Submission of Supplemental Projects for Inclusion in the Local Plan

ComEd Local Plan - 2023

ComEd Transmission Zone M-3 Process
Line 15518

Need Number: ComEd-2022-004

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Previously Presented:

Solutions Meeting 10/14/2022

Need Meeting 8/19/2022

Project Driver:

Equipment Material Condition, Performance and Risk

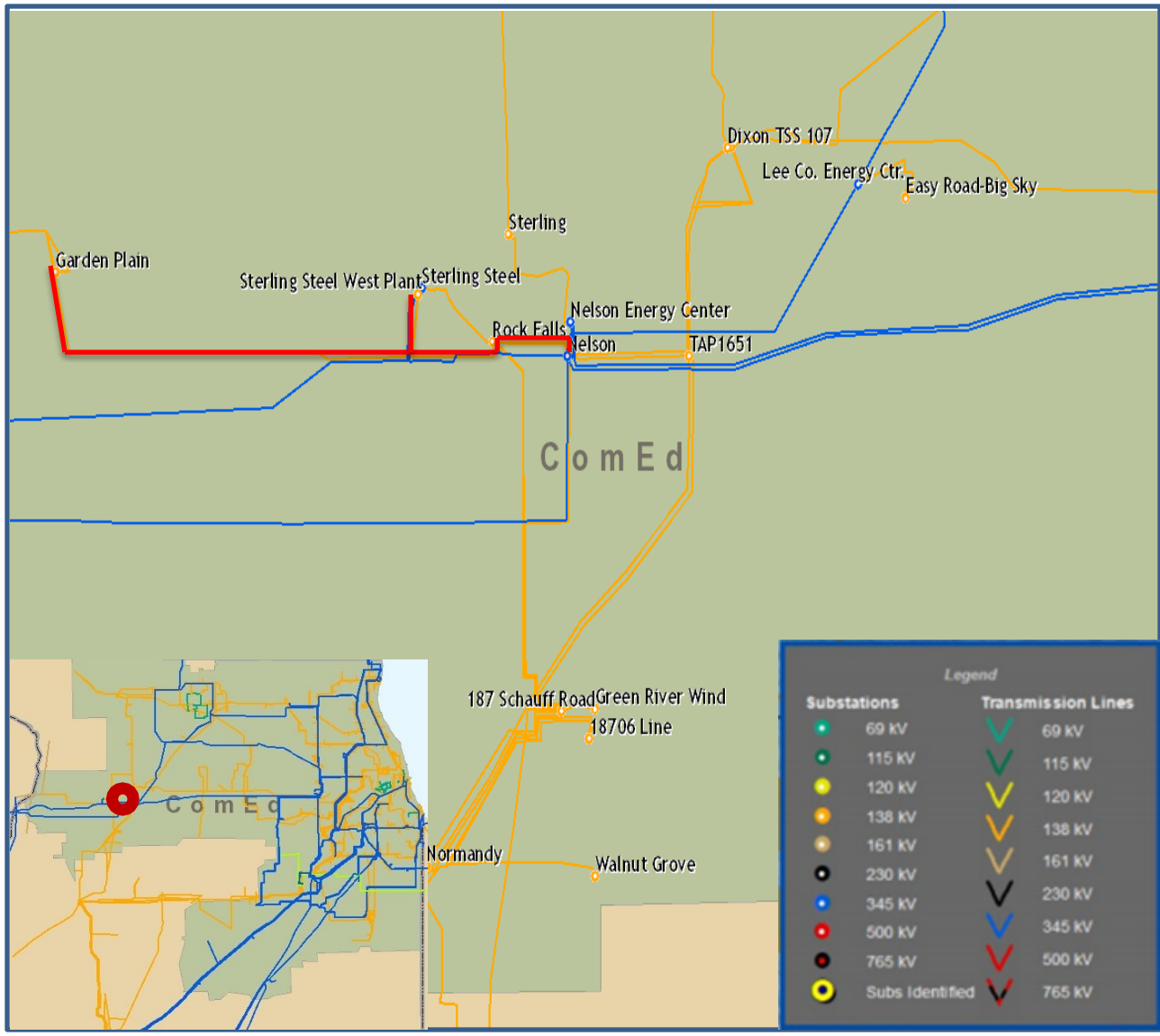
Operational Flexibility and Efficiency

Specific Assumption Reference:

- Transmission infrastructure replacements (EOL/condition/obsolescence) that are consistent with efficient asset management decisions
- Programmatic review and/or replacement of breakers, relays, wood poles, etc.
- Enhancing system functionality, flexibility, visibility, or operability

Problem Statement: 138 kV L15518 is a three-terminal line between Rock Falls, Nelson, and Garden Plain.

- 202 structures built in 1965 with single wood poles are undersized by today's standards
- 104 structures built in 1951 are wood H-frame construction and are reaching end-of-life.
- In 2020 two different wind events caused failure of 11 wood pole structures. Another wood pole failed in the spring of 2022.
- An area of loose peat is causing existing structures to lean which require costly repairs.



ComEd Transmission Zone M-3 Process
Line 15518

Need Number: ComEd-2022-004

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Selected Solution:

Rebuild 23 miles of wood poles with 1113 kCMIL conductor on steel towers. Eliminate three terminal line by extending 1113 kCMIL conductor from Rock Falls to the structure going to Garden Plain.

Line Rating capability:

Description	Summer Normal	Summer Emergency	Winter Normal	Winter Emergency
Existing	114	182	172	202
Proposed	351	449	421	500

Estimated Cost: $ 94M

Alternatives Considered:

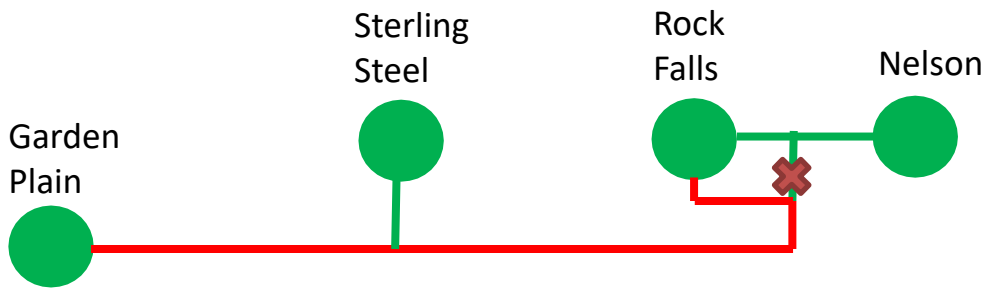
None

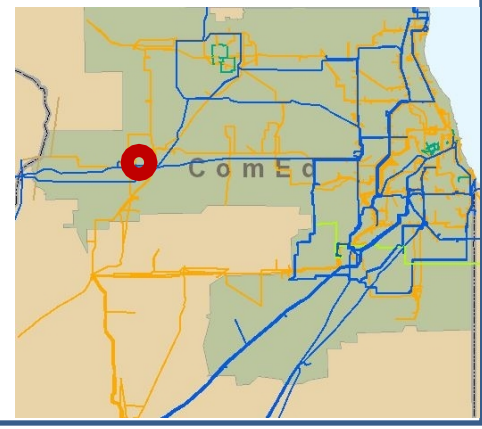
Projected In-Service: 12/31/2026

Supplemental Project ID: s2870

Project Status: Conceptual

Model: RTEP 2027





ComEd Transmission Zone M-3 Process
Waterman

Need Number: ComEd-2022-005

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Previously Presented:

Solutions Meeting 10/14/2022

Need Meeting 8/19/2022

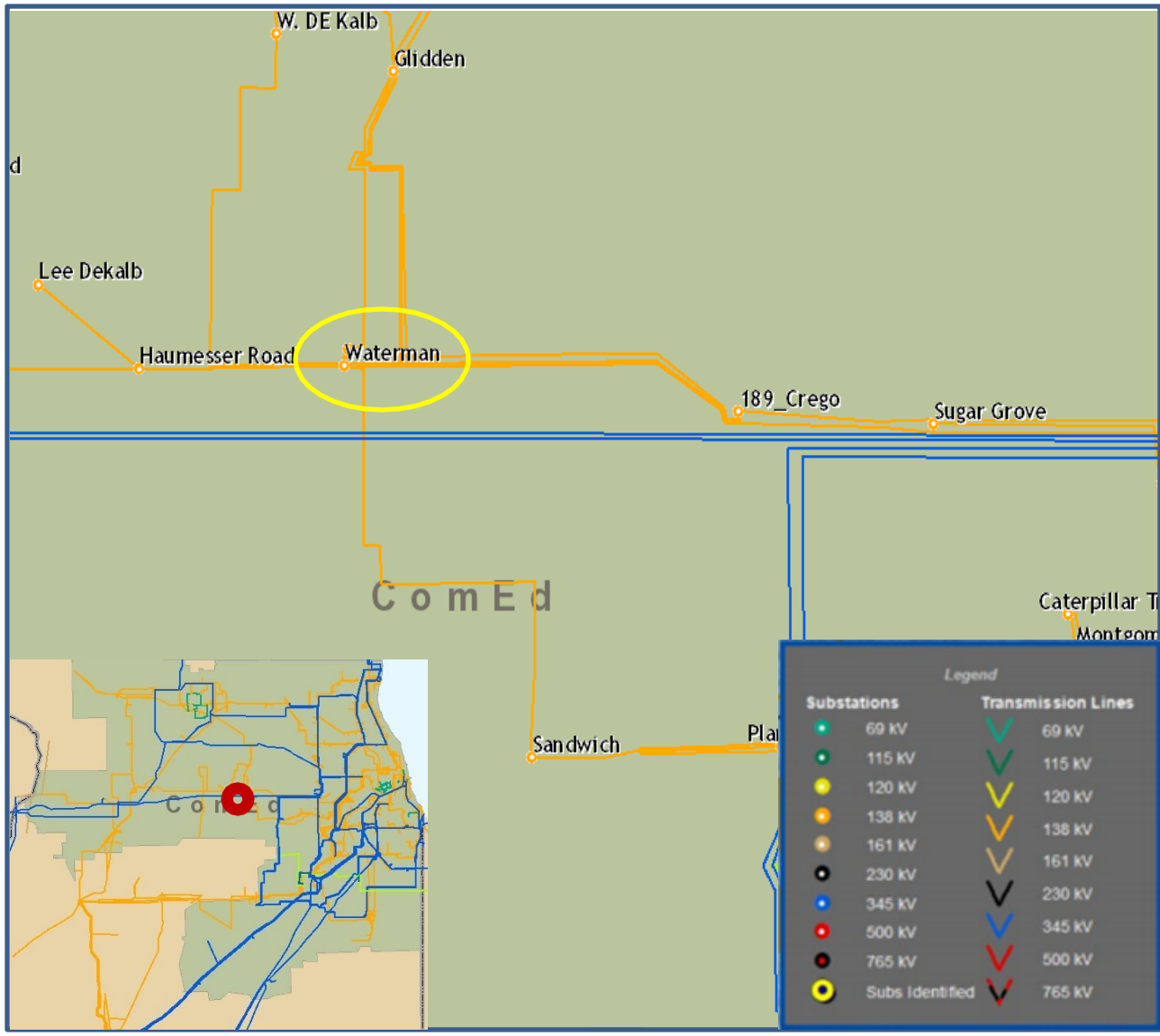
Project Driver:

Customer Service

Specific Assumption Reference:

- Transmission System configuration changes due to new or expansion of existing distribution substations

Problem Statement: Distribution load is increasing by 18 MVA at Waterman by 12/31/2023.



ComEd Transmission Zone M-3 Process
Waterman

Need Number: ComEd-2022-005

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Selected Solution:

Expand 138 kV bus at Waterman and install 138-34 kV 60 MVA transformer. Reconfigure 138 kV bus at Waterman and install 138 kV line CBs on Waterman to Crego 138 kV line and Waterman to Haumesser Road 138 kV line.

Estimated Transmission Cost: $ 11.4 M

Alternatives Considered:

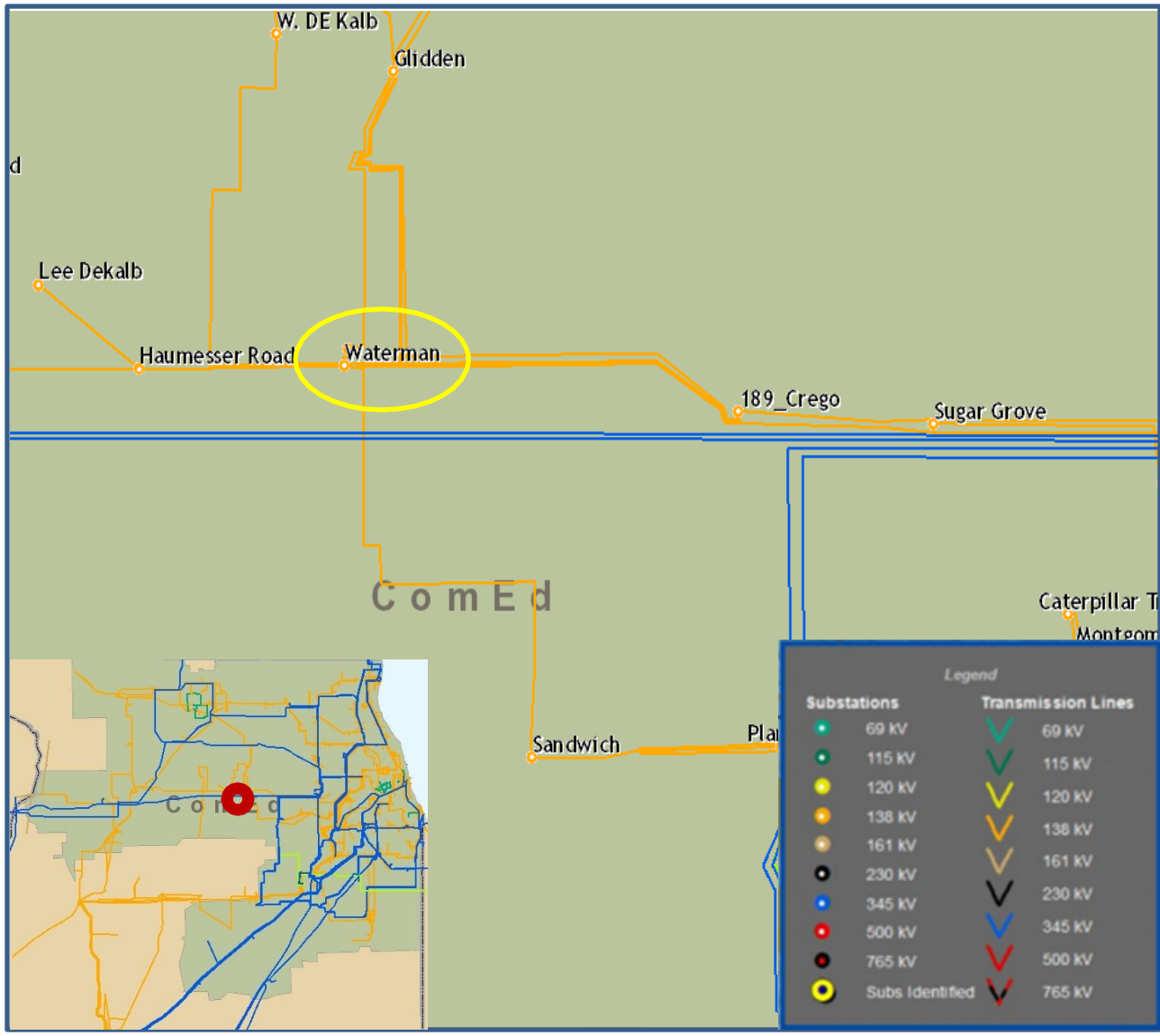
None

Projected In-Service: 12/31/2023

Supplemental Project ID: s2871

Project Status: Engineering

Model: RTEP 2027



ComEd Transmission Zone M-3 Process
Customer in Elk Grove

Need Number: ComEd-2022-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Previously Presented:

Solutions Meeting 11/18/2022

Need Meeting 2/18/2022

Project Driver:

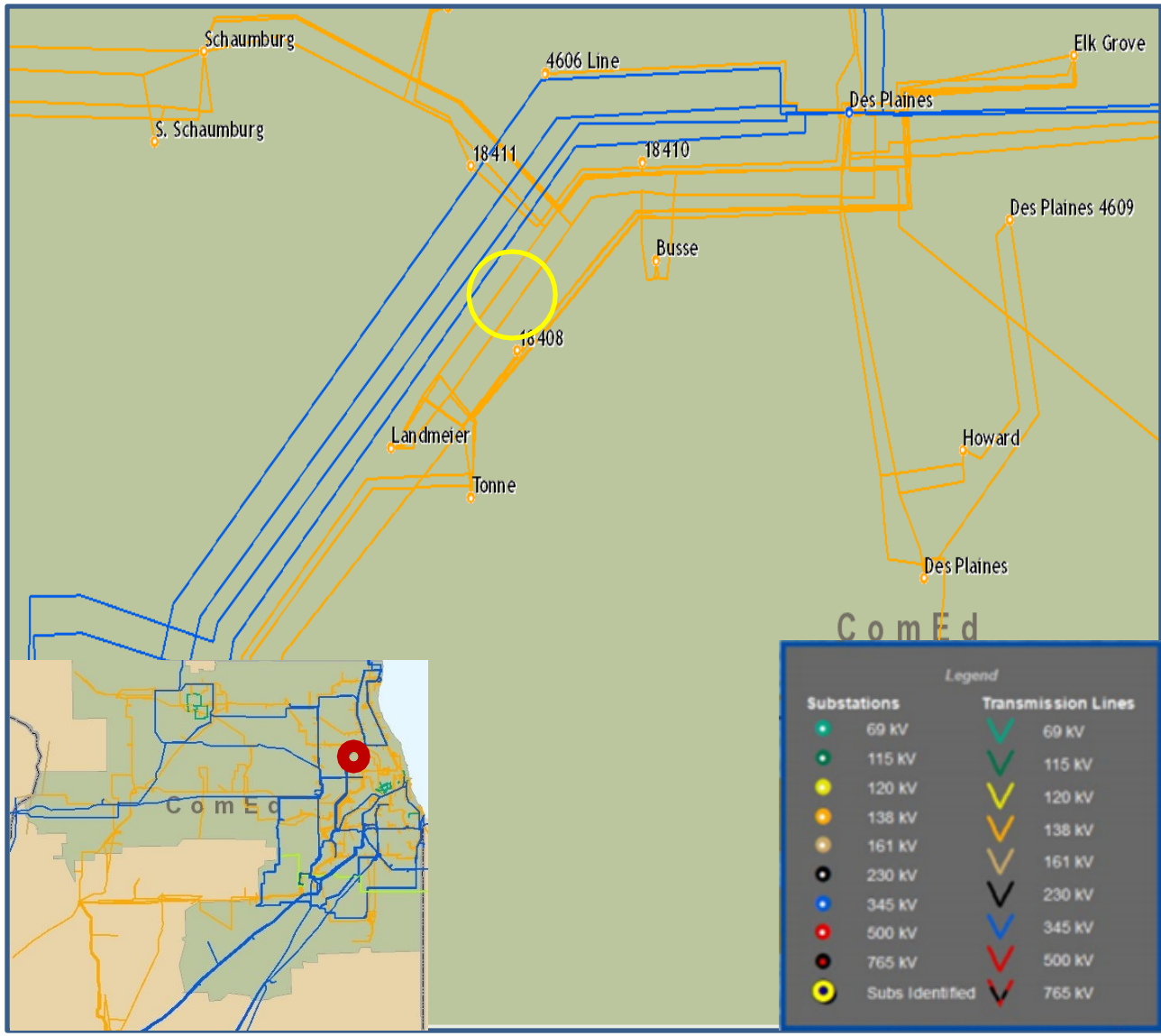
Customer Service

Specific Assumption Reference:

- New transmission customer interconnections or modification to an existing customer

Problem Statement:

New customer is looking for transmission service in Elk Grove. Initial loading is expected to be 24 MW in June 2023 with an ultimate load of 96 MW by the end of 2027.



ComEd Transmission Zone M-3 Process
Customer in Elk Grove

Need Number: ComEd-2022-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan May 3, 2023

Proposed Solution:

Tap 138 kV lines from Elk Grove to Tonne and extend 0.12 miles to a new customer substation.

Estimated Transmission Cost: $ 0

Alternatives Considered:

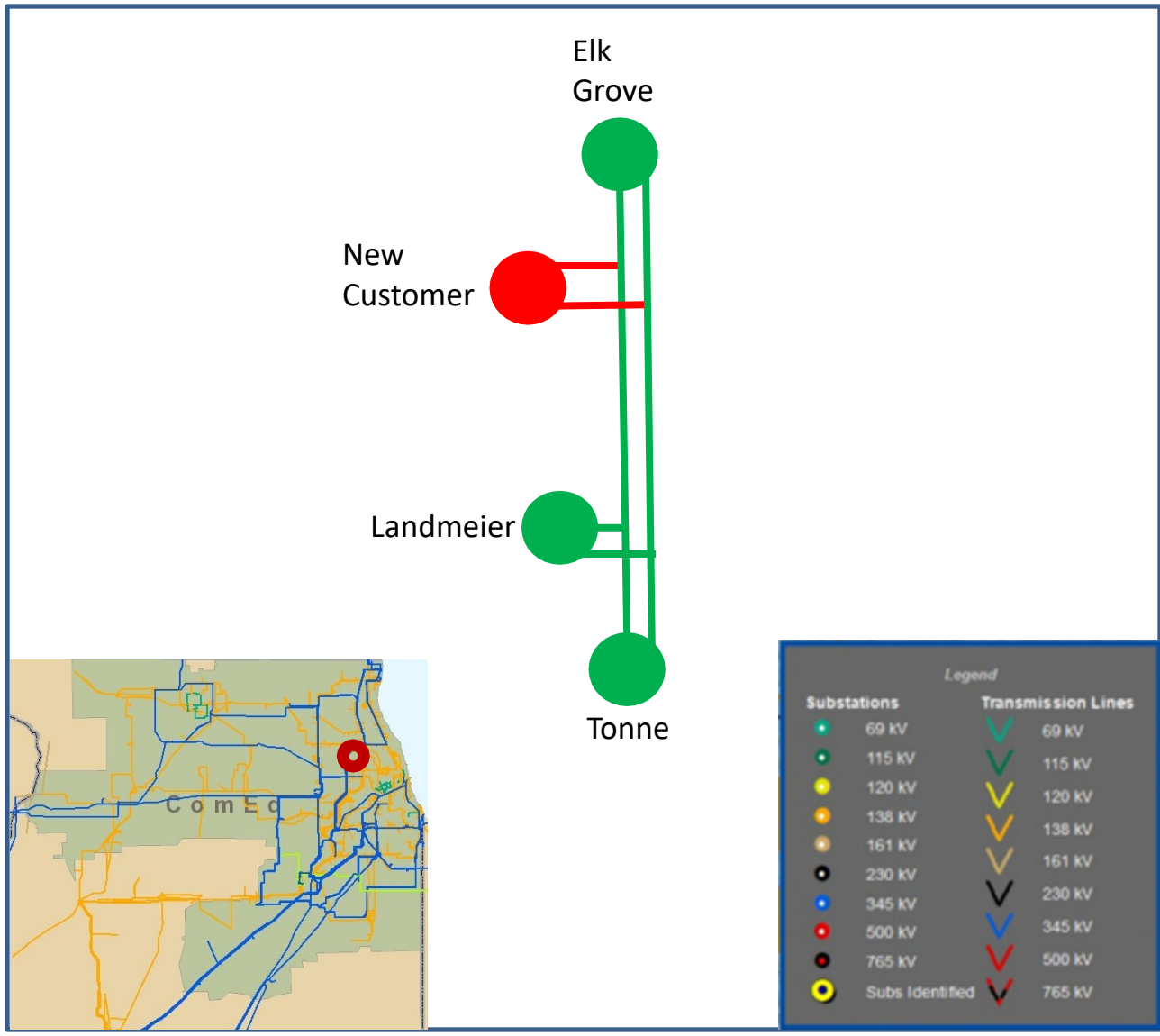
A networked connection with lines in and out of the new station was considered but rejected due to insufficient right-of-way availability.

Projected In-Service: 12/31/2024

Supplemental Project ID: s2872

Project Status: Conceptual

Model: RTEP 2027



ComEd Transmission Zone M-3 Process
Franklin Park

Need Number: ComEd-2022-006

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan July 25, 2023

Previously Presented:

Solutions Meeting 2/17/2023

Need Meeting 11/18/2022

Project Driver:

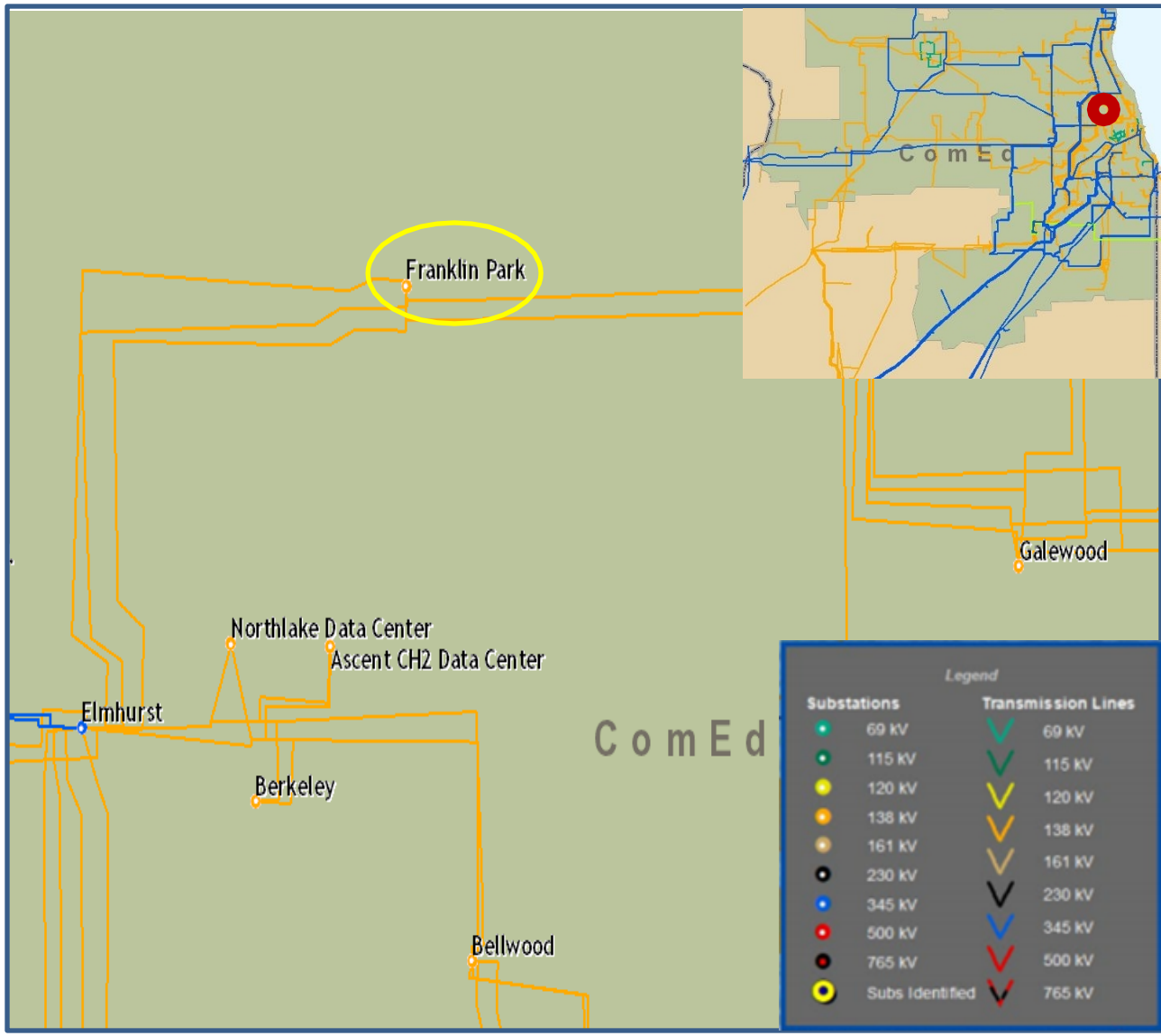
Operational Flexibility and Efficiency

Specific Assumption Reference:

- Enhancing system functionality, flexibility, visibility, or operability

Problem Statement:

There are three 138 kV lines from Elmhurst to Franklin Park. Two of the lines share a ring bus circuit breaker at Franklin Park resulting in the loss of two of the three lines for a stuck breaker contingency.



ComEd Transmission Zone M-3 Process
Franklin Park

Need Number: ComEd-2022-006

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan July 25, 2023

Proposed Solution:

Install a new 138 kV CB between Bus 4 and existing BT 2-4 to create a new bus 6

Estimated Transmission Cost: $ 3.2 M

Alternatives Considered:

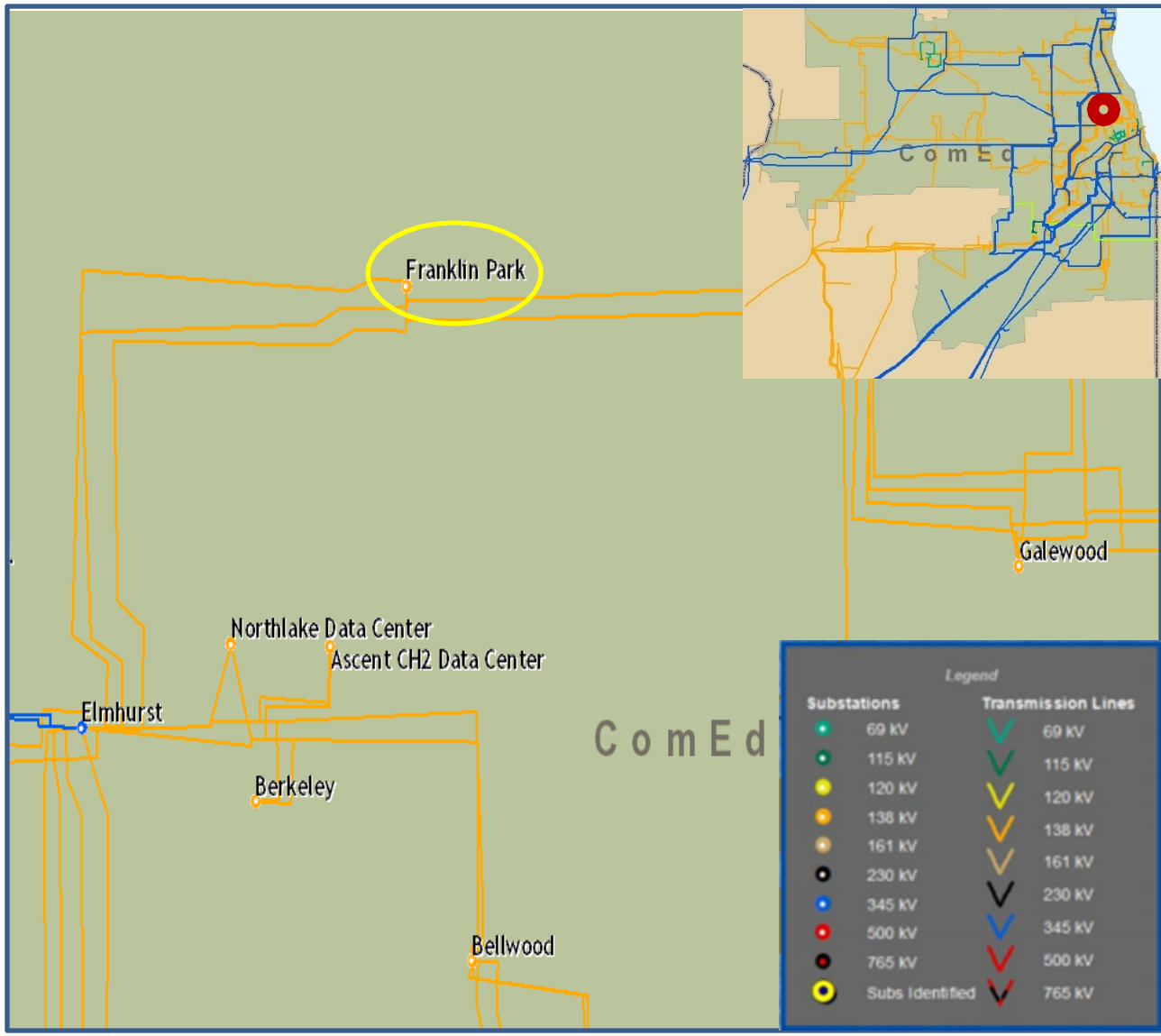
No feasible alternatives

Projected In-Service: 12/31/2023

Supplemental Project ID: s2927

Project Status: Engineering

Model: RTEP 2027



ComEd Transmission Zone M-3 Process
Jefferson

Need Number: ComEd-2022-007

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan July 25, 2023

Previously Presented:

Solutions Meeting 2/17/2023

Need Meeting 11/18/2022

Project Driver:

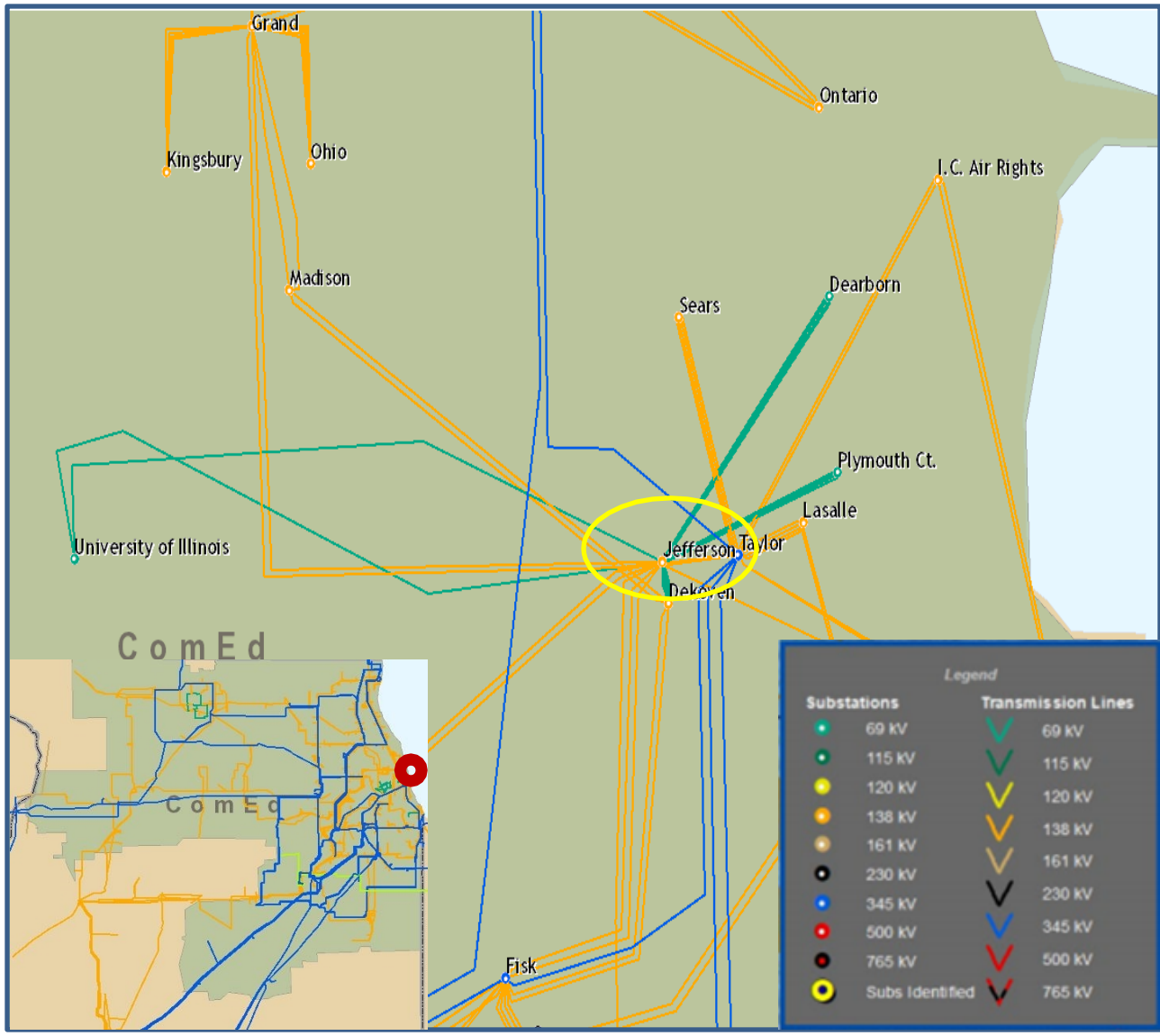
Customer Service

Specific Assumption Reference:

- Transmission System configuration changes due to new or expansion of existing distribution substations

Problem Statement:

ComEd Distribution has a need for an additional 138-12 kV transformer at Jefferson substation.



ComEd Transmission Zone M-3 Process
Jefferson

Need Number: ComEd-2022-007

Proposed Solution:

Install a new 138-12 kV transformer on bus 9 and move 138 kV Jefferson – Taylor line from bus 9 to Bus 8. Install 138 kV line breaker on 138 kV Jefferson – Taylor line.

Estimated Transmission Cost: $ 4.5M

Alternatives Considered:

Install new 138-12 kV transformer on bus 8.

Estimated Transmission Cost: $0

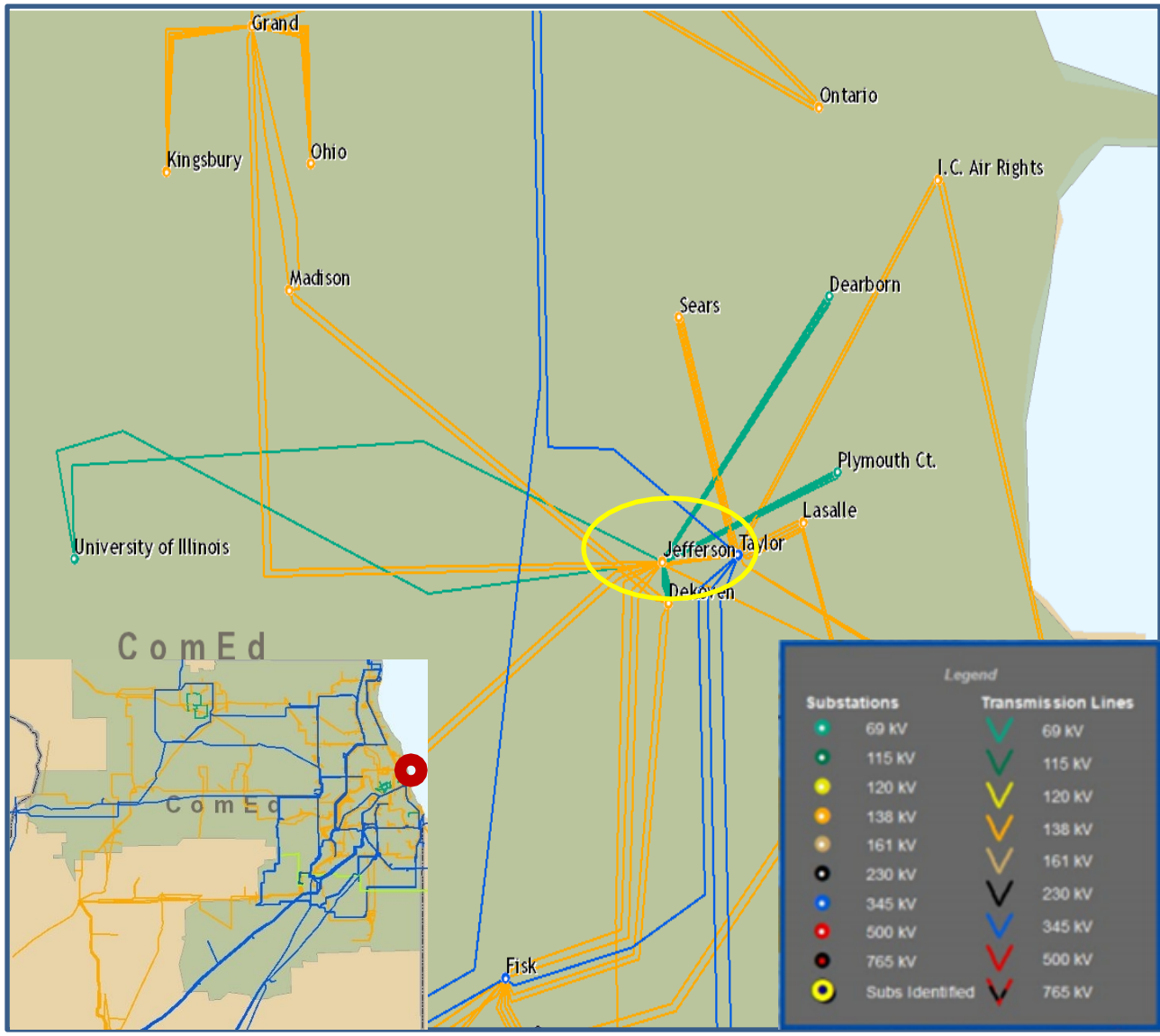
This alternative was not chosen because the new transformer would share a bus position with an existing transformer feeding the same distribution load resulting in reduced reliability.

Projected In-Service: 6/1/2023

Supplemental Project ID: s2928

Project Status: Engineering

Model: RTEP 2027



ComEd Transmission Zone M-3 Process
Customer in Itasca

Need Number: ComEd-2023-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan October 31, 2023

Previously Presented:

Solutions Meeting 6/16/2023

Need Meeting 4/21/2023

Project Driver:

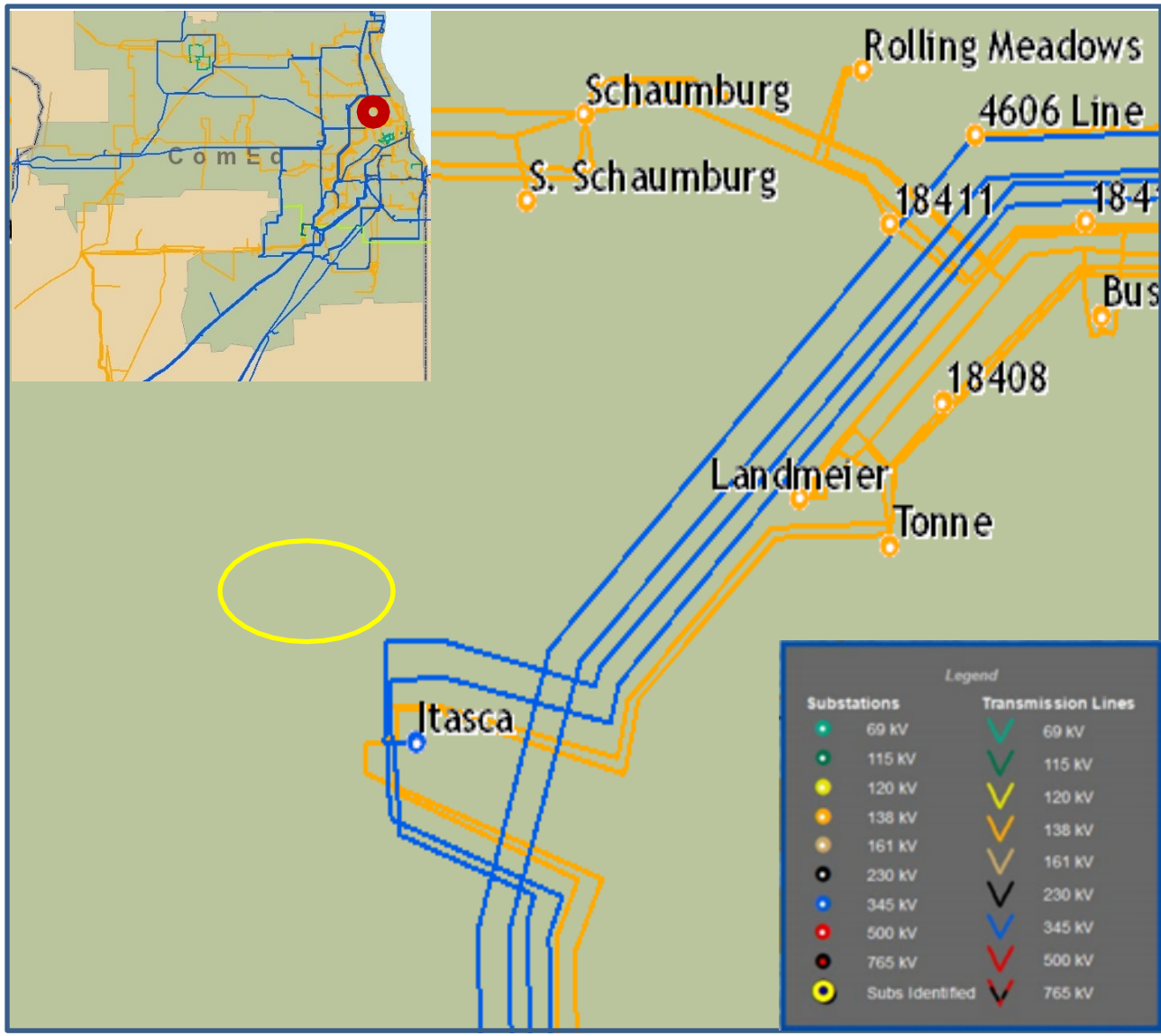
Customer Service

Specific Assumption Reference:

- New transmission customer interconnections or modification to an existing customer

Problem Statement:

New customer is looking for transmission service in Itasca. Initial loading is expected to be 117 MW in 2026, 218 MW in 2028, with an ultimate load of 299 MW.



ComEd Transmission Zone M-3 Process
Customer in Itasca

Need Number: ComEd-2023-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan October 31, 2023

Selected Solution:

- New customer will be radially served with 2 new 1 mile 138 kV lines from Itasca. Customer substation will be double ring bus configuration with 4 – 138 kV to 34 kV transformers.
- Additionally, at Itasca, 138 kV line Itasca – Lombard will be moved from Bus 1 to its own position on new Bus 15. BT 3-4 CB will be installed at Itasca.

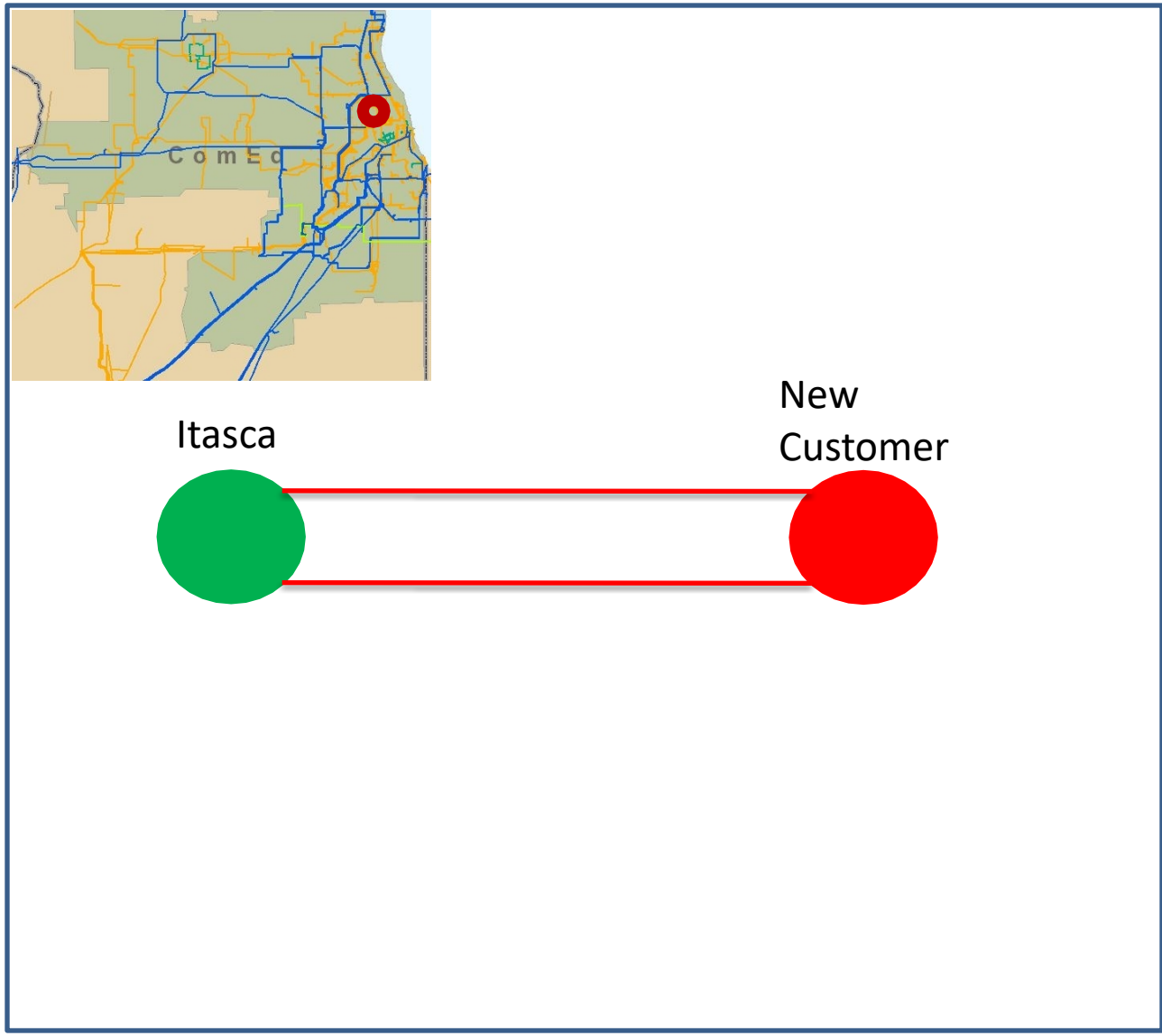
Estimated Transmission Cost: $8M

Projected In-Service: 6/1/26

Supplemental Project ID: s3004

Project Status: Conceptual

Model: 2027 RTEP



ComEd Transmission Zone M-3 Process Customer in Elk Grove

Need Number: ComEd-2023-002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan October 31, 2023

Previously Presented:

Solutions Meeting 8/18/2023

Need Meeting 4/21/2023

Project Driver:

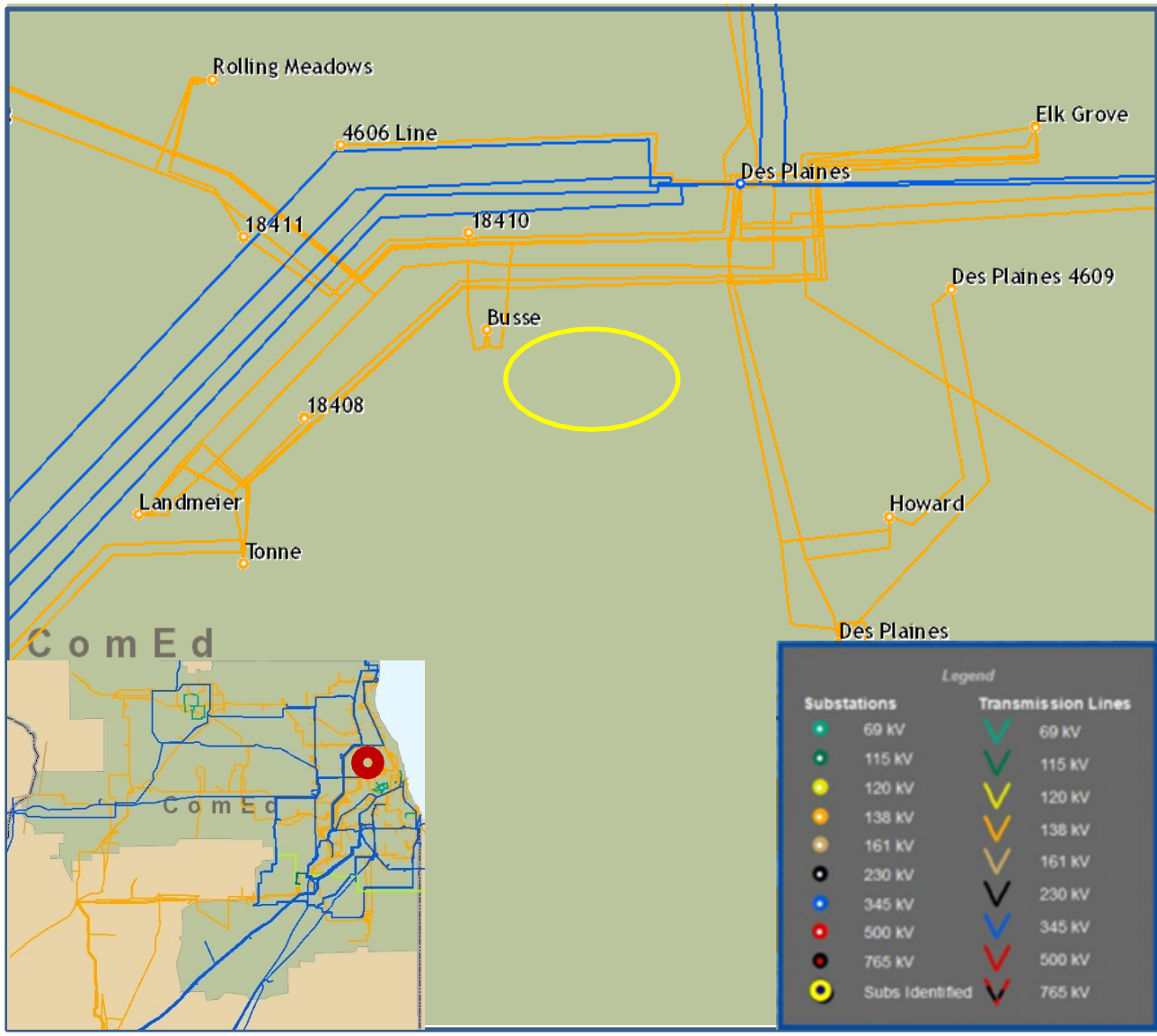
Customer Service

Specific Assumption Reference:

- New transmission customer interconnections or modification to an existing customer

Problem Statement:

New customer is looking for transmission service in Elk Grove. Initial loading is expected to be 9.6 MW in June 2026, 30.7 MW in 2028, with an ultimate load of 288 MW.



ComEd Transmission Zone M-3 Process
Customer in Elk Grove

Need Number: ComEd-2023-002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan October 31, 2023

Selected Solution:

New customer will be radially served with 2 new, two mile 138 kV lines from Elk Grove. Customer substation will be double ring bus configuration with 4 – 138 kV to 34 kV transformers. Expand Elk Grove to accommodate new line positions.

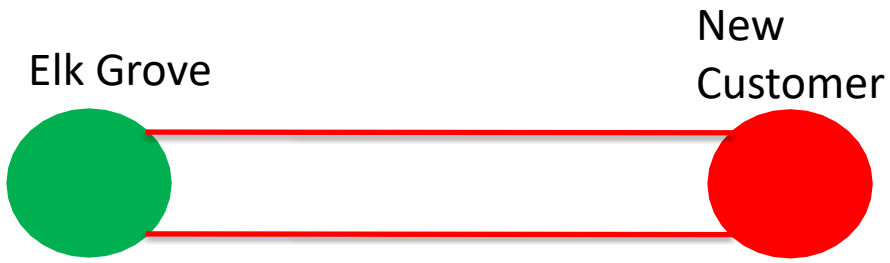
Estimated Transmission Cost: $18M

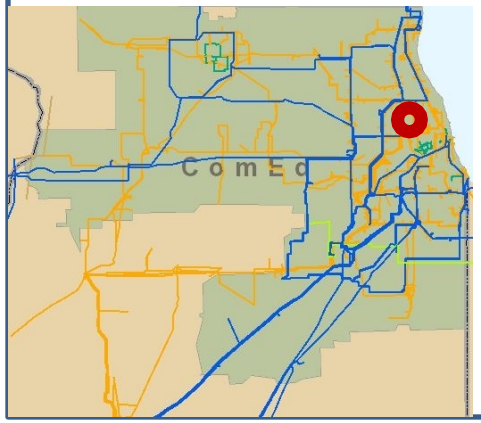
Projected In-Service: 12/31/25

Supplemental Project ID: s3005

Project Status: Conceptual

Model: 2027 RTEP





ComEd Transmission Zone M-3 Process
TSS Wayne 345 kV Line 11126

Need Number: ComEd-2023-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan November 14, 2023

Previously Presented:

Solutions Meeting 4/11/2023

Need Meeting 2/7/2023

Project Driver:

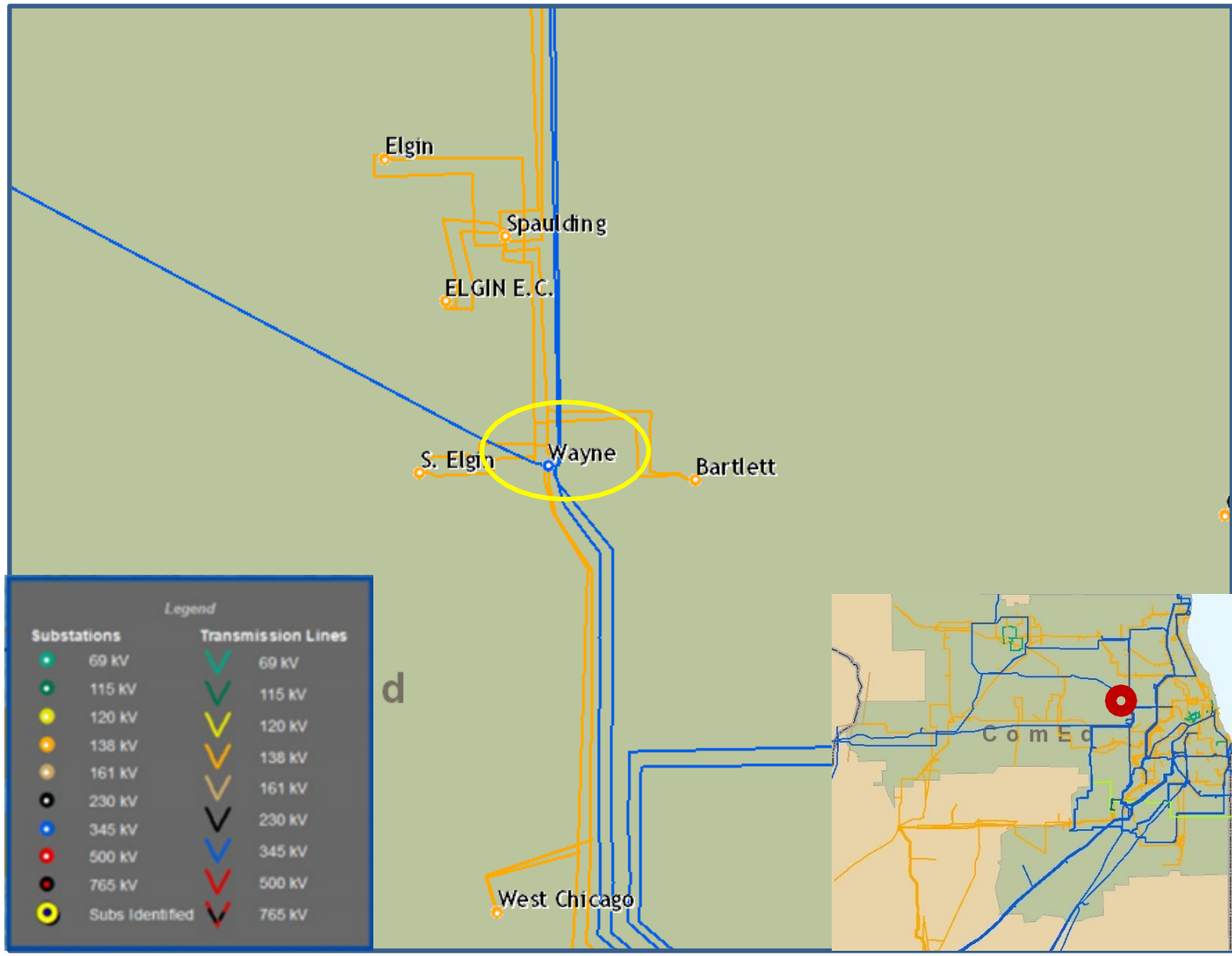
- Operational Flexibility and Efficiency

Specific Assumption References:

- Enhancing system functionality, flexibility, visibility, or operability

Problem Statement:

- In the current configuration at Wayne, 345 kV Line 11126 (Electric Junction – Wayne) does not have its own position on the ring bus. This makes maintenance outages difficult to obtain.



ComEd Transmission Zone M-3 Process
TSS Wayne 345 kV Line 11126

Need Number: ComEd-2023-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan November 14, 2023

Selected Solution:

Move 345 kV Line 11126 (Electric Junction – Wayne) to Bus 6 and install 345 kV Bus Tie 5-6 CB.

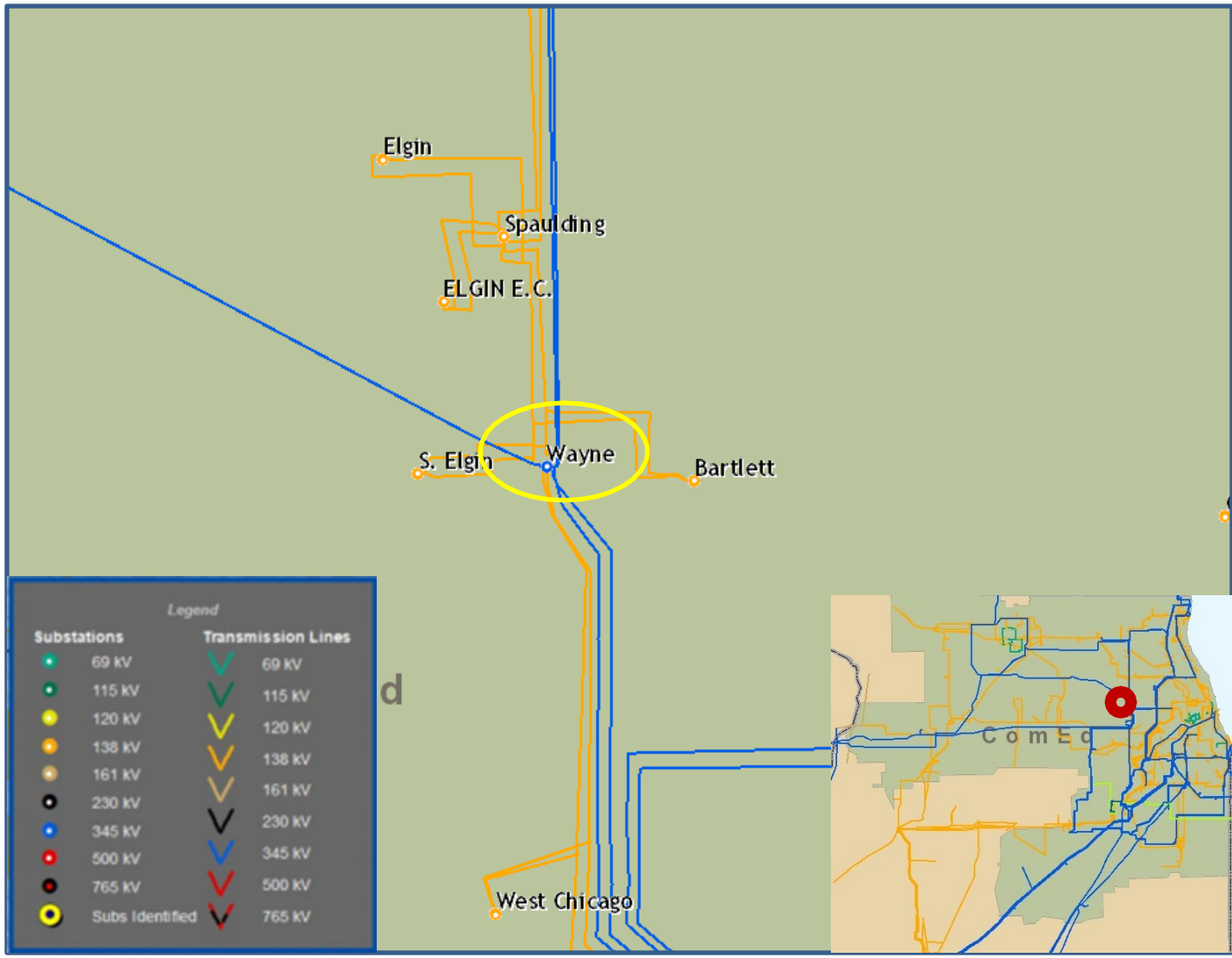
Estimated transmission cost: $10M

Projected In-Service: 12/31/25

Supplemental Project ID: s2929

Project Status: Conceptual

Model: 2027 RTEP



Revision History

5/3/2023 – V1 Added slides #1-7, s2870-s2872

8/10/2023 – V2 Added slides #8-11, s2927 and s2928

11/1/2023 – V3 Added slides #12-15, s3004 and s3005

11/14/2023 – V4 Added slides #16-17, s2929