

Village of Long Grove

Pavement Condition Study and Proposed 2015-2029 Road Program

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Exhibits

- Proposed Fifteen-Year Road Maintenance Program & Map - Option 1 (2015-2029 with Opinion of Probable Cost)
- Proposed Fifteen-Year Road Maintenance Program & Map - Option 2 (2015-2029 with Opinion of Probable Cost)
- Village Map
(With PCI Rankings)
- Pavement Condition Index (PCI) Reports
(Subdivision Order, Alphabetical Order and Increasing PCI Order)
- PCI Rating System Methodology
- Long Grove Infrastructure Workshop Q&A

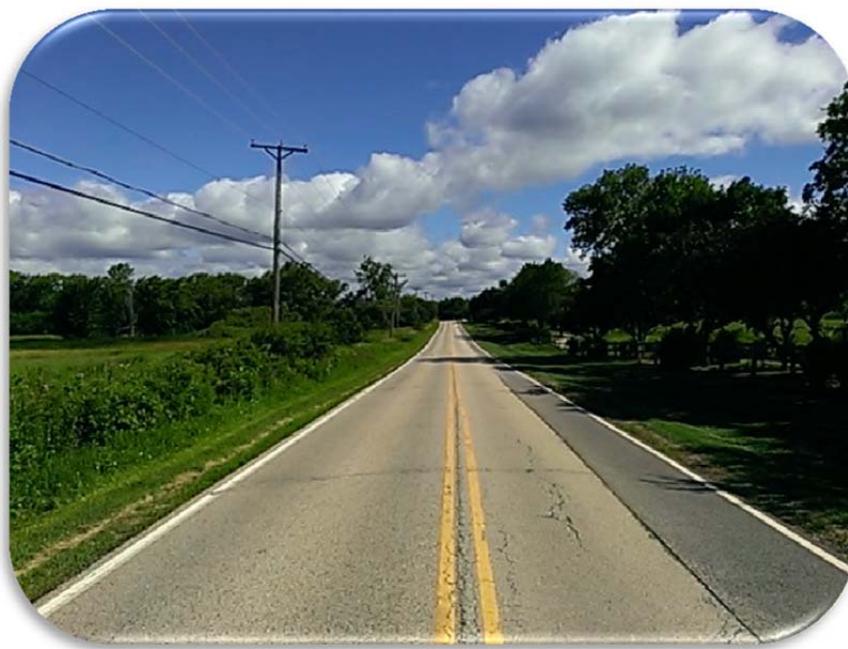
Project Background

Gewalt Hamilton Associates, Inc. (GHA) was retained by the Village of Long Grove to perform a pavement condition evaluation and to prepare a long term road program and rehabilitation plan. The benefit of this type of study is to help the Village budget the necessary funds to preserve the existing roadway network in a logical order, thus minimizing the necessity of much more costly full depth reconstruction. The evaluation provides a quantitative assessment of the roadway condition and allows for the prioritizing of the roads most in need of rehabilitation in preparing an improvement program. In addition, GHA was asked to provide a review of the 2013 Long Grove Road Program Paving Costs as well as some potential saving options for future road programs.

Pavement Evaluation Methodology

The pavement evaluation was completed by surveying approximately 29 miles of Village maintained streets to evaluate the distress using a Pavement Condition Index (PCI) system developed by PAVER™. This pavement management software was developed by the US Army Corps of Engineers and sponsored by the Federal Highway Administration, among other agencies. PAVER™ provides pavement management capabilities designed for the following functions: (1) develop and organize the pavement inventory, (2) assess the current condition of pavements, (3) develop models to predict future conditions; (4) report on past and future pavement performance; (5) develop scenarios for Maintenance and Rehabilitation (M&R) based on budget or condition requirements; and (6) plan projects.

The PCI system utilized in this study has been adopted as a standard practice by ASTM (D-6433-10) and is increasingly the predominant methodology used in the industry. Due to its standardization and the development of a number of software tools to support the methodology, GHA utilized the PCI system for this study.



Example of a Serious PCI Rating

Current Study

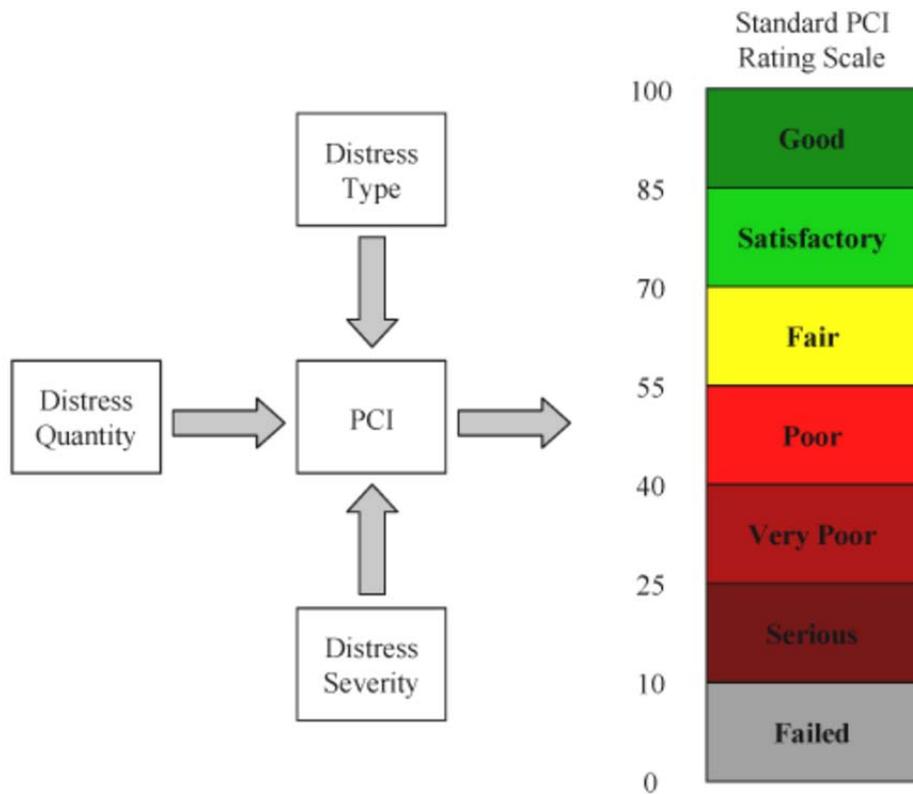
GHA conducted a field study of approximately 29 miles of Village maintained roadways in July of 2014. Each roadway section was judged on its structural condition using various distress characteristics (cracking, rutting, etc.) to identify pavement failure and thereafter applying a “severity” and “quantity” factor to each. The resulting weighted ratings, or more specifically Pavement Condition Index (PCI) numbers, were assembled and ranked in ascending order of worst to best. Segments were assigned a rehabilitation year, within a 15-year period, prioritized by variables such as severity of distress and geographic location. Finally, construction cost and inflation factors were applied to develop an annual road program budget.

The pavement condition and road program data were also integrated into a GIS application using Lake County GIS Data. The PCI reports and annual road program summaries are attached, along with maps for the 2015 through 2029 programs, and a map of the entire roadway network indicating the PCI.

This pavement study does not include a review of existing culverts and other drainage structures, review of open ditches in the Village right-of-way, or bridge inspections.

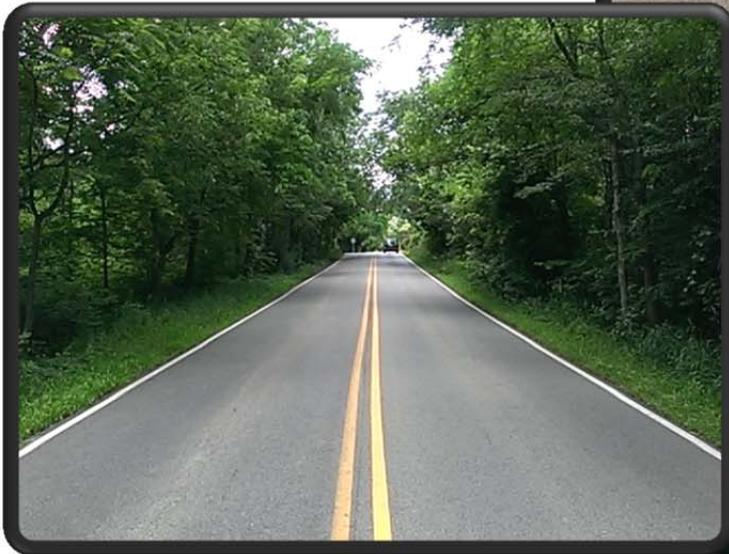
Summary of Observations

The PCI numbers presented in the attached reports can be used in conjunction with the attached bar chart to interpret the condition of the Village pavements on an objective scale.





Example of a Failed PCI Rating



Example of a Satisfactory PCI Rating



Example of a Serious PCI Rating

Though subjective analysis may result in consideration of roadway sections characterized as “Serious” or “Very Poor” by the PAVER™ system to be in fair condition and vice versa, the PCI ratings do provide an objective measure to utilize for comparison of the pavements and prioritization of future roadway improvements. The current average PCI of Village roadways from the 2014 inspection is 19.0, with a range of 1 to 100. Longitudinal cracking, and alligator cracking were common deficiencies observed on the Village roadways.

Weather and material related distresses, such as material aging, loss of surface aggregate, oxidation of the asphalt binder, and weather related contraction and expansion with water (ice) intrusion into cracks, often manifest themselves in the form of surface cracking and shallow potholes. Intermediate repairs, such as cold patching or crack sealing, can limit the impact of such distresses and improve the overall life of the pavement. This type of repair is completed on an “as-needed” basis.

This Pavement Study noted an average PCR of 19.0, in the middle of the “Serious” range. The average PCI of 19.0 does reflect a significantly lower overall pavement condition than desired. Recently, village roadway conditions have likely been negatively affected by deferred work and several extreme winters.

Evaluation of 2013 Long Grove Road Program

The Village of Long Grove 2013 Road Program had an Engineer’s Opinion of Probable Cost (OPC) of \$523,423.55 with 3 bidders. The low bid was \$467,723.90, the second bid was \$514,900.00 and the highest bid was \$609,623.80. It appears that there was a substantial amount of surface patching work done as part of Long Grove’s 2013 Road Program. An overall cost comparison between 2013 Road Programs from other similar Villages (i.e. Kildeer, Deer Park and Lake Barrington) is difficult due to the different approaches used. Other similar Villages focused on:

- complete patching (4”-6” depths), leveling binder (1” average thickness), and a surface overlay (2” thickness) or,
- full-depth reclamation including pulverization of existing asphalt and stone, re-compaction, undercut of areas that fail a proof roll, binder (2.25”), and surface asphalt (2”).

However, the overall unit prices for surface paving and restoration from the 2013 Long Grove bids were in line with other road programs in the area from that year.

Potential Cost Savings

As discussed with the Village Board on April 22nd, 2014 there are some potential cost savings in the following areas:

- Combining your annual road program with other communities, (ie Kildeer). This would allow for a larger program and the potential for better unit prices. Estimated cost savings in the 4-7% range.
- Pursue grants and outside source funding. Improvements that address drainage and safety issues will have a better chance of receiving outside funding.

Pavement approach as described above will provide for a longer more serviceable road life, and will reduce future maintenance costs. Additionally, Federal funding for FAU designated routes within the Village could create savings of approximately 50% for each route. Cuba Road, Indian Creek and Long Grove Road are currently all qualified to apply for this funding. In addition, N. Krueger and S. Krueger have potential to for FAU designation based on discussions with Lake County Department of Transportation. Due to uncertainty of federal funds, the scheduling of these particular projects in regards to availability of federal dollars should be assessed regularly.

Assumptions

Creation of a Road Maintenance Program requires a number of assumptions. These assumptions and the basis behind each is summarized below:

Assumption	Basis
Cost/Square Yard of work	A cost of \$32/SY was estimated based off recent bid result averages from other Lake County Municipalities on similar jobs
Inflation Rate	7% Inflation rate based on observed rise in paving unit prices over the past year and industry expert speculation. A large reduction in the quantity of qualified paving companies due to the recession affects these rates on top of economic trends. To provide additional figures, costs have also been evaluated at inflation rates of 5% and 10%. While correlations have been found between unit prices and certain commodities, this model does not use this basis for calculations.
Contingency (% cost)	Contingency was calculated at 7% of the construction cost. This is a standard rate which is provided to cover unforeseen costs. Lower percentages incur higher risk of a project exceeding the approved budget.
Engineering Rate (% cost)	Engineering was calculated at 8% of the construction cost. This rate is 2% lower than that paid by the Village in previous years. *FAU routes will incur additional engineering expenses due to coordination.

Recommendations

Upon completion of the pavement inventory, all of the roadways were organized in order of ascending PCI. In grouping the roadways for the proposed Fifteen-Year Road Maintenance Program, the PCI ratings were used as the starting point to group the roads into yearly programs of roughly equal size. For Option 1, roads were shuffled slightly in order to group roads that are geographically in the same proximity, which helps to lower ultimate bid prices as well as limit the number of residents burdened by construction in any given year. In addition to this, an Option 2 was created strictly off of PCI rankings. The estimated dollar amount of each year's recommendation is shown in the attached yearly program schedule for each option, and is summarized below. The cost is shown in today's dollars as well as future cost based on a 7% inflation rate. A 7% contingency is also included to

compensate for further deterioration as the roads are waiting to be rehabilitated. For additional background information, a table showing costs for each option with 5% and 10% inflation values are attached to this report.

GHA recommends a typical roadway maintenance program of patching (4"-6"), leveling binder (1" average thickness), and a surface overlay (2" thickness) for roadways. We also consider full-depth reclamation on roadways with more serious distresses. This full depth reclamation includes pulverization of existing asphalt and stone, re-compaction, undercut of areas that fail a proof roll, binder (2.25"), and surface asphalt (2"). This method requires preferably 10"-12" of existing stone and asphalt. We would propose this methodology for the majority of village streets if adequate base and stone exist. The cost structure of the 2015-2029 Road Program is based on costs of overlay and reclamation projects that GHA has managed for various Lake County municipalities and townships in the past few years, using the recommended typical roadway maintenance cross-section. These costs are estimated at \$32/square yard based on recent bid result averages. Typically existing shoulders will be maintained in kind, either with topsoil, seed, and blanket or with stone. Once a roadway is selected for improvements, specific drainage improvements will be considered.

In areas where frequent and wide transverse cracks are encountered, we recommend special treatment to prevent or at least minimize their recurrence on the new surface. This could include area reflective crack control. A crack-filling program could be conducted in areas not needing immediate resurfacing to extend the life of the existing pavement.

**Village of Long Grove – Option 1 15-Year Road Program
(Organized Geographically)**

Year	Preliminary Budget (2015 dollars)*	Adjusted Preliminary Budget (7% Inflation)
2015	\$976,000	\$976,000
2016	\$1,065,000	\$1,140,000
2017	\$945,000	\$1,082,000
2018	\$931,000	\$1,141,000
2019	\$913,000	\$1,197,000
2020	\$1,010,000	\$1,417,000
2021	\$848,000	\$1,272,000
2022	\$967,000	\$1,552,000
2023	\$864,000	\$1,484,000
2024	\$920,000	\$1,691,000
2025	\$885,000	\$1,740,000
2026	\$966,000	\$2,034,000
2027	\$926,000	\$2,085,000
2028	\$1,042,000	\$2,511,000
2029	\$983,000	\$2,536,000
Total Expenditures (2015 dollars)- \$14,241,000		
Total Expenditures (Adjusted) - \$23,858,000		
2015-2029 Mileage Resurfaced- 29.19 Miles		

* It should be noted that the budgetary amount shown does not describe the full budgetary need of the Roads & Bridges line item, but is rather only reflective of pavement rehabilitation costs. This number does not take into account drainage improvements, bridge maintenance, snow plowing, etc. and includes engineering at 8%. If detailed engineering plans, drainage studies or topographies are required, that percentage would increase.

**Village of Long Grove – Option 2 15-Year Road Program
(Organized by PCI)**

Year	Preliminary Budget (2015 dollars)*	Adjusted Preliminary Budget (7% Inflation)
2015	\$847,000	\$847,000
2016	\$923,000	\$988,000
2017	\$922,000	\$1,055,000
2018	\$915,000	\$1,122,000
2019	\$1,029,000	\$1,349,000
2020	\$1,003,000	\$1,407,000
2021	\$958,000	\$1,438,000
2022	\$888,000	\$1,426,000
2023	\$908,000	\$1,560,000
2024	\$1,405,000	\$1,921,000
2025	\$933,000	\$1,835,000
2026	\$922,000	\$1,942,000
2027	\$971,000	\$2,187,000
2028	\$952,000	\$2,294,000
2029	\$1,024,000	\$2,640,000
Total Expenditure (2015 dollars)- \$14,241,000		
Total Expenditure (Adjusted) - \$24,011,000		
2015-2029 Mileage Resurfaced- 29.19 Miles		

* It should be noted that the budgetary amount shown does not describe the full budgetary need of the Roads & Bridges line item, but is rather only reflective of pavement rehabilitation costs. This number does not take into account drainage improvements, bridge maintenance, snow plowing, etc. and includes engineering at 8%. If detailed engineering plans, drainage studies or topographies are required, that percentage would increase.

We have organized the road data and have prepared the pavement condition inventory shown in the exhibits. The following exhibits are attached to the end of this section:

- Proposed 2015-2029 Road Program & Map – Option 1
- Proposed 2015-2029 Road Program & Map – Option 2
- Village Map PCI Rankings
- PCI Summary Reports (subdivision, alphabetical, and increasing PCI order)
- PCI Rating System Methodology

Specific details of road repairs such as curb and gutter removal and replacement, pavement patching, and manhole and inlet adjustments were not noted in our inventory report. Once the specific roadway sections are selected for improvements, a more thorough review of resurfacing needs will be evaluated, which will include pavement cores to determine the condition of the pavement subgrade. A detailed opinion of probable cost will be established with each annual maintenance program, and the actual road program chosen each year will depend upon the available budget.

It should be noted that all of the estimated costs are based on inflation of anticipated 2015 construction dollars and may have to be updated each year as segments of the program are selected for improvement. The proposed Fifteen-Year Road Maintenance Program should be used as a budgetary and planning tool for the Village. We understand that roads may be moved from one year's program to another year's program based on available funding, and updated roadway conditions.

Conclusion

The attached PCI reports provide the Village with a comparative assessment of each Village-maintained roadway. The roads with low PCI's are in most need of repair and are scheduled for maintenance towards the beginning of the maintenance program. Whereas, the roads with higher PCI's are in better condition and maintenance can be deferred to the later years.

Each year's road program is summarized, with a cost in 2015 dollars and an estimated cost in the proposed year of maintenance. A map highlighting the roadway segments that are proposed in each year's maintenance program is also included for quick reference.

We believe the proposed Fifteen-Year Road Maintenance Program is a helpful tool for the Village in planning for future road maintenance and preparing budgets.

Village of Long Grove Pavement Condition Study & 2015-2019
Proposed Road Program

EXHIBITS

Village of Long Grove
Proposed Fifteen-Year Road Maintenance Program & Map
Option 1
(2015-2029 with Opinion of Probable Cost)

Village of Long Grove

Option 1 - Opinion of Probable Cost

(7% Inflation)

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2015 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2015 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Lincoln	Lexington Dr	Checker Rd	1954	22	4776	0	\$152,846.22	\$152,846.22
CCEstates	Shenandoah	Lincoln Ave	Checker Rd	1838	22	4493	3	\$143,772.44	\$143,772.44
CCEstates	Sheridan	Shiloh Dr	Stayton Ln	911	22	2227	3	\$71,260.44	\$71,260.44
CCEstates	Shiloh	Old Hicks Rd	IL Rt 53	2773	22	6778	3	\$216,910.22	\$216,910.22
CCEstates	Lincoln	Lexington Rd	Terminus	2346	22	5735	8	\$183,509.33	\$183,509.33
CCEstates	Union	Lincoln Ave	Terminus	472	21	1101	10	\$35,242.67	\$35,242.67
CCEstates	Cavalry	Lincoln Ave	Terminus	577	22	1410	31	\$45,134.22	\$45,134.22

7% Annual Inflation Compounded:		\$0.00
Construction Cost:	\$848,675.56	\$848,675.56
8% Engineering:	\$67,894.04	\$67,894.04
7% Contingency:	\$59,407.29	\$59,407.29
Total:	\$976,000.00	\$976,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10871
 Total Length (Miles) 2.06

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2016 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2016 Rehabilitation Cost	2015 Rehabilitation Cost
MardenEst	Monitor	Middlesax Dr	Allison Ln	535	24	1427	1	\$48,849.07	\$45,653.33
MardenWood	EMardan	cra	Monitor Ln	1834	21	4279	1	\$146,524.37	\$136,938.67
MardenWood	WMardan	Mardan Dr	Monitor Ln	1943	20	4318	2	\$147,840.71	\$138,168.89
MardenWood	Monitor Ln	Hidden Valley	Middlesax Dr	1659	19	3502	4	\$119,919.89	\$112,074.67
Skycrest	Hilltop	IL Rt 83	Terminus	2343	19	4946	4	\$169,362.45	\$158,282.67
MardenEst	Middlesax	IL Rt 53	Monitor Ln	1997	22	4882	9	\$167,144.46	\$156,209.78
MardenEst	Monticello	Middlesax Dr	Terminus	583	16	1036	9	\$35,487.86	\$33,166.22
MardenWood	Mardan	IL Rt 53	E/W Mardan Dr	260	22	636	10	\$21,761.42	\$20,337.78
Skycrest	Golf	Hilltop Rd	Sunshine Ln	846	15	1410	10	\$48,278.40	\$45,120.00
MardenEst	Mayflower	Middlesax Dr	Terminus	319	16	567	11	\$19,417.88	\$18,147.56
Skycrest	Sunshine	Golf Rd	Terminus	473	15	788	11	\$26,992.53	\$25,226.67
MardenEst	Merrimac	Middlesax Dr	Terminus	580	18	1160	17	\$39,718.40	\$37,120.00

7% Annual Inflation Compounded:		\$64,851.24
Construction Cost:	\$991,297.46	\$926,446.22
8% Engineering:	\$79,303.80	\$74,115.70
7% Contingency:	\$69,390.82	\$64,851.24
Total:	\$1,140,000.00	\$1,065,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 13372
Total Length (Miles) 2.53

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2017 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2017 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Cuba_3	S Krueger Rd	Lakeridge Ct	1407	22	3439	0	\$126,006.17	\$110,058.67
Collector	Cuba_1	McGinty Farm	Old McHenry Rd	7310	22	17869	4	\$654,658.91	\$571,804.44
Collector	Cuba_2	Lakeridge Ct	McGinty Farm	1785	22	4363	34	\$159,858.57	\$139,626.67

7% Annual Inflation Compounded:		\$119,033.87
Construction Cost:	\$940,523.65	\$821,489.78
8% Engineering:	\$75,241.89	\$65,719.18
7% Contingency:	\$65,836.66	\$57,504.28
Total:	\$1,082,000.00	\$945,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10502
 Total Length (Miles) 1.99

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2018 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2018 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	HollyCt	Schaeffer Rd East	Terminus	648	22	1584	0	\$62,094.98	\$50,688.00
LeSavanne	BrittanyCt	Brittany Ln	Terminus	795	24	2120	2	\$83,106.92	\$67,840.00
LeSavanne	PicardyCt	Picardy Ln	Terminus	1022	24	2725	4	\$106,836.82	\$87,210.67
Bennington	Knoll Ct	Knoll Rd East	Terminus	649	19	1370	6	\$53,710.24	\$43,843.56
CCMeadows	CountryClu	Tanager Way	Checker Rd	1728	23	4416	6	\$173,113.28	\$141,312.00
LeSavanne	BrittanyLn	Arlington Heights Rd	Picardy Ct	1046	24	2789	7	\$109,345.70	\$89,258.67
LeSavanne	PicardyLn	Brittany Ct	Picardy Ct	936	25	2600	8	\$101,923.58	\$83,200.00
CCMeadows	HollyCt	Schaeffer Rd West	Tanager Way	764	23	1952	10	\$76,538.51	\$62,478.22
CCMeadows	Tanager	Holly Ct	Country Club Dr	1094	23	2796	10	\$109,598.34	\$89,464.89
Bennington	Knoll	Long Grove Rd	Knoll Ct	653	19	1379	21	\$54,041.27	\$44,113.78
Bennington	Knoll Ct	Knoll Dr West	Terminus	743	19	1569	25	\$61,489.54	\$50,193.78

7% Annual Inflation Compounded:		\$182,195.61
Construction Cost:	\$991,799.17	\$809,603.56
8% Engineering:	\$79,343.93	\$64,768.28
7% Contingency:	\$69,425.94	\$56,672.25
Total:	\$1,141,000.00	\$931,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	10078
Total Length (Miles)	1.91

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2019 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2019 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Oakwood	IL Rt 83	Partridge Ln	4344	24	11584	2	\$485,896.35	\$370,688.00
Oak Island	RollingGle	Crestivew Dr	Terminus	816	14	1269	3	\$53,242.79	\$40,618.67
OakwoodCre	Oakwood	Oakwood Rd	Oakwood Rd	3354	22	8199	9	\$343,896.95	\$262,357.33
Oak Island	Crestview	Cuba Rd	Terminus	1609	21	3754	19	\$157,477.28	\$120,138.67

7% Annual Inflation Compounded:		\$246,710.70
Construction Cost:	\$1,040,513.37	\$793,802.67
8% Engineering:	\$83,241.07	\$63,504.21
7% Contingency:	\$72,835.94	\$55,566.19
Total:	\$1,197,000.00	\$913,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	10123
Total Length (Miles)	1.92

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2020 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2020 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Federal Ct	Lexington Dr	Terminus	515	21	1202	5	\$53,932.79	\$38,453.33
CCEstates	Cumberland	Lexington Dr	Lexington Dr	2224	22	5436	6	\$243,996.63	\$173,966.22
CCEstates	Coach	Lexington Rd North	Old Hicks Rd	665	23	1699	12	\$76,273.88	\$54,382.22
CCEstates	GrantPI	Schaeffer Rd	Terminus	625	20	1389	12	\$62,335.63	\$44,444.44
CCEstates	GrantCt	Grant PI	Terminus	408	20	907	13	\$40,692.70	\$29,013.33
CCEstates	Lexington	Coach Rd	Lincoln Ave	2681	24	7149	16	\$320,873.91	\$228,778.67
CCEstates	Antietam	Schaeffer Rd	Terminus	1810	23	4626	22	\$207,602.59	\$148,017.78
CCEstates	Coach	Lexington Rd South	Old Hicks Rd	1107	23	2829	23	\$126,970.20	\$90,528.00
CCEstates	Pottawatom	Antietam Dr	Terminus	907	22	2217	40	\$99,507.62	\$70,947.56

7% Annual Inflation Compounded:		\$353,654.40
Construction Cost:	\$1,232,185.95	\$878,531.56
8% Engineering:	\$98,574.88	\$70,282.52
7% Contingency:	\$86,253.02	\$61,497.21
Total:	\$1,417,000.00	\$1,010,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10942
 Total Length (Miles) 2.07

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2021 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2021 Rehabilitation Cost	2015 Rehabilitation Cost
EstOakHill	OakGrove1	IL Rt 83	5367 Oak Grove Dr	3806	25	10572	10	\$507,713.75	\$338,311.11
EstOakHill	OakGroveC	Oak Grove Dr	Oak Grove Dr	2196	24	5856	26	\$281,224.86	\$187,392.00
EstOakHill	OakGrove2	5367 Oak Grove Dr	IL Rt 22	2477	24	6605	30	\$317,210.37	\$211,370.67

7% Annual Inflation Compounded:		\$369,075.21
Construction Cost:	\$1,106,148.99	\$737,073.78
8% Engineering:	\$88,491.92	\$58,965.90
7% Contingency:	\$77,430.43	\$51,595.16
Total:	\$1,272,000.00	\$848,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	8479
Total Length (Miles)	1.61

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2022 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2022 Rehabilitation Cost	2015 Rehabilitation Cost
Creekside	Private	Creekside Rd	Terminus	643	15	1072	0	\$55,067.60	\$34,293.33
Towers	Meadow	IL Rt 83	Osage Ln	408	27	1224	7	\$62,895.25	\$39,168.00
Towers	Willow Spr	Osage Ln	Terminus	1340	21	3127	8	\$160,663.79	\$100,053.33
Towers	Meadow	Willow Spring Rd	Osage Ln	1449	21	3381	10	\$173,732.71	\$108,192.00
Towers	Willow Spr	Village Limits at IL Rt 83	Osage Ln	480	22	1173	16	\$60,291.74	\$37,546.67
Creekside	Creekside	Indian Creek Rd	Terminus	3062	25	8506	25	\$437,058.03	\$272,177.78
Creekside	Arrowhead	Creekside Dr	Terminus	762	23	1947	33	\$100,063.74	\$62,314.67
Creekside	Tribal	Creekside Dr	Terminus	650	22	1589	34	\$81,645.07	\$50,844.44
Towers	Osage	Willow Spring Rd	Meadow Ln	1823	21	4254	40	\$218,574.69	\$136,117.33

7% Annual Inflation Compounded:		\$509,285.06
Construction Cost:	\$1,349,992.62	\$840,707.56
8% Engineering:	\$107,999.41	\$67,256.60
7% Contingency:	\$94,499.48	\$58,849.53
Total:	\$1,552,000.00	\$967,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10617
Total Length (Miles) 2.01

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2023 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2023 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Schaeffe_2	Checker Rd	Richmond Ln	1303	22	3185	3	\$175,123.64	\$101,923.56
Collector	RPCoffin_1	Old McHenry Rd	IL Rt 83	2264	31	7798	8	\$428,761.52	\$249,543.11
LakesLG	3LakesDr	RPC	Terminus	2302	25	6394	17	\$351,579.07	\$204,622.22
Collector	SKrueger	Cuba Rd	Village Limits	1638	21	3822	24	\$210,141.04	\$122,304.00
LakesLG	3LakesCt	Three Lakes Dr	Terminus	818	25	2272	24	\$124,931.23	\$72,711.11

7% Annual Inflation Compounded:		\$539,432.51
Construction Cost:	\$1,290,536.51	\$751,104.00
8% Engineering:	\$103,242.92	\$60,088.32
7% Contingency:	\$90,337.56	\$52,577.28
Total:	\$1,484,000.00	\$864,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 8325
Total Length (Miles) 1.58

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2024 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2024 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Chickamaug	Sumter Dr	Terminus	3396	24	9056	12	\$532,770.77	\$289,792.00
BridgeWate	ManassasL	Schaeffer Rd East	Terminus	1475	21	3442	18	\$202,475.64	\$110,133.33
CCEstates	SumterDr	Schaeffer Rd	Terminus	3010	23	7692	19	\$452,538.78	\$246,151.11
BridgeWate	ManassasLn	Schaeffer Rd West	Terminus	1362	22	3329	24	\$195,866.99	\$106,538.67
CCEstates	SumterCt	Sumter Dr	Terminus	580	23	1482	50	\$87,200.16	\$47,431.11

7% Annual Inflation Compounded:		\$670,806.13
Construction Cost:	\$1,470,852.35	\$800,046.22
8% Engineering:	\$117,668.19	\$64,003.70
7% Contingency:	\$102,959.66	\$56,003.24
Total:	\$1,691,000.00	\$920,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9823
Total Length (Miles) 1.86

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2025 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2025 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Schaeffe_1	Holly Ct	IL Rt 53	3659	24	9757	15	\$614,212.85	\$312,234.67
Collector	NKrueger	IL Rt 22	Gilmer Rd	5842	22	14280	23	\$898,937.46	\$456,974.22

7% Annual Inflation Compounded:		\$743,941.42
Construction Cost:	\$1,513,150.31	\$769,208.89
8% Engineering:	\$121,052.02	\$61,536.71
7% Contingency:	\$105,920.52	\$53,844.62
Total:	\$1,740,000.00	\$885,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9501
 Total Length (Miles) 1.80

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2026 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2026 Rehabilitation Cost	2015 Rehabilitation Cost
Promontory	Port Clint	Tall Oaks Dr	Terminus	2700	23	6900	12	\$464,751.31	\$220,800.00
Promontory	PortClinto	IL Rt 83	Tall Oaks Dr	550	25	1528	22	\$102,903.87	\$48,888.89
PromoRidge	Hampton	IL Rt 22	Port Clinton Rd	2538	23	6486	26	\$436,866.23	\$207,552.00
Promontory	Tall Oaks	IL Rt 22	Port Clinton Rd	4441	23	11349	28	\$764,429.84	\$363,175.11

7% Annual Inflation Compounded:		\$928,535.26
Construction Cost:	\$1,768,951.26	\$840,416.00
8% Engineering:	\$141,516.10	\$67,233.28
7% Contingency:	\$123,826.59	\$58,829.12
Total:	\$2,034,000.00	\$966,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	10229
Total Length (Miles)	1.94

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2027 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2027 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	ArlingtonH	Thompson Blvd	Terminus	1882	23	4810	11	\$346,625.30	\$153,905.78
Collector	Indian Cre	Diamond Lake Rd	Village Limits	3943	23	10077	11	\$726,218.68	\$322,449.78
Indian Cre	Estate Ln	Indian Creek Rd	Terminus	1588	23	4058	30	\$292,476.61	\$129,863.11
Indian Cre	LakeridgeC	Lakeridge Dr	Terminus	583	22	1425	35	\$102,707.94	\$45,603.56
Indian Cre	LakeridgeD	Indian Creek Rd	Terminus	1960	22	4791	41	\$345,296.00	\$153,315.56

7% Annual Inflation Compounded:		\$1,008,186.75
Construction Cost:	\$1,813,324.53	\$805,137.78
8% Engineering:	\$145,065.96	\$64,411.02
7% Contingency:	\$126,932.72	\$56,359.64
Total:	\$2,085,000.00	\$926,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9956
 Total Length (Miles) 1.89

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2028 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2028 Rehabilitation Cost	2015 Rehabilitation Cost
Edgebrook	Roanake	Schaeffer Rd	Terminus	357	21	833	12	\$64,236.83	\$26,656.00
Edgebrook	Dawn	Schaeffer Rd	Terminus	430	22	1051	13	\$81,056.48	\$33,635.56
Edgebrook	Schaeffer	Checker Rd North	Terminus	1242	23	3174	29	\$244,763.14	\$101,568.00
Collector	Checker_1	Old Hicks Rd	Schaeffer Rd	6369	23	16276	36	\$1,255,150.10	\$520,842.67
Collector	RPCoffin_2	IL Rt 53	Old McHenry Rd	2120	25	5889	42	\$454,121.90	\$188,444.44
Residentia	Schaeffer	IL Rt 53	RPC	704	14	1095	100	\$84,449.54	\$35,043.56

7% Annual Inflation Compounded:		\$1,277,587.75
Construction Cost:	\$2,183,777.98	\$906,190.22
8% Engineering:	\$174,702.24	\$72,495.22
7% Contingency:	\$152,864.46	\$63,433.32
Total:	\$2,511,000.00	\$1,042,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 11222
 Total Length (Miles) 2.13

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2029 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2029 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Long Grove	Village Limits	IL Rt 53	3468	26	10019	85	\$826,671.17	\$320,597.33
Collector	Checker_2	Schaeffer Rd	18376 Checker Rd	2010	22	4913	94	\$405,414.33	\$157,226.67
Collector	OldHicks	IL Rt 53	Checker Rd	4614	23	11791	100	\$972,939.38	\$377,322.67

7% Annual Inflation Compounded:		\$1,349,878.22
Construction Cost:	\$2,205,024.88	\$855,146.67
8% Engineering:	\$176,401.99	\$68,411.73
7% Contingency:	\$154,351.74	\$59,860.27
Total:	\$2,536,000.00	\$983,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10092
 Total Length (Miles) 1.91

Village of Long Grove

Option 1 - Opinion of Probable Cost

(5% & 10% Inflation Summaries)

Option 1 - Additional Inflation Rates

Option 1 - Preliminary 15-Year Road Program Summary (With 5% Inflation)

Year	Preliminary Budget (2015 Dollars)	Adjusted Preliminary Budget (5% Inflation)
2015	\$976,000	\$976,000
2016	\$1,065,000	\$1,119,000
2017	\$945,000	\$1,042,000
2018	\$931,000	\$1,078,000
2019	\$913,000	\$1,110,000
2020	\$1,010,000	\$1,289,000
2021	\$848,000	\$1,136,000
2022	\$967,000	\$1,360,000
2023	\$864,000	\$1,276,000
2024	\$920,000	\$1,427,000
2025	\$885,000	\$1,441,000
2026	\$966,000	\$1,653,000
2027	\$926,000	\$1,663,000
2028	\$1,042,000	\$1,965,000
2029	\$983,000	\$1,947,000
TOTAL*	\$14,241,000	\$20,482,000

Option 1 - Preliminary 15-Year Road Program Summary (With 10% Inflation)

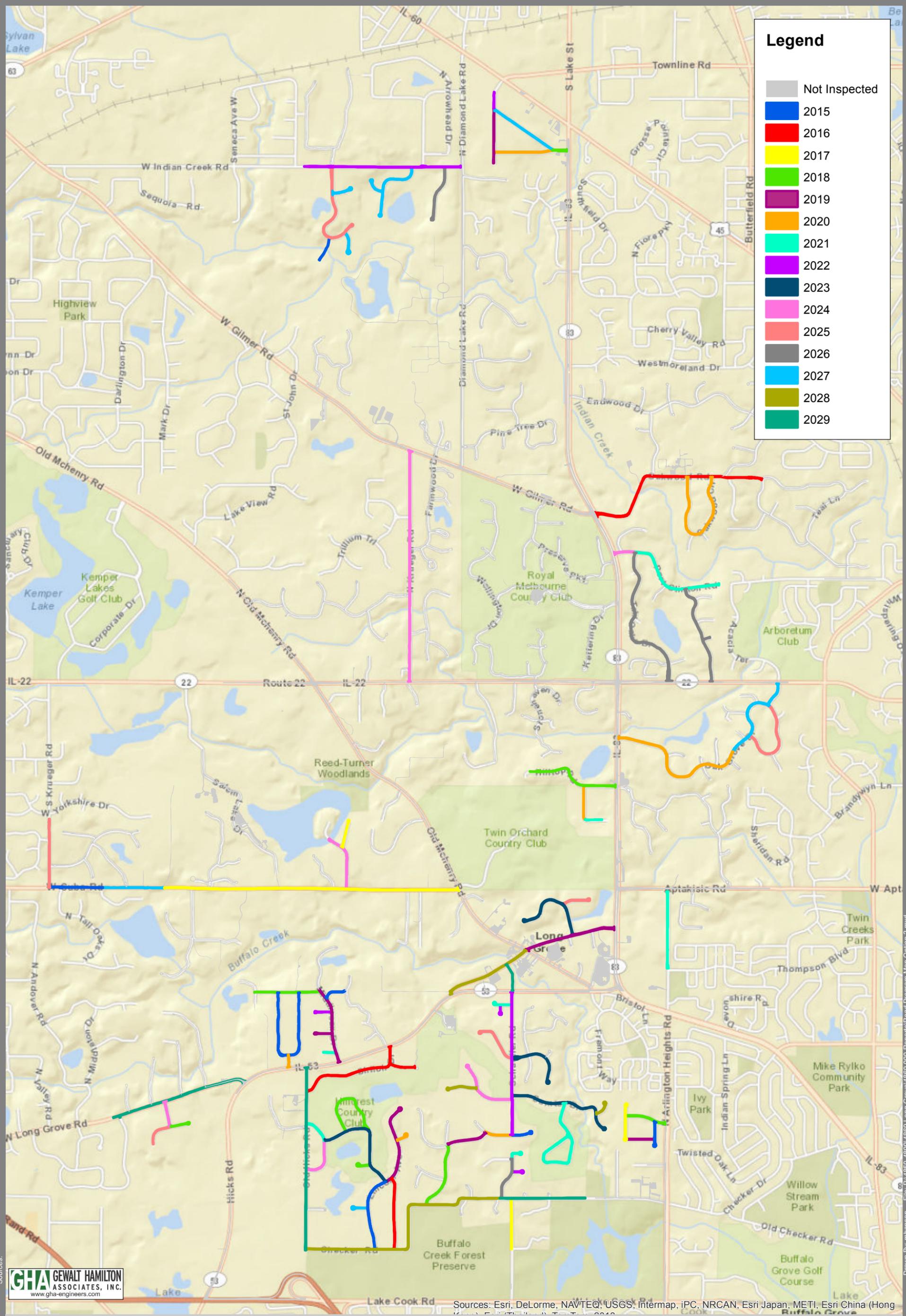
Year	Preliminary Budget (2015 Dollars)	Adjusted Preliminary Budget (10% Inflation)
2015	\$976,000	\$976,000
2016	\$1,065,000	\$1,172,000
2017	\$945,000	\$1,143,000
2018	\$931,000	\$1,239,000
2019	\$913,000	\$1,337,000
2020	\$1,010,000	\$1,627,000
2021	\$848,000	\$1,502,000
2022	\$967,000	\$1,884,000
2023	\$864,000	\$1,852,000
2024	\$920,000	\$2,169,000
2025	\$885,000	\$2,294,000
2026	\$966,000	\$2,757,000
2027	\$926,000	\$2,906,000
2028	\$1,042,000	\$3,598,000
2029	\$983,000	\$3,735,000
TOTAL*	\$14,241,000	\$30,191,000

*Totals inclusive of 8% Engineering and 7% Contingency.

Village of Long Grove
Proposed Fifteen-Year Road Maintenance Program & Map
Option 2
(2015-2029 with Opinion of Probable Cost)

Legend

- Not Inspected
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024
- 2025
- 2026
- 2027
- 2028
- 2029



Sources:
GHA GEWALT HAMILTON ASSOCIATES, INC.
 www.gha-engineers.com

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, TCS, Telemat, CNRS



1 inch = 3,000
 Feet

Village of Long Grove - Option 2 Road Program (PCI)

Long Grove, Illinois

Drawn By: mhansen File: P:\4350-4899\4899 Long Grove\4669.000 Reports\Road Program Map Option 2.mxd

Village of Long Grove

Option 2 - Opinion of Probable Cost

(7% Inflation)

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2015 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2015 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Lincoln	Lexington Dr	Checker Rd	1954	22	4776	0	\$152,846.22	\$152,846.22
Collector	Cuba_3	S Krueger Rd	Lakeridge Ct	1407	22	3439	0	\$110,058.67	\$110,058.67
CCEstates	HollyCt	Schaeffer Rd East	Terminus	648	22	1584	0	\$50,688.00	\$50,688.00
Creekside	Private	Creekside Rd	Terminus	643	15	1072	0	\$34,293.33	\$34,293.33
MardenEst	Monitor	Middlesax Dr	Allison Ln	535	24	1427	1	\$45,653.33	\$45,653.33
MardenWood	EMardan	cra	Monitor Ln	1834	21	4279	1	\$136,938.67	\$136,938.67
LeSavanne	BrittanyCt	Brittany Ln	Terminus	795	24	2120	2	\$67,840.00	\$67,840.00
MardenWood	WMardan	Mardan Dr	Monitor Ln	1943	20	4318	2	\$138,168.89	\$138,168.89

7% Annual Inflation Compounded:		\$0.00
Construction Cost:	\$736,487.11	\$736,487.11
8% Engineering:	\$58,918.97	\$58,918.97
7% Contingency:	\$51,554.10	\$51,554.10
Total:	\$847,000.00	\$847,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9759
 Total Length (Miles) 1.85

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2016 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2016 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Oakwood	IL Rt 83	Partridge Ln	4344	24	11584	2	\$396,636.16	\$370,688.00
CCEstates	Shenandoah	Lincoln Ave	Checker Rd	1838	22	4493	3	\$153,836.52	\$143,772.44
CCEstates	Sheridan	Shiloh Dr	Stayton Ln	911	22	2227	3	\$76,248.68	\$71,260.44
CCEstates	Shiloh	Old Hicks Rd	IL Rt 53	2773	22	6778	3	\$232,093.94	\$216,910.22

7% Annual Inflation Compounded:		\$56,184.18
Construction Cost:	\$858,815.29	\$802,631.11
8% Engineering:	\$68,705.22	\$64,210.49
7% Contingency:	\$60,117.07	\$56,184.18
Total:	\$988,000.00	\$923,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	9866
Total Length (Miles)	1.87

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2017 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2017 Rehabilitation Cost	2015 Rehabilitation Cost
Oak Island	RollingGle	Crestivew Dr	Terminus	816	14	1269	3	\$46,504.31	\$40,618.67
Collector	Schaeffe_2	Checker Rd	Richmond Ln	1303	22	3185	3	\$116,692.28	\$101,923.56
Collector	Cuba_1	McGinty Farm	Old McHenry Rd	7310	22	17869	4	\$654,658.91	\$571,804.44
LeSavanne	PicardyCt	Picardy Ln	Terminus	1022	24	2725	4	\$99,847.49	\$87,210.67

7% Annual Inflation Compounded:		\$116,145.66
Construction Cost:	\$917,702.99	\$801,557.33
8% Engineering:	\$73,416.24	\$64,124.59
7% Contingency:	\$64,239.21	\$56,109.01
Total:	\$1,055,000.00	\$922,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	10451
Total Length (Miles)	1.98

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2018 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2018 Rehabilitation Cost	2015 Rehabilitation Cost
MardenWood	Monitor Ln	Hidden Valley	Middlesax Dr	1659	19	3502	4	\$137,296.29	\$112,074.67
Skycrest	Hilltop	IL Rt 83	Terminus	2343	19	4946	4	\$193,903.07	\$158,282.67
CCEstates	Federal Ct	Lexington Dr	Terminus	515	21	1202	5	\$47,106.99	\$38,453.33
Bennington	Knoll Ct	Knoll Rd East	Terminus	649	19	1370	6	\$53,710.24	\$43,843.56
CCMeadows	CountryClu	Tanager Way	Checker Rd	1728	23	4416	6	\$173,113.28	\$141,312.00
CCEstates	Cumberland	Lexington Dr	Lexington Dr	2224	22	5436	6	\$213,116.10	\$173,966.22
LeSavanne	BrittanyLn	Arlington Heights Rd	Picardy Ct	1046	24	2789	7	\$109,345.70	\$89,258.67
Towers	Meadow	IL Rt 83	Osage Ln	408	27	1224	7	\$47,982.48	\$39,168.00

7% Annual Inflation Compounded:		\$179,215.04
Construction Cost:	\$975,574.15	\$796,359.11
8% Engineering:	\$78,045.93	\$63,708.73
7% Contingency:	\$68,290.19	\$55,745.14
Total:	\$1,122,000.00	\$916,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10572
 Total Length (Miles) 2.00

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2019 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2019 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Lincoln	Lexington Rd	Terminus	2346	22	5735	8	\$240,543.30	\$183,509.33
LeSavanne	PicardyLn	Brittany Ct	Picardy Ct	936	25	2600	8	\$109,058.23	\$83,200.00
Towers	Willow Spr	Osage Ln	Terminus	1340	21	3127	8	\$131,149.51	\$100,053.33
Collector	RPCoffin_1	Old McHenry Rd	IL Rt 83	2264	31	7798	8	\$327,100.11	\$249,543.11
MardenEst	Middlesax	IL Rt 53	Monitor Ln	1997	22	4882	9	\$204,759.15	\$156,209.78
MardenEst	Monticello	Middlesax Dr	Terminus	583	16	1036	9	\$43,474.15	\$33,166.22
CCMeadows	Tanager	Holly Ct	Country Club Dr	1094	23	2796	10	\$117,270.22	\$89,464.89

7% Annual Inflation Compounded:		\$278,208.01
Construction Cost:	\$1,173,354.68	\$895,146.67
8% Engineering:	\$93,868.37	\$71,611.73
7% Contingency:	\$82,134.83	\$62,660.27
Total:	\$1,349,000.00	\$1,029,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10560
 Total Length (Miles) 2.00

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2020 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2020 Rehabilitation Cost	2015 Rehabilitation Cost
OakwoodCre	Oakwood	Oakwood Rd	Oakwood Rd	3354	22	8199	9	\$367,969.73	\$262,357.33
CCEstates	Union	Lincoln Ave	Terminus	472	21	1101	10	\$49,429.66	\$35,242.67
CCMeadows	HollyCt	Schaeffer Rd West	Tanager Way	764	23	1952	10	\$87,628.94	\$62,478.22
MardenWood	Mardan	IL Rt 53	E/W Mardan Dr	260	22	636	10	\$28,524.79	\$20,337.78
Skycrest	Golf	Hilltop Rd	Sunshine Ln	846	15	1410	10	\$63,283.13	\$45,120.00
Towers	Meadow	Willow Spring Rd	Osage Ln	1449	21	3381	10	\$151,744.88	\$108,192.00
EstOakHill	OakGrove1	IL Rt 83	5367 Oak Grove Dr	3806	25	10572	10	\$474,498.83	\$338,311.11

7% Annual Inflation Compounded:		\$351,040.85
Construction Cost:	\$1,223,079.96	\$872,039.11
8% Engineering:	\$97,846.40	\$69,763.13
7% Contingency:	\$85,615.60	\$61,042.74
Total:	\$1,407,000.00	\$1,003,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10951
 Total Length (Miles) 2.07

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2021 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2021 Rehabilitation Cost	2015 Rehabilitation Cost
MardenEst	Mayflower	Middlesax Dr	Terminus	319	16	567	11	\$27,234.59	\$18,147.56
Skycrest	Sunshine	Golf Rd	Terminus	473	15	788	11	\$37,858.42	\$25,226.67
Collector	ArlingtonH	Thompson Blvd	Terminus	1882	23	4810	11	\$230,971.07	\$153,905.78
CCEstates	Coach	Lexington Rd North	Old Hicks Rd	665	23	1699	12	\$81,613.05	\$54,382.22
CCEstates	GrantPI	Schaeffer Rd	Terminus	625	20	1389	12	\$66,699.13	\$44,444.44
Edgebrook	Roanake	Schaeffer Rd	Terminus	357	21	833	12	\$40,003.47	\$26,656.00
CCEstates	Chickamaug	Sumter Dr	Terminus	3396	24	9056	12	\$434,899.65	\$289,792.00
Promontory	Port Clint	Tall Oaks Dr	Terminus	2700	23	6900	12	\$331,361.26	\$220,800.00

7% Annual Inflation Compounded:		\$417,285.98
Construction Cost:	\$1,250,640.64	\$833,354.67
8% Engineering:	\$100,051.25	\$66,668.37
7% Contingency:	\$87,544.84	\$58,334.83
Total:	\$1,438,000.00	\$958,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10417
Total Length (Miles) 1.97

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2022 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2022 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Indian Cre	Diamond Lake Rd	Village Limits	3943	23	10077	11	\$517,783.88	\$322,449.78
CCEstates	GrantCt	Grant Pl	Terminus	408	20	907	13	\$46,589.07	\$29,013.33
Edgebrook	Dawn	Schaeffer Rd	Terminus	430	22	1051	13	\$54,011.35	\$33,635.56
Collector	Schaeffe_1	Holly Ct	IL Rt 53	3659	24	9757	15	\$501,380.64	\$312,234.67
Towers	Willow Spr	Village Limits at IL Rt 83	Osage Ln	480	22	1173	16	\$60,291.74	\$37,546.67
MardenEst	Merrimac	Middlesax Dr	Terminus	580	18	1160	17	\$59,606.61	\$37,120.00

7% Annual Inflation Compounded:		\$467,663.30
Construction Cost:	\$1,239,663.30	\$772,000.00
8% Engineering:	\$99,173.06	\$61,760.00
7% Contingency:	\$86,776.43	\$54,040.00
Total:	\$1,426,000.00	\$888,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9500
 Total Length (Miles) 1.80

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2023 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2023 Rehabilitation Cost	2015 Rehabilitation Cost
CCEstates	Lexington	Coach Rd	Lincoln Ave	2681	24	7149	16	\$393,084.34	\$228,778.67
LakesLG	3LakesDr	RPC	Terminus	2302	25	6394	17	\$351,579.07	\$204,622.22
BridgeWate	ManassasL	Schaeffer Rd East	Terminus	1475	21	3442	18	\$189,229.57	\$110,133.33
CCEstates	SumterDr	Schaeffer Rd	Terminus	3010	23	7692	19	\$422,933.44	\$246,151.11

7% Annual Inflation Compounded:		\$567,141.09
Construction Cost:	\$1,356,826.43	\$789,685.33
8% Engineering:	\$108,546.11	\$63,174.83
7% Contingency:	\$94,977.85	\$55,277.97
Total:	\$1,560,000.00	\$908,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	9468
Total Length (Miles)	1.79

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2024 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2024 Rehabilitation Cost	2015 Rehabilitation Cost
Oak Island	Crestview	Cuba Rd	Terminus	1609	21	3754	19	\$220,870.04	\$120,138.67
Bennington	Knoll	Long Grove Rd	Knoll Ct	653	19	1379	21	\$81,101.38	\$44,113.78
CCEstates	Antietam	Schaeffer Rd	Terminus	1810	23	4626	22	\$272,124.65	\$148,017.78
Promontory	PortClinto	IL Rt 83	Tall Oaks Dr	550	25	1528	22	\$89,880.23	\$48,888.89
CCEstates	Coach	Lexington Rd South	Old Hicks Rd	1107	23	2829	23	\$166,432.04	\$90,528.00
Collector	NKrueger	IL Rt 22	Gilmer Rd	5842	22	14280	23	\$840,128.47	\$456,974.22

7% Annual Inflation Compounded:		\$761,875.47
Construction Cost:	\$1,670,536.80	\$908,661.33
8% Engineering:	\$133,642.94	\$72,692.91
7% Contingency:	\$116,937.58	\$63,606.29
Total:	\$1,921,000.00	\$1,045,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 11571
 Total Length (Miles) 2.19

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2025 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2025 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	SKrueger	Cuba Rd	Village Limits	1638	21	3822	24	\$240,590.48	\$122,304.00
LakesLG	3LakesCt	Three Lakes Dr	Terminus	818	25	2272	24	\$143,033.76	\$72,711.11
BridgeWate	ManassasLn	Schaeffer Rd West	Terminus	1362	22	3329	24	\$209,577.68	\$106,538.67
Bennington	Knoll Ct	Knoll Dr West	Terminus	743	19	1569	25	\$98,738.76	\$50,193.78
Creekside	Creekside	Indian Creek Rd	Terminus	3062	25	8506	25	\$535,414.88	\$272,177.78
EstOakHill	OakGroveC	Oak Grove Dr	Oak Grove Dr	2196	24	5856	26	\$368,628.43	\$187,392.00

7% Annual Inflation Compounded:		\$784,666.66
Construction Cost:	\$1,595,983.99	\$811,317.33
8% Engineering:	\$127,678.72	\$64,905.39
7% Contingency:	\$111,718.88	\$56,792.21
Total:	\$1,835,000.00	\$933,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 9819
Total Length (Miles) 1.86

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2026 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2026 Rehabilitation Cost	2015 Rehabilitation Cost
PromoRidge	Hampton	IL Rt 22	Port Clinton Rd	2538	23	6486	26	\$436,866.23	\$207,552.00
Promontory	Tall Oaks	IL Rt 22	Port Clinton Rd	4441	23	11349	28	\$764,429.84	\$363,175.11
Edgebrook	Schaeffer	Checker Rd North	Terminus	1242	23	3174	29	\$213,785.60	\$101,568.00
Indian Cre	Estate Ln	Indian Creek Rd	Terminus	1588	23	4058	30	\$273,342.62	\$129,863.11

7% Annual Inflation Compounded:		\$886,266.08
Construction Cost:	\$1,688,424.30	\$802,158.22
8% Engineering:	\$135,073.94	\$64,172.66
7% Contingency:	\$118,189.70	\$56,151.08
Total:	\$1,942,000.00	\$922,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	9809
Total Length (Miles)	1.86

PROGRAMMED IMPROVEMENTS
VILLAGE OF LONG GROVE
2027 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2027 Rehabilitation Cost	2015 Rehabilitation Cost
EstOakHill	OakGrove2	5367 Oak Grove Dr	IL Rt 22	2477	24	6605	30	\$476,047.24	\$211,370.67
CCEstates	Cavalry	Lincoln Ave	Terminus	577	22	1410	31	\$101,650.92	\$45,134.22
Creekside	Arrowhead	Creekside Dr	Terminus	762	23	1947	33	\$140,344.57	\$62,314.67
Collector	Cuba_2	Lakeridge Ct	McGinty Farm	1785	22	4363	34	\$314,466.00	\$139,626.67
Creekside	Tribal	Creekside Dr	Terminus	650	22	1589	34	\$114,511.43	\$50,844.44
Indian Cre	LakeridgeC	Lakeridge Dr	Terminus	583	22	1425	35	\$102,707.94	\$45,603.56
Towers	Osage	Willow Spring Rd	Meadow Ln	1823	21	4254	40	\$306,562.31	\$136,117.33
Indian Cre	LakeridgeD	Indian Creek Rd	Terminus	1960	22	4791	41	\$345,296.00	\$153,315.56

7% Annual Inflation Compounded:		\$1,057,259.31
Construction Cost:	\$1,901,586.42	\$844,327.11
8% Engineering:	\$152,126.91	\$67,546.17
7% Contingency:	\$133,111.05	\$59,102.90
Total:	\$2,187,000.00	\$971,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT) 10617
Total Length (Miles) 2.01

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2028 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2028 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Checker_1	Old Hicks Rd	Schaeffer Rd	6369	23	16276	36	\$1,255,150.10	\$520,842.67
CCEstates	Pottawatom	Antietam Dr	Terminus	907	22	2217	40	\$170,972.61	\$70,947.56
Collector	RPCoffin_2	IL Rt 53	Old McHenry Rd	2120	25	5889	42	\$454,121.90	\$188,444.44
CCEstates	SumterCt	Sumter Dr	Terminus	580	23	1482	50	\$114,301.63	\$47,431.11

7% Annual Inflation Compounded:		\$1,166,880.46
Construction Cost:	\$1,994,546.24	\$827,665.78
8% Engineering:	\$159,563.70	\$66,213.26
7% Contingency:	\$139,618.24	\$57,936.60
Total:	\$2,294,000.00	\$952,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	9976
Total Length (Miles)	1.89

PROGRAMMED IMPROVEMENTS
 VILLAGE OF LONG GROVE
 2029 ROAD PROGRAM



Subdivision or Collector	Street	From	To	Length (ft)	Width (ft)	Area (sy)	PCI	2029 Rehabilitation Cost	2015 Rehabilitation Cost
Collector	Long Grove	Village Limits	IL Rt 53	3468	26	10019	85	\$826,671.17	\$320,597.33
Collector	Checker_2	Schaeffer Rd	18376 Checker Rd	2010	22	4913	94	\$405,414.33	\$157,226.67
Collector	OldHicks	IL Rt 53	Checker Rd	4614	23	11791	100	\$972,939.38	\$377,322.67
Residentia	Schaeffer	IL Rt 53	RPC	704	14	1095	100	\$90,361.00	\$35,043.56

7% Annual Inflation Compounded:		\$1,405,195.67
Construction Cost:	\$2,295,385.89	\$890,190.22
8% Engineering:	\$183,630.87	\$71,215.22
7% Contingency:	\$160,677.01	\$62,313.32
Total:	\$2,640,000.00	\$1,024,000.00

(Note: Totals Rounded to nearest \$1,000)

Total Length (FT)	10796
Total Length (Miles)	2.04

Village of Long Grove

Option 2 - Opinion of Probable Cost

(5% & 10% Inflation Summaries)

Option 2 - Additional Inflation Rates

Option 2 - Preliminary 15-Year Road Program Summary (With 5% Inflation)

Year	Preliminary Budget (2015 Dollars)	Adjusted Preliminary Budget (5% Inflation)
2015	\$847,000	\$847,000
2016	\$923,000	\$969,000
2017	\$922,000	\$1,016,000
2018	\$916,000	\$1,060,000
2019	\$1,029,000	\$1,251,000
2020	\$1,003,000	\$1,280,000
2021	\$958,000	\$1,284,000
2022	\$888,000	\$1,249,000
2023	\$908,000	\$1,342,000
2024	\$1,045,000	\$1,621,000
2025	\$933,000	\$1,520,000
2026	\$922,000	\$1,578,000
2027	\$971,000	\$1,744,000
2028	\$952,000	\$1,795,000
2029	\$1,024,000	\$2,027,000
TOTAL	\$14,241,000	\$20,583,000

Option 2 - Preliminary 15-Year Road Program Summary (With 10% Inflation)

Year	Preliminary Budget (2015 Dollars)	Adjusted Preliminary Budget (10% Inflation)
2015	\$847,000	\$847,000
2016	\$923,000	\$1,015,000
2017	\$922,000	\$1,115,000
2018	\$916,000	\$1,219,000
2019	\$1,029,000	\$1,507,000
2020	\$1,003,000	\$1,615,000
2021	\$958,000	\$1,698,000
2022	\$888,000	\$1,730,000
2023	\$908,000	\$1,947,000
2024	\$1,045,000	\$2,464,000
2025	\$933,000	\$2,420,000
2026	\$922,000	\$2,632,000
2027	\$971,000	\$3,047,000
2028	\$952,000	\$3,286,000
2029	\$1,024,000	\$3,888,000
TOTAL	\$14,241,000	\$30,430,000

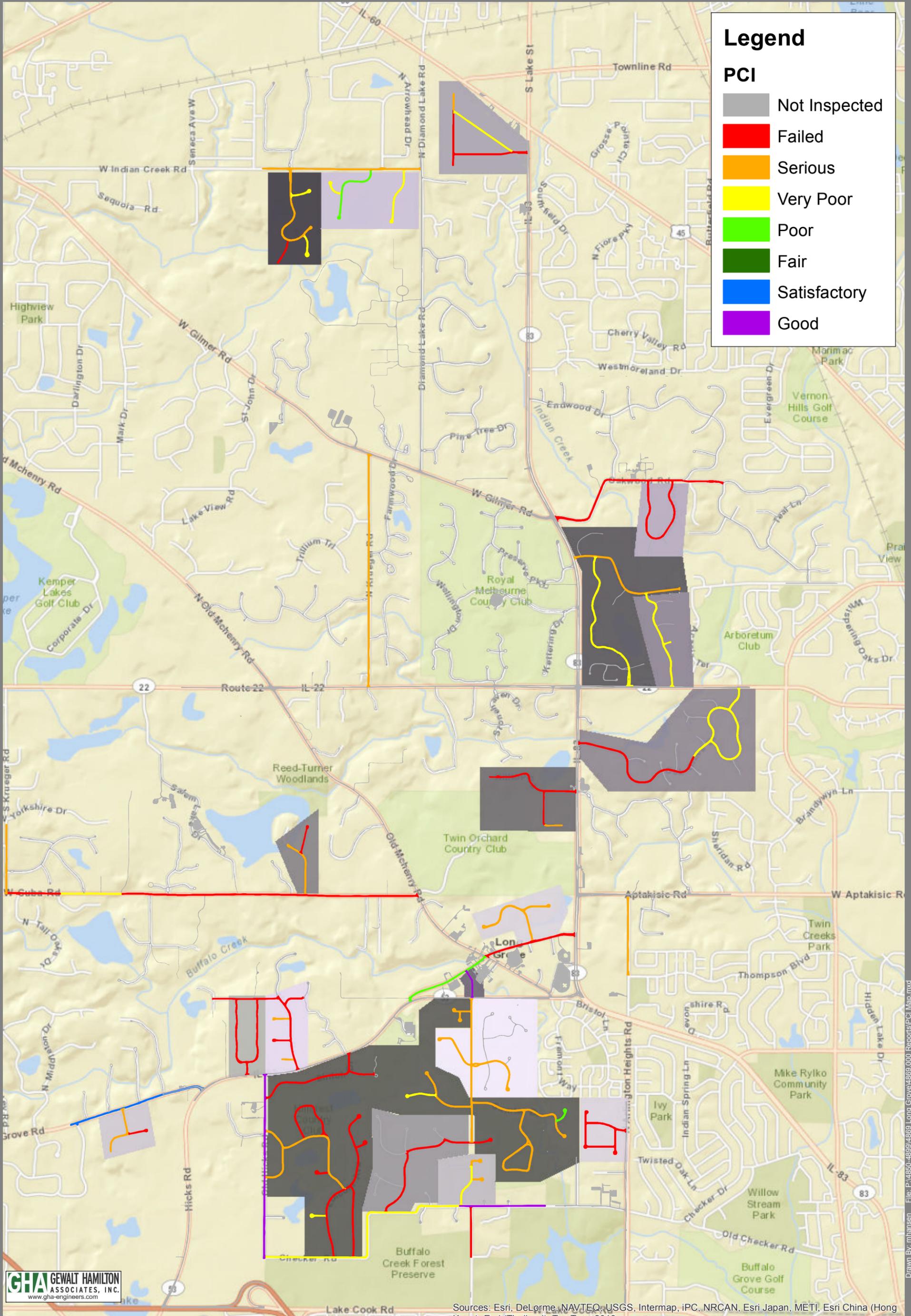
*Totals inclusive of 8% Engineering and 7% Contingency.

Village of Long Grove
Village Map (With PCI Rankings)

Legend

PCI

- Not Inspected
- Failed
- Serious
- Very Poor
- Poor
- Fair
- Satisfactory
- Good



Sources:
GHA GEWALT HAMILTON
 ASSOCIATES, INC.
 www.gha-engineers.com

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, TSBG, Telemat, CNRS, IGN, VEOLIA, GEBCO, Esri, Swisstopo, TSBG, Telemat, CNRS, IGN, VEOLIA, GEBCO



1 inch = 3,000
 Feet

Village of Long Grove - Pavement Condition Index

Long Grove, Illinois

Village of Long Grove

Pavement Condition Index (PCI) Reports

(Subdivision Order, Alphabetical Order and Increasing PCI Order)

SUMMARY REPORT BY SUBDIVISION

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Bennington	Knoll Ct	Knoll Rd East	Terminus	649	6	Failed
Bennington	Knoll	Long Grove Rd	Knoll Ct	653	21	Serious
Bennington	Knoll Ct	Knoll Dr West	Terminus	743	25	Serious
BridgeWate	ManassasL	Schaeffer Rd East	Terminus	1,475.00	18	Serious
BridgeWate	ManassasLn	Schaeffer Rd West	Terminus	1,362.00	24	Serious
CCEstates	Lincoln	Lexington Dr	Checker Rd	1,954.00	0	Failed
CCEstates	HollyCt	Schaeffer Rd East	Terminus	648	0	Failed
CCEstates	Shiloh	Old Hicks Rd	IL Rt 53	2,773.00	3	Failed
CCEstates	Shenandoah	Lincoln Ave	Checker Rd	1,838.00	3	Failed
CCEstates	Sheridan	Shiloh Dr	Stayton Ln	911	3	Failed
CCEstates	Federal Ct	Lexington Dr	Terminus	515	5	Failed
CCEstates	Cumberland	Lexington Dr	Lexington Dr	2,224.00	6	Failed
CCEstates	Lincoln	Lexington Rd	Terminus	2,346.00	8	Failed
CCEstates	Union	Lincoln Ave	Terminus	472	10	Failed
CCEstates	Coach	Lexington Rd North	Old Hicks Rd	665	12	Serious
CCEstates	Chickamaug	Sumter Dr	Terminus	3,396.00	12	Serious
CCEstates	GrantPl	Schaeffer Rd	Terminus	625	12	Serious
CCEstates	GrantCt	Grant Pl	Terminus	408	13	Serious
CCEstates	Lexington	Coach Rd	Lincoln Ave	2,681.00	16	Serious
CCEstates	SumterDr	Schaeffer Rd	Terminus	3,010.00	19	Serious
CCEstates	Antietam	Schaeffer Rd	Terminus	1,810.00	22	Serious
CCEstates	Coach	Lexington Rd South	Old Hicks Rd	1,107.00	23	Serious
CCEstates	Cavalry	Lincoln Ave	Terminus	577	31	Very Poor
CCEstates	Pottawatom	Antietam Dr	Terminus	907	40	Very Poor
CCEstates	SumterCt	Sumter Dr	Terminus	580	50	Poor
CCMeadows	CountryClu	Tanager Way	Checker Rd	1,728.00	6	Failed
CCMeadows	HollyCt	Schaeffer Rd West	Tanager Way	764	10	Failed
CCMeadows	Tanager	Holly Ct	Country Club Dr	1,094.00	10	Failed
Collector	Cuba_3	S Krueger Rd	Lakeridge Ct	1,407.00	0	Failed
Collector	Oakwood	IL Rt 83	Partridge Ln	4,344.00	2	Failed
Collector	Schaeffe_2	Checker Rd	Richmond Ln	1,303.00	3	Failed
Collector	Cuba_1	McGinty Farm	Old McHenry Rd	7,310.00	4	Failed
Collector	RPCoffin_1	Old McHenry Rd	IL Rt 83	2,264.00	8	Failed
Collector	Indian Cre	Diamond Lake Rd	Village Limits	3,943.00	11	Serious
Collector	ArlingtonH	Thompson Blvd	Terminus	1,882.00	11	Serious
Collector	Schaeffe_1	Holly Ct	IL Rt 53	3,659.00	15	Serious
Collector	NKrueger	IL Rt 22	Gilmer Rd	5,842.00	23	Serious
Collector	SKrueger	Cuba Rd	Village Limits	1,638.00	24	Serious
Collector	Cuba_2	Lakeridge Ct	McGinty Farm	1,785.00	34	Very Poor
Collector	Checker_1	Old Hicks Rd	Schaeffer Rd	6,369.00	36	Very Poor
Collector	RPCoffin_2	IL Rt 53	Old McHenry Rd	2,120.00	42	Poor
Collector	Long Grove	Village Limits	IL Rt 53	3,468.00	85	Satisfactory
Collector	Checker_2	Schaeffer Rd	18376 Checker Rd	2,010.00	94	Good
Collector	OldHicks	IL Rt 53	Checker Rd	4,614.00	100	Good
Creekside	Private	Creekside Rd	Terminus	643	0	Failed
Creekside	Creekside	Indian Creek Rd	Terminus	3,062.00	25	Serious
Creekside	Arrowhead	Creekside Dr	Terminus	762	33	Very Poor

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Creekside	Tribal	Creekside Dr	Terminus	650	34	Very Poor
Edgebrook	Roanake	Schaeffer Rd	Terminus	357	12	Serious
Edgebrook	Dawn	Schaeffer Rd	Terminus	430	13	Serious
Edgebrook	Schaeffer	Checker Rd North	Terminus	1,242.00	29	Very Poor
EstOakHill	OakGrove1	IL Rt 83	5367 Oak Grove Dr	3,806.00	10	Failed
EstOakHill	OakGroveC	Oak Grove Dr	Oak Grove Dr	2,196.00	26	Very Poor
EstOakHill	OakGrove2	5367 Oak Grove Dr	IL Rt 22	2,477.00	30	Very Poor
Indian Cre	Estate Ln	Indian Creek Rd	Terminus	1,588.00	30	Very Poor
Indian Cre	LakeridgeC	Lakeridge Dr	Terminus	583	35	Very Poor
Indian Cre	LakeridgeD	Indian Creek Rd	Terminus	1,960.00	41	Poor
LakesLG	3LakesDr	RPC	Terminus	2,302.00	17	Serious
LakesLG	3LakesCt	Three Lakes Dr	Terminus	818	24	Serious
LeSavanne	BrittanyCt	Brittany Ln	Terminus	795	2	Failed
LeSavanne	PicardyCt	Picardy Ln	Terminus	1,022.00	4	Failed
LeSavanne	BrittanyLn	Arlington Heights Rd	Picardy Ct	1,046.00	7	Failed
LeSavanne	PicardyLn	Brittany Ct	Picardy Ct	936	8	Failed
MardenEst	Monitor	Middlesax Dr	Allison Ln	535	1	Failed
MardenEst	Middlesax	IL Rt 53	Monitor Ln	1997	9	Failed
MardenEst	Monticello	Middlesax Dr	Terminus	583	9	Failed
MardenEst	Mayflower	Middlesax Dr	Terminus	319	11	Serious
MardenEst	Merrimac	Middlesax Dr	Terminus	580	17	Serious
MardenWood	EMardan	Mardan Dr	Monitor Ln	1,834.00	1	Failed
MardenWood	WMardan	Mardan Dr	Monitor Ln	1,943.00	2	Failed
MardenWood	Monitor Ln	Hidden Valley	Middlesax Dr	1,659.00	4	Failed
MardenWood	Mardan	IL Rt 53	E/W Mardan Dr	260	10	Failed
Oak Island	RollingGle	Crestivew Dr	Terminus	816	3	Failed
Oak Island	Crestview	Cuba Rd	Terminus	1,609.00	19	Serious
OakwoodCre	Oakwood	Oakwood Rd	Oakwood Rd	3,354.00	9	Failed
Promontory	Port Clint	Tall Oaks Dr	Terminus	2,700.00	12	Serious
Promontory	PortClinto	IL Rt 83	Tall Oaks Dr	550	22	Serious
Promontory	Tall Oaks	IL Rt 22	Port Clinton Rd	4,441.00	28	Very Poor
PromoRidge	Hampton	IL Rt 22	Port Clinton Rd	2,538.00	26	Very Poor
Residentia	Schaeffer	IL Rt 53	RPC	704	100	Good
Skycrest	Hilltop	IL Rt 83	Terminus	2,343.00	4	Failed
Skycrest	Golf	Hilltop Rd	Sunshine Ln	846	10	Failed
Skycrest	Sunshine	Golf Rd	Terminus	473	11	Serious
Towers	Meadow	IL Rt 83	Osage Ln	408	7	Failed
Towers	Willow Spr	Osage Ln	Terminus	1,340.00	8	Failed
Towers	Meadow	Willow Spring Rd	Osage Ln	1,449.00	10	Failed
Towers	Willow Spr	Village Limits at IL Rt 83	Osage Ln	480	16	Serious
Towers	Osage	Willow Spring Rd	Meadow Ln	1,823.00	40	Very Poor

SUMMARY REPORT BY BRANCH

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Bennington	Knoll	Long Grove Rd	Knoll Ct	653	21	Serious
Bennington	Knoll Ct	Knoll Rd East	Terminus	649	6	Failed
Bennington	Knoll Ct	Knoll Dr West	Terminus	743	25	Serious
BridgeWate	ManassasL	Schaeffer Rd East	Terminus	1,475.00	18	Serious
BridgeWate	ManassasLn	Schaeffer Rd West	Terminus	1,362.00	24	Serious
CCEstates	Antietam	Schaeffer Rd	Terminus	1,810.00	22	Serious
CCEstates	Cavalry	Lincoln Ave	Terminus	577	31	Very Poor
CCEstates	Chickamaug	Sumter Dr	Terminus	3,396.00	12	Serious
CCEstates	Coach	Lexington Rd North	Old Hicks Rd	665	12	Serious
CCEstates	Coach	Lexington Rd South	Old Hicks Rd	1,107.00	23	Serious
CCEstates	Cumberland	Lexington Dr	Lexington Dr	2,224.00	6	Failed
CCEstates	Federal Ct	Lexington Dr	Terminus	515	5	Failed
CCEstates	GrantCt	Grant Pl	Terminus	408	13	Serious
CCEstates	GrantPl	Schaeffer Rd	Terminus	625	12	Serious
CCEstates	HollyCt	Schaeffer Rd East	Terminus	648	0	Failed
CCEstates	Lexington	Coach Rd	Lincoln Ave	2,681.00	16	Serious
CCEstates	Lincoln	Lexington Dr	Checker Rd	1,954.00	0	Failed
CCEstates	Lincoln	Lexington Rd	Terminus	2,346.00	8	Failed
CCEstates	Pottawatom	Antietam Dr	Terminus	907	40	Very Poor
CCEstates	Shenandoah	Lincoln Ave	Checker Rd	1,838.00	3	Failed
CCEstates	Sheridan	Shiloh Dr	Stayton Ln	911	3	Failed
CCEstates	Shiloh	Old Hicks Rd	IL Rt 53	2,773.00	3	Failed
CCEstates	SumterCt	Sumter Dr	Terminus	580	50	Poor
CCEstates	SumterDr	Schaeffer Rd	Terminus	3,010.00	19	Serious
CCEstates	Union	Lincoln Ave	Terminus	472	10	Failed
CCMeadows	CountryClu	Tanager Way	Checker Rd	1,728.00	6	Failed
CCMeadows	HollyCt	Schaeffer Rd West	Tanager Way	764	10	Failed
CCMeadows	Tanager	Holly Ct	Country Club Dr	1,094.00	10	Failed
Collector	ArlingtonH	Thompson Blvd	Terminus	1,882.00	11	Serious
Collector	Checker_1	Old Hicks Rd	Schaeffer Rd	6,369.00	36	Very Poor
Collector	Checker_2	Schaeffer Rd	18376 Checker Rd	2,010.00	94	Good
Collector	Cuba_1	McGinty Farm	Old McHenry Rd	7,310.00	4	Failed
Collector	Cuba_2	Lakeridge Ct	McGinty Farm	1,785.00	34	Very Poor
Collector	Cuba_3	S Krueger Rd	Lakeridge Ct	1,407.00	0	Failed
Collector	Indian Cre	Diamond Lake Rd	Village Limits	3,943.00	11	Serious
Collector	Long Grove	Village Limits	IL Rt 53	3,468.00	85	Satisfactory
Collector	NKrueger	IL Rt 22	Gilmer Rd	5,842.00	23	Serious
Collector	Oakwood	IL Rt 83	Partridge Ln	4,344.00	2	Failed
Collector	OldHicks	IL Rt 53	Checker Rd	4,614.00	100	Good
Collector	RPCoffin_1	Old McHenry Rd	IL Rt 83	2,264.00	8	Failed
Collector	RPCoffin_2	IL Rt 53	Old McHenry Rd	2,120.00	42	Poor

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Collector	Schaeffe_1	Holly Ct	IL Rt 53	3,659.00	15	Serious
Collector	Schaeffe_2	Checker Rd	Richmond Ln	1,303.00	3	Failed
Collector	SKrueger	Cuba Rd	Village Limits	1,638.00	24	Serious
Creekside	Arrowhead	Creekside Dr	Terminus	762	33	Very Poor
Creekside	Creekside	Indian Creek Rd	Terminus	3,062.00	25	Serious
Creekside	Private	Creekside Rd	Terminus	643	0	Failed
Creekside	Tribal	Creekside Dr	Terminus	650	34	Very Poor
Edgebrook	Dawn	Schaeffer Rd	Terminus	430	13	Serious
Edgebrook	Roanake	Schaeffer Rd	Terminus	357	12	Serious
Edgebrook	Schaeffer	Checker Rd North	Terminus	1,242.00	29	Very Poor
EstOakHill	OakGrove1	IL Rt 83	5367 Oak Grove Dr	3,806.00	10	Failed
EstOakHill	OakGrove2	5367 Oak Grove Dr	IL Rt 22	2,477.00	30	Very Poor
EstOakHill	OakGroveC	Oak Grove Dr	Oak Grove Dr	2,196.00	26	Very Poor
Indian Cre	Estate Ln	Indian Creek Rd	Terminus	1,588.00	30	Very Poor
Indian Cre	LakeridgeC	Lakeridge Dr	Terminus	583	35	Very Poor
Indian Cre	LakeridgeD	Indian Creek Rd	Terminus	1,960.00	41	Poor
LakesLG	3LakesCt	Three Lakes Dr	Terminus	818	24	Serious
LakesLG	3LakesDr	RPC	Terminus	2,302.00	17	Serious
LeSavanne	BrittanyCt	Brittany Ln	Terminus	795	2	Failed
LeSavanne	BrittanyLn	Arlington Heights Rd	Picardy Ct	1,046.00	7	Failed
LeSavanne	PicardyCt	Picardy Ln	Terminus	1,022.00	4	Failed
LeSavanne	PicardyLn	Brittany Ct	Picardy Ct	936	8	Failed
MardenEst	Mayflower	Middlesax Dr	Terminus	319	11	Serious
MardenEst	Merrimac	Middlesax Dr	Terminus	580	17	Serious
MardenEst	Middlesax	IL Rt 53	Monitor Ln	1997	9	Failed
MardenEst	Monitor	Middlesax Dr	Allison Ln	535	1	Failed
MardenEst	Monticello	Middlesax Dr	Terminus	583	9	Failed
MardenWood	EMardan	Mardan Dr	Monitor Ln	1,834.00	1	Failed
MardenWood	Mardan	IL Rt 53	E/W Mardan Dr	260	10	Failed
MardenWood	Monitor Ln	Hidden Valley	Middlesax Dr	1,659.00	4	Failed
MardenWood	WMardan	Mardan Dr	Monitor Ln	1,943.00	2	Failed
Oak Island	Crestview	Cuba Rd	Terminus	1,609.00	19	Serious
Oak Island	RollingGle	Crestview Dr	Terminus	816	3	Failed
OakwoodCre	Oakwood	Oakwood Rd	Oakwood Rd	3,354.00	9	Failed
Promontory	Port Clint	Tall Oaks Dr	Terminus	2,700.00	12	Serious
Promontory	PortClinto	IL Rt 83	Tall Oaks Dr	550	22	Serious
Promontory	Tall Oaks	IL Rt 22	Port Clinton Rd	4,441.00	28	Very Poor
PromoRidge	Hampton	IL Rt 22	Port Clinton Rd	2,538.00	26	Very Poor
Residentia	Schaeffer	IL Rt 53	RPC	704	100	Good
Skycrest	Golf	Hilltop Rd	Sunshine Ln	846	10	Failed
Skycrest	Hilltop	IL Rt 83	Terminus	2,343.00	4	Failed
Skycrest	Sunshine	Golf Rd	Terminus	473	11	Serious

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Towers	Meadow	IL Rt 83	Osage Ln	408	7	Failed
Towers	Meadow	Willow Spring Rd	Osage Ln	1,449.00	10	Failed
Towers	Osage	Willow Spring Rd	Meadow Ln	1,823.00	40	Very Poor
Towers	Willow Spr	Osage Ln	Terminus	1,340.00	8	Failed
Towers	Willow Spr	Village Limits at IL Rt 83	Osage Ln	480	16	Serious

SUMMARY REPORT BY PCI

Branch ID	Section ID	From	To	Length	PCI	PCI Category
CCEstates	HollyCt	Schaeffer Rd East	Terminus	648	0	Failed
CCEstates	Lincoln	Lexington Dr	Checker Rd	1,954.00	0	Failed
Collector	Cuba_3	S Krueger Rd	Lakeridge Ct	1,407.00	0	Failed
Creekside	Private	Creekside Rd	Terminus	643	0	Failed
MardenEst	Monitor	Middlesax Dr	Allison Ln	535	1	Failed
MardenWood	EMardan	Mardan Dr	Monitor Ln	1,834.00	1	Failed
Collector	Oakwood	IL Rt 83	Partridge Ln	4,344.00	2	Failed
LeSavanne	BrittanyCt	Brittany Ln	Terminus	795	2	Failed
MardenWood	WMardan	Mardan Dr	Monitor Ln	1,943.00	2	Failed
CCEstates	Shenandoah	Lincoln Ave	Checker Rd	1,838.00	3	Failed
CCEstates	Sheridan	Shiloh Dr	Stayton Ln	911	3	Failed
CCEstates	Shiloh	Old Hicks Rd	IL Rt 53	2,773.00	3	Failed
Collector	Schaeffe_2	Checker Rd	Richmond Ln	1,303.00	3	Failed
Oak Island	RollingGle	Crestivew Dr	Terminus	816	3	Failed
Collector	Cuba_1	McGinty Farm	Old McHenry Rd	7,310.00	4	Failed
LeSavanne	PicardyCt	Picardy Ln	Terminus	1,022.00	4	Failed
MardenWood	Monitor Ln	Hidden Valley	Middlesax Dr	1,659.00	4	Failed
Skycrest	Hilltop	IL Rt 83	Terminus	2,343.00	4	Failed
CCEstates	Federal Ct	Lexington Dr	Terminus	515	5	Failed
Bennington	Knoll Ct	Knoll Rd East	Terminus	649	6	Failed
CCEstates	Cumberland	Lexington Dr	Lexington Dr	2,224.00	6	Failed
CCMeadows	CountryClu	Tanager Way	Checker Rd	1,728.00	6	Failed
LeSavanne	BrittanyLn	Arlington Heights Rd	Picardy Ct	1,046.00	7	Failed
Towers	Meadow	IL Rt 83	Osage Ln	408	7	Failed
CCEstates	Lincoln	Lexington Rd	Terminus	2,346.00	8	Failed
Collector	RPCoffin_1	Old McHenry Rd	IL Rt 83	2,264.00	8	Failed
LeSavanne	PicardyLn	Brittany Ct	Picardy Ct	936	8	Failed
Towers	Willow Spr	Osage Ln	Terminus	1,340.00	8	Failed
MardenEst	Middlesax	IL Rt 53	Monitor Ln	1997	9	Failed
MardenEst	Monticello	Middlesax Dr	Terminus	583	9	Failed
OakwoodCre	Oakwood	Oakwood Rd	Oakwood Rd	3,354.00	9	Failed
CCEstates	Union	Lincoln Ave	Terminus	472	10	Failed
CCMeadows	HollyCt	Schaeffer Rd West	Tanager Way	764	10	Failed
CCMeadows	Tanager	Holly Ct	Country Club Dr	1,094.00	10	Failed
EstOakHill	OakGrove1	IL Rt 83	5367 Oak Grove Dr	3,806.00	10	Failed
MardenWood	Mardan	IL Rt 53	E/W Mardan Dr	260	10	Failed
Skycrest	Golf	Hilltop Rd	Sunshine Ln	846	10	Failed
Towers	Meadow	Willow Spring Rd	Osage Ln	1,449.00	10	Failed
Collector	ArlingtonH	Thompson Blvd	Terminus	1,882.00	11	Serious
Collector	Indian Cre	Diamond Lake Rd	Village Limits	3,943.00	11	Serious
MardenEst	Mayflower	Middlesax Dr	Terminus	319	11	Serious

Branch ID	Section ID	From	To	Length	PCI	PCI Category
Skycrest	Sunshine	Golf Rd	Terminus	473	11	Serious
CCEstates	Chickamaug	Sumter Dr	Terminus	3,396.00	12	Serious
CCEstates	Coach	Lexington Rd North	Old Hicks Rd	665	12	Serious
CCEstates	GrantPl	Schaeffer Rd	Terminus	625	12	Serious
Edgebrook	Roanake	Schaeffer Rd	Terminus	357	12	Serious
Promontory	Port Clint	Tall Oaks Dr	Terminus	2,700.00	12	Serious
CCEstates	GrantCt	Grant Pl	Terminus	408	13	Serious
Edgebrook	Dawn	Schaeffer Rd	Terminus	430	13	Serious
Collector	Schaeffe_1	Holly Ct	IL Rt 53	3,659.00	15	Serious
CCEstates	Lexington	Coach Rd	Lincoln Ave	2,681.00	16	Serious
Towers	Willow Spr	Village Limits at IL Rt 83	Osage Ln	480	16	Serious
LakesLG	3LakesDr	RPC	Terminus	2,302.00	17	Serious
MardenEst	Merrimac	Middlesax Dr	Terminus	580	17	Serious
BridgeWate	ManassasL	Schaeffer Rd East	Terminus	1,475.00	18	Serious
CCEstates	SumterDr	Schaeffer Rd	Terminus	3,010.00	19	Serious
Oak Island	Crestview	Cuba Rd	Terminus	1,609.00	19	Serious
Bennington	Knoll	Long Grove Rd	Knoll Ct	653	21	Serious
CCEstates	Antietam	Schaeffer Rd	Terminus	1,810.00	22	Serious
Promontory	PortClinto	IL Rt 83	Tall Oaks Dr	550	22	Serious
CCEstates	Coach	Lexington Rd South	Old Hicks Rd	1,107.00	23	Serious
Collector	NKrueger	IL Rt 22	Gilmer Rd	5,842.00	23	Serious
BridgeWate	ManassasLn	Schaeffer Rd West	Terminus	1,362.00	24	Serious
Collector	SKrueger	Cuba Rd	Village Limits	1,638.00	24	Serious
LakesLG	3LakesCt	Three Lakes Dr	Terminus	818	24	Serious
Bennington	Knoll Ct	Knoll Dr West	Terminus	743	25	Serious
Creekside	Creekside	Indian Creek Rd	Terminus	3,062.00	25	Serious
EstOakHill	OakGroveC	Oak Grove Dr	Oak Grove Dr	2,196.00	26	Very Poor
PromoRidge	Hampton	IL Rt 22	Port Clinton Rd	2,538.00	26	Very Poor
Promontory	Tall Oaks	IL Rt 22	Port Clinton Rd	4,441.00	28	Very Poor
Edgebrook	Schaeffer	Checker Rd North	Terminus	1,242.00	29	Very Poor
EstOakHill	OakGrove2	5367 Oak Grove Dr	IL Rt 22	2,477.00	30	Very Poor
Indian Cre	Estate Ln	Indian Creek Rd	Terminus	1,588.00	30	Very Poor
CCEstates	Cavalry	Lincoln Ave	Terminus	577	31	Very Poor
Creekside	Arrowhead	Creekside Dr	Terminus	762	33	Very Poor
Collector	Cuba_2	Lakeridge Ct	McGinty Farm	1,785.00	34	Very Poor
Creekside	Tribal	Creekside Dr	Terminus	650	34	Very Poor
Indian Cre	LakeridgeC	Lakeridge Dr	Terminus	583	35	Very Poor
Collector	Checker_1	Old Hicks Rd	Schaeffer Rd	6,369.00	36	Very Poor
CCEstates	Pottawatom	Antietam Dr	Terminus	907	40	Very Poor
Towers	Osage	Willow Spring Rd	Meadow Ln	1,823.00	40	Very Poor
Indian Cre	LakeridgeD	Indian Creek Rd	Terminus	1,960.00	41	Poor
Collector	RPCoffin_2	IL Rt 53	Old McHenry Rd	2,120.00	42	Poor

Branch ID	Section ID	From	To	Length	PCI	PCI Category
CCEstates	SumterCt	Sumter Dr	Terminus	580	50	Poor
Collector	Long Grove	Village Limits	IL Rt 53	3,468.00	85	Satisfactory
Collector	Checker_2	Schaeffer Rd	18376 Checker Rd	2,010.00	94	Good
Collector	OldHicks	IL Rt 53	Checker Rd	4,614.00	100	Good
Residentia	Schaeffer	IL Rt 53	RPC	704	100	Good

PCI Rating System Methodology

PAVER™ 6.5 Brochure

PAVER™

6.5

*NEW DIMENSIONS IN PAVEMENT
MAINTENANCE MANAGEMENT*



**US Army Corps Of Engineers
Engineer Research And Development Center
Construction Engineering Research Laboratory**

Background

PAVER™ is a pavement management system developed by the US Army Corps Of Engineers, Construction Engineering Research Laboratory (CERL). PAVER™ development is supported by the following agencies: US Air Force, US Army, US Navy, Federal Aviation Administration, and the Federal Highway Administration.

PAVER™ provides pavement management capabilities to: (1) develop and organize the pavement inventory; (2) assess the current condition of pavements; (3) develop models to predict future conditions; (4) report on past and future pavement performance; (5) develop scenarios for M&R based on budget or condition requirements; and (6) plan projects.

The following is a brief overview of the PAVER™ components and capabilities.

Inventory

PAVER™ inventory management is based on a hierarchical structure composed of networks, branches, and sections, with the section being the smallest managed unit. This structure allows users to easily organize their inventory while providing numerous fields and levels for storing pavement data.

These are some of the other features included in Inventory:

- **User-defined Fields:** In addition to the standard inventory information, users can define their own fields to meet their management requirements.

- **Virtual Inventory:** Allows the user to create virtual copies of the existing inventory and group sections for easy presentation.
- **Surface Change:** Automatically calculates and updates pavement surface based on work history information.
- **Edit Historical Inventory:** Easily edit historical inventory values associated with previous inspections.

Inspection

To assess pavement condition, PAVER™ uses the Pavement Condition Index (PCI) as its primary standard. The PCI measures pavement condition on a scale from 0 to 100. ASTM has adopted the PCI as standard practice for roads (D-6433-10) and airfields (D-5340-10). PAVER™ provides users the ability to customize the PCI condition rating categories, Figure 1. PAVER™ also allows the user an interface for recording the results of an inspection and an online distress user guide, Figure 2.

In addition to the PCI, PAVER™ allows managers to use and create other condition indices, including those based on PCI distresses. A new interface has been added for easily importing inspection data from automated vehicle collection sources.

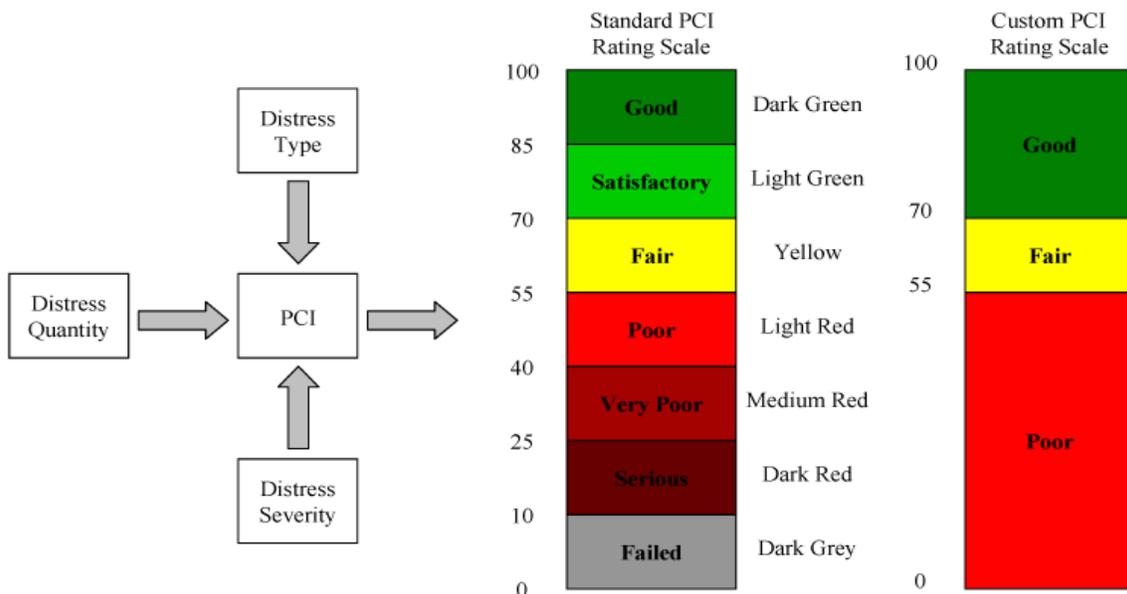


Figure 1: Pavement Condition Index (PCI) ranges may be customized and used for reporting analysis results.

Village of Long Grove
Infrastructure Workshop Q&A

BOARD WORKSHOP #2

Item #3:

Draft Workshop #1 Detailed Q&A Responses

Long Grove Community Engagement Workshops
Infrastructure Session
Session #1
8-18-14

This summary is intended to be included as further detail to the approved meeting minutes for the August 18, 2014 Workshop by reference.

QUESTIONS RAISED AND DISPOSITION.

There were thirty-nine (39) questions raised during the workshop session. Upon review at the end of the workshop, the members agreed that Gewalt-Hamilton & Associates (GHA) sufficiently answered thirty (30) of these thirty nine (39) questions. The following presents the questions raised and then briefly summarizes the responses.

ANSWERED QUESTIONS. The following thirty (30) questions were raised and answered during the workshop, include:

1. Can you compare unit costs of report with recent repairs/private bid for a Long Grove HOA road project? We have lower “unit “costs” for our repairs.*
(A) Although we did not inspect the subdivision in question, we were informed by a representative from the HOA that the subdivision in question was a curb and gutter pavement section and is less than 10 years old since the final surface was installed. It should be in much better condition and therefore require less work. It is not an “apples to apples” comparison.

2. Ninety-five percent (95%) of our roads are rated poor or worse per your team’s assessment. How does that compare to other villages? How fast (years) will a road deteriorate from a “serious to fail” condition rating for example. Are there other cost options to consider?
(A) Based on a number of similar Villages we represent, it would indicate that the Roads in the Village of Long Grove are in worse shape than many similar communities. The change from “serious to fail” has many different variables that affect the pavement that is not uniform between road sections (ie drainage, pavement cross section, Average Daily Traffic (ADT), base soils, etc). There are numerous cost options to consider which would be done at the time the roads are in design based on additional information that would be gathered (current pricing, pavement borings, drainage work). The cost options provided allow for two different methods depending on the existing conditions that should both work very well.

3. Did I hear correctly that surface patching is not included in the G H A long-term Road Program estimates presented tonight? It seems like, without annual patching needs tallied,-we don’t have a total dollar requirement for our roads just yet?
(A) Surface patching was not included in the estimate, but there is a contingency that might allow for this depending on the bidding climate.

*Note: all responses to questions and technical data or illustrations provided by GHA Engineering
denotes a similar question or topic raised at the Village’s previous workshops Spring of 2014

4. Why has the Village only budgeted/spent \$400,000 per year on roads historically?*
- (A) The Village's prior presentations from the Town Hall meetings includes a summary of prior road paving expenses which averages \$374K during the years of 2002-2012. The Village's total expenses for road paving plus all other road maintenance items such as snow removal, rock salt purchase, pothole patching, etc. averaged \$806K during this ten year periods. The General Fund budget during this ten year period averaged \$2.5M. The Village's is mandated to have a balanced budget and has adjusted the road paving expenses during these years to maximize the amount of road paving possible while maintaining a balanced budget. Most recently, in 2013 when new home building permit revenues grew more than anticipated the Village increased road paving expenses to \$600K. The materials for the 2012-2013 Town Hall Meetings and Village Budget information are posted on the Village website under the "Village Infrastructure" quicklink tab and under the "Village Finances" pull down menu. Village Finances will be reviewed in further detail during the third workshop meeting.*
5. Would all roads be repaired in the fifteen (15) year life of the proposed program presented in your preliminary report/program plan?*
- (A) All Public and throughfare roads as shown on the Village exhibit.*
6. Isn't there a road repair agreement on Cuba Road for the Lake Zurich sewer easement?
- (A) Nothing on-going. The easement granted for the installation of the sanitary sewer on Cuba Road required that the road be restored following construction and repaired when any repairs necessary to the sanitary sewer were completed that would affect the pavement.*
7. What did you use for the price of a barrel of oil as your starting point for commodity costs and road repairs in present dollars?
- (A) Although the Village's previous analysis from the Town Hall meetings included a comparison of the price of oil vs. cost of paving that appears to support a direct correlation between each other, it was not the basis for this analysis.*
8. Are you assuming SSA's?*
- (A) We only looked at Roads that would be rehabilitated with public funds.*
9. Do we have to pay union rates and prevailing wages for contracts/contractors that work on Village roads and projects?
- (A) Yes.*
10. Do we have to use your design specs and full repair approach/ cross section options including reclamation when we repair our roads?*
- (A) No, it is our recommendation to use this approach based on the current conditions of the roads if there is suitable base material. The other design Option includes patching, 1" of level binder and 2" of surface. The methodology chosen will depend on the factors discussed above*

Note: all responses to questions and technical data or illustrations provided by GHA Engineering

*denotes a similar question or topic raised at the Village's previous workshops Spring of 2014

11. Does Kildeer partner with other villages? Would they be open to this?*
- (A) They have not yet, but they have indicated a willingness to do so.*
12. How likely is it that we would get the Federal Funding and the FAU Grant dollars you've identified as possibilities for parts of our road system?*
- (A) Based on a conversation with LCDOT, the work is eligible, but funding is not guaranteed. It does appear that there is a good chance to receive some of these funds.*
13. Could we increase FAU Savings of about \$128k per year if we open Arlington Heights Road?
- (A) Savings to rehabilitate Arlington Heights Road would occur one time and would be about \$70,000 in 2015 dollars if it were opened and it kept the FAU designation.*
14. Do the State and County have different standards (construction/design) for different roads?
- (A) Attached are two exhibits for widening projects on State and County roadways. Typical State and County roadway cross sections for full reconstructions are based on numerous factors and are much more extensive than anything that would be proposed for Village streets.*
15. Is it possible to enhance a road's "profile or width", as part of the full depth reclamation repair process? For example, what would the estimated additional cost of improvements like this on Krueger Road (e.g., three feet on each side) be?
- (A) Yes, if there are not other mitigating factors (ie wetlands, ROW, utility conflicts, grade transitions, etc.) Typical costs for this would be \$65/sy in 2015 dollars.*
16. The PCI rating tool is based on assumptions-did you check pavement depths, or, make use of depth estimates?
- (A) No pavement cores were completed at this time.*
17. Can more roads be designated as FAU's?
- (A) There is a potential for N. Krueger Road and S. Krueger Road to be designated as FAU routes.*
18. What is the Federal DOT definition of an FAU roadway or street? Connections; Traffic counts; Speed Limits.
- (A) The primary factors for an FAU route include connectivity, ADT and speed limits. The Village will be pursuing this designation for both Krueger Roads.*
19. Do you use historical context in your PCI model, e.g. – whether or not a specific section of road was repaired/resurfaced three years ago or fifteen years ago?
- (A) This data was not factored into the study.*

Note: all responses to questions and technical data or illustrations provided by GHA Engineering
*denotes a similar question or topic raised at the Village's previous workshops Spring of 2014

20. Public versus private unit costs and specs seem different based on the earlier question and reply—HOA repair standards vs. Village/Public ROW. repairs and requirements. Can you explain these again?

(A) Oftentimes, private work administered without professional oversight is not held to the same standards for material testing and workmanship as public projects. In addition, roadway conditions and standards are not uniform (see response to Question 1).

21. Is your program full depth reclamation for all 29 miles? What are the relative costs if we had just a 2 inch resurfacing on the majority of the Village's roads and then came back and did them again when they needed it? What if we just did two inches with patching as our approach? We may need to do it more frequently, but the roads would be done and maybe done cheaper?

(A) We have two options shown in the report for rehabilitation that would each work well. They are similar in cost. The option that would be chosen would be based on additional information that was gathered during the design phase. You could cover more roadway if you complete a 2" resurfacing with some minor patching. The problem with that approach in the current state of the roads, is that it would not hold up well. Once the rehabilitations are completed, the option to do a more limited approach in the future and have the improvements hold up well is much greater.

22. If we use the reclamation approach, how long will it be before we would need to do the \$32.00 (est. cost) reclamation approach again?

(A) With the right approach and maintenance (including resurfacing), between 35 and 45 years before a major reconstruction is required.

23. How does reclamation compare to full road reconstruction?

(A) The existing stone and asphalt is pulverized into a fairly uniform gradation. It is then compacted and tested prior to asphalt being installed. Any areas that fail are undercut (remove 18" to 24" of material), compact the existing base, proof rolled again, geotextile fabric, new stone installed and then paved. Full reconstruction does not take advantage of the existing material. All existing stone and asphalt is removed and replaced. This process is approximately 2 to 2.5 times as expensive. It opens the road up to potential issues caused by rain during the time the clay is exposed. It creates a much longer disturbance time for the motoring public, as well as residents having access in and out of their driveways.

24. Who actually drove around and did the ratings on the roads?

(A) Two Senior Engineering Technicians from Gewalt Hamilton Associates, each with over 20 years of experience in paving projects.

25. Is it (the program projections and sequencing) a "worst first" approach that you've programmed and presented? Did you use a specific dollar per year target? Did you use a specific program length as a target? What if you changed your assumptions e.g., the timeframe?

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(A) We chose the time frame of 15 years based on our experience with other communities going through a similar process.

26. Should we plan to schedule the FAU roads first to be sure we capture federal dollars available under the current program?

(A) We would recommend that the pursuit of Federal funds be moved up in the priority list so as to increase the likelihood to receive those funds.

27. If we went to FAU status on roads-would we have to change road widths, dimensions, etc.?

(A) The minimum pavement width would be 11' lanes with 4' shoulders unless a variance was pursued. The shoulders could be gravel or paved. We would recommend that they be paved.

28. Are there any other changes in development or land use plans in surrounding towns that would impact Village roads?

(A) There are always discussions regarding potential developments on open parcels in this area. There are no definite developments that we are aware of at this time.

29. Does widening a road extend the life of the road?

(A) Having a paved shoulder reduces the chance for the edge to deteriorate and should extend the life and useable quality of the road..

30. Are there any roads that we (Village) could turn over to the State or County? Would they be interested?

(A) None of the Village's roads meet the criteria to become State roads. The Village raised this question to Lake County and they responded that they did not have any interest in accepting any of the Village's roads unless they met their county-wide objective to move traffic throughout the County.

OPEN QUESTIONS. The following nine (9) questions were raised during the workshop and require further follow-up research and additional information or discussion.

31. Can you explain your model's assumptions, particularly the rate of inflation basis used (i.e., 7%)? How did your model account for commodities and their prices? How did your model account for future economic trends and inflation? How might revenues trend over same time in Village? What about engineering fees as a percentage? Isn't the use of a 7% inflation factor too high?*

(A) Based on recent increases in construction costs a 7% inflation rate was chosen. Our assumption did not factor in specific commodities pricing, but was based on current unit pricing that we have received for similar work. It is not only the commodities that affect the paving cost, but prevailing wage and benefits, liability insurance, etc. We can't comment on revenue trends within the Village. Engineering fees were shown as 8% and the scope provided is detailed in the report.

Note: all responses to questions and technical data or illustrations provided by GHA Engineering

*denotes a similar question or topic raised at the Village's previous workshops Spring of 2014

32. The pavement condition “PCI rating scale” you used is “foreboding”; the results and findings look very negative. Can you describe how the index is translated? Can you provide a sample and the criteria they use on the rating sheets?
- (A) We have attached samples of sections of roadways that were rated with corresponding photos. Also attached is a separate rating system that shows how the PCI index and PCR index correlate to each other. The index is based on the software that the USACE developed.*
33. What are the soil and pavement cross sections, (surface & subsurface) conditions now? Are soil borings necessary? Did you take into account traffic counts? Did you consider or research when the road was last repaired, and what type of repair, etc.?
- (A) We do not know the existing pavement cross sections. Pavement cores and soil borings will be taken prior to beginning paving rehabilitation methods. We did not evaluate the historical paving repairs as part of this study. GHA to provide samples drawings of cross sections and illustrations of the two primary repair approaches. ADT's were not used as part of the evaluation.*
34. Are there any other assumptions that are part of the PCI Program? Like financing, etc.
- (A) Financial assumptions in terms of front end loading the work were not included as part of this analysis. Once the final workshop is completed, we can address other options if directed.*
35. Can you provide a list of the assumptions used in your report and estimates? Almost all costs are (or seem to be) indexed to the pavement costs-(22% approximately). Can you provide details of the indexing and other criteria or variables?
- (A) cost of \$32/SY was estimated based off recent bid result averages from other Lake County Municipalities on similar jobs. 7% Inflation rate based on observed rise in paving unit prices over the past year and industry expert speculation. A large reduction in the quantity of qualified paving companies due to the recession affects these rates on top of economic trends. Contingency was calculated at 7% of the construction cost. This is a standard rate which is provided to cover unforeseen costs. Lower percentages incur higher risk of a project exceeding the approved budget. Engineering was calculated at 8% of the construction cost. This rate is 2% lower than that paid by the Village in previous years. *FAU routes will incur additional engineering expenses due to coordination, and Federal requirements for plan preparation, studies and documentation.*
36. What aspects of your study will require follow-up? What ideas did you identify for Village options to save dollars? What are the next steps for your work as you understand it?
- (A) Federal funds for FAU roads could save approximately \$1 million. Bidding with other Local Government agencies may save approximately 5%. Pursuit of other grants that address localized drainage issues associated with roadways.*
37. What version of the “Paver Program” (software) do you use?
- (A) PAVER 6.5.7 .*

*Note: all responses to questions and technical data or illustrations provided by GHA Engineering
denotes a similar question or topic raised at the Village's previous workshops Spring of 2014

38. What would happen if we “front loaded” the program and addressed our most critical needs early, or, did a bond issue and did a large number of roads right away? How would it change costs? How would it change pavement life and future maintenance cycles/requirements? Identified for Parking Lot:

(A) A large front end loading of the pavement improvements would obviously reduce the overall costs and time frame associated to complete all the roadways. It would reduce costs by not having to worry as much about potential impacts of inflation. By having a larger Road Program(s) initially, unit prices should be reduced. Future pavement cycles would be not as costly, as there would be less maintenance to occur as roads were waiting to be rehabilitated.

39. Could you speak to the fifteen year cycle you chose? Why not sixteen, eighteen? How would the program change or the pavement conditions change over eighteen years, for example?

(A) Many communities similar to the Village of Long Grove have had difficulty in completing all roads in 10 years financially. Twenty year Road cycle in the current condition is too long based on our experience and the condition of the pavement. A fifteen year cycle seems to be one that is more reasonable. If the Village did pass a bond issue that allowed for a substantial increase in the up front paving costs as well as adequate funding for the remaining streets, the overall time could be reduced substantially. The actual time frame would depend on the dollars that were available.

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denotes a similar question or topic raised at the Village’s previous workshops Spring of 2014

PCR vs PCI Rating Graphic

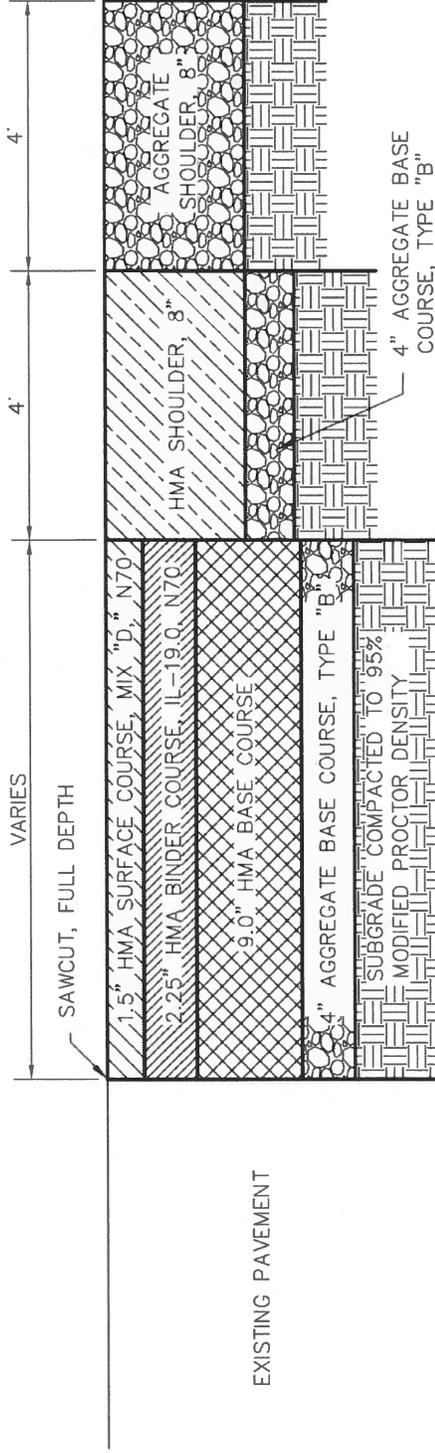
PCR Rating		PCI Rating	
Very Good	91-100	86-100	Good
Good	81-90		Satisfactory
Fair	66-80	71-85	Fair
	Poor	51-65	56-70
41-55			Very Poor
Very Poor	0-50	26-40	Serious
		11-25	Failed
		0-10	

*Note: all responses to questions and technical data or illustrations provided by GHA Engineering
 denotes a similar question or topic raised at the Village's previous workshops Spring of 2014

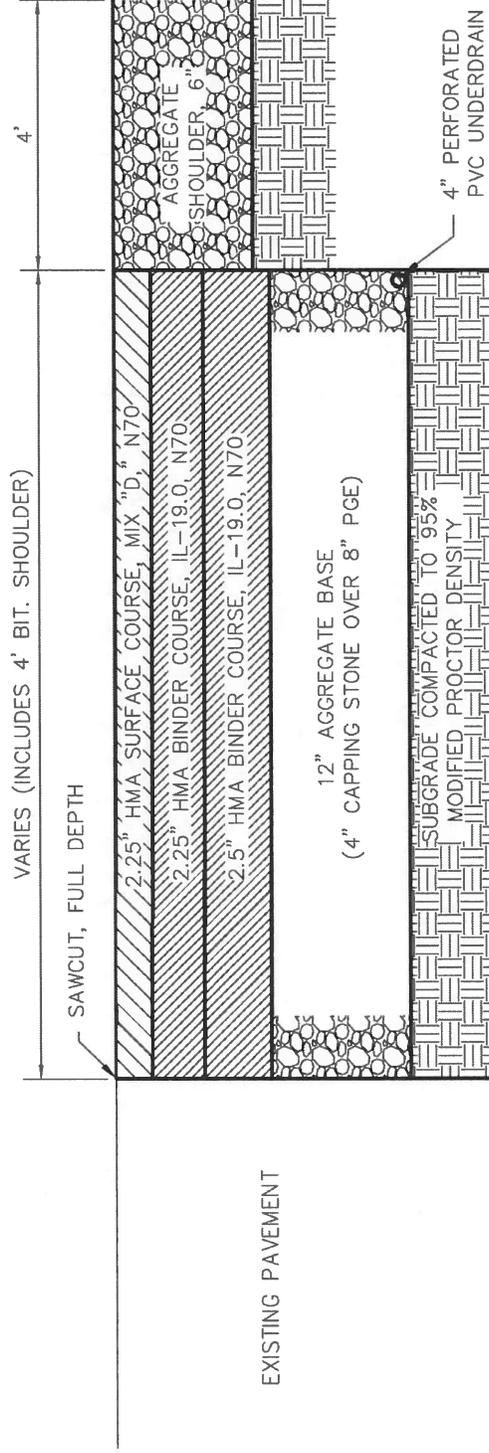
PHOTOGRAPH OF RECLAMATION



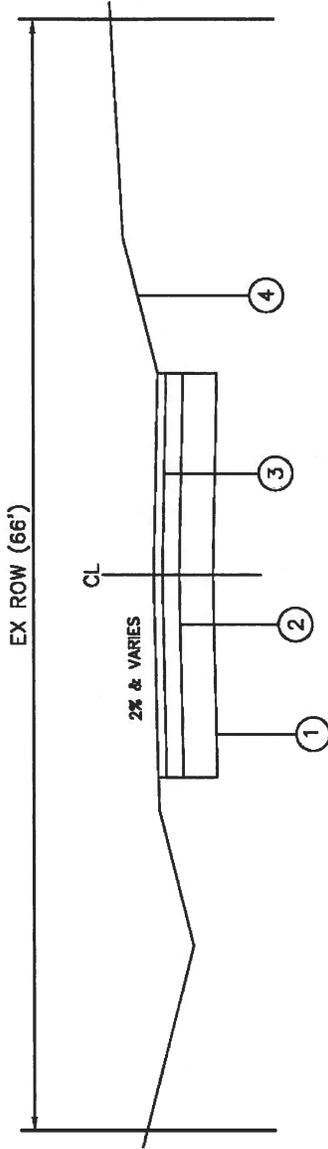
Full Depth Reclamation



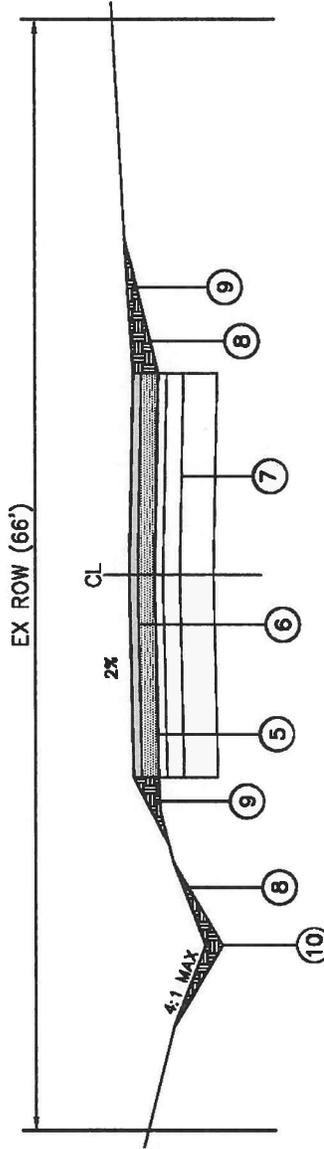
TYPICAL IDOT WIDENING DETAIL



TYPICAL LCDOT WIDENING DETAIL



EXISTING PAVEMENT SECTION



PROPOSED PAVEMENT SECTION

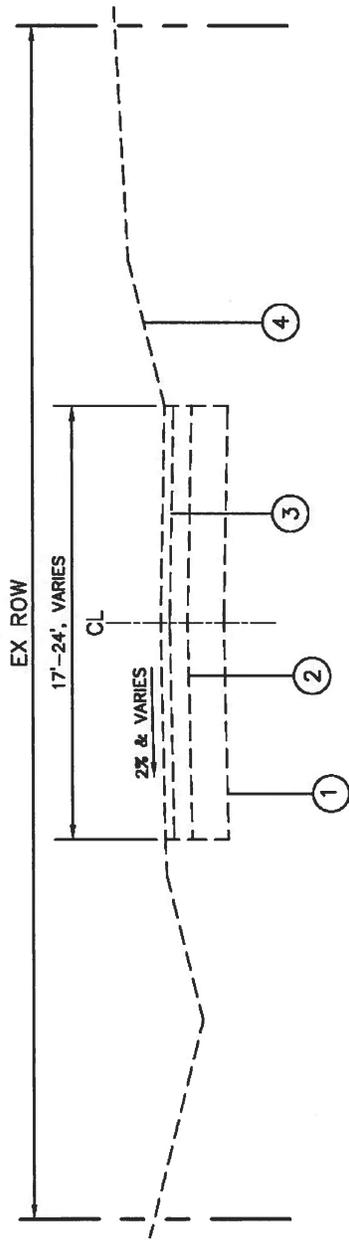
LEGEND

- ① EXISTING AGG BASE COURSE, VARIES
- ② EXISTING HMA BINDER, VARIES
- ③ EXISTING HMA SURFACE, VARIES
- ④ EXISTING SHOULDER/GRADE
- ⑤ PROPOSED HMA BINDER, IL-19.0, N50, 2 1/4"
- ⑥ PROPOSED HMA SURFACE, MIX D, 2"
- ⑦ FULL-DEPTH RECLAMATION (PULVERIZATION), 10"
- ⑧ PROPOSED RESTORATION, DEPTH AND WIDTH VARIES (PULV TOPSOIL, CL 1A SEED, NAG 575 ECB)
- ⑨ REMOVAL AND DISPOSAL OF EX. AGG. SHOULDERS REPLACE WITH BULK TOPSOIL
- ⑩ PROPOSED CL DITCH W/MAX 4:1 SLOPES

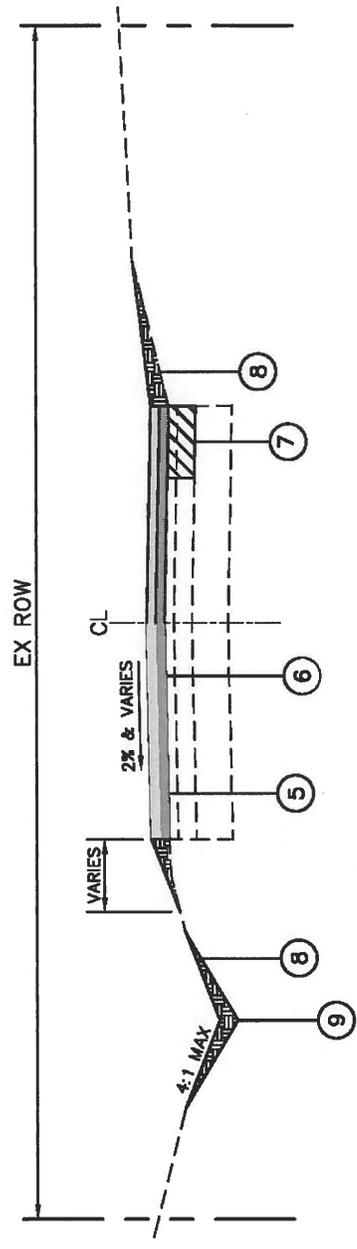
HMA - MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS @ Ndes
HMA Surface Course, Mix D, N50	4% @ 50 Gyr.
HMA Binder Course, IL-19.0, N50	4% @ 50 Gyr.

- 1. The unit weight used to calculate all HMA Surface Mixtures is 112 lb/cy/in
- 2. Local Agency may use surface and binder N30 L (Low ESAL) for ADT <700 and 10% trucks or less (3% Air Voids @ 30 Gyr.) with written approval by the Engineer.
- 3. The "AC Type" shall be PG 64-22
- 4. When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.



EXISTING PAVEMENT SECTION



PROPOSED PAVEMENT SECTION

LEGEND

- ① EXISTING AGG BASE COURSE, VARIES
- ② EXISTING HMA BINDER, VARIES
- ③ EXISTING HMA SURFACE, VARIES
- ④ EXISTING SHOULDER/GRADE
- ⑤ PROPOSED HMA LEVEL BINDER, N50, 1"
- ⑥ PROPOSED HMA SURFACE, MIX D, 2"
- ⑦ PROPOSED CLASS D PATCHES
- ⑧ PROPOSED RESTORATION, DEPTH AND WIDTH VARIES (PULV TOPSOIL, CL 1A SEED, NAG DS75 ECB)
- ⑨ PROPOSED CL DITCH W/MAX 4:1 SLOPES

HMA - MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS @ Ndes
HMA Surface Course, Mix D, N50	4% @ 50 Gyr.
Levelling Binder (MM), N50	4% @ 50 Gyr.
HMA Binder Course, IL-19.0, N50	4% @ 50 Gyr.
Class D Patches, TY I-IV, 10"	4% @ 50 Gyr.

1. The unit weight used to calculate all HMA Surface Mixtures is 112 lb/sy/in
2. Local Agency may use surface and binder N30 L (Low ESAL) for ADT <700 and 10% trucks or less (3% Air Voids @ 30 Gyr.) with written approval by the Engineer.
3. The "AC Type" shall be PG 64-22
4. When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.

CUBA RD (S. KREWEGER RD, To LAKEBRIDGE CT)

L $1406' + 1407' = 2813' \div 2 = 1407'$

W $22' + 22' + 23' = 67' \div 3 = 22'$

A $30,954 SF$

SAMPLE AREA #1 (e LAKEBRIDGE CT)

N $42^{\circ} 10.155'$ L 250'

W $88^{\circ} 02.254'$ W 22'

A $55,003 SF$

DISTRESS	L	M	H
10	55'	69'	203'
13			HIT HIT 1 11EA
7	37'	187'	150'
1	1393 SF	602 SF	1054 SF
15	862 SF	791 SF	
3	1103 SF	500 SF	

215

1(M) $(11 \times 3) + (4 \times 25) + (6 \times 27) + (57 \times 6) + (17 \times 5) = 602 SF$

1(H) $(167 \times 5) + (80 \times 6) + (17 \times 3) = 1054 SF$

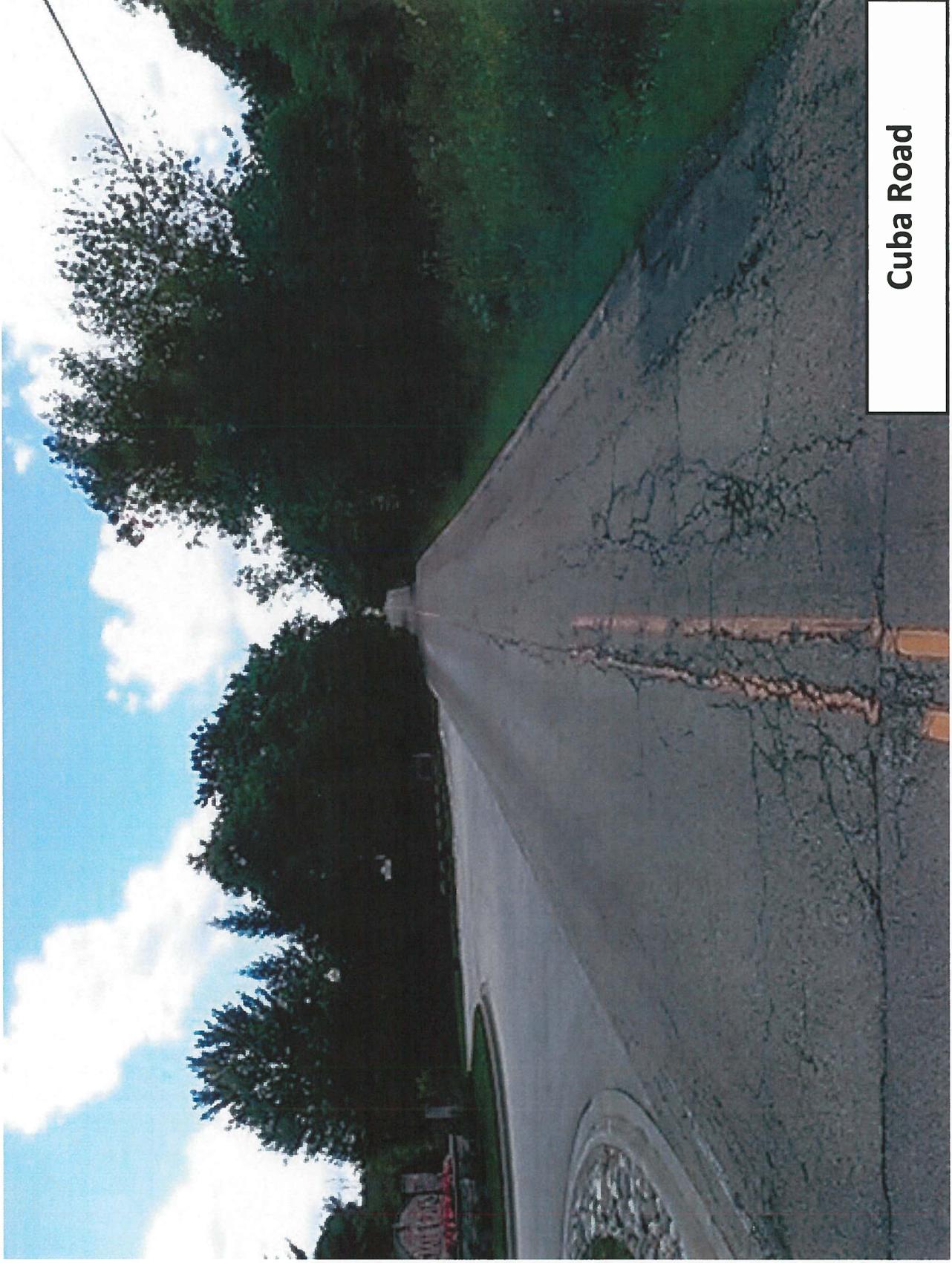
15(L) $(4 \times 25) + (3 \times 28) + (14 \times 3) + (169 \times 3) + (3 \times 43) = 862 SF$

15(M) $(4 \times 67) + (3 \times 27) + (3 \times 14) = 791 SF$

1(L) $(3 \times 30) + (3 \times 33) + (169 \times 6) + (30 \times 5) = 2413 SF$

2(M) $(15 \times 4) + (6 \times 31) + (8 \times 28) = 500 SF$

3(L) $(10 \times 11) = 110 SF$



Cuba Road

ESTATE LN (INDIAN CREEK RD TO TERMINUS)

L $150' + 150' = 3175 \div 2 = 1588'$ ✓

W $24' + 22' = 46 \div 2 = 23'$

A $36,524\text{SF}$

SAMPLE AREA #1 (6733 ESTATE LN)

N $42^\circ 14' .002'$ L 250'

W $88^\circ 0.255'$ W 21'

A 5250SF

DISTRESS L M H

10 $101'$ $153'$ $97'$

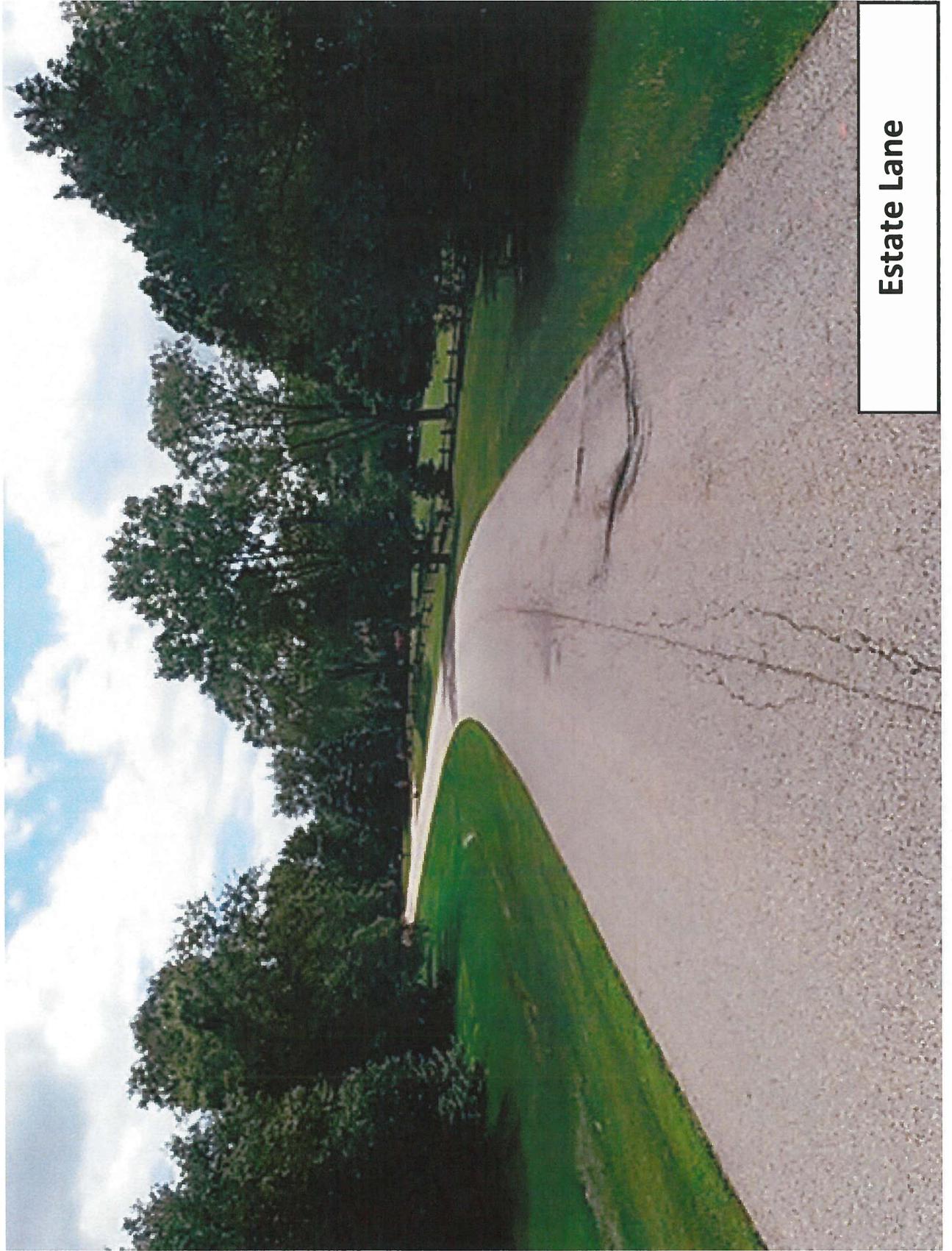
7 $14'$ $100'$

17 140SF

1 204SF

RB

(H) $(4 \times 10) = 40\text{ SF}$
 (M) $(4 \times 17) + (4 \times 26) = 204\text{ SF}$



Estate Lane

SCHAEFER RD. (1/4 PT 53 TO HOLLY CT)

L $3060' + 3058' = 7316' \div 2 = 3658'$

W $28' + 23' + 23' + 23' = 97' \div 4 = 24'$

A $87,816 \text{ SF}$

SAMPLE AREA #1 (C MANASSAS LN)

N $420 \cdot 0.326 = 136.92$

W $87 \cdot 59.969 = 5219.82$

A 5750 SF

DISTRESS L M H

4 $16'$ $41'$

7 $19'$

13 $3EA$

11 183 SF

1 178 SF 778 SF 2593 SF

17 96 SF

3 686 SF 695 SF

15 812 SF

P24

11(N) $(6 \times 3) + (6 \times 2) + (3 \times 1) = 183 \text{ SF}$

14 $(4 \times 88) + (5 \times 30) + (5 \times 44) + (9 \times 7) + (5 \times 6) + (4 \times 6)$

$(4 \times 22) + (8 \times 7) + (9 \times 4) + (3 \times 6) + (8 \times 5) + (12 \times 2)$

$(5 \times 2) + (22 \times 2) + (4 \times 21) + (8 \times 12) + (3 \times 8) + (3 \times 13)$

$(4 \times 5) + (7 \times 4) + (5 \times 7) = 2592 \text{ SF}$

17(M) $(6 \times 6) = 96 \text{ SF}$

1(A) $(3 \times 5) + (4 \times 4) + (3 \times 8) + (3 \times 23) + (4 \times 7) + (4 \times 9)$

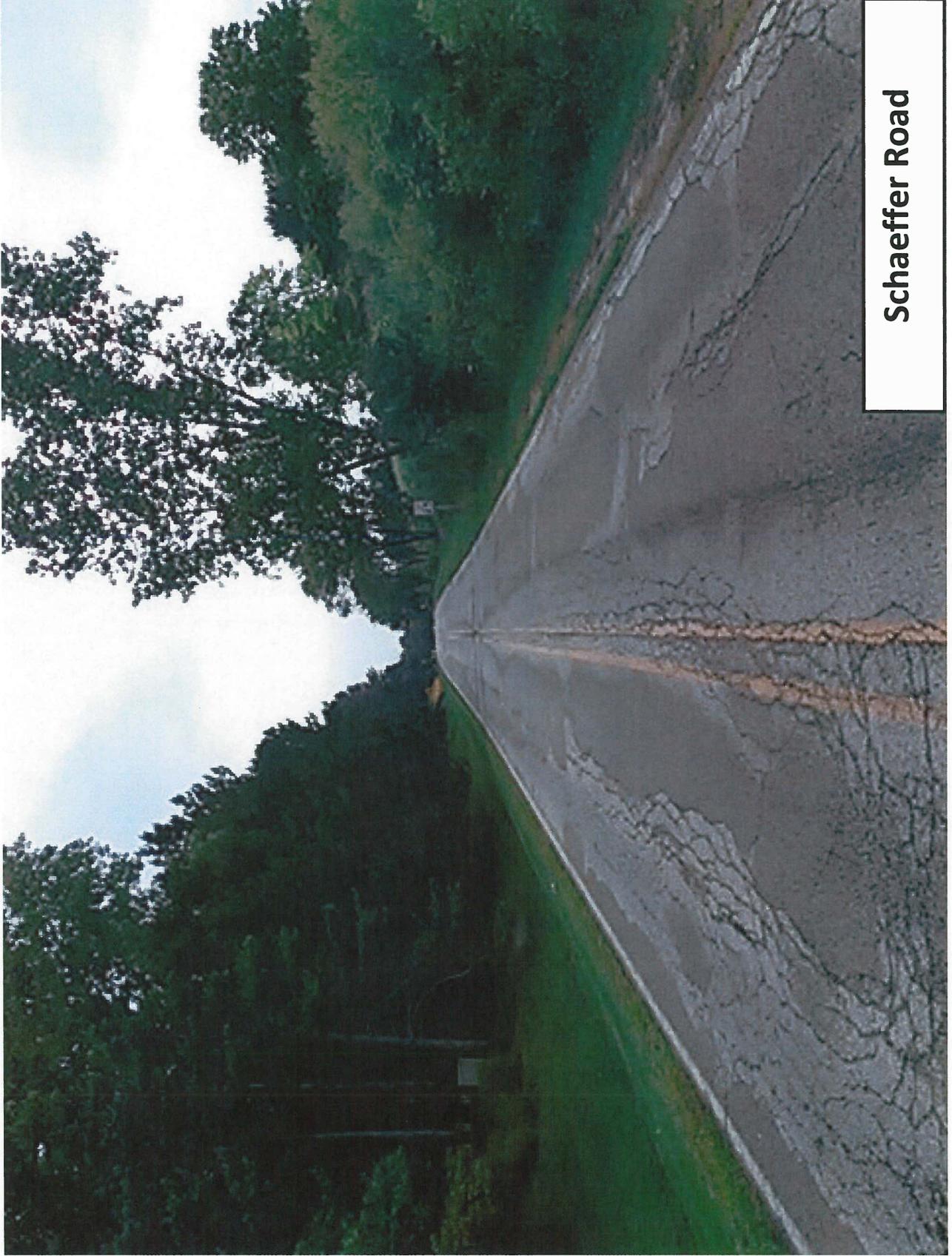
$(4 \times 4) + (4 \times 4) = 278 \text{ SF}$

3(L) $(4 \times 73) + (20 \times 4) + (6 \times 29) = 386 \text{ SF}$

3(M) $(37 \times 11) + (32 \times 9) = 695 \text{ SF}$

1(L) $(3 \times 42) + (2 \times 26) = 178 \text{ SF}$

15(L) $(12 \times 5) + (10 \times 4) = 812 \text{ SF}$



Schaeffer Road