

# Elwood - Joliet

## General Information

Proposing entity name	COMED
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	For internal use only
PJM Proposal ID	138
Project title	Elwood - Joliet
Project description	Install two new 345 kV circuits from Elwood to Joliet for a distance of approximately 8 miles.
Email	Personal email address removed
Project in-service date	06/2028
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Potential CEII information

## Project Components

1. Add 345 kV Circuit Breaker at Elwood
2. Joliet 345 kV Six Circuit Breaker Ring Bus
3. Elwood to Joliet 345 kV

## Substation Upgrade Component

Component title	Add 345 kV Circuit Breaker at Elwood
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Project description

Substation name

Elwood

Substation zone

ComEd

Substation upgrade scope

Add one 345 kV circuit breaker and associated equipment to create a new bay at Elwood to connect a new Elwood to Joliet 345 kV line. A second line will connect to an existing available bay. Install two line Motor Operated Disconnects (MODs), two A-frame structures, and associated relays and other equipment at Elwood to connect the two new 345 kV lines to the station.

## Transformer Information

None

New equipment description

One new 345 kV 3000A 63 kA circuit breaker, and two 345 kV 3000A MODs.

Substation assumptions

A future CB position exists at the station to install bus tie 12-14 and create a new bay for one of the new lines. The other line will connect to bus 7 which is currently available.

Real-estate description

The substation fence does not need to be expanded.

Construction responsibility

ComEd

Benefits/Comments

## Component Cost Details - In Current Year \$

Engineering & design

Detailed cost estimates broken down by category are considered proprietary information and are redacted.

Permitting / routing / siting

Detailed cost estimates broken down by category are considered proprietary information and are redacted.

ROW / land acquisition

Detailed cost estimates broken down by category are considered proprietary information and are redacted.

Materials & equipment

Detailed cost estimates broken down by category are considered proprietary information and are redacted.

Construction & commissioning

Detailed cost estimates broken down by category are considered proprietary information and are redacted.

Construction management	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Overheads & miscellaneous costs	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Contingency	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Total component cost	\$2,994,172.00
Component cost (in-service year)	\$3,471,066.00

### **Substation Upgrade Component**

Component title	Joliet 345 kV Six Circuit Breaker Ring Bus
Project description	Rebuild Joliet 345 KV Bus As A Six Circuit Breaker Ring Bus
Substation name	Joliet
Substation zone	ComEd
Substation upgrade scope	Joliet 345 yard currently consists of a three breaker straight bus with two generator leads connected to lines to Lockport via circuit breakers, and a circuit breaker tie between the two. The existing bus would be removed and rebuild as a six CB ring bus connecting the two lines to Lockport with the two new lines from Elwood and the two generator leads.

### **Transformer Information**

None	
New equipment description	New circuit breakers will be 3000A 63kA.
Substation assumptions	The existing substation does not meet current standards and cannot accommodate two additional 345 kV lines without rebuilding the bus.
Real-estate description	ComEd owns the property around the existing 345 kV yard that will be used for the new construction.
Construction responsibility	ComEd
Benefits/Comments	Interconnection customer information.

**Component Cost Details - In Current Year \$**

Engineering & design	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Permitting / routing / siting	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
ROW / land acquisition	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Materials & equipment	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Construction & commissioning	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Construction management	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Overheads & miscellaneous costs	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Contingency	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Total component cost	\$34,700,678.00
Component cost (in-service year)	\$40,227,597.00

**Greenfield Transmission Line Component**

Component title	Elwood to Joliet 345 kV
Project description	Two 345 kV greenfield lines from Elwood to Joliet
Point A	Elwood
Point B	Joliet
Point C	

**Normal ratings**

**Emergency ratings**

Summer (MVA)	1679.000000	2058.000000
Winter (MVA)	2091.000000	2381.000000
Conductor size and type	2-1277 ACAR per phase. Static/Shield wire to be 668 kcmil OPGW.	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	
General route description	<p>Route is approximately 8.1 miles in length between TSS-900 Elwood and Station 29 Joliet. The route begins on double-circuit 345kV poles and traverses rural farmland for the first 4.0 miles, going west from TSS-900 for approximately 2.2 miles and turning north after passing Baseline Road/Houbolt Road. The route progresses north for approximately 1.8 miles. The route crosses over Houbolt Road before passing through a wooded area and over the Des Plaines River (approximately 1.3 miles). After crossing the river, it proceeds through another wooded area before entering a commercial/industrial area (approximately 1.1 miles). The route then converges upon an existing double-circuit 138kV transmission right-of-way. The approximate 1.5 miles of existing 138kV Right-of-Way will need to be rebuilt as quad-circuit structures to accommodate the new transmission lines. The 138kV and 345kV paths then diverge, with the remaining 0.3 miles of route being double-circuit 345kV.</p>	
Terrain description	<p>Relatively flat terrain expected for the rural farmland areas and the commercial/industrial areas, with some mild hills. Areas near creeks/rivers/ponds will have slightly steeper elevation changes. Des Plaines River crossing will have steeper terrain changes, but the design plans to span this entire area.</p>	
Right-of-way width by segment	<p>All Double-Circuit 345kV RoW, except the River Crossing, will be NEW and approximately 120-130 feet in width. This is approximately 6.4 miles. All Quad Circuit RoW (2 new 345kV and 2 rebuilt/underbuilt 138kV), will be on existing RoW that is approximately 150 feet in width. This is approximately 1.5 miles. The Double-Circuit 345kV River Crossing will need a wider RoW. Pending detailed engineering, it is estimated that this width will be somewhere in the range of 150-200 feet in width. The river crossing is approximately 0.3 miles.</p>	
Electrical transmission infrastructure crossings	<p>This route will cross four existing company-owned 138kV transmission lines, two of which are planned to be underbuilt (0903 &amp; 0904) on the new pole line for approximately 1.5 miles. The other two existing 138kV company-owned transmission lines (0905 &amp; 0906) are crossed in a single span near Station 29 Joliet. At TSS-900 Elwood, two 345kV lines owned by Elwood Generation (90001 &amp; 90002) are being crossed.</p>	

Civil infrastructure/major waterway facility crossing plan

US/State/County Permits will be requested and acquired for all necessary line crossings. When possible, line crossings of roads will be as close to perpendicular as possible. Extra precautions will be taken by construction organization to ensure safety of the public when installing road crossing spans. For Des Plaines River crossing, it is anticipated that and Army Corps of Engineers permit will be required. This permit will be requested, and all requirements will be met. FAA permits will be requested/acquired for all structures, if determined necessary by the FAA Notice Criteria Tool. Northern-most portion of the line is several miles away from Joliet Regional Airport. It is expected that some height limitations may exist for this last section of line. Structure design will be modified accordingly.

Environmental impacts

Environmental research will be acquired for the entire project area, and line will comply with all necessary environmental regulations. Approximately the last 2 miles of line are in an area that will require the installation of bird diverters. The Quad-Circuit area is near a wetland, Environmental research will need to be performed to determine if special precautions need to be taken in this area.

Tower characteristics

Steel Monopole structures will be utilized for the proposed project. Structures will be engineered and have baseplates. They will sit on drilled shaft foundations, consisting of concrete, anchor bolts, and a steel reinforcing (rebar) cage. The majority of the line will be double-circuit 345kV, with four equal-length arms on each side of the structure in a vertical configuration. The top arm will support the static/shield wire, and the three arms below it each supporting a conductor/phase. Standard I-String suspension assemblies will be used for tangent structures. The River Crossing span will be similar in arrangement, but the overall dimensions will likely be larger to ensure all necessary clearances are maintained in the long span. The quad-circuit portion of line will have three equal length arms on each side, in a vertical arrangement. The 345kV circuit will have a delta-conductor configuration. The top arm will support one static/shield wire and one 345kV phase conductor with an I-String suspension assembly for the typical tangent structure. The middle arm will support the remaining two phases of the 345kV circuit, with the outer phase being supported by an I-String and the inner phase being supported by a V-String for the typical tangent structure. The 138kV circuit will be supported on the bottom arm in a horizontal arrangement, with I-String suspension assemblies for the typical tangent structure.

Construction responsibility

ComEd

Benefits/Comments

Potential CEII information.

**Component Cost Details - In Current Year \$**

Engineering & design

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Permitting / routing / siting

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ROW / land acquisition	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Materials & equipment	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Construction & commissioning	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Construction management	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Overheads & miscellaneous costs	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Contingency	Detailed cost estimates broken down by category are considered proprietary information and are redacted.
Total component cost	\$59,808,064.00
Component cost (in-service year)	\$69,333,938.00

## Congestion Drivers

None

## Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W1-GD-S563	270736	ELWOOD ; B	270770	GOODINGS ;4B	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S570	270736	ELWOOD ; B	270770	GOODINGS ;4B	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S1260	270736	ELWOOD ; B	270770	GOODINGS ;4B	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S571	1270736	ELWOOD ; B	270770	GOODINGS ;4B	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S548	270737	ELWOOD ; R	270769	GOODINGS ;2R	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S1259	270737	ELWOOD ; R	270769	GOODINGS ;2R	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S554	270737	ELWOOD ; R	270769	GOODINGS ;2R	1	345	222	Summer Gen Deliv	Included
2023W1-GD-S190	270737	ELWOOD ; R	270769	GOODINGS ;2R	1	345	222	Summer Gen Deliv	Included

## **New Flowgates**

None

## **Financial Information**

Capital spend start date 01/2024

Construction start date 01/2026

Project Duration (In Months) 53

## **Additional Comments**

None