

EXHIBIT "A"

Lake County Division of Transportation Project Scope Description to Provide Phase I (Study) Services for Cedar Lake Road Realignment - Nippersink Road to Hart Road Section Number: 02-00065-01-FP Supplement 2 – Preferred Alignment

The Phase I study process for a realignment or new alignment project can generally be broken into two stages. The first stage generally involves looking at multiple corridors, screening for environmental impacts, and then picking a corridor. The second stage generally involves performing more detailed conceptual and preliminary design for the selected corridor and finalizing the environmental impacts and mitigation. In 2012, after the jurisdictional transfer of Cedar Lake Road (IL 120 to Nippersink Road) from IDOT, LCDOT decided to perform a feasibility study following LCDOT and IDOT BLRS standards. IDOT had performed multiple Phase I studies of this project in the last half-century. The feasibility study confirmed that the project was still possible, multiple corridors were feasible to achieve LCDOT and Round Lake goals, and the project could move on to the next stage. The tentative preferred corridor was identified in conjunction with engaging the Village throughout the feasibility study. The study was not intended to include comprehensive coordination with Metra and IDOT regarding the full scope of improvements. The full range of corridors created uncertainty with impacts potentially resulting in a cascade of tertiary improvements, depending on the corridor selected.

The preferred corridor from the feasibility study, commonly referred to as “the east alignment”, routed the proposed roadway to the east of Village Hall, intersected the Metra Milwaukee District North Line (MD-N) tracks without major vertical changes, and shortened the overall improvement length. Throughout the feasibility study, Round Lake was informed that the preferred corridor could change when a full environmental study was performed as part of the federal Phase I study through the NEPA process. Contractually, the Phase I study assumed that all the corridors would have to be evaluated through the NEPA process, essentially the first half of the study. For the second half of the study, it was assumed the tentative preferred alignment would be selected. The preferred alignment was shorter in length and resulted in the least overall roadway network improvements. LCDOT chose to scope the shorter improvement as an approach to the Phase I contract to limit engineering costs by not committing to extra funding that may not be necessary to complete the Phase I study.

As a result of following the NEPA process, the State Historic Preservation Officer (SHPO) identified 8 historic architectural resources within the area of potential effect. The eastern corridor alternatives were eliminated during the alternatives screening process at the request of IDOT Bureau of Design and Environment (BDE) in accordance with Federal Highway Administration (FHWA) policy. None of these properties were listed on the National Register; therefore, they were not identified in the cursory screening during the feasibility study. Four alignments in a “western corridor” were further evaluated and a preferred alignment was selected. The significance of the western corridor is that improvements to IL 134, Avilon Avenue, Hart Road, existing Cedar Lake Road, and Lakewood Terrace significantly increased in comparison to an eastern corridor. Furthermore, IDOT has recently requested channelization at the intersection of IL 134 at the Ace entrance and IL 134 at Nippersink Road. The overall

roadway network improvement increased by 111% to a total of approximately 2 miles. With the western corridor, IL 134 had to be raised by 5+ feet in some areas for a proposed at-grade rail crossing of the MD-N. The increase in roadway improvement length increases the amount of effort associated with preliminary design and evaluation of environmental impact. IDOT's request for improvements at IL 134 and Nippersink Road puts the improvements outside of the original environmental survey limits and requires an expansion of environmental study.

In addition to the amount of roadway improvements, further coordination with Metra identifies the need for parking replacement at 1:1. The initial study showed an abundant amount of parking (450 spaces) available with moderate occupancy (53%). Replacing these un-utilized parking spaces was not planned in the feasibility study. In addition, due to the implementation of the western corridor, approximately 1500 feet of railroad siding will need to be relocated further east of the station at Metra's request. This additional work puts the project footprint outside of the originally anticipated environmental survey limits. The siding and parking improvements will increase effort for preliminary design, environmental study, and cost estimating for roadway project impacts to the Metra Station site.

Delays in the project are primarily attributable due to environmental study and review delays at IDOT and with the State Historic Preservation Office (SHPO). While CMT has accelerated some of the environmental studies by performing them internally, cultural, biological, and special waste studies (within State ROW) can only be performed by IDOT, by policy. Furthermore, COVID restrictions delayed the public involvement process, an essential element to development of the study in the Context Sensitive Solutions (CSS) process.

It should be noted that Supplement 1 for this Phase I study was a minor supplement for assisting LCDOT staff with preparing the 2021 federal RAISE Grant Application.

General Project Information

A. Updated Schedule

This phase of the project was originally estimated to last 24 months from September 2016 to August 2018. NTP was received November 16, 2016. The study is estimated to conclude in June of 2022. The new duration of study is estimated at 5 years and 8 months (68 months).

B. Roadway Limits

The length of improvements for the various roadway facilities are summarized as follows:

	Road	Phase I Prime Agreement Scope	Supplement 2 Scope	Net Change
1	Cedar Lake Road	2772	3692	920
2	Nippersink Road	900	1248	348
3	Avilon Avenue	207	715	508
4	Goodnow Boulevard	375	117	-258
5	IL 134	250	2911	2661
6	Metra Entrance (north of RR)	368	0	-368
7	Hart Road	0	351	351
8	Old Cedar Lake Road	0	1064	1064

9	Lakewood Terrace	45	283	238
Total		4917	10381	5464

The overall change in length is approximately a factor of 2.1.

- C. No change to the original brief narrative for the scope of the improvements.
- D. The only change to the general tasks for the scope of services is the removal of geotechnical investigations, which will be deferred to Phase II of the project.
- E. The project has been proceeding to date as a federally approved Categorical Exclusion. There are no indications that the environmental study will need to be escalated to an Environmental Assessment (EA) at this time. If it is determined to be processed as an EA, then additional effort will need to be scoped in a separate agreement.
- F. CMT researched recorded property records for the originally anticipated project limits as defined in the original agreement. Any further existing ROW research for the expansion of the project limits will be deferred to the Phase II.

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Phase I Engineering – Detailed Scope of Services

Tasks

1. Data Collection

- a. Obtain, Review, and Inventory the following:
 - 1) Additional Existing Utility Information - in new areas. Note a new JULIE design stage ticket for all original areas will be deferred to Phase II. There has been a significant amount of time between the original design stage ticket and the current supplement.
 - 2) Additional Existing Available Roadway Plans – in new areas
 - 3) Additional Crash Data – Not included in this supplement. This information was procured as part of Supplement 1 for the RAISE Grant Application
 - 4) ADT information – No additional information necessary to complete the work
 - 5) Soil Conservation Service Maps – no additional work
 - 6) USGS Maps – no additional work
 - 7) NWI Maps – no additional work
 - 8) Current Development Plans – additional existing development plans will be attained from the Village of Round Lake
 - 9) Obtain School Bus Route Information – no additional work
 - 10) Railroad/Metra crossing information – no additional information necessary
 - 11) Traffic Counts - The only additional peak hour turning movement traffic counts will be at IL 134 and the Ace Entrance. All other locations have traffic counts. The count will include the classification of vehicles.
- b. Establish existing ROW Line work / Property Ownership / Tax Maps – the additional areas will use GIS information as planning level information. Phase II will complete the existing ROW line work as part of the boundary surveys and plats and legals.
- c. Project Site Visit by Project Manager and Project Engineer – no additional work. Title Commitments will be removed from the overall contract as part of this supplement. This work will be deferred to the Phase II.

2. Field Surveys

- a. Office setup and coordination
- b. Preliminary field work
- c. Topographic Surveys
 - 1) Created a combined terrain for conceptual design work between project topographic survey and County LIDAR
 - 2) Created an artificial terrain of the proposed surface where the project to the south (IL 120 to Nippersink) was under construction
 - 3) Performed additional drainage surveys to establish the existing downtown storm sewer network (limited information available from Round Lake)
 - 4) Perform Topographic Survey for expanded areas
 - 5) Perform Drainage Survey for expanded areas

- d. Existing Survey in-hand review by Project Engineer – perform a new walkthrough after the additional areas have been completed.
 - e. Pickup Surveys – additional pickup surveys as necessary in expanded areas
 - f. Combining old terrain with additional pickup survey terrain models
3. Location Drainage Study
- a. Existing Drainage System
 - 1) Extra effort to establish the existing downtown drainage system of Round Lake due to a lack of information from Round Lake and a legacy storm sewer system that has conflicting field information for the routing and outlet of storm water.
 - 2) Investigation of potential storm sewer connections underneath the railroad near IL 134 at the Ace Entrance.
 - 3) Extra effort for the expanded project limits
 - b. Proposed Drainage System for Roadway
 - 1) Extra effort for the expanded project limits
 - 2) Extra effort to coordinate a combined regional detention system in conjunction with the Village of Round Lake developing the undeveloped portions of downtown in accordance with their comprehensive plan
 - c. Floodplain Encroachment Evaluation – No additional work
 - d. Exhibits
 - 1) General Location Drainage Map - Update and Expand Area
 - 2) Existing Drainage Plan – Update and Expand Area
 - 3) Flood Insurance Rate Map – Update and Expand Area
 - 4) Proposed Concept Drainage Plan – Update and Expand Area
 - 5) Existing Typical Sections – Update and Add
 - 6) Proposed Typical Sections – Update and Add
 - e. Other Anticipated Permits – No additional work
 - f. Water Quality / Best Management Practices
 - 1) Extra effort for the expanded project limits
4. Alternative Alignment Analysis
- a. Opportunity and Constraints Map – No additional work
 - b. Develop Alignment Alternatives
 - 1) Develop an additional four alignment alternatives to the originally scoped three alignment alternatives for a total of seven alignment alternatives (Red, Blue, Pink, Yellow, Orange, Green, Purple).
 - 2) Develop variations of the purple alignment that would avoid section 4f impacts to the school soccer field but still maintain access to Magee Middle School.
 - 3) Development of cross street connection alternatives for the yellow and purple alignments
 - 4) Evaluate the additional four alignment alternatives and add to the evaluation matrix
5. Traffic Analysis

- a. Traffic Projections and Assignment to the Roadway Network for the Various Alignment Alternatives
 - 1) Completed the conversions of 2040 ADTs to peak hours count projections at the start of the project as scoped.
 - 2) Additional effort to update to 2050 during development of the project
- b. Crash Analysis for Existing and Proposed Roadway Networks
 - 1) Crash Maps
 - a) Existing Crash Map completed with 2011-2015 data
 - b) Additional Effort to prepare updated Crash Map with updated 2016-2020 data
 - 2) Existing Collision Diagrams
 - a) Existing Crash Map completed with 2011-2015 data
 - b) Additional Effort to prepare updated Collision Diagram with updated 2016-2020 data
 - 3) Existing Crash Frequency for Existing Network
 - a) Completed with 2011-2015 data per original scope
 - b) Update completed with 2016-2020 data via Supplement 1 for RAISE
 - 4) Expected Crash Frequency for Existing and Proposed Network
 - a) Completed with 2040 projections data per original scope
 - b) Update completed to 2050 via Supplement 1 for RAISE
 - 5) Summary Table of Expected Crashes for both alternatives and scenarios
 - a) Completed with 2040 projections data per original scope
 - b) Update completed to 2050 via Supplement 1 for RAISE
 - 6) Assume that a crash analysis will have to be updated one more time, to account for the most recent year of data (2017-2021), for the Final PDR as a result of typical IDOT comments on the Draft PDR.
- c. Capacity Analysis for Existing and Proposed Roadway Networks
 - 1) Completed Existing and Proposed (2040) at the start of the project as scoped.
 - 2) Additional effort to update the Proposed to 2050 during development of the project
 - 3) Evaluate Additional intersection of Nippersink Road at IL 134
- d. Coordination with CMAP
 - 1) Completed for 2040 at the start of the project as scoped.
 - 2) Additional effort to attain 2050 projections per IDOT request during development of the project
- e. Roundabout Analysis
 - 1) This was not originally scoped because roundabouts had been generally vetted during the feasibility study. IDOT requested a roundabout analysis for all corridor intersections. CMT performed a roundabout memorandum for three major corridor intersections including Proposed Cedar Lake Road at Nippersink Road, Proposed Cedar Lake Road at IL 134, and Proposed Cedar Lake Road at Hart Road. An additional analysis was performed at IL 134 and Nippersink Road once the intersection was added to the scope by IDOT.

- 2) Additional roundabout analysis was performed with the expansion of IL 134 limits on the project. Roundabout analysis was performed at IL 134 and Nippersink Road. Roundabout analysis was not performed at IL 134 at Goodnow Boulevard and IL 134 at Old Cedar Lake Road due to the space constraints, potential historic impacts, and proximity to the signalized intersection of IL 134 at Proposed Cedar Lake Road.
 - f. Traffic Signal Warrants (non-mainline) – additional effort
 - 1) IL 134 at Nippersink Road
 - 2) IL 134 at Existing Cedar Lake Road – No Build
 - g. All Way Stop Control Warrants (non-mainline) – additional effort
 - 1) IL 134 at Old Cedar Lake Road
 - 2) IL 134 at Nippersink Road
6. Intersection Design Studies
- a. Realigned Cedar Lake Road at Hart Road – originally scoped
 - 1) Move Hart Road further north per ICC safety request – additional effort
 - b. Realigned Cedar Lake Road at Illinois Route 134 – originally scoped
 - 1) Traffic Signal Railroad Report per IDOT/ICC request – additional effort
 - 2) Complete four preliminary designs for this intersection to keep the project moving due to IDOT historic analysis delays – additional effort
 - i. Blue Alignment with Pre-Signal
 - ii. Blue Alignment with Relocating IL 134 further South
 - iii. Red Alignment with Pre-Signal
 - iv. Red Alignment with Relocating IL 134 further South
 - c. Realigned Cedar Lake Road at Aylon Avenue – originally scoped
 - d. Realigned Cedar Lake Road at Nippersink Road – originally scoped
 - e. Old Cedar Lake Road at Lakewood Terrace – new scope
 - f. IL 134 at Private (Ace) Entrance – new scope
 - g. IL 134 at Goodnow Boulevard – new scope
 - h. IL 134 at Old Cedar Lake Road – new scope
 - i. IL 134 at Nippersink Road – new scope
7. Conceptual Roadway Design
- a. Establish project design criteria and standards
 - 1) Additional effort for expanded project area
 - b. Perform roadway capacity to determine roadway geometrics – no additional work, covered by traffic analysis and IDS tasks
 - c. Revisit and updated roadway typical sections
 - 1) Additional effort for expanded project area
 - d. Determine geometric and location requirements/need for bike path/ pedestrian facilities
 - 1) Additional effort for expanded project area
 - 2) Additional effort to update based upon incorporating Millenium Trail connection into project
 - e. Establish preliminary horizontal and vertical alignments
 - 1) Additional effort for expanded project area

- 2) Additional effort for two-mainline alternatives (red and blue) for IDOT meeting regarding Traffic PreSignals at IL 134
 - f. Develop proposed pavement design based on geotechnical report
 - 1) no additional effort, geotechnical removed from Phase I and deferred to Phase II, made assumptions for cost estimating purposes
 - g. Develop conceptual MOT/Construction Staging Plan
 - 1) Additional effort for expanded project area
 - h. Develop conceptual cross sections every 100'
 - 1) Additional effort for expanded project area
8. Conceptual Design of Railroad Improvements
- a. Evaluation and coordination of vacating existing railroad crossing and evaluation of proposed railroad crossing – no additional work/effort
 - b. Evaluation and coordination of relocated railroad station/platform – no additional work/effort
 - c. Siding Relocation – Additional Scope/Effort
 - 1) Two alternatives (east and west)
 - 2) Preliminary design of railroad siding relocation at preferred location
 - d. Parking Analysis and Design – Additional Scope/Effort
 - 1) Metra has requested all parking impacted at the station be replaced at a 1:1 ratio.
 - 2) Prepare multiple iterations of parking design for Metra and Round Lake review
 - e. Preliminary Design of Station – Additional Scope/Effort
 - 1) Kiss-n-Rides
 - 2) Parking and Handicapped Parking Layout
 - 3) Warming Shelters
 - 4) Bicycle and Pedestrian layout
 - 5) Relocation of existing architectural features including clock and monument
 - 6) Additional pedestrian crossings of railroad; separate from proposed roadway crossing of railroad
 - 7) Bus shelter design/accommodation
 - 8) Turning Templates for emergency response vehicles
 - 9) Transit Site Alternatives and Evaluation Matrix
 - f. Traffic Analysis – Additional Scope/Effort
 - 1) Reevaluate the entire traffic turning movement network based multiple evolutions of the new site design based on different access points proposed with the evolving site design. Determine occupancy rates of existing parking lots and apply to the proposed parking configuration. Evaluate capacity of entrances.
 - g. Quiet Zone Review and Input – Additional Scope/Effort
 - 1) This scope of work only includes input regarding the scoping of the work entailed for the Village to lead a quiet zone analysis, which would entail a larger study beyond the limits of this project.
 - 2) This scope also includes ensuring that if a quiet zone is pursued by the Village, then the proposed crossing improvements would already

incorporate the necessary infrastructure/design to accommodate a quiet zone.

9. Preliminary Design Studies

- a. Refine horizontal and vertical geometry based on concept review comments – additional effort for project area expansion
- b. Identify Barrier Warrant Analysis locations – additional effort for project area expansion
- c. Preliminary Opinion of Probable Construction Cost
 - 1) Additional effort for project area expansion
 - 2) Additional effort for two submittals of Draft PDR, instead of one
- d. Utility conflict identification and Phase I level utility coordination
 - 1) Additional effort for project area expansion
 - 2) Drafting of utilities into 3D in select areas to address Round Lake comments/questions about conflicts
 - 3) Select Utility conflict exhibits for village (plan, cross section)
- e. Finalize Maintenance of Traffic/Construction Staging Plan – additional effort for project area expansion

10. Public Involvement

- a. Stakeholder Identification and SIP Development – no additional effort
- b. Public Information Meeting – no change
- c. SIG Meetings
 - 1) The number of SIG meetings will be reduced from 4 down to 3. All 3 SIG meetings have been held to date.
- d. Public Meeting and Hearing
 - 1) The scope for the future public hearing will remain.
 - 2) The scope for the other public meeting will be removed.
- e. Project Website and Brand Development – additional effort for duration of project continuing beyond June 2018. Estimate 4 years beyond original scope to June 2022.

11. Environmental Studies

- a. Wetland Delineation and Report – Additional Scope and Effort
 - 1) The original area scope of work was completed with the report dated August 4, 2017. This area will need to be re-delineated due to the amount of time that has transpired per LCSMC.
 - 2) The additional area for the project expansion, within the ESR addendum limits, will also be added as additional effort.
- b. Jurisdictional Determination Submittal/Boundary Verification
 - 1) A preliminary jurisdictional determination (PJD) was requested and received from LCSMC in September 2017 based upon the original project area and original delineation. A new PJD will need to be requested from LCSMC after the updated wetland delineations are completed.
- c. Wetland Permitting Corps of Engineers – this scope of work will be removed from the Phase I and deferred to the Phase II

- d. Lake County Wetland Permitting – this scope of work will be changed to the initial permitting meetings and coordination. A full permit scope will be removed from the Phase I and deferred to the Phase II
- e. Wetland Mitigation Strategies – Change the scope to Wetland Impact Evaluation (WIE) – same original scope hours
- f. IHPA Photolog – all items below, except 1) were not in original scope
 - 1) Photolog prepared by Huff & Huff as part of original ESR: 2/12/2018 - original scope
 - 2) Additional Photolog prepared by CMT dated: August 2019 - additional scope/effort requested from IDOT
 - 3) Additional Corridor Photolog (Red and Blue Alignments) prepared by CMT dated: August 2019 - additional scope/effort requested from IDOT
 - 4) Review and Consideration of WW2 Monument and Tower Clock on Metra Property
 - 5) Historic Impacts Memorandum and Avoidance Designs – additional effort to attain IDOT BDE Cultural Resources Unit Approval of Preferred Alignment, Property Impacts and Design – February 2021
 - 6) Final Revised Memo for Historic Impacts Memorandum - July 2021
- g. Tree Survey – additional effort for larger project area
- h. Sustainable Concepts – additional effort for larger project area and the additional proposed drainage (flooding) improvements
- i. Preliminary Environmental Site Assessment (PESA) – additional effort for larger project impact area
- j. Traffic Noise Analysis – additional effort for larger project impact area
- k. Section 4(f) Special Lands
 - 1) Screening for potential Section 4f areas – included in original scope
- l. Environmental Project Admin – additional effort for larger project impact area
- m. Environmental Survey Request (ESR) – new subtask
 - 1) ESR Submittal to IDOT D1 (Lost) – 2/12/2018
 - 2) ESR Resubmittal to IDOT D1 – 3/21/2019
 - 3) ESR Addendum A (for project expansion) – 6/18/2021
- n. COSIM Prescreen Submittal – Each Intersection

12. Geotechnical Investigations

This scope is removed as part of the Phase I and deferred until Phase II. The original scope has an insufficient amount of soil borings and pavement cores to meet IDOT standard practices given the expansion of the project. Phase I cost estimates will assume certain locations of known undercuts due to existing wetlands. Unknown locations will have a percentage of area assumed as undercuts for cost estimating purposes.

13. Draft PDR

The original scope included one submittal of the Draft PDR. To qualify for Shared STP funding through CMAP, LCDOT requested an advance Pre-Draft PDR for submittal to IDOT. This was submitted in February 2021. The official Draft PDR will be submitted closer to all the preliminary engineering and environmental studies being completed.

14. Final PDR

No change to original scope.

15. Meetings and Coordination

Additional Meetings and Coordination beyond the originally planned scope and schedule. Round Lake coordination has significantly exceeded original estimates based upon their role as a project partner and key stakeholder, as well as their involvement throughout each step of the study. Based on a review of project activity since NTP, the project had activity for 54 months of the 56 months since notice to proceed (NTP – November 16, 2016 through June 2021). There have 710 hours expended on this task through June 2021 at a rate of approximately 13.14 hours per month. A rate of 14 hours per month will be applied for the remainder of the project schedule to estimate the supplement. The original scope included 602 hours for this task. It is estimated 878 hours will be needed to completed this task. 276 hours are additional effort for supplement 2.

16. Project Administration

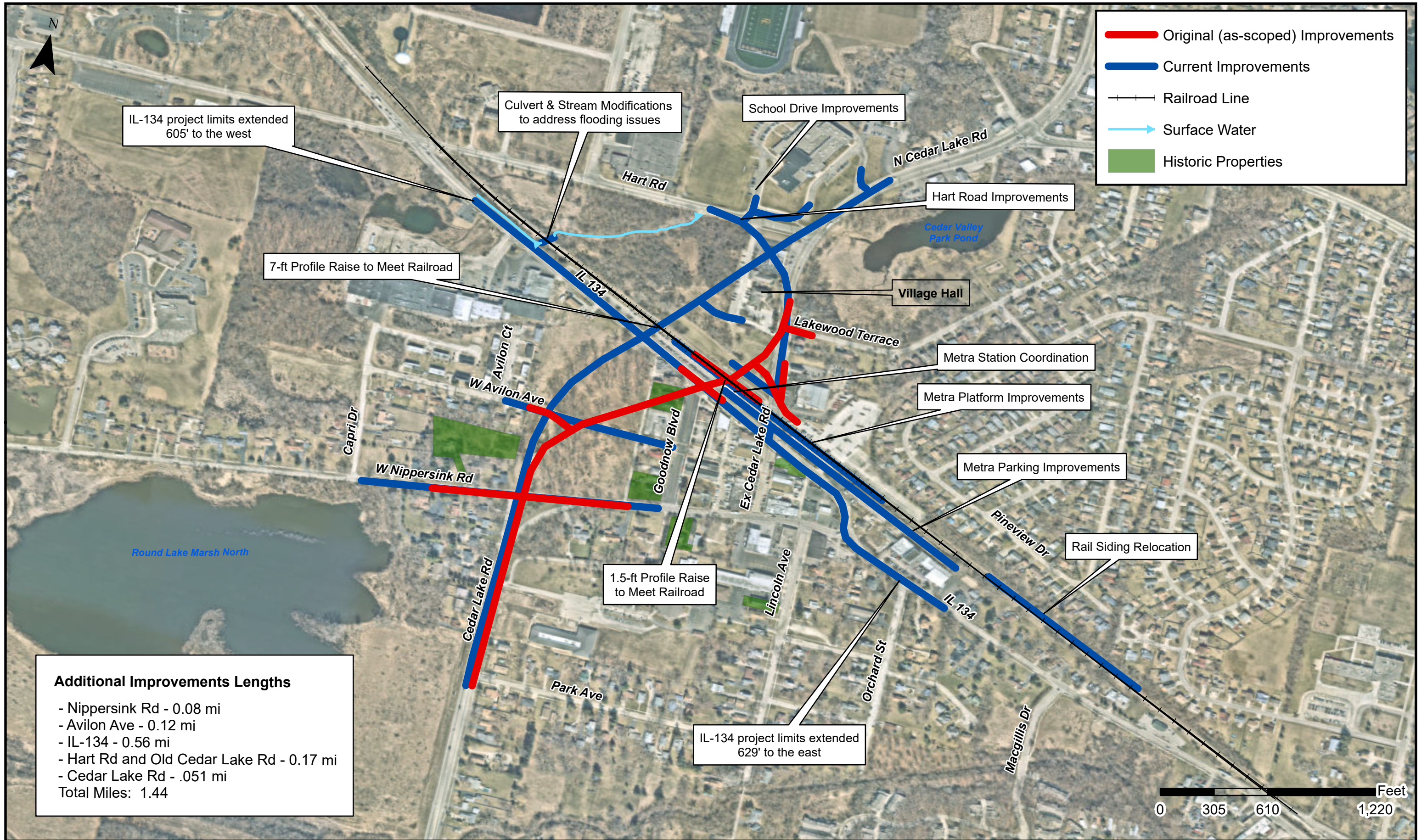
- a. Project Setup
 - 1) Modifications to Accounting and Billings for Supplement
- b. Project Management
 - 1) Schedule and Progress Schedule Updates beyond original schedule
 - 2) Budget Control for longer schedule
 - 3) Resource Planning for longer schedule
 - 4) Additional Project Team Meetings
 - 5) Additional Progress Reports (BDE 430)
- c. Quality Assurance
 - 1) Update Quality Assurance Plan for Supplement
 - 2) Additional QA Reviews

17. IGA and Funding Assistance – New Task

- a. Shared STP Application Assistance
- b. Other Funding Application Assistance as needed (excepting task 18 below)
- c. Assist with Identifying Village of Round Lake Cost Shares
- d. Assist with Identifying IDOT Cost Shares
- e. Assist with Identifying Metra Cost Shares

18. RAISE Grant Application

No work included in this supplement. This was part of Supplement 1.



Cedar Lake Road - Village of Round Lake, Lake Co., IL SCOPE CHANGE EXHIBIT

"Exhibit B"

Route: Cedar Lake Road Realignment - Phase I Improvement Project
 Local Agency: Lake County Division of Transportation

SUPPLEMENT 2

*Firm's **approved rates** on file with DOT'S Bureau of Accounting and Auditing:
 Overhead Rate (OH) 164.09%
 Complexity Factor '©' 0.00
 Calendar Days 580

Method of Compensation:

- Cost Plus Fixed Fee 1 14.5%[DL + R(DL) + OH(DL) + IHDC]
 Cost Plus Fixed Fee 2 14.5%[DL + R(DL) + 1.4(DL) + IHDC]
 Cost Plus Fixed Fee 3 14.5%[(2.3 + R)DL + IHDC]

Cost Estimate of Consultant's Services in Dollars

Element of Work		Man-Hours	Payroll Rate	Payroll Costs (DL)	Overhead*	Services by others	In-House Direct Costs (IHDC)	Profit	Total	% of Grand Total
1	Data Collection	48.0	\$41.33	\$1,984.03	\$3,255.60	\$0.00	(\$15,000.00)	(\$1,415.25)	(\$11,175.63)	-2.01%
2	Field Surveys	278.0	\$40.66	\$11,303.96	\$18,548.67	\$103,732.01	\$1,030.40	\$4,478.04	\$139,093.09	25.08%
3	Location Drainage Study	1165.0	\$36.45	\$42,461.87	\$69,675.68	\$0.00	\$480.00	\$16,329.54	\$128,947.09	23.25%
4	Alternative Alignment Analysis	90.0	\$34.73	\$3,125.87	\$5,129.24	\$0.00	\$0.00	\$1,196.99	\$9,452.10	1.70%
5	Traffic Analysis	214.0	\$39.80	\$8,516.87	\$13,975.34	\$0.00	\$0.00	\$3,261.37	\$25,753.58	4.64%
6	Intersection Design Studies	820.0	\$37.52	\$30,768.54	\$50,488.09	\$0.00	\$0.00	\$11,782.21	\$93,038.84	16.77%
7	Conceptual Roadway Design	232.0	\$33.09	\$7,675.89	\$12,595.37	\$0.00	\$0.00	\$2,939.33	\$23,210.59	4.18%
8	Conceptual Railroad Improvements	320.0	\$36.63	\$11,722.37	\$19,235.23	\$0.00	\$0.00	\$4,488.85	\$35,446.45	6.39%
9	Preliminary Design Studies	136.0	\$36.91	\$5,019.40	\$8,236.33	\$0.00	\$0.00	\$1,922.08	\$15,177.81	2.74%
10	Public Involvement	(111.0)	\$45.12	(\$5,008.82)	(\$8,218.97)	\$0.00	(\$1,124.00)	(\$2,081.01)	(\$16,432.80)	-2.96%
11	Environmental Studies	342.0	\$42.56	\$14,555.60	\$23,884.29	\$0.00	\$868.20	\$5,699.67	\$45,007.77	8.11%
12	Geotechnical Investigations	0.0	\$38.89	\$0.00	\$0.00	(\$27,941.48)	(\$108.00)	(\$15.66)	(\$28,065.14)	-5.06%
13	Draft PDR	177.0	\$39.59	\$7,008.03	\$11,499.47	\$0.00	\$20.00	\$2,686.49	\$21,213.98	3.82%
14	Final PDR	0.0	\$0.00	\$0.00	\$0.00	\$0.00	\$20.00	\$2.90	\$22.90	0.00%
15	Meetings and Coordination	276.0	\$43.12	\$11,902.29	\$19,530.47	\$0.00	\$409.63	\$4,617.15	\$36,459.53	6.57%
16	Project Administration	101.0	\$49.03	\$4,952.51	\$8,126.57	\$0.00	\$0.00	\$1,896.47	\$14,975.55	2.70%
17	IGA and Funding Assistance	200.0	\$37.25	\$7,450.90	\$12,226.18	\$0.00	\$0.00	\$2,853.18	\$22,530.25	4.06%
18	RAISE Grant Application	0.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%
Totals		4288.0	\$38.12	\$163,439.30	\$268,187.54	\$75,790.53	(\$13,403.78)	\$60,642.34	\$554,655.94	100.00%

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

Summary of Man Hours

Item	#REF!	CMT Prime Agreement Hours	CMT Supplement 1 Hours	CMT Supplement 2 Hours	Total Hours including Supplements
1	Data Collection	134.0	-	48.0	182.0
2	Field Surveys	32.0	-	278.0	310.0
3	Location Drainage Study	588.0	-	1,165.0	1,753.0
4	Alternative Alignment Analysis	52.0	-	90.0	142.0
5	Traffic Analysis	158.0	-	214.0	372.0
6	Intersection Design Studies	560.0	-	820.0	1,380.0
7	Conceptual Roadway Design	248.0	-	232.0	480.0
8	Conceptual Railroad Improvements	310.0	-	320.0	630.0
9	Preliminary Design Studies	96.0	-	136.0	232.0
10	Public Involvement	824.0	-	-111.0	713.0
11	Environmental Studies	52.0	-	342.0	394.0
12	Geotechnical Investigations	36.0	-	-36.0	0.0
13	Draft PDR	152.0	-	177.0	329.0
14	Final PDR	128.0	-	0.0	128.0
15	Meetings and Coordination	602.0	-	276.0	878.0
16	Project Administration	320.0	-	101.0	421.0
17	IGA and Funding Assistance	-	-	200.0	200.0
18	RAISE Grant Application	-	234.0	-	234.0
Total Project Hours:		4,292.0	234.0	4,252.0	8,778.0

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

1	Data Collection	<u>Hours</u>	
a	Obtain, Review and Inventory Data	32	
b	Establish remaining existing R.O.W. using GIS, topo and as-builts	16	
c	Project Site Visit	0	
	Sub - total		48
2	Field Surveys		
a	Office Set-up and Coordination	4	
b	Preliminary Field Work	16	
c	Conduct Topo Surveys	154	
d	Survey Field Check by Engineer	8	
e	Pick-up Surveys	80	
f	Combin old terrain with additional pickup survey terrain models	16	
	Sub - total		278
3	Location Drainage Study		
a	Existing Drainage System	752	
b	Proposed Drainage System	325	
c	Floodplain Encroachment Evaluation	0	
d	Exhibits	64	
e	Other Permits	0	
f	Water Quality/Best Management Practices	24	
	Sub - total		1165
4	Alternative Alignment Analysis		
a	Develop Opportunity/Constraints Map	0	
b	Develop Alignment Alternatives	90	
	Sub - total		90

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

5 Traffic Analysis

a	Traffic Projections	32
b	Crash Analysis	40
c	Capacity Analysis	80
d	CMAP Coordination	6
e	Roundabout Analysis	40
f	Traffic Signal Warrants - non-mainline	8
g	All-Way Stop Control Warrants - non-mainline	8

Sub - total

214

6 Intersection Design Studies

a	Cedar Lake Road at Hart Road - Relocate Hart Road, change phasing and timing	60
b	Cedar Lake Road at IL 134	160
	Traffic Signal Railroad Report	120
	Four Preliminary Designs with and without presignals for Red/Blue Alignments	40
c	Cedar Lake Road at Aylon Avenue	0
d	Cedar Lake Road at Nippersink Road	0
e	Old Cedar Lake Road at Lakewood Terrace	120
f	IL 134 at Private (Ace) Entrance	120
g	IL 134 at Goodnow Boulevard	120
h	IL 134 at Old Cedar Lake Road	120
i	IL 134 at Nippersink Road	120

Sub - total

820

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

7	Conceptual Roadway Design		
a	Establish Design Criteria	8	
b	Perform Roadway Capacity	0	
c	Develop Typical Sections	12	
d	Determine Bicycle/Pedestrian Facility Requirements	12	
e	Establish Preliminary Horizontal and Vertical Alignments	60	
f	Develop Preliminary Pavement Design	0	
g	Develop Concept MOT/Staging	60	
h	Develop Conceptual Roadway Cross-sections	80	
	Sub - total		232
8	Conceptual Railroad Improvements		
a	Evaluation/Coordination of Vacating Existing and Proposed Railroad Crossing	0	
b	Evaluation/Coordination of Relocated Railroad Station/Platform	0	
c	Siding Relocation	40	
d	Parking Analysis and Design	80	
e	Preliminary Design of Station	160	
f	Traffic Analysis	16	
g	Quiet Zone Review and Input	24	
	Sub - total		320
9	Preliminary Design Studies		
a	Refine Horizontal and Vertical Alignments per Review Comments	16	
b	Identify Barrier Warrant Analysis	6	
c	Preliminary Opinion of Construction Costs	80	
d	Utility Conflict Identification	24	
e	Finalize MOT/Construction Staging Plan	10	
	Sub - total		136

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

10	Public Involvement		
a	Stakeholder Identification and SIP Development	0	
b	Public Information Meeting	0	
c	SIG Meetings	-40	
d	Public Meeting and Hearing	-135	
e	Project Website and Brand Development	64	
	Sub - total		-111
11	Environmental Studies		
a	Wetland Delineation and Report	45	
b	Jurisdictional Determination Submittal/Boundary Verification	9	
c	Wetland Permitting Corps of Engineers	0	
d	Lake County Wetland Permitting	0	
e	Wetland Mitigation Strategies	0	
f	Historical	120	
g	Tree Survey	16	
h	Sustainable Concepts	0	
i	PESA	10	
j	Traffic Noise	30	
k	Section 4(f)	0	
l	Environmental Project Admin	24	
m	ESR	80	
n	COSIM Prescreen	8	
	Sub - total		342

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

12	Geotechnical Investigations		
a	Coordination and Meetings with Subconsultant		-12
b	Provide Sketches to Subconsultant for Boring Layout Plan		-4
c	Provide Elevation Information for Boring Logs		-12
d	Review and Analyze Soil Surveys for Design Purposes		-8
e	Soil Coordination Meetings w/ LCDOT (Hours included under Task 15)		0
	Sub - total		-36
13	Draft PDR		
	Location and Existing Conditions		8
	Location	1	
	Description of Existing Facility	4	
	Traffic Data	1	
	Structures	0	
	Railroads	1	
	Contiguous Sections	1	
	Proposed Improvements		52
	Purpose and Need	24	
	Design Guidelines	1	
	Scope	27	
	<i>Road</i>	2	
	<i>Alignment</i>	1	
	<i>Drainage</i>	2	
	<i>Traffic Control</i>	2	
	<i>Railroad</i>	4	
	<i>Utility Adjustments</i>	4	
	<i>Sideslopes and Clear Zone</i>	2	
	<i>Items Affecting Improvements</i>	2	
	<i>Design Variances</i>	2	
	<i>Cost</i>	1	
	<i>Bike/Ped</i>	2	
	<i>Adjacent Segments</i>	3	
	Crash Analysis		2
	ROW		8

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

Prime Farmland	0	
Floodplain Encroachment	1	
NPDES	1	
404 Permit	1	
Special Waste	4	
Environmental Survey	4	
Section 4(f)	1	
Air Quality	1	
Noise	1	
Work Zone Traffic Management Plan	1	
Complete Streets	1	
Maintenance of Traffic	1	
Public Involvement	2	
Coordination	2	
Other Coordination	2	
Commitments	1	
Attachments	75	
Location Map	4	
Functional Classification Map with Project Limits	1	
Existing and Proposed Typical Sections	16	
Plan and Profile Sheets	40	
Intersection Design Studies	1	
Spot Map and/or Collision Diagram	1	
Environmental Clearances and Correspondence	1	
Public Involvement Correspondence	4	
Newspaper Advertisement	1	
Coordination Meeting Minutes	4	
BLR 22120 Approval of Design Variance	1	
Cost Estimate	1	
Assemble report pdf and hard copies	8	
Sub - total		177

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Man Hour Estimate for Consulting Services (Total Project)

Crawford, Murphy, and Tilly, Inc.

14	Final PDR		
	N/A		
	Sub - total		0
15	Meetings and Coordination		
a	Ongoing Meetings and Coordination for Extended Project Duration	276	
	Sub - total		276
16	Project Administration		
a	Project Setup	8	
b	Project Management	77	
c	Quality Assurance	16	
	Sub - total		101
17	IGA and Funding Assistance	<u>Hours</u>	
a	Shared STP Application Assistance	40	
b	Other Funding Application Assistance as needed (excepting task 18 below)	40	
c	Assist with Identifying Village of Round Lake Cost Shares	40	
d	Assist with Identifying IDOT Cost Shares	40	
e	Assist with Identifying Metra Cost Shares	40	
	Sub - total		200
18	RAISE Grant Application	<u>Hours</u>	
	N/A		
	Sub - total		0

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Development of Project Hourly Rates (IDOT Method)

Crawford, Murphy, and Tilly, Inc.

Item	2016 Actual Rate	2017 Projected @ 3.0% Increase	2018 Projected @ 3.0% Increase	2019 Projected @ 3.0% Increase	2020 Projected @ 3.0% Increase	2021 Projected @ 3.0% Increase	2022 Projected @ 3.0% Increase
Average Hourly Rate as a Percent of 2016 Rate	100.0%	103.0%	106.1%	109.3%	112.6%	115.9%	119.4%
Estimated Months of Contract in Given Year	2	12	12	12	12	12	6
% of Project Duration	2.94%	17.65%	17.65%	17.65%	17.65%	17.65%	8.82%
Extension	0.029	0.182	0.187	0.193	0.199	0.205	0.105
Weighted Project Hourly Rate Multiplier	Note: Salary Adjustments are Given on January 1 of Each Year						1.0998

Project Duration: June 2021 to July 2021 =

68 months

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation**

**Computation of Prorated
Project Hourly Rates**

Crawford, Murphy, and Tilly, Inc.

Classification	Actual 2016 Average Hourly Rate	Weighted Hourly Rate Multiplier	Project Hourly Rates *
Principal	\$70.00	1.0998	\$76.98
Senior Project Engr/Mngr	\$59.98	1.0998	\$65.96
Project Engineer	\$45.93	1.0998	\$50.51
Senior Engineer	\$35.55	1.0998	\$39.10
Senior Technical Manager	\$39.93	1.0998	\$43.91
Engineer	\$28.25	1.0998	\$31.07
Planner	\$23.38	1.0998	\$25.71
Registered Land Surveyor	\$41.60	1.0998	\$45.75
Senior Technician	\$33.97	1.0998	\$37.36
Technician II	\$24.29	1.0998	\$26.71
Technical I	\$18.74	1.0998	\$20.61
Administrative Assistant	\$21.51	1.0998	\$23.66

* Rates to be applied to all project work tasks

AVERAGE HOURLY PROJECT RATES

FIRM Crawford, Murphy & Tilly, Inc.
PSB N/A
PRIME/SUPPLEMENT Supplement 2

DATE 08/05/21

SHEET 1 OF 4

PAYROLL CLASSIFICATION	AVG HOURLY RATES	TOTAL PROJECT RATES			Data Collection			Field Surveys			Location Drainage Study			Alternative Alignment Analysis			Traffic Analysis		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
Principal	76.98	0	0.00%	0.00															
Senior Project Engr/Mngr	65.96	20	0.46%	0.30															
Project Engineer	50.51	1169	26.90%	13.59	18	37.50%	18.94	76	27.34%	13.81	136	11.67%	5.90	12	13.33%	6.74	68	31.78%	16.05
Senior Engineer	39.10	751	17.28%	6.76	17	35.42%	13.85	30	10.79%	4.22	420	36.05%	14.10	12	13.33%	5.21	68	31.78%	12.42
Senior Technical Manager	43.91	129	2.97%	1.30							1	0.09%	0.04						
Engineer	31.07	1945	44.75%	13.90							498	42.75%	13.28	66	73.33%	22.78	78	36.45%	11.32
Planner	25.71	4	0.09%	0.02	1	2.08%	0.54												
Registered Land Surveyor	45.75	58	1.33%	0.61	4	8.33%	3.81	12	4.32%	1.97	42	3.61%	1.65						
Senior Technician	37.36	191	4.39%	1.64	2	4.17%	1.56	146	52.52%	19.62	18	1.55%	0.58						
Technician II	26.71	5	0.12%	0.03							5	0.43%	0.11						
Technical I	20.61	64	1.47%	0.30	5	10.42%	2.15	14	5.04%	1.04	45	3.86%	0.80						
Administrative Assistant	23.66	10	0.23%	0.05	1	2.08%	0.49												
TOTALS		4346	100%	\$38.52	48	100.00%	\$41.33	278	100%	\$40.66	1165	100%	\$36.45	90	100%	\$34.73	214	100%	\$39.80

AVERAGE HOURLY PROJECT RATES

FIRM Crawford, Murphy & Tilly, Inc.
PSB N/A
PRIME/SUPPLEMENT Supplement 2

DATE 08/05/21
SHEET 2 **OF** 4

PAYROLL CLASSIFICATION	AVG HOURLY RATES	Intersection Design Studies			Conceptual Roadway Design			Conceptual Railroad Improvements			Preliminary Design Studies			Public Involvement			Environmental Studies		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
Principal	76.98																		
Senior Project Engr/Mngr	65.96													20	18.02%	11.89			
Project Engineer	50.51	254	30.98%	15.65	22	9.48%	4.79	80	25.00%	12.63	26	19.12%	9.66	30	27.03%	13.65	124	36.26%	18.31
Senior Engineer	39.10	44	5.37%	2.10	5	2.16%	0.84	28	8.75%	3.42	30	22.06%	8.62	28	25.23%	9.86	26	7.60%	2.97
Senior Technical Manager	43.91													5	4.50%	1.98	102	29.82%	13.10
Engineer	31.07	522	63.66%	19.78	205	88.36%	27.45	212	66.25%	20.58	70	51.47%	15.99	10	9.01%	2.80	90	26.32%	8.18
Planner	25.71										3	2.21%	0.57						
Registered Land Surveyor	45.75																		
Senior Technician	37.36										4	2.94%	1.10	9	8.11%	3.03			
Technician II	26.71																		
Technical I	20.61																		
Administrative Assistant	23.66													9	8.11%	1.92			
TOTALS		820	100%	\$37.52	232	100%	\$33.09	320	100%	\$36.63	136	100%	\$36.91	111	100%	\$45.12	342	100%	\$42.56

AVERAGE HOURLY PROJECT RATES

FIRM Crawford, Murphy & Tilly, Inc.
PSB N/A
PRIME/SUPPLEMENT Supplement 2

DATE 08/05/21
SHEET 3 **OF** 4

PAYROLL CLASSIFICATION	AVG HOURLY RATES	Geotechnical Investigations			Draft PDR			Final PDR			Meetings and Coordination			Project Administration		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
Principal	76.98															
Senior Project Engr/Mngr	65.96															
Project Engineer	50.51	4	11.11%	5.61	61	34.46%	17.41				166	60.14%	30.38	92	91.09%	46.01
Senior Engineer	39.10	16	44.44%	17.38	21	11.86%	4.64				6	2.17%	0.85			
Senior Technical Manager	43.91				12	6.78%	2.98				4	1.45%	0.64	2	1.98%	0.87
Engineer	31.07	4	11.11%	3.45	83	46.89%	14.57				100	36.23%	11.26	7	6.93%	2.15
Planner	25.71															
Registered Land Surveyor	45.75															
Senior Technician	37.36	12	33.33%	12.45												
Technician II	26.71															
Technical I	20.61															
Administrative Assistant	23.66															
TOTALS		36	100%	\$38.89	177	100%	\$39.59	0	0%	\$0.00	276	100%	\$43.12	101	100%	\$49.03

AVERAGE HOURLY PROJECT RATES

FIRM Crawford, Murphy & Tilly, Inc.
PSB N/A
PRIME/SUPPLEMENT Supplement 2

DATE 08/05/21
SHEET 4 **OF** 4

PAYROLL CLASSIFICATION	AVG HOURLY RATES	IGA and Funding Assistance			RAISE Grant Application											
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
Principal	76.98															
Senior Project Engr/Mngr	65.96															
Project Engineer	50.51	59	29.50%	14.90												
Senior Engineer	39.10															
Senior Technical Manager	43.91	7	3.50%	1.54												
Engineer	31.07	134	67.00%	20.82												
Planner	25.71															
Registered Land Surveyor	45.75															
Senior Technician	37.36															
Technician II	26.71															
Technical I	20.61															
Administrative Assistant	23.66															
TOTALS		200	100%	\$37.25	0	0%	\$0.00	0	0%	\$0.00	0	0%	\$0.00	0	0%	\$0.00

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

**Estimate of Direct Costs
Crawford, Murphy, and Tilly, Inc.**

1	Data Collection		
a	Title Commitments: 30 PINs x \$500/report - Defer to Phase II		-\$15,000.00
	Sub - total		-\$15,000.00
2	Field Surveys		
a	Mileage (Past) 11 trips x 112 miles/trip x \$.575/mile		\$708.40
b	Mileage (Future) 5 trips x 112 miles/trip x \$.575/mile		\$322.00
	Sub - total		\$1,030.40
3	Location Drainage Study		
a	Printing: Pre-Final LDS Report 2 additional Copies @ \$50.00/copy 5 copies total including prime agreement LCDOT, LCSMC, IDOT Hydraulics, Round Lake, CMT		\$200.00
	Final LDS Report 2 additional Copies @ \$50.00/copy 5 copies total including prime agreement LCDOT, LCSMC, IDOT Hydraulics, Round Lake, CMT		\$200.00
b	Shipping Prefinal - 4 agencies x \$10 overnight each Final - 4 agencies x \$10 overnight each		\$40.00 \$40.00
	Sub - total		\$480.00
4	Alternative Alignment Analysis		
a	No Direct Costs		\$0.00
	Sub - total		\$0.00

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Estimate of Direct Costs

5	Traffic Analysis		
a	No Direct Costs	\$0.00	
	Sub - total		\$0.00
6	Intersection Design Studies		
a	No Direct Costs	\$0.00	
	Sub - total		\$0.00
7	Conceptual Roadway Design		
a	No Direct Costs	\$0.00	
	Sub - total		\$0.00
8	Conceptual Railroad Improvements		
a	No Direct Costs	\$0.00	
	Sub - total		\$0.00
9	Preliminary Design Studies		
a	No Direct Costs	\$0.00	
	Sub - total		\$0.00

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Estimate of Direct Costs

10	Public Involvement	
a	Printing: Color Comment Sheets (150/meeting) -150 Sheets * \$.50 removed one meeting	-\$75.00
b	Display Boards for First Public Meeting: -10 Boards @ \$80.00/Board removed one meeting	-\$800.00
c	Travel: 7 trips -2 trips x 100 miles x \$.54/mile removed 2 trips (1 SIG, 1 PIM)	-\$108.00
d	Postage: Meeting Notification Letters 200 Letters/Meeting * -1 Meetings * \$.47/Letter removed one meeting	-\$94.00
e	Postage: Comment Response Letters -100 Comment Letters * \$.47/Letter removed one meeting	-\$47.00
	Sub - total	-\$1,124.00
11	Environmental Studies	
a	Equipment: Sound Level Meter Rental 1 week rental @ \$300.00/week	\$300.00
b	Travel: Noise Monitoring 1 trip x 100 miles and 1 trip x 730 miles @ \$.54/mile	\$448.20
c	Accommodations: Noise Monitoring 1 overnight stay @ \$120/night	\$120.00
	Sub - total	\$868.20
12	Geotechnical Investigations	
a	Travel: 2 trips x 100 miles x \$.54/mile DEFERRED TO PHASE II	-\$108.00
	Sub - total	-\$108.00

**Cedar Lake Road Realignment - Phase I Improvement Project
Lake County Division of Transportation
Supplement 2**

Estimate of Direct Costs

13	Draft PDR		
	a	Shipping - 2 agencies x \$10 overnight each	\$20.00
		Sub - total	\$20.00
14	Final PDR		
	a	Shipping - 2 agencies x \$10 overnight each	\$20.00
		Sub - total	\$20.00
15	Meetings and Coordination		
	a	Prime agreement mileage is sufficient given COVID and Conferencing	
	b	Mileage for out-of-state streetscape expert \$.575*523 miles	\$300.73
	c	Hotel for out-of-state streetscape expert	\$108.90
		Sub - total	\$409.63
16	Project Administration		
	a	No Direct Costs	\$0.00
		Sub - total	\$0.00

PROPOSED TASKS

1. Administration
 - 1.1. Meetings with Owner or Agent, including in-house meetings. Progress Reports, scheduling, invoicing and other project administrative tasks.
 - 1.2. Technical direction of staff and resource allocation.
 - 1.3. Project Management, resource coordination.
2. Document Compilation
 - 2.1. Obtain relevant project documents from Owner/Agent.
 - 2.2. Compile, review and index information.
 - 2.3. Prepare compiled information for field and office tasks.
3. Horizontal and Vertical Control
 - 3.1. Search and reconnaissance for record control points. Recover and verify previous control points.
 - 3.2. Set additional control points for Data Collection and provide swing tie sketches as required in field book format.
 - 3.3. Traverse/GPS/level through found monuments to establish primary control.
Traverse/GPS/level through secondary control to densify control.
 - 3.4. Office calculations, adjustment, tabulations of coordinates, and working drawings.
4. 3-D Topographic Survey
 - 4.1. Locate the following visible, marked or available from record man-made topographic features within the survey limits: Point(s) of access to property(ies), sewers, culverts and discharge pipes (including size and invert elevation), catch basins, inlets, drainage structures, fire hydrants, manholes, hand holes, traffic signals, wells, guardrails, retaining walls, large and/or overhead signs, pavement, curbs and other manmade improvements. Building corners will be located along with finish floor elevation.
 - 4.1.1. Locate streetlights, street signs, traffic lights, guardrail, and other safety devices.
 - 4.2. Locate individual trees and canopy limits within red survey limit areas (6-inch diameter at 3 feet above ground). **ASE assumes 200 trees.** ASE will not identify species of trees. Tree species identification and tree tagging, if necessary, will be performed by others. Perimeter outlines of landscape areas will be located.
 - 4.3. Conduct elevation surveys at intervals and at locations necessary for 1-foot contours to create the mapping deliverable shots may be taken on random stationing and locations as required to create a Digital Terrain Model (DTM). Elevations shall be obtained in order to provide client with a DTM with an appropriate accuracy to depict existing conditions. ASE will perform spot elevations at approximately 50' intervals and at breaks in grade, high points and low points, and other areas of significance. For site areas outside of ROW, paving, curb, landscape areas, top of bank, centerline of ditch, and toe of slope elevations shown at approximately 50' intervals. Elevations will be measured at building corners. Building finish floor elevations will be measured at a door, overhead doors, entries or exit.
 - 4.3.1. Elevations on paved surfaces shall be reported to 0.01 of a foot.
 - 4.3.2. Elevations on other surfaces shall be reported to 0.1 of a foot.
 - 4.4. Utility Survey
ASE will collect and record this data using in-house detail sheets. Manholes or other confined spaces (as defined by OSHA) will not be entered, pumped or cleaned. ASE shall not be responsible for underground topographic information not physically locatable or visible at the time of the

survey; or any information provided by utility provider. ASE will only submit reduced field details of underground structures for this task.

- 4.4.1. Detail utility features (assume 100 features) including: Manholes, handholes, culverts, catch basins, valve vaults or other surface indications of subsurface utilities. Measure inverts, pipe sizes and observed flow direction in manholes and other underground facilities. Pipe size/type details will be created but will be a check on plan information only. Electric/Communications vaults will be observed if accessible, with the number of observed cables and open or unoccupied conduits included. ASE will not be responsible for opening or accessing large or restricted manhole/utility vault covers.
- 4.4.2. Locate evidence of underground tanks, vaults, burial ground, etc. ASE will only locate visible surface-level appurtenances of these.
- 4.5. CADD drafting and incorporate the following topographic features into mapping:
 - 4.5.1. Digital Terrain Model (DTM) will be generated and will include one-half foot contours; ASE will combine the original DTM along with the new work.
 - 4.5.2. ASE will also combine the above DTM with the County Aerial (to be provided by client). ASE will not be responsible for changed conditions, areas of Aerial DTM or the meshing between the two.
 - 4.5.3. ASE will combine the original planimetrics and the planimetrics from the new topography; ASE will not be responsible for changed conditions.
- 5. Boundary Survey
 - 5.1. No boundary work or reconnaissance for existing monumentation will be performed; however, any monuments found during topography will be located.
- 6. QA/QC
 - 6.1. Prepare project specific QA/QC plan.
 - 6.2. Review plan and prepare final report.

DELIVERABLES

- MicroStation drawing based on IDOT standards including Planimetric and DTM (Meshed with County DTM to be supplied by others).
- Utility Detail Sheets

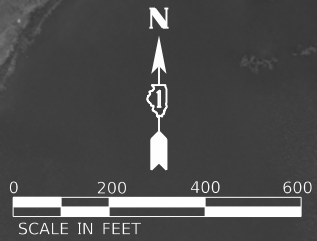
DIRECT COSTS

Traffic Control (Assume One Day @ \$1,000 per day)	\$ 1000.00
Rail Road Permit (Assume \$1,500)	\$ 1,500.00
Rail Road Flagging (Assume two days @\$800/day)	\$ 1,600.00



LEGEND

- EXISTING SURVEY
- SURVEY NEEDED



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FILE NAME =	exh_NeededSurvey.dgn	DESIGNED -	REVISED -
MODEL NAME =	Default	DRAWN -	REVISED -
PLOT SCALE =	400.0000' / 1 in.	CHECKED -	REVISED -
PLOT DATE =	7/21/2021 (2:30:00 PM)	DATE -	07/21/2021
			REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ADDITIONAL SURVEY NEEDED
CEDAR LAKE ROAD REALIGNMENT**

SCALE: 1"=200'

SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
192	02-00065-01-FP	LAKE	1	1
CONTRACT NO.			5CN#	
ILLINOIS FED. AID PROJECT				



PROJECT: Round Lake Improvements

LOCATION: Round Lake, Lake Co., IL

CLIENT: CMT Engineering

PROPOSAL No. : 211101.1

DATE: 8/10/2021

SUMMARY OF TASKS	MANHOURS																					
TASK	PIC	PM	P S/E 4	P S/E 3	P S/E 2	P S/E 1	CADD	ST3	ST2	ST1	ROW 4	ROW 3	ROW 2	ROW 1	SUE 3	SUE 2	SUE 1	CONTR.	A/C 3	A/C 2	TOTAL	
1.0 Administration	2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	32
2.0 Data Compilation	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
3.0 Horizontal/Vertical Control	0	0	0	6	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	46
4.0 Topography	0	8	0	53	0	0	266	201	201	0	0	0	0	0	0	0	0	0	0	0	0	729
5.0 Boundary (N/A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
6.0 QA/QC	2	10	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	16
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hours	4	38	0	61	0	0	266	222	222	0	0	0	0	0	0	0	0	0	0	14	0	827

