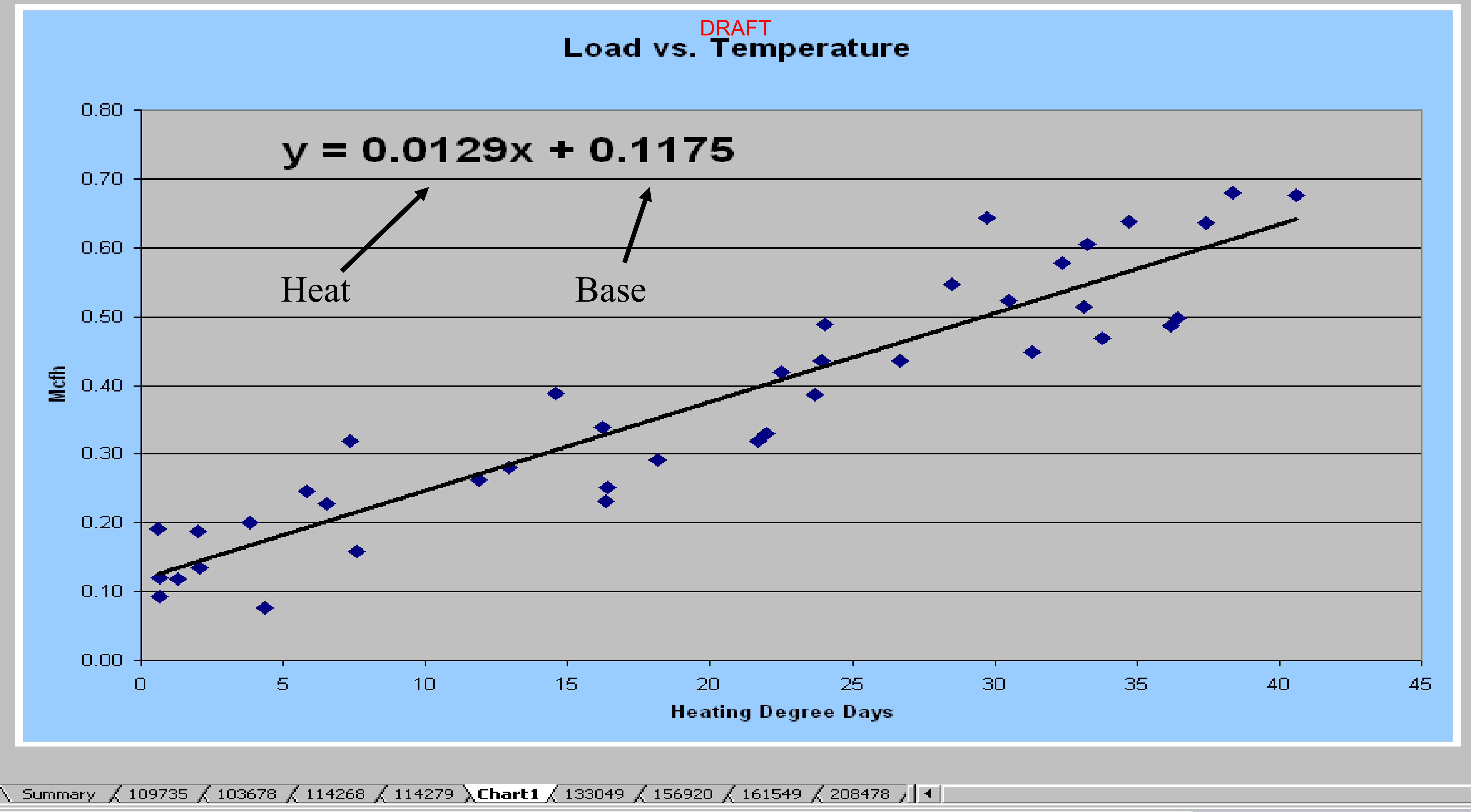
# Estimating Customer Usage

- Gathering Data
  - Days of service
  - Degree Days
  - Usage
  - Name, Address, Revenue Class, Rate Schedule…

# Estimating Customer Usage cont.

- Degree Days
  - Heating (HDD)
  - Cooling (CDD)
- Temperature - Usage Relationship
  - Load vs. HDD's
  - Base Load (constant)
  - Heat Load (variable)
  - High correlation with residential

| Avg. Daily Temperature ('Fahrenheit) | Heating Degree Days (HDD) | Cooling Degree Days (CDD) |
|---|---|---|
| 85 | | 20 |
| 80 | | 15 |
| 75 | | 10 |
| 70 | | 5 |
| ***65*** | ***0*** | ***0*** |
| 60 | 5 | |
| 55 | 10 | |
| 50 | 15 | |
| 45 | 20 | |
| 40 | 25 | |
| 35 | 30 | |
| 30 | 35 | |
| 25 | 40 | |
| 20 | 45 | |
| 15 | 50 | |
| 10 | 55 | |
| 5 | 60 | |
| 4 | 61 | |
| 0 | 65 | |
| -5 | 70 | |
| -10 | 75 | |
| -15 | 80 | |



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Load vs. Temperature
y = 0.0129x + 0.1175
Heat
Base
Mcfh
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0
5
10
15
20
25
30
35
40
45
Heating Degree Days
Summary
109735
103678
114268
114279
Chart1
133049
156920
161549
208478

# Coeur D'Alene Area

## Current System

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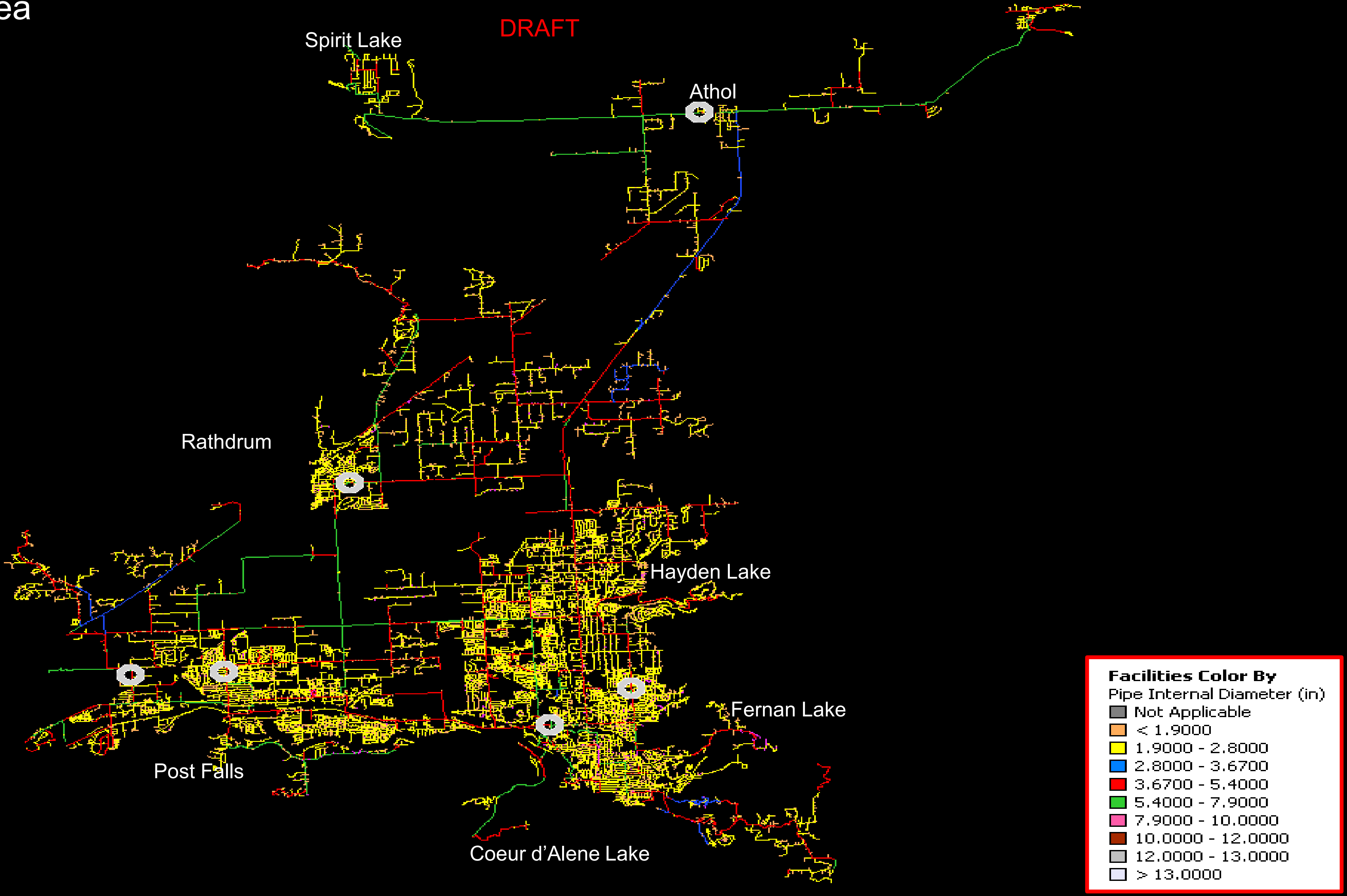

# Coeur D'Alene Area
## Current System

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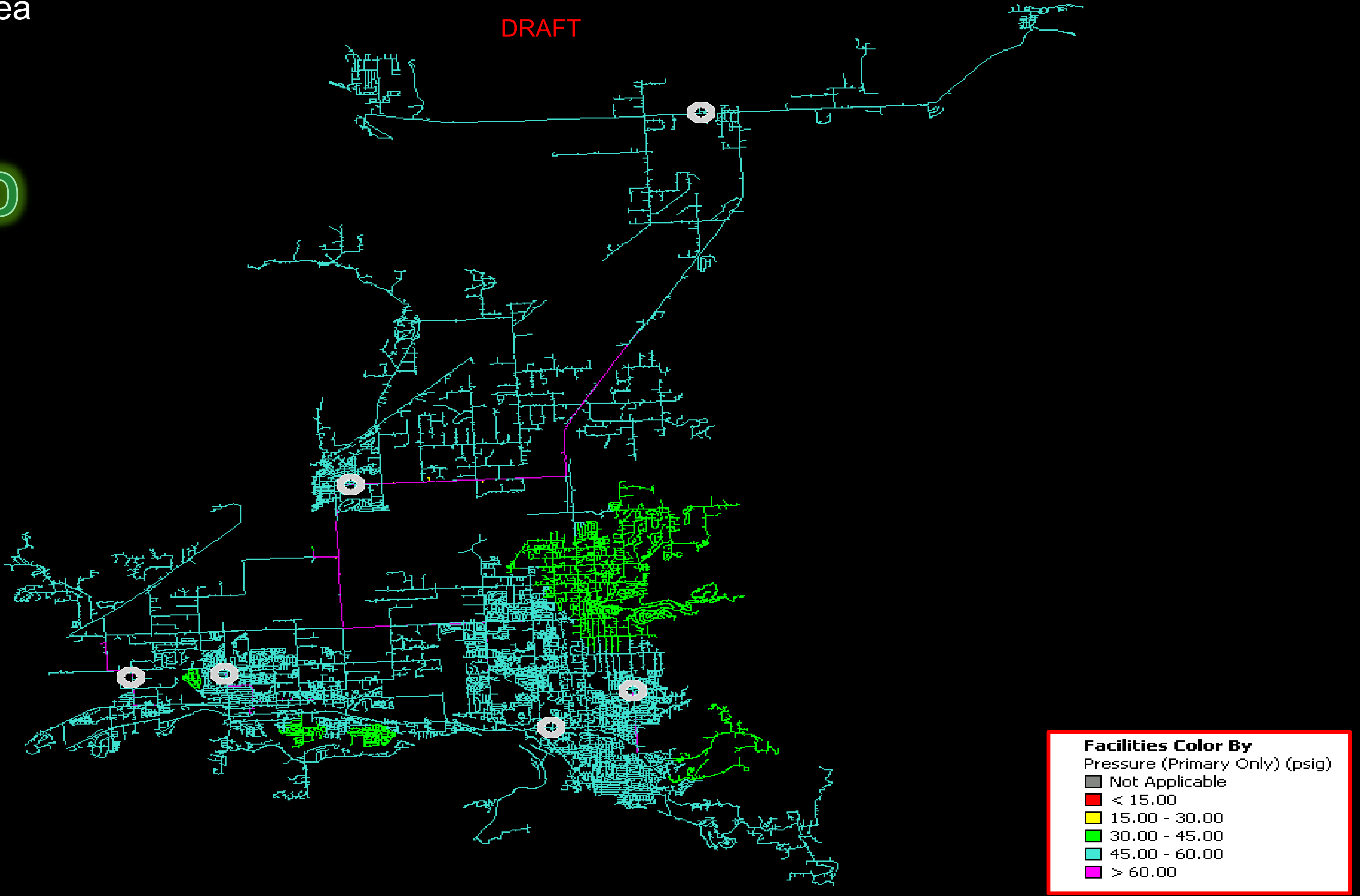
50 HDD

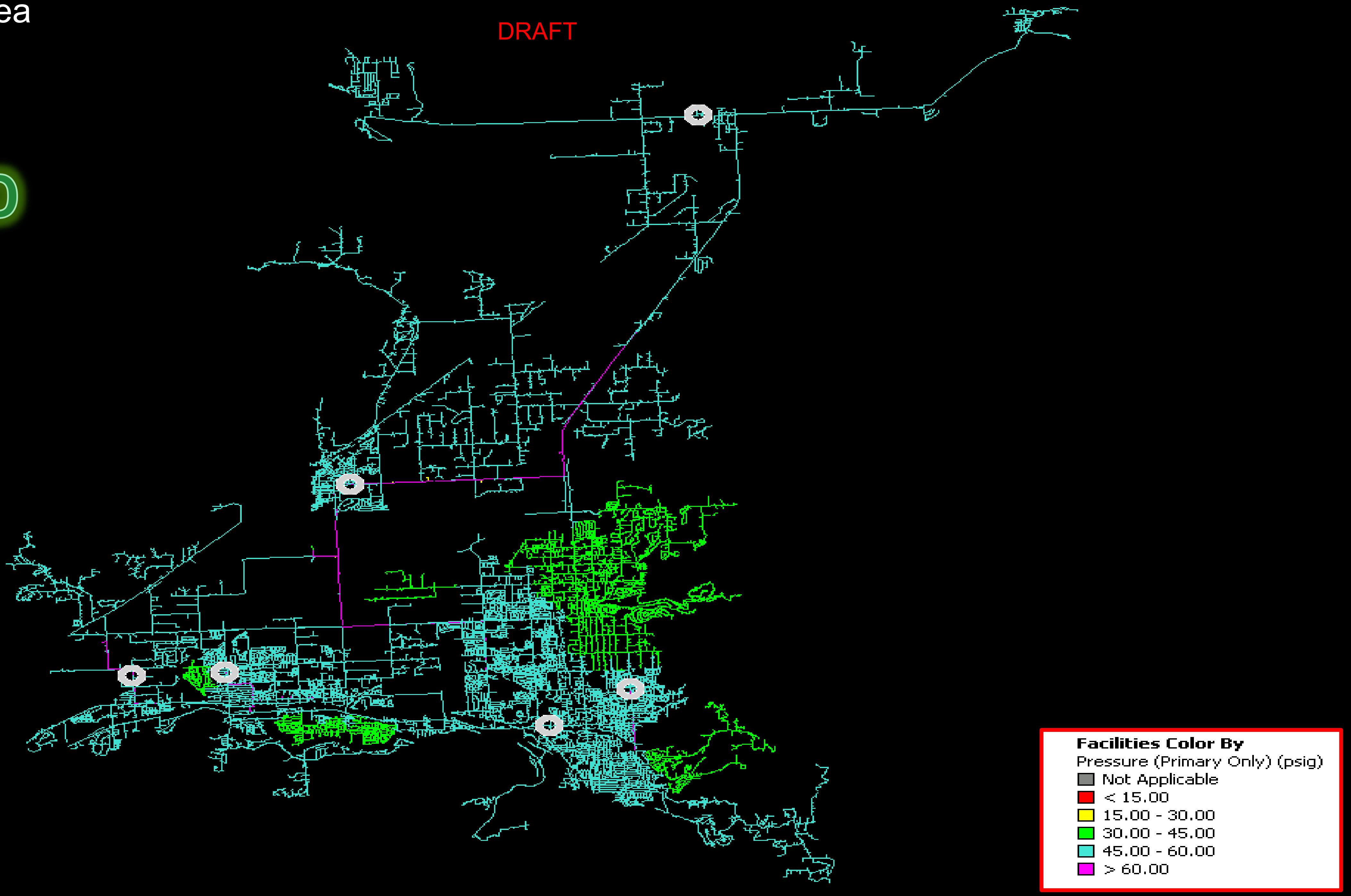


Coeur D'Alene Area

Current System

DRAFT

55 HDD

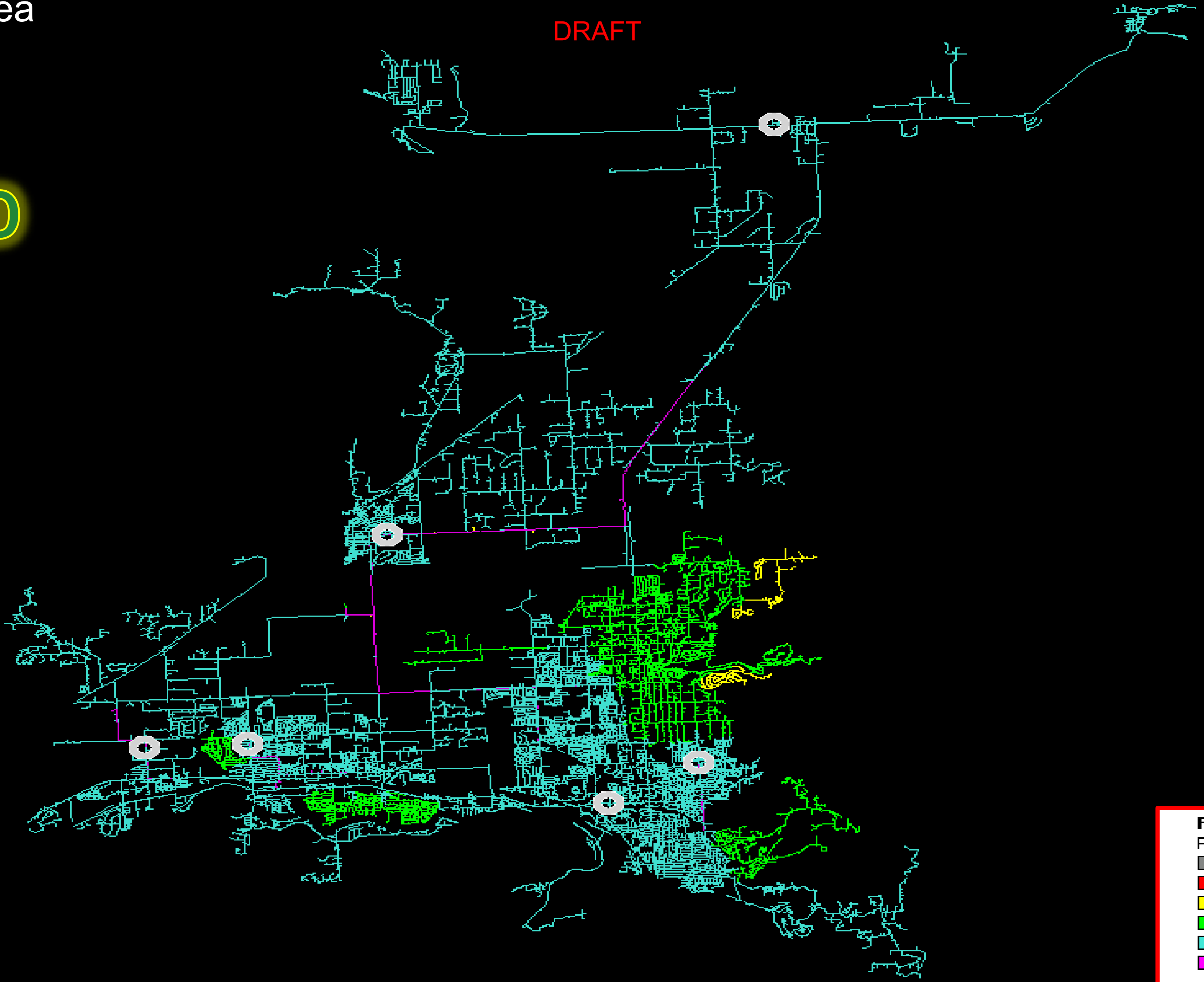


# Coeur D'Alene Area

## Current System

DRAFT

60 HDD



**Facilities Color By**
Pressure (Primary Only) (psig)
- Not Applicable
- < 15.00
- 15.00 - 30.00
- 30.00 - 45.00
- 45.00 - 60.00
- > 60.00

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# Monitoring Our System

- Electronic Pressure Recorders
  - Daily Feedback
  - Real time if necessary
- Validates our Load Studies

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# Validating Model

- Simulate recorded condition
- Electronic Pressure Recorders
  - Do calculated results match *field* data?
- Gate Station Telemetry
  - Do calculated results match *source* data?
- Possible Errors
  - Missing pipe
  - Source pressure changed
  - Industrial loads

# Planning Criteria – 2026

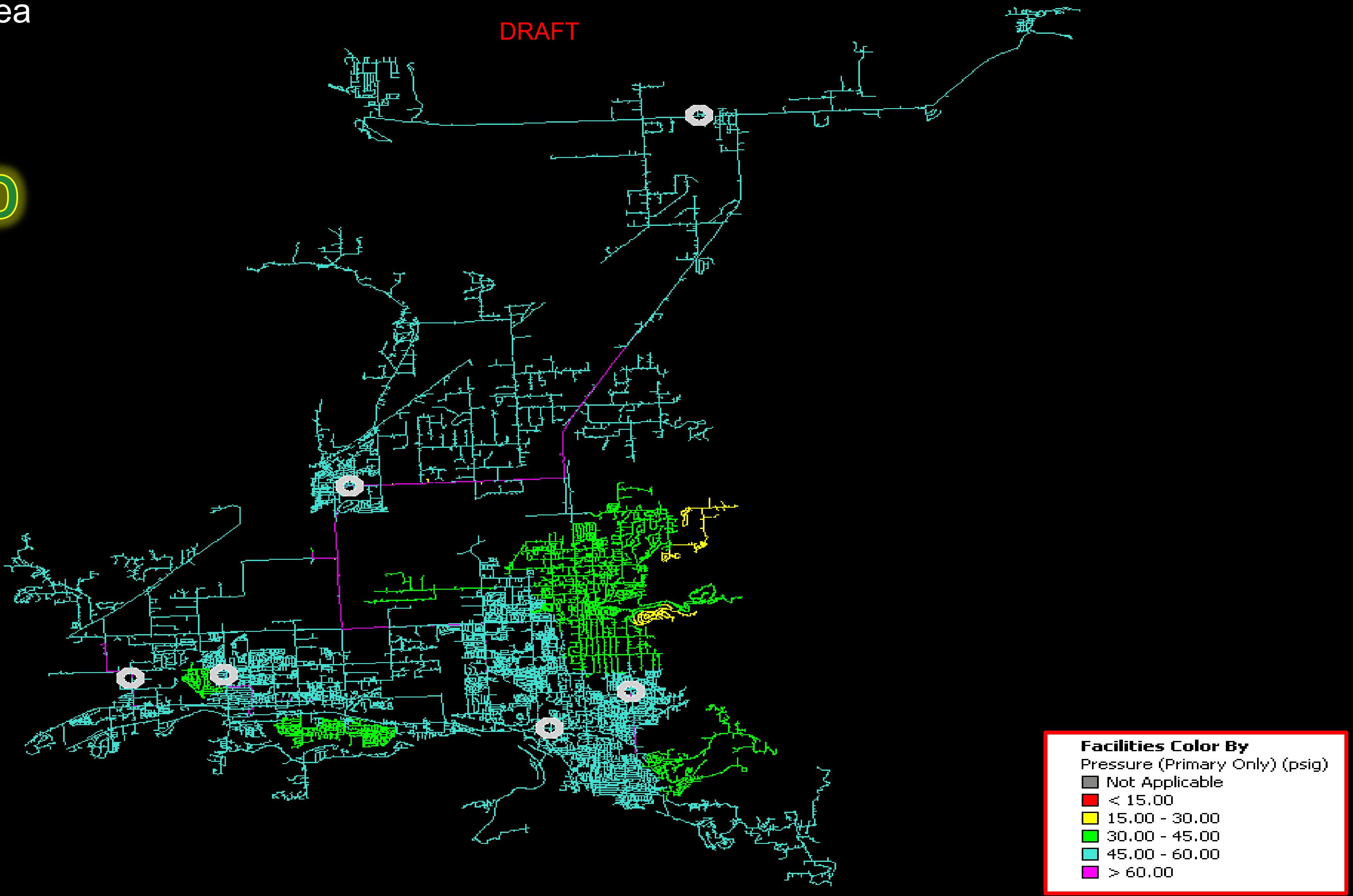
- Reliability during design HDD
  - Spokane **81 HDD** *(avg. daily temp. -16’ F)*
  - Medford **60 HDD** *(avg. daily temp. 5’ F)*
  - Klamath Falls **72 HDD** *(avg. daily temp. -7’ F)*
  - La Grande **75 HDD** *(avg. daily temp. -10’ F)*
  - Roseburg **54 HDD** *(avg. daily temp. 11’ F)*
- Maintain minimum of 15 psig in system at all times
  - 5 psig in lower MAOP areas
  - 3 psig in Medford 6 psig systems

# Coeur D'Alene Area

## Current System

DRAFT

60 HDD

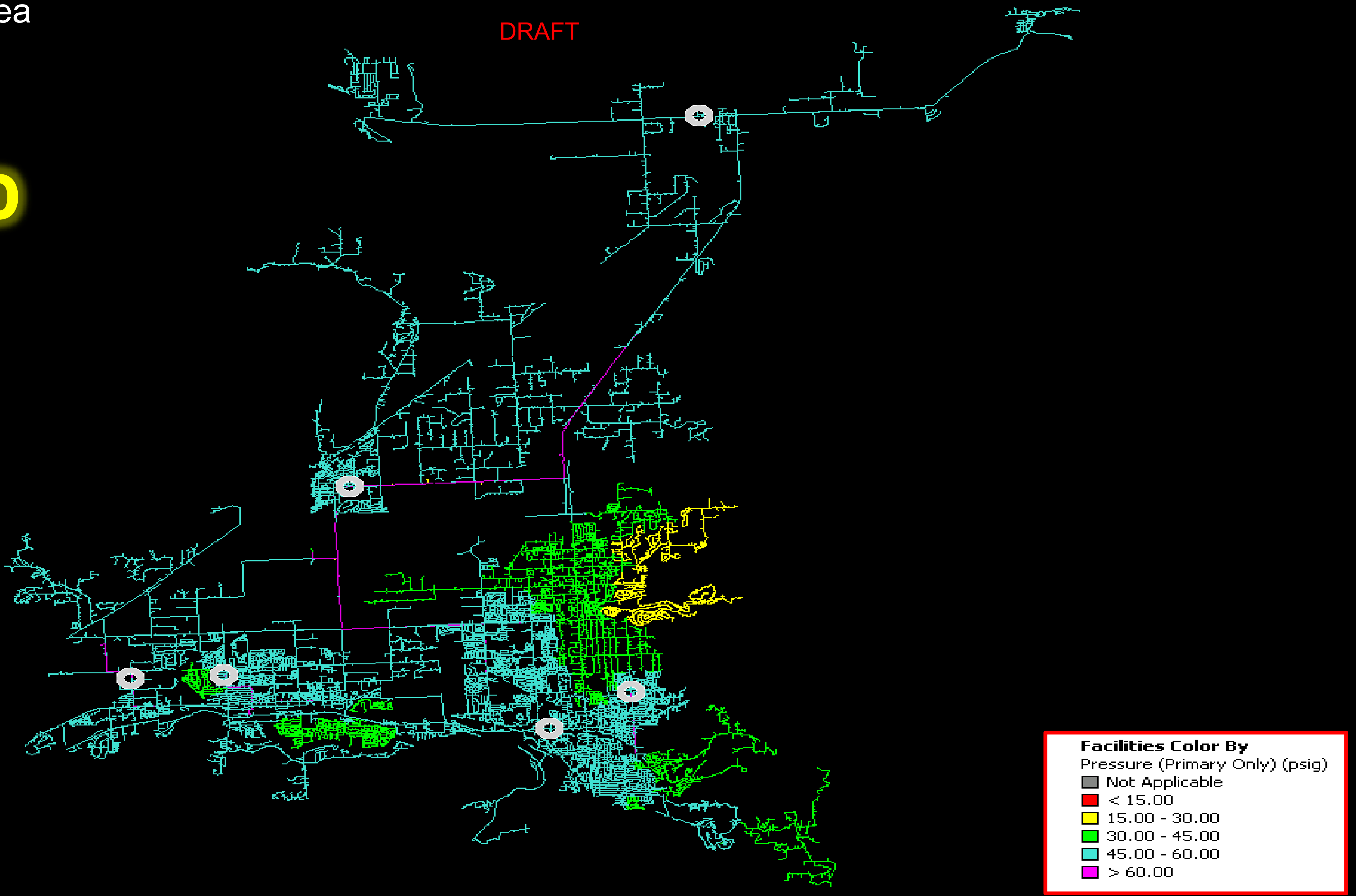


# Coeur D'Alene Area

## Current System

DRAFT

**65 HDD**

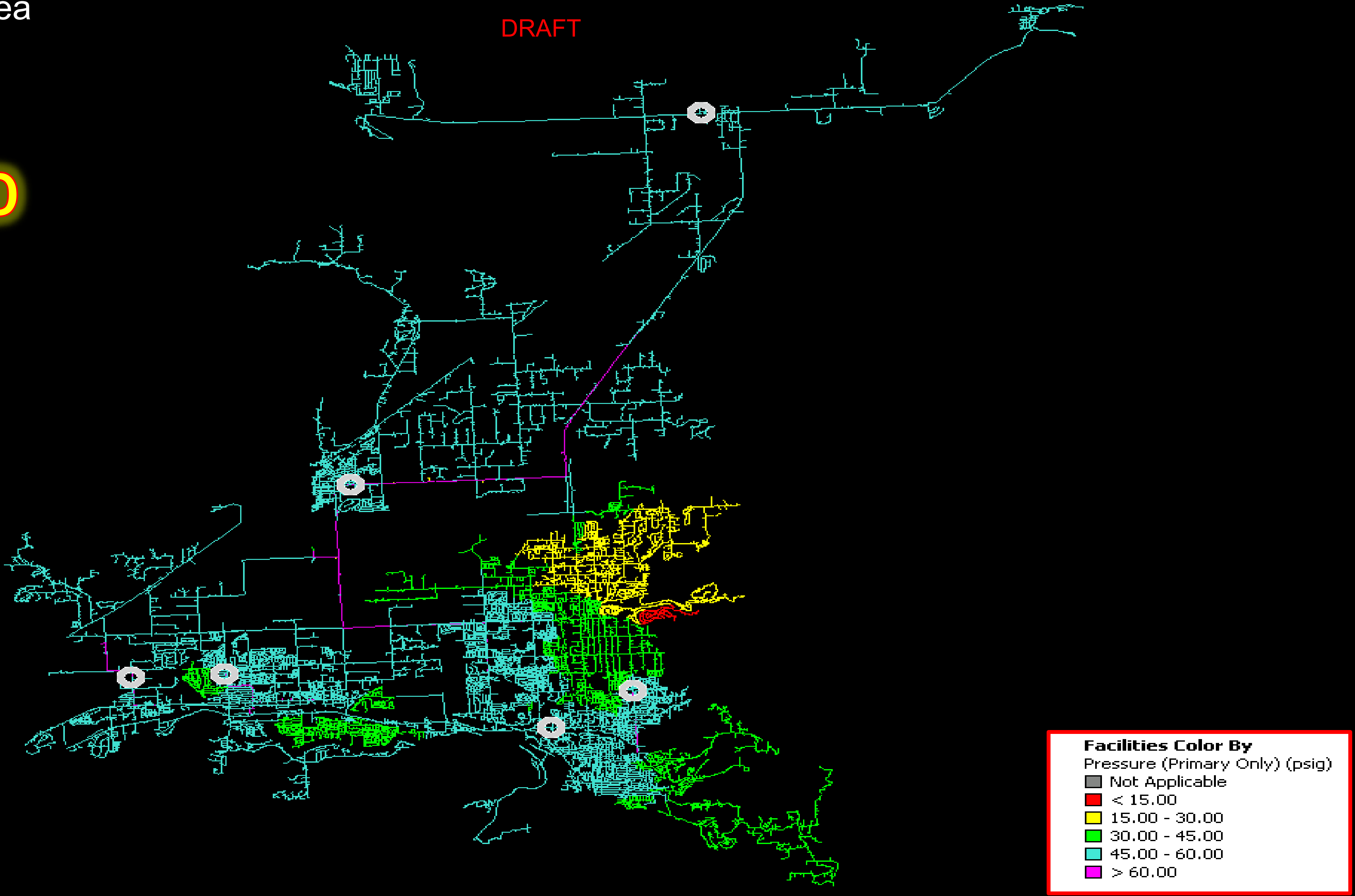


# Coeur D'Alene Area

## Current System

DRAFT

**70 HDD**



# Coeur D'Alene Area

## Current System

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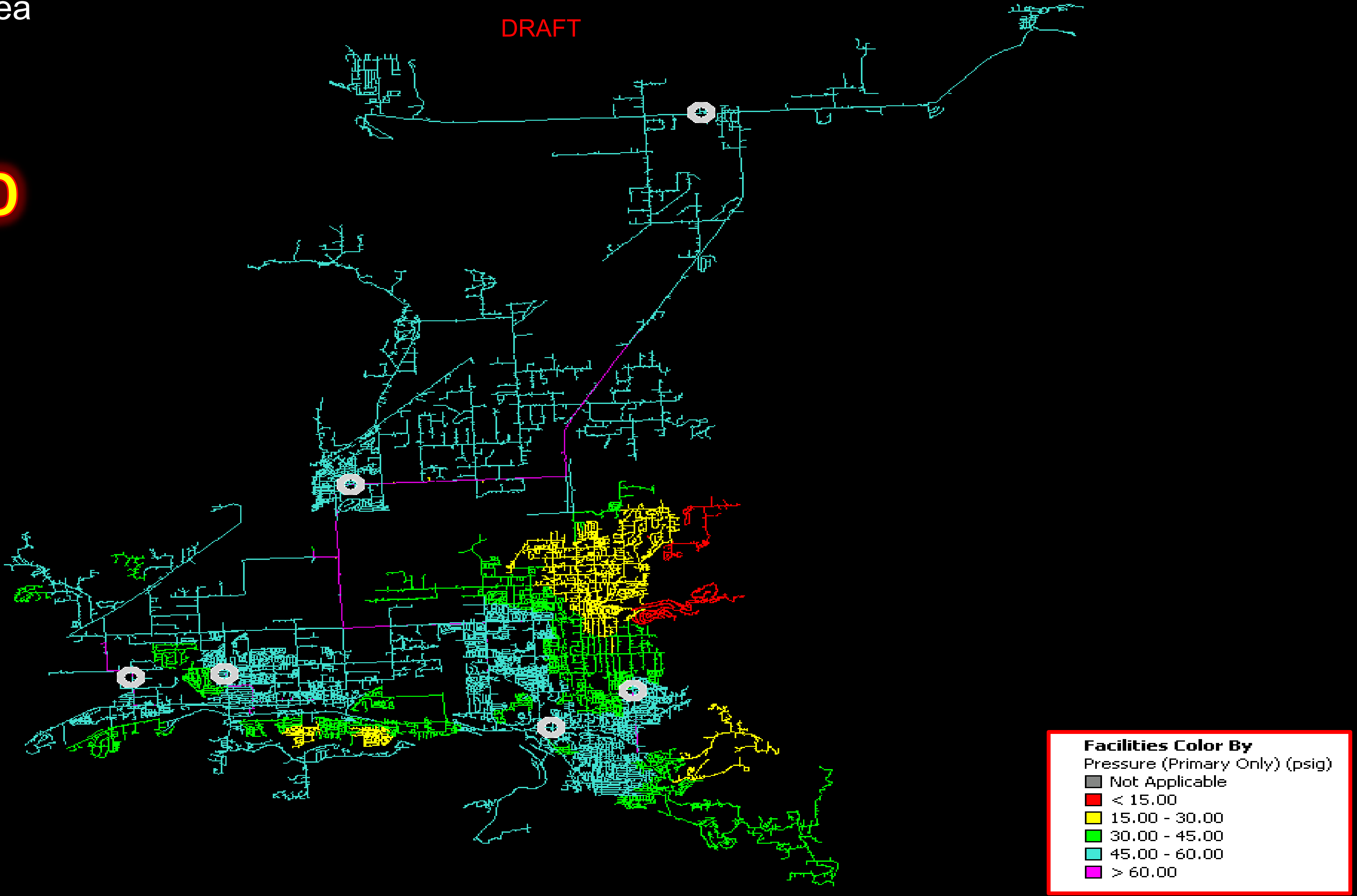
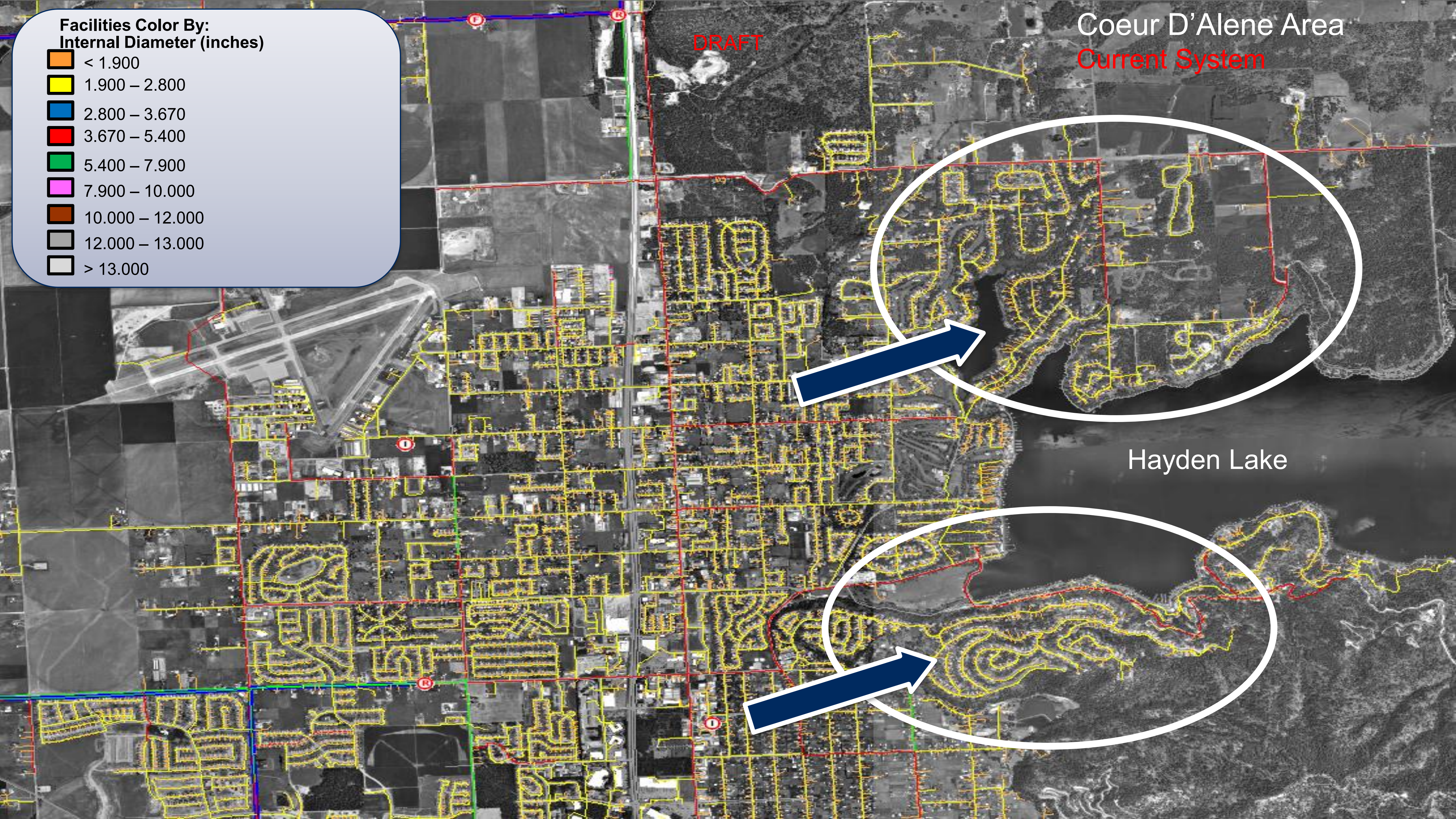
# 75 HDD



# Coeur D'Alene Area
## Current System
## 75 HDD


Facilities Color By:
Internal Diameter (inches)
< 1.900
1.900 – 2.800
2.800 – 3.670
3.670 – 5.400
5.400 – 7.900
7.900 – 10.000
10.000 – 12.000
12.000 – 13.000
> 13.000
DRAFT
Coeur D'Alene Area
Current System
Hayden Lake

DRAFT

# Fixes and Reinforcements

- Identify Low Pressure Areas
  - Number of feeds
  - Proximity to source
- Looking for Most Economical Solution
  - Length (minimize)
  - Construction obstacles (minimize)
- Lead Times:
  - Design and engineering; 12 months
  - Real estate, permits, and environmental; 6-24 months
  - Material ordering and delivery; 3-6 months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Proposed 2" PE Tie-ins
(Proposal 1)
Facilities Color By:
Internal Diameter (inches)
< 1.900
1.900 – 2.800
2.800 – 3.670
3.670 – 5.400
5.400 – 7.900
7.900 – 10.000
10.000 – 12.000
12.000 – 13.000
> 13.000


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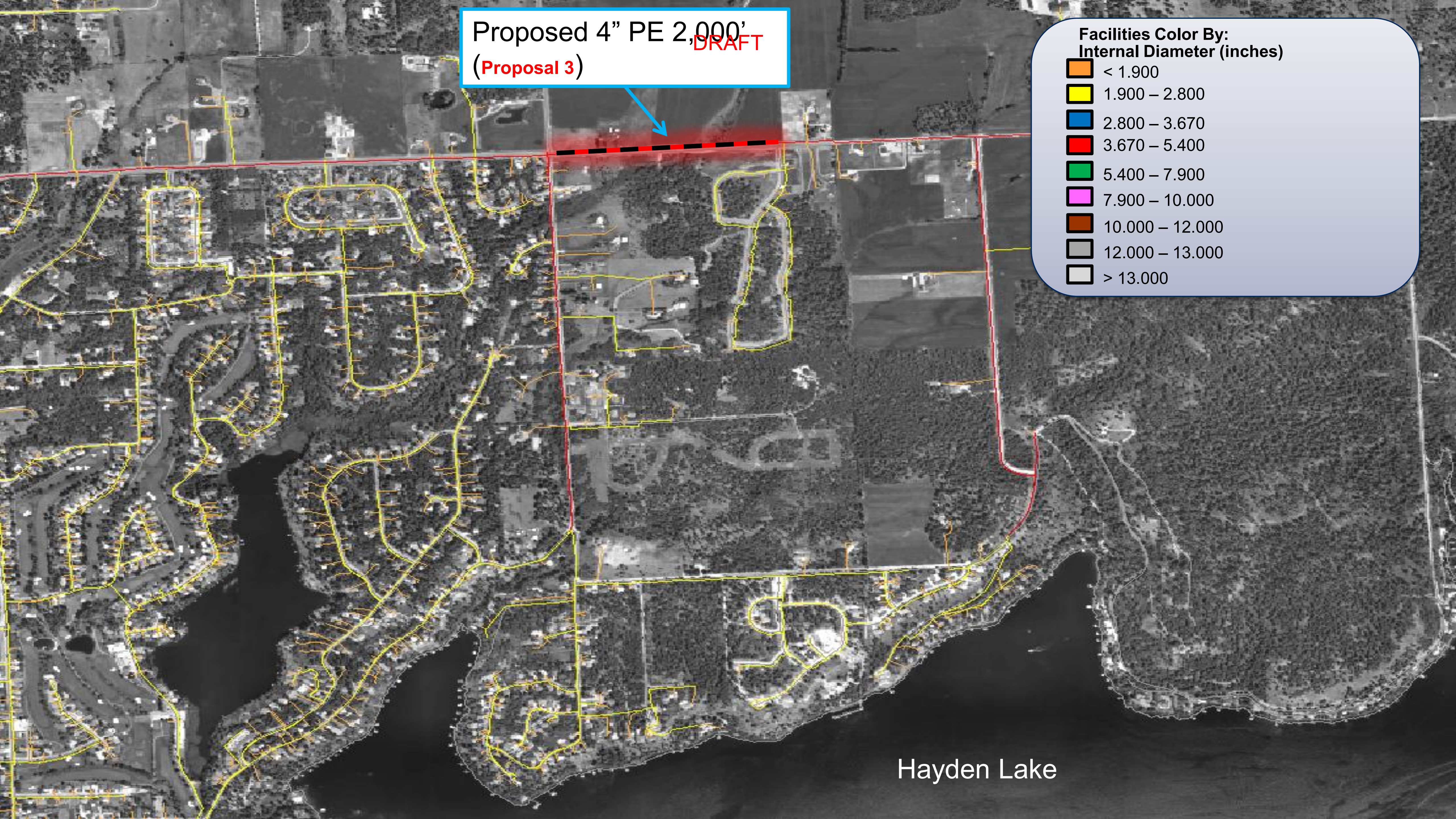
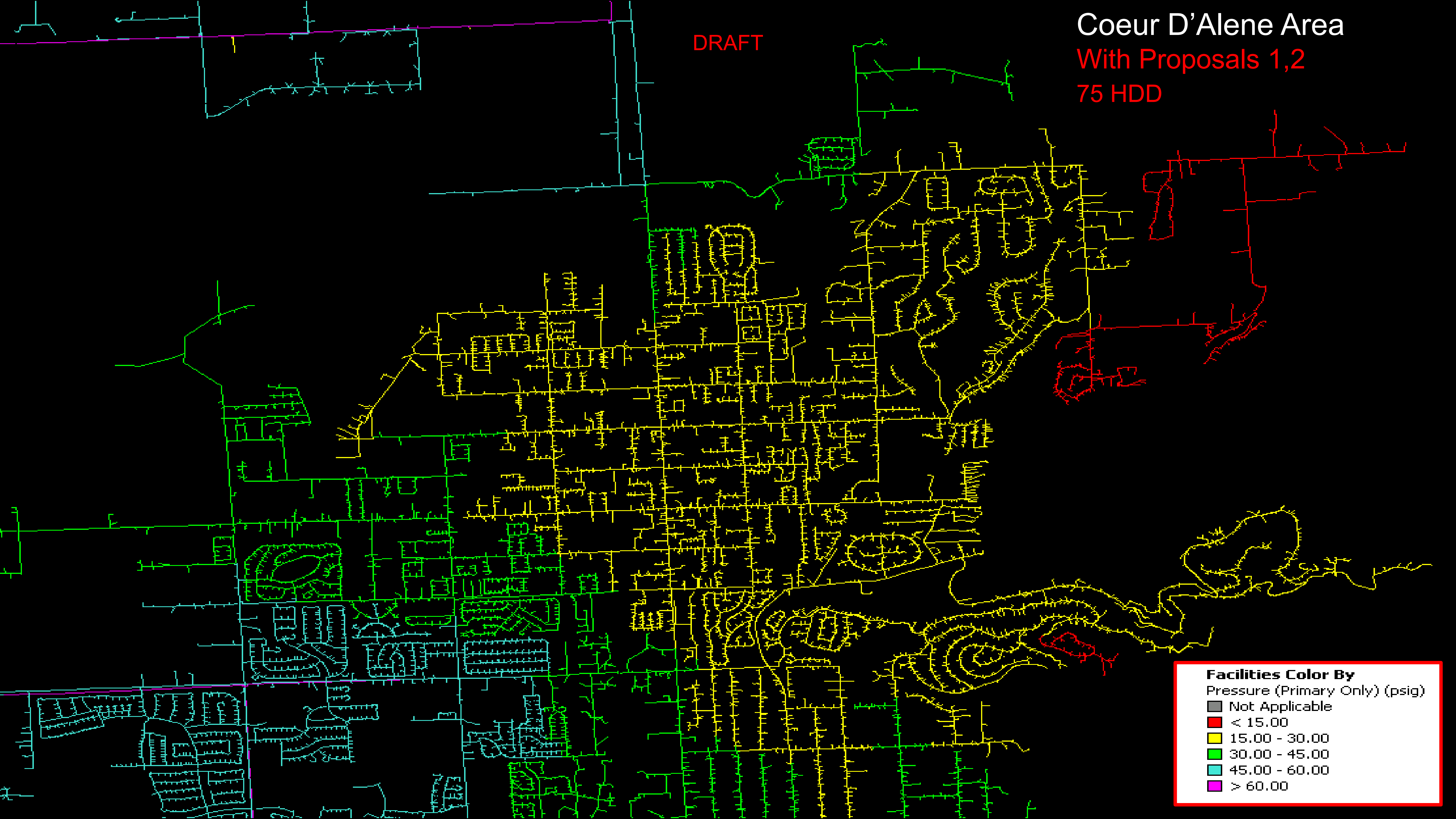
Proposed 6” PE 1,080’
(Proposal 2)
Facilities Color By:
Internal Diameter (inches)
< 1.900
1.900 – 2.800
2.800 – 3.670
3.670 – 5.400
5.400 – 7.900
7.900 – 10.000
10.000 – 12.000
12.000 – 13.000
> 13.000



Proposed 4” PE 2,000’
(Proposal 3)
DRAFT
Facilities Color By:
Internal Diameter (inches)
< 1.900
1.900 – 2.800
2.800 – 3.670
3.670 – 5.400
5.400 – 7.900
7.900 – 10.000
10.000 – 12.000
12.000 – 13.000
> 13.000
Hayden Lake


Coeur D'Alene Area
Current System
75 HDD
DRAFT
Hayden Lake
Facilities Color By
Pressure (Primary Only) (psig)
Not Applicable
< 15.00
15.00 - 30.00
30.00 - 45.00
45.00 - 60.00
> 60.00



Coeur D'Alene Area
With Proposals 1,2
75 HDD
DRAFT
Facilities Color By
Pressure (Primary Only) (psig)
Not Applicable
< 15.00
15.00 - 30.00
30.00 - 45.00
45.00 - 60.00
> 60.00

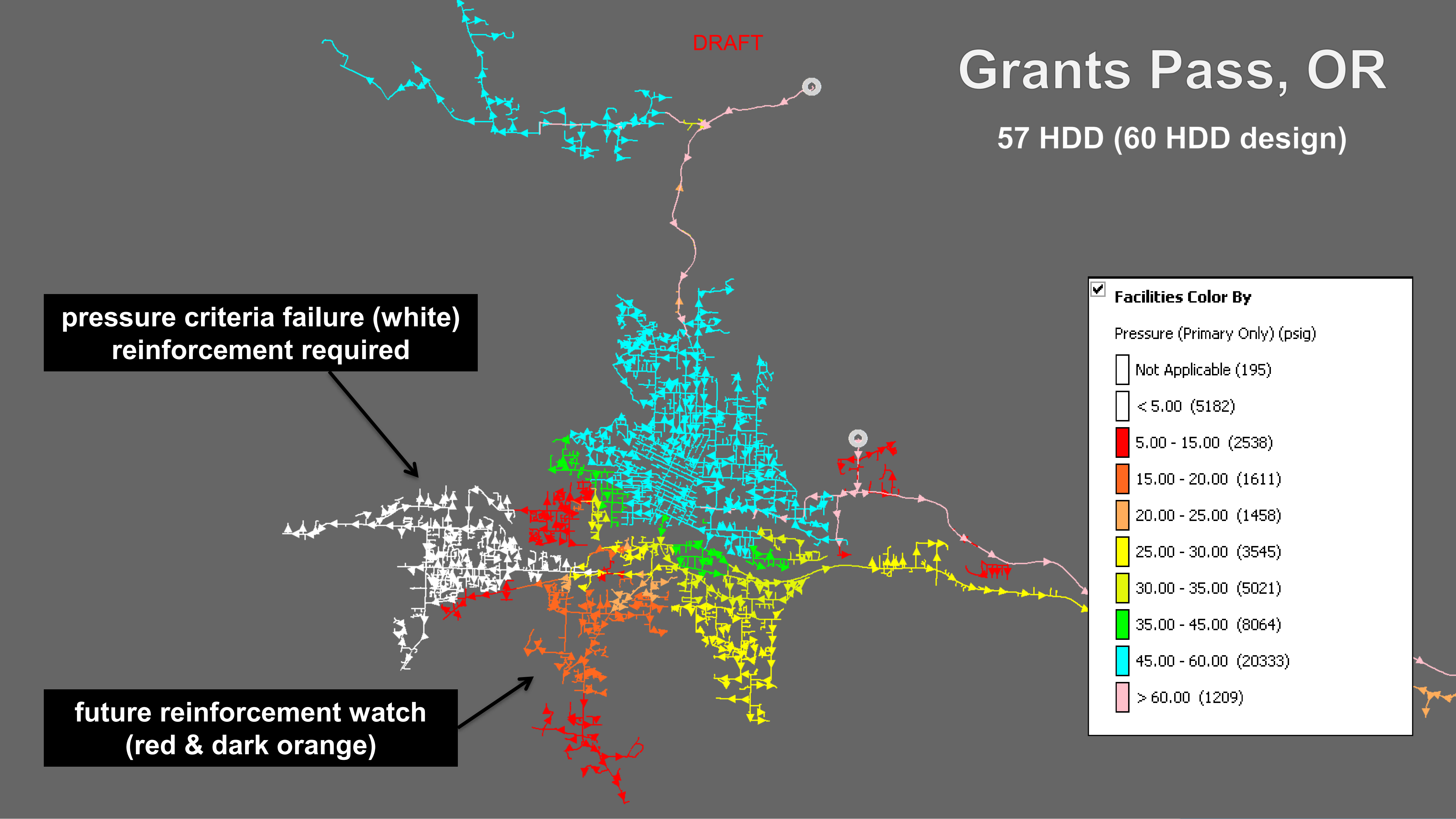

Coeur D'Alene Area
With Proposals 1,2,3
75 HDD
DRAFT
Facilities Color By
Pressure (Primary Only) (psig)
Not Applicable
< 15.00
15.00 - 30.00
30.00 - 45.00
45.00 - 60.00
> 60.00

# Non-Pipe Alternatives (NPAs) Studies

- Grants Pass
- Roseburg

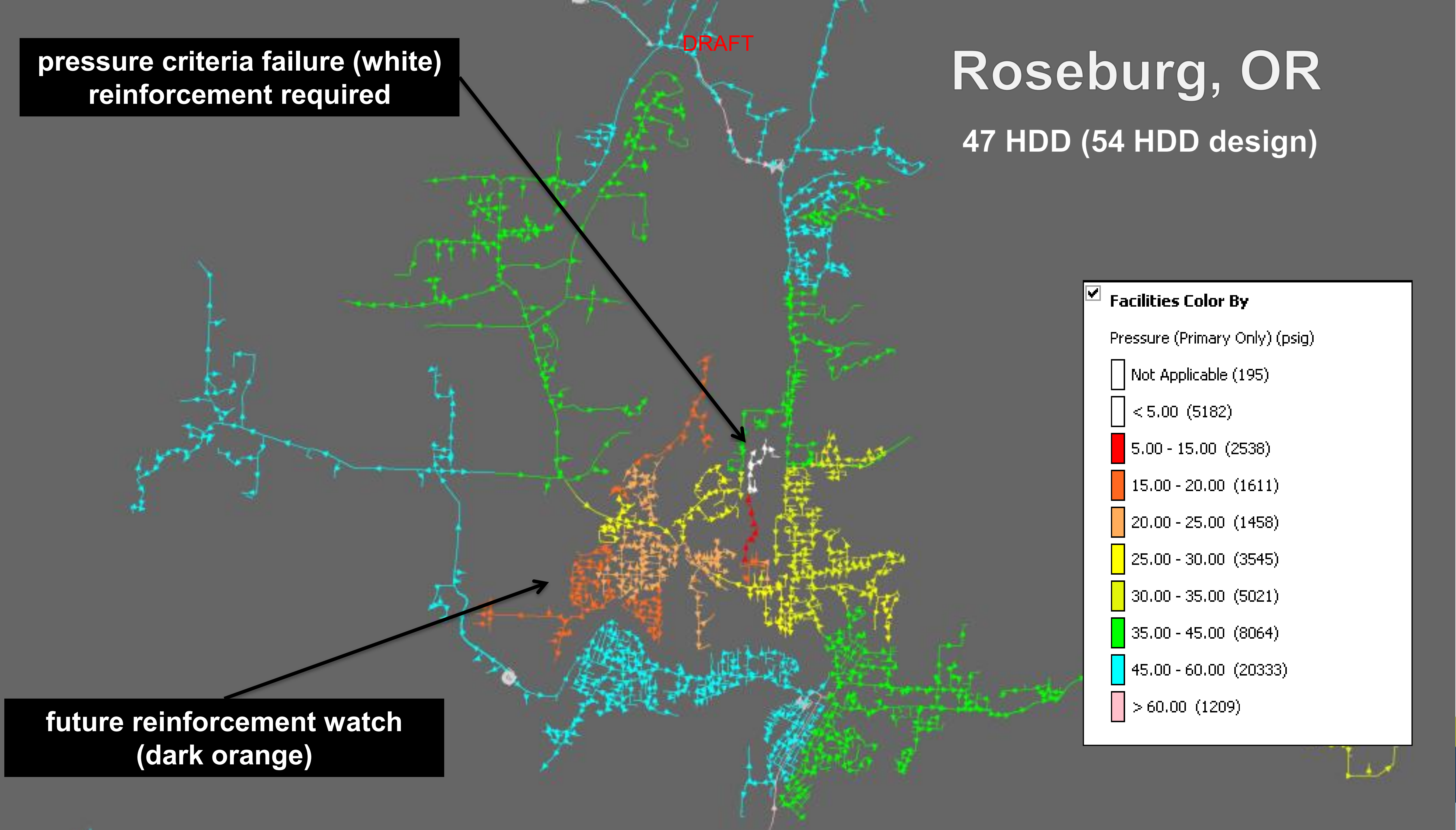
# Grants Pass, OR

**57 HDD (60 HDD design)**



# Roseburg, OR

**47 HDD (54 HDD design)**



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# Areas Currently Monitoring for Low Pressure and Proposed Solutions*

- Grants Pass, OR
- Roseburg, OR
- Airway Heights, WA
- North Spokane, WA
- Liberty Lake, WA
- Schweitzer Resort, ID
- Hayden, ID
- Moscow, ID

*Notes:

- List not comprehensive
- projects are subject to change and will be reviewed on a regular basis

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# City Gate Stations Currently Monitoring and Proposed Solutions*

- Observation and Monitoring:
  - Sutherlin, OR
  - Medford, OR
  - Medical Lake, WA
  - Mica, WA
  - Pullman, WA
  - CDA E, ID
  - CDA W, ID
  - McGuire, ID
  - Moscow, ID
  - Kellogg, ID

- Rebuild and Enhancement:
  - Malin, OR: 2026
  - Spokane West, WA: 2027+
  - Mead, WA: 2028 +

*Notes:
  - List not comprehensive
  - projects are subject to change and will be reviewed on a regular basis

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# Questions and Discussion

## *Mission*

***Using technology to plan and design a safe, reliable, and economical distribution system***