

Report on Reliability of ComEd Electrical Service within Downers Grove
Prepared November 13, 2015

Executive Summary

Since 2011, the Village of Downers Grove has worked closely with ComEd to improve electrical reliability for residents and businesses. Over the past four years, the Village has coordinated with ComEd to ensure the most problematic areas see upgrades to equipment and vegetation management to reduce the frequency and severity of outages.

The Village has two goals:

- 1) achieve measurable improvements in reliability, measured by the frequency and duration of outages; and
- 2) encourage improved communications between ComEd customers and ComEd.

Key Findings & Conclusions:

- Outages continue to trend down.
- Unplanned outages are lower in 2015 (181) than through the same period in 2014 (223).
- Weather-related outages are tracking lower in 2015 than in any other year since the Village began reviewing data.
- Outages of long duration are tracking lower in 2015 than in any year since 2011.
- Reliability within the Village of Downers Grove has been better than the region average in 2014 and 2015.
- ComEd has been more proactive in contacting customers directly rather than using Village staff as an intermediary.
- ComEd has completed planned equipment upgrades.
- ComEd has restored power outages more promptly in the case of outages, resulting in fewer outages of extended duration.
- ComEd has improved communication with customers in non-emergency situations.

Actions Requested by Village of Downers Grove

Based on a review of the reliability data provided by ComEd, as well as the on-going requests by customers, the Village requests the following of ComEd:

- Continue to make improvements in the worst-performing circuits in Downers Grove.
- Enhance communication with customers.
 - Provide multiple methods of two-way communication when Smart Meter improvements begin
 - Improve communications to customers when work is planned or underway, such as the proposed start and finish dates and anticipated duration of planned outages.

Section 1: Reliability Data

The Village reviews outage data annually to identify areas within the Village that see disproportionately high numbers of power outages.

Frequency and Causes of Power Outages

Equipment failure (overhead and underground) is the most common cause of power outages, while weather and tree-related issues cause most outages of extended duration. Overall, outages are trending lower in 2015 than in previous years.

Table 1: Total Outages from 2011 - 2015 Grouped by Major Cause Categories

Outage Category	2011	2012	2013	2014	2015 YTD	TOTAL
Weather/Tree Related	211	76	91	46	36	460
Equipment Related	161	154	147	156	112	730
Other	96	93	131	130	140	590
TOTAL	468	323	369	332	288	1,780

2015 Year-to-Date

ComEd provided data regarding outages through September 30, 2015. This year, there have been 288 outages. There have been fewer weather/tree-related outages than in any year since the Village began reviewing outage data and fewer outages of extended duration.

In 2014 and 2015, staff also analyzed the outage data to differentiate outages that were planned for maintenance or repairs from outages that were unplanned (i.e. equipment failure or storm-related outages). This recognizes that some intentional outages may be necessary for ComEd to complete improvements to its system that improve overall reliability.

Table 2: Total Outages (as of 9/30/15)

Outage Category	2014	2015 (thru 9/30/15)
Weather/Tree Related	46	36
Equipment Related	156	112
Intentional (Planned for Maintenance or for Emergency Work)	67	107
Other	63	33
TOTAL	332	288

Duration of Outages

During mild storm years, outages of longer duration tend to be lower. Most outages of longer duration occur around major storms; therefore, this year, there have been fewer storms and fewer outages of longer duration. Staff will continue to track this data to see if the trend continues during future storm seasons.

Table 3: Number and Causes of Outages of Duration of Four Hours or Longer (2011-2015 YTD)

Outage Category	2011	2012	2013	2014	2015 YTD
Weather/Tree Related	173	42	57	25	12
Equipment Related	57	31	49	34	32
Other	18	18	19	32	19*
TOTAL	248	91	125	91	63

**16 of 19 outages classified as 'Other' are Intentional for Maintenance, Emergency Repairs or at Customer Request*

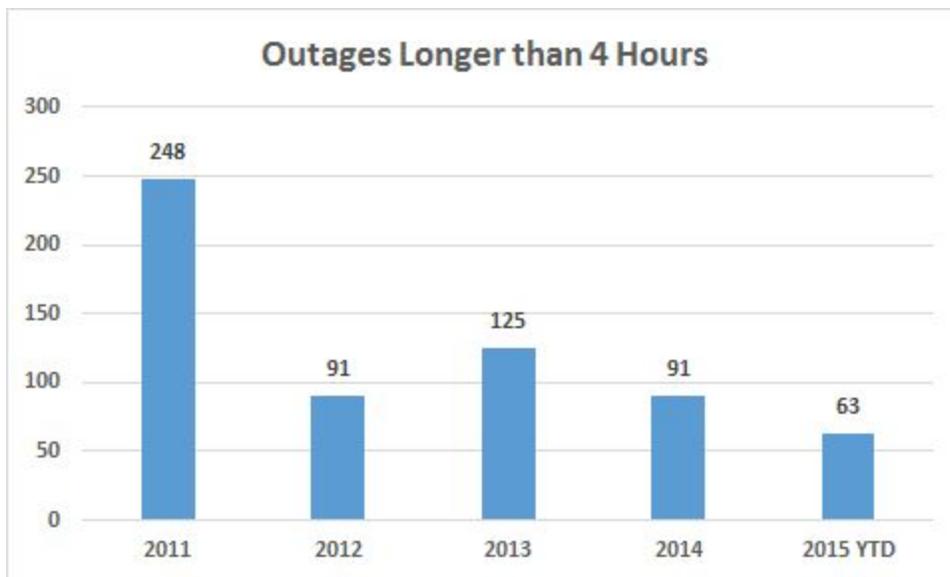
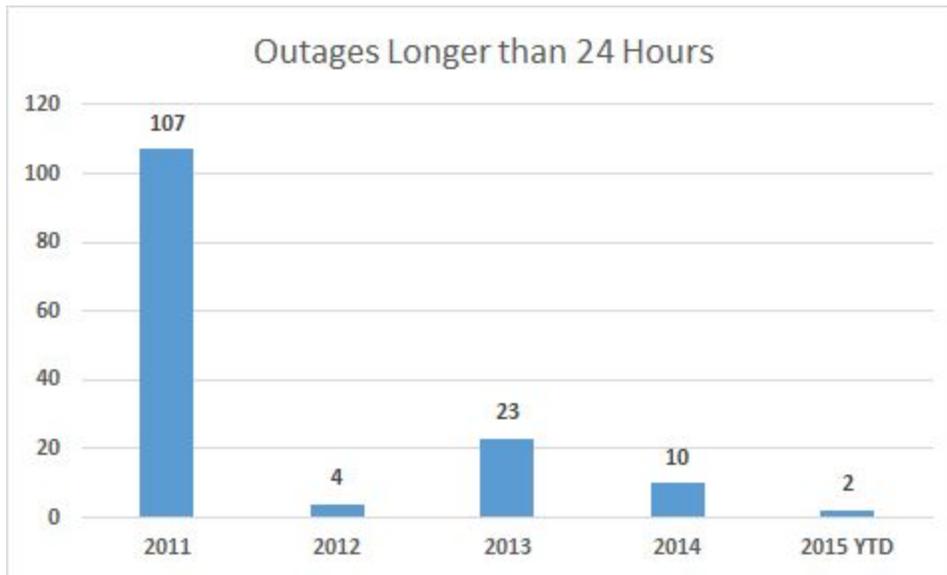


Table 5: Number and Causes of Outages of Duration of 24 Hours or Longer (2011-2015)

Outage Category	2011	2012	2013	2014	2015 YTD
Weather/Tree Related	100	4	18	7	1
Equipment Related	4	0	5	2	1
Other	3	0	0	1	0
TOTAL	107	4	23	10	2



Key Findings

- Year-to-date in 2015, the frequency of outages has been lower than in previous years.
- Equipment-related outages continue to be the most frequent type of outage.
- The Village saw an improvement in outages of an extended duration.

Circuits Experiencing Highest Frequency of Outages

Staff reviewed outage data for 2014 and 2015 (through 9/30) to determine which circuits have seen the highest number of *unplanned* outages since January 2014. Staff recommends that ComEd review the circuits listed below to determine where additional work will lead to measurable improvements.

Table 7: Circuits Ranked by Highest Frequency of Outages

Rank in Frequency of Outages	Circuit	Location	2014 Outages	2015 YTD	TOTAL
1	W8017	West of Main Street on the north and south side of Maple	15	14	29
2	W039	Area to the northwest of Downers Grove South High School	12	15	27
3	W4101	Area west of Highland, near 39th Street	13	9	22
4	W031	Located between Ogden and Maple from I-355 to Main Street	17	4	21
5	W8010	Located along Fairview, from 63rd to 75th St	9	10	19
6	W0318	West of Main Street, south of Ogden	13	5	18
7	W036	Area south of Burlington to 59th Street, between I-355 and Fairview	8	10	18
8	W803	Area northwest of the intersection of Lemont Road and 75th Street	9	9	18
9	W455Y	Northern end of Village, west of Highland to I-88	11	6	17
10	W5910	From 63rd to 71st St along Woodward Ave	10	7	17

The table below shows that equipment failure is the most common cause of outages in these circuits. In 2011 and 2012, ComEd’s investment focused heavily on enhanced tree trimming and installation of reinforced overhead cable. In 2014 and 2015, ComEd has invested more in underground cable refurbishment and replacement.

Table 8: Causes of Unplanned Outages in 2014 and 2015 (through 9/30) in Top 10 Circuits

Outage Category	W8017	W039	W410	W031	W8010	W0318	W036	W803	W455Y	W5910
Weather/Tree Related	11	4	1	3	0	4	3	1	2	0
Equipment Related	5	15	15	10	18	11	11	15	14	17
Other	13	8	6	8	1	3	4	2	1	0
Total	29	27	22	21	19	18	18	18	17	17

Table 9: Improvements in Priority Circuits Identified by the Village

Rank in Frequent Outages	Circuit	Location	Improvements
1	W8017	West of Main Street on the north and south side of Maple	No additional work completed
2	W039	Area to the northwest of Downers Grove South High School	Automation equipment upgrades and replacement of 10,600 feet of underground cable
3	W4101	Northwest of Ogden and Main including portions of Orchard Brook	Replacement of 7,000 feet of underground cable
4	W031	Located between Ogden and Maple from I-355 to Main Street	Overhead inspections led to 18 instances of maintenance and repair
5	W8010	Located along Fairview, from 63rd to 75th St	Replacement of 14,000 feet of underground cable
6	W0318	West of Main Street, south of Ogden	Full tree trimming and overhead inspections that led to 5 instances of repair or maintenance
7	W036	Area south of Burlington to 59th Street, between I-355 and Fairview	Overhead inspections that resulted in 12 instances of repair or maintenance
8	W803	Area northwest of the intersection of Lemont Road and 75th Street	Replacement of 10,700 feet of underground cable
9	W455Y	Northern end of Village, west of Highland to I-88	Replacement of 14,900 feet of underground cable

10	W5910	From 63rd to 71st St along Woodward Ave	Installation automation equipment and replacement of 6,000 feet of underground cable
----	-------	---	--

Key Findings

- Equipment-related outages continue to be the most frequent cause of unplanned outages for the circuits experiencing the most outages.
- Equipment upgrades should be continued to reduce non-weather related outages, which cause significant frustration to customers.

Section 2: ComEd Communications to Customers

After the summer of 2011, ComEd instituted new outage-related communications to improve how customers report outages and receive restoration estimates. In 2013, the Village asked ComEd to make similar efforts to improve methods of everyday communication between ComEd and its customers regarding problem conditions (leaning poles, overgrown vegetation, etc.). Based on staff experience with residents and ComEd representatives, staff recommends the following:

- **Maintain improved customer relationships:** ComEd’s representatives have made a greater effort to contact customers directly when they voice concerns. This has reduced the burden on Village staff to act as a go-between for ComEd.
- **Enhanced communication for Smart Meter installation:** Smart Meter installation, which is planned for 2016, may generate additional inquiries to the Village. The Village requests that ComEd provide a timeline and list of FAQs as soon as possible so that customers know what to expect.