


Municipality	LOCAL AGENCY	 <b>Illinois Department of Transportation</b>	CONSULTANT	Name Baxter & Woodman, Inc
Township				Address 8678 Ridgefield Road
County Lake County – Division of Transportation		<b>Preliminary Engineering Services Agreement For Non-Motor Fuel Tax Funds</b>		City Crystal Lake
Section 17-00095-19-CH				State IL

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of May, 2018 between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above SECTION. Non-Motor Fuel Tax Funds, allotted to the LA ~~by the State of Illinois~~, under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely ~~or in part~~ to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

### Section Description

Name Hunt Club Road (CH 29) and Washington Street (CH 45), Intersection Improvements

Route CH 29/45 Length 1.87 Mi. 9890.00 FT (Structure No. \_\_\_\_\_)

Termini CH 29: Wildflower Lane to Orchard Valley Dr; CH 45: White Oak Lane to 1,970-ft east of Hunt Club Road

### Description:

This project will include safety improvements, channelization improvements, access control and bike path/sidewalk extensions.

### Agreement Provisions

#### The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
  - a. ☒ Make such detailed surveys as are necessary for the preparation of detailed roadway plans
  - b. ☐ Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
  - c. ☒ Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
  - d. ☒ Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
  - e. ☐ Prepare Army Corps of Engineers Permit, **Lake County Stormwater Management Commission Permit**, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
  - f. ☐ Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
  - g. ☐ Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with **one (1) copy of each document in both hardcopy and electronic format**. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at the ENGINEER's actual cost for reproduction.
  - h. ☒ Furnish the LA with survey and drafts in **duplicate** of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.
  - i. ☐ Assist the LA in the tabulation and interpretation of the contractors' proposals

- j. ☒ Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
  - k. ☒ Prepare the Project Development Report when required by the DEPARTMENT.
  - l. ☒ **Services as included and/or defined in the attached Scope of Services.**
2. That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies **of the LA of the DEPARTMENT**. It is being understood that all such reports, plats, plans and drafts shall, before being finally accepted, be subject to approval by the LA ~~and the DEPARTMENT~~.
  3. To attend conferences at any reasonable time when requested to do so by representatives of the LA ~~or the Department~~.
  4. In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that the ENGINEER will perform such work without expense to the LA, even though final payment has been received by the ENGINEER. The ENGINEER shall give immediate attention to these changes so there will be a minimum delay to the CONTRACTOR.
  5. That basic survey notes and sketches, charts, computations and other data prepared or obtained by the ENGINEER pursuant to this AGREEMENT will be made available, upon request, to the LA ~~or the DEPARTMENT~~ without cost and without restriction or limitations as to their use.
  6. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will show the ENGINEER's professional seal where such is required by law.

**The LA Agrees,**

1. To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT according to the following method indicated by a check mark:
  - a. ☐ A sum of money equal to \_\_\_\_\_ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
  - b. ☐ A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

**Schedule for Percentages Based on Awarded Contract Cost**

Awarded Cost	Percentage Fees	
Under \$50,000	_____	(see note)
	_____	%
	_____	%
	_____	%

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for all services rendered in accordance with this AGREEMENT at the actual cost of performing such work plus   \*   percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at the ENGINEER's actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided in section 1 of the ENGINEER AGREES. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus an additional service charge of up to five (5) percent.

"Cost to Engineer" to be verified by furnishing the LA ~~and the DEPARTMENT~~ copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed. **\*See the CECs**

**The Total Not-to-Exceed Contract Amount shall be \$813,623.16**

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed. ~~in accordance with the following schedule:~~
- ~~a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by section 1 of the ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.~~
  - ~~b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.~~
- By Mutual agreement, partial payments, ~~not to exceed 90 percent of the amount earned~~, may be made from time to time as the work progresses.
4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in sections 1 and 3 of the ENGINEER AGREES and prior to the completion of such services, the LA shall reimburse the ENGINEER for the ENGINEER's actual costs plus 160 percent incurred up to the time the ENGINEER is notified in writing of such abandonment - "actual cost" being defined as in paragraph 2 of the LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of the ENGINEER AGREES, ~~after they have been approved by the DEPARTMENT~~, the LA will pay the ENGINEER for such changes on the basis of actual cost plus 160 percent to cover profit, overhead and readiness to serve - "actual cost" being defined as in paragraph 2 of the LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of the ENGINEER's responsibility to prepare a complete and adequate set of plans and specifications.

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**It is Mutually Agreed,**

- 1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
- 2. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with section 4 of the LA AGREES.
- 3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA ~~and their approval by the DEPARTMENT~~, the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and approved by the LA ~~and the DEPARTMENT~~.
- 4. That the ENGINEER warrants that the ENGINEER has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that the ENGINEER's has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in triplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

County of Lake of the  
(Municipality/Township/County)

ATTEST:

State of Illinois, acting by and through its

By \_\_\_\_\_

County Board

Lake County

Clerk

(Seal)

By \_\_\_\_\_

Title Chairman of the County Board

RECOMMENDED FOR EXECUTION

Shane Schneider, P.E., MBA  
Director of Transportation/County Engineer  
Lake County

Executed by the ENGINEER:

Baxter & Woodman, Inc.

Engineering Firm

8678 Ridgefield Road

Street Address

Crystal Lake, IL 60014

City, State

ATTEST:

By Barbara Tabin

By [Signature]

Title Deputy Secretary

Title President/CEO

**Note: Three (3) Original Executed Contracts – (2) LCDOT; (1) Consultant**

**HUNT CLUB ROAD (CH 29) AT WASHINGTON STREET (CH 45)  
INTERSECTION IMPROVEMENTS  
PHASE I ENGINEERING SERVICES  
LAKE COUNTY DIVISION OF TRANSPORTATION  
SECTION 17-00095-19-CH**

**SCOPE OF SERVICES**

**LOCATION:**

The project is located on Hunt Club Road and Washington Street within the Village of Gurnee. The area for study includes the following:

<b><u>Roadway</u></b>	<b><u>Limits</u></b>	<b><u>Length</u></b>
Hunt Club Road	Wildflower Lane to Orchard Valley Drive	6,220 FT
Washington Street	White Oak Lane to 1,970 ft east of Hunt Club Road	3,670 FT

**PROJECT UNDERSTANDING:**

This project involves Phase I Engineering and Environmental Studies for the intersection improvements at Hunt Club Road and Washington Street. This study aims to provide proactive alternatives to address high number of reported crashes at the subject location particularly those that are categorized as turning crashes, to improve the level of services and delays, and to facilitate the best practices implementations in order to provide a safe and operational access for the subject intersection's motorized and non-motorized users. Bicycle and pedestrian accommodations will also be evaluated. In addition, the drainage study will address improvements in order to mitigate flooding and potential ponding. Structural Engineering has been deferred to Phase II Design.

**EXISTING CONDITIONS:**

Washington Street is a four lane divided roadway with two 11 ft lanes in each direction with curb & gutter on both sides. There is a 12 ft flush/stripped median which provides both east and west bounds with 400 ft protected left turn storage lanes at the intersection. Washington Street is a minor arterial currently under the jurisdiction of Lake County Division of Transportation (LCDOT). Through its corridor, Washington Street has signalized intersections with Almond Road, White Oak Lane, Hunt Club Road, Cemetery Road, and Tri-State Parkway respectively from west to east. These intersections are spaced approximately 1,850 ft, 2,125 ft, 2,650 ft, and 2,000 ft respectively from west to east. Washington Street provides full access and an exclusive right turn lane to BP gas station and convenient store driveway on its west leg in addition to a similar situation for PNC bank on the east leg. An existing 10 ft multi-use path is located in the north parkway of Washington Street. However, the bike path discontinued at approximately 1,150 ft east of Washington Street's intersection with Hunt Club Road. The Village of Gurnee is proposing a carriage walk in the east leg of Washington Street as an interim improvement in 2018 to fill the gap. Drainage issues such as flooding and ponding were observed relatively frequent on

the west leg approximately 1,300 ft from the intersection where previously a special manhole with restrictor has been installed and connected to the culvert.

Hunt Club Road is a four lane divided lane roadway with two 11 ft lanes in each direction with curb & gutter on both sides. An 11 ft flush/striped median provides protected left turn storage lanes on both directions of Hunt Club Road at its intersection with Washington Street in addition to an exclusive single right turn storage lane which is located on the south bound. Hunt Club Road is also categorized as a minor arterial which is currently under the jurisdiction of Lake County Division of Transportation (LCDOT). It crosses through the project area where occupied by residential areas, and single family homes. Hunt Club Road also provides access to several apartment buildings and facilities including lake land church, banks, and BP gas station and convenient store. In the south leg, existing sidewalk extends south from Washington Street to Gurnee Glen Road in the west parkway of Hunt Club Road, and from Washington Street to PNC bank's driveway in the east parkway of Hunt Club Road. Sidewalk also exists in the west parkway of Hunt Club Road from Washington Street to a point approximately 1300 ft to the north. However, There is an existing gap with no sidewalk between the intersection and approximately 280 ft north in the east parkway of Hunt Club Road. 800 ft of sidewalk exists north of that point along Hunt Club Road. Signalized intersections are located at Orchard Valley Road and Hunt Club Road approximately 3,275 ft north of Washington Street and Gages Lake and Hunt Club Road located approximately 4,000 ft south of Washington Street. A three legged intersection is located approximately 1,450 ft south of Washington Street along Hunt Club Road with Wildflower lane. Wildflower lane is currently stop sign controlled.

Existing detention is provided via in-line detention from the 1992 improvements which included the addition of left turn lanes at the intersection. In 2003, Washington Street was widened to two lanes in each direction within the project limits. A wet bottom detention pond is located south of Washington Street approximately 1,950 ft west of the intersection.



INTERSECTIONS OUTSIDE STUDY LIMITS TO BE PART OF TRAFFIC ANALYSIS:

- WASHINGTON STREET AT TRI STATE PARKWAY
- HUNT CLUB ROAD AT GAGES LAKE ROAD
- HUNT CLUB ROAD AT ORCHARD VALLEY DRIVE

PROPOSED BIKE PATH



PROPOSED DUAL LEFT TURN AND SINGLE RIGHT TURN LANE

PROPOSED DUAL LEFT TURN AND SINGLE RIGHT TURN LANE

ENVIRONMENTAL SURVEY REQUEST

POTENTIAL DRAINAGE DETENTION POND

POTENTIAL WETLAND IMPACTS

POTENTIAL CONTAMINATED SOIL AND ENGINEERED BARRIER IMPACTS - IEPA COORDINATION

PROPOSED U-TURN LANE

POTENTIAL FULL REALIGNMENT GAS STATION ACCESS/SHARED DRIVEWAY

POTENTIAL UNDERPASS

PROPOSED BIKE PATH

PROPOSED U-TURN LANE

Washington Street

Existing Drainage Detention

ANALYZE THE CULVERT

IDENTIFIED DRAINAGE ISSUE

POTENTIAL WATERS OF U.S.

MODIFICATION TO THE DRAINAGE DETENTION POND

**LEGEND**

- EXISTING RESIDENTIAL DRAINAGE DETENTION
- PROPOSED DRAINAGE DETENTION POND
- PHASE I STUDY LIMITS
- ITEMS TO BE EVALUATED DURING PHASE I STUDY

BP Gas Station

Bank

ANALYZE BUMP OUT FOR U-TURN WIDENING

POTENTIAL WATERS OF U.S.

PROPOSED DUAL LEFT TURN AND SINGLE RIGHT TURN LANE

POTENTIAL JAWA IMPACTS/OTHER UTILITIES

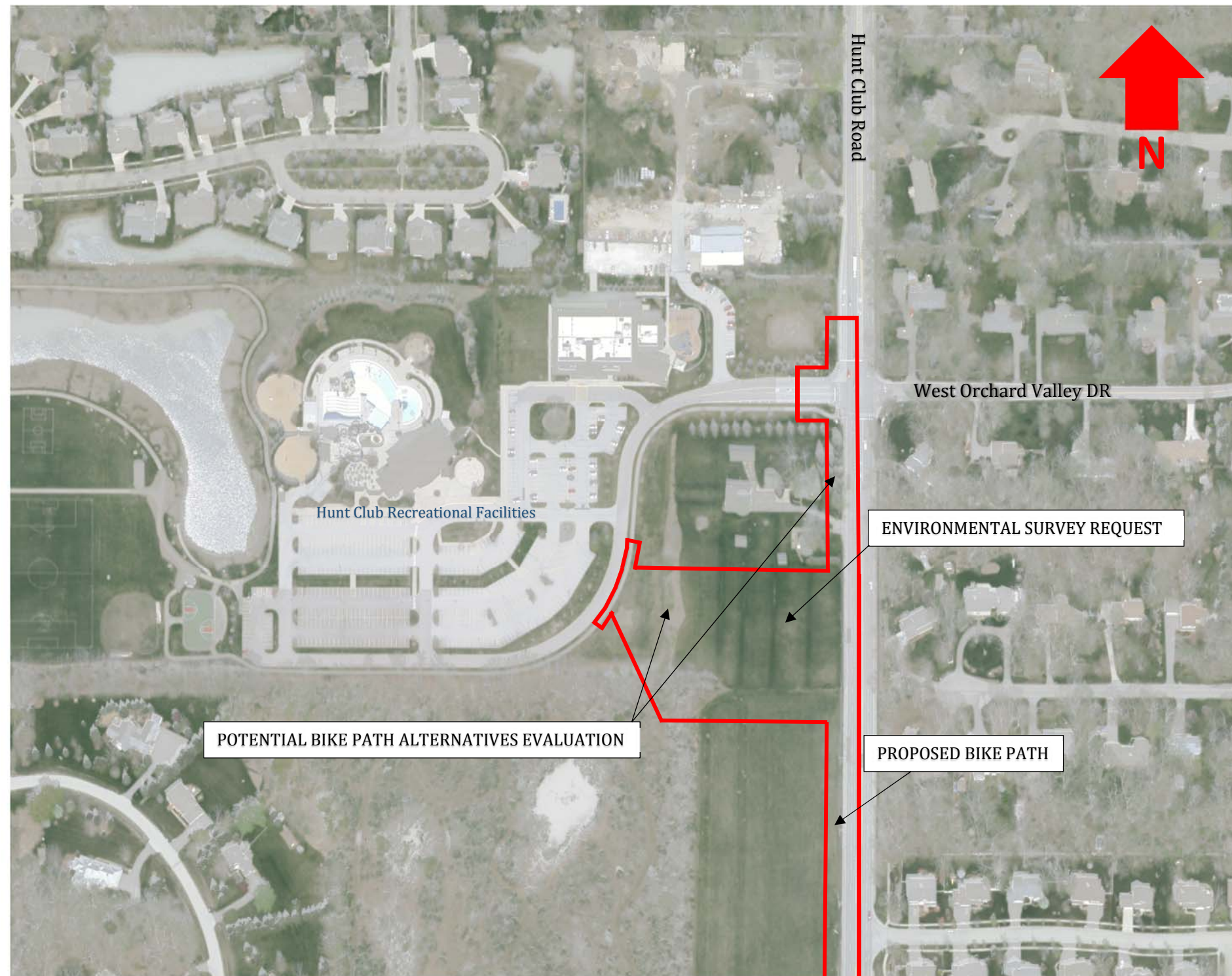
Hunt Club Road



LAKE COUNTY DIVISION OF TRANSPORTATION  
Hunt Club Road at Washington Street Intersection Improvements

STUDY LIMITS EXHIBIT  
INTERSECTION, EAST LEG, WEST LEG





# **LEGEND**

- EXISTING RESIDENTIAL DRAINAGE DETENTION
- PROPOSED DRAINAGE DETENTION POND




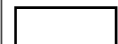
**PHASE I STUDY LIMITS**

**ITEMS TO BE EVALUATED DURING PHASE I STUDY**





**LEGEND**

-  EXISTING RESIDENTIAL DRAINAGE DETENTION
-  PROPOSED DRAINAGE DETENTION POND
-  PHASE I STUDY LIMITS
-  ITEMS TO BE EVALUATED DURING PHASE I STUDY

This project will follow federal project development procedures to ensure eligibility for federal funding after completion of the Phase 1 Study. The project will be coordinated with Illinois Department of Transportation's (IDOT) Bureau of Local Roads and Streets and the Federal Highway Administration for reviews and Phase 1 Design Approval. It is anticipated that this project will be processed as a State Approved Categorical Exclusion.

#### **SCOPE OF SERVICES:**

##### **1. EARLY COORDINATION AND DATA COLLECTION**

- ***Data Collection:*** Obtain, review and evaluate the following information for use in the study:
  - Record Roadway and Drainage Plans including CADD files, if available
  - Utility Atlases
  - Existing Structure Plans with Inspection Reports
  - GIS Shape files surrounding the project limits
  - Aerial Photography
  - Environmental Studies
  - Maintenance and flooding records
  - Drainage Studies
  - Available traffic data
  - Hydraulic and Hydrologic information and calculations
  - Soils and Geological Information
  - Right-of-way, GIS and property data
- ***Field evaluation:*** Perform a field evaluation of the condition of existing pavements, drainage structures, and curb and gutter. Collect and record all necessary field data for structural, roadway, drainage, utility, and pavement analysis. Observe and photograph the project area and immediate surroundings.
- ***Crash Data, Agency Coordination and Crash Analysis Report:*** Review 5 year crash data provided by LCDOT. Coordinate with IDOT, Gurnee Police Department, and the Lake County Sheriff's Office for further clarification regarding specific accident reports and to ensure State Based System includes all known crash data. Prepare collision diagram exhibits for the last 5 years of available data. Complete an accident analysis to evaluate the frequency, severity, and recommended countermeasures.
- ***Traffic Counts:***  
Utilize Miovision traffic counting technology to obtain 24-hour intersection traffic counts and/or 24-hour Average Daily Traffic counts at the following locations (1 week day per location):
  - Washington Street at Hunt Club Road
  - Washington Street at White Oak Lane
  - Washington Street at Almond Road
  - Washington Street at Cemetery Road
  - Washington Street at Tri State Parkway
  - Hunt Club Road at Gages Lake Road
  - Hunt Club Road at Wildflower Lane
  - Hunt Club at Orchard Valley Drive



Baxter & Woodman will provide electronic files consistent with IDOT procedures and formatting, which will include turning movement volumes, and vehicle classification at one hour intervals.

- *Highway Safety Improvement Program (HSIP):*  
Prepare submittal package in accordance with IDOT's Safety Engineering Policy Memorandum, SAFETY 1-06, Highway Safety Improvement Program including the following:
  - HSIP Candidate Form
  - Determination of Countermeasures and Proposed Concepts
  - Benefit Cost Analysis
  - Study Location Map
  - Supporting Exhibits and Photo Logs
  - Crash Summary Tables
- *Congestion Mitigation and Air Quality Improvement (CMAQ):*  
Prepare CMAQ funding application with the Chicago Metropolitan Agency for Planning (CMAP) including all necessary exhibits and cost estimates. Assist the County with coordination of letters of support for inclusion in the application. Coordinate with the Lake County Council of Mayors and IDOT District 1 Bureau of Local Roads and Streets (BLRS).
- *Illinois Transportation Enhancement Program (ITEP):*  
Prepare ITEP submittal package for bike path improvements in accordance with the Illinois Grant Accountability and Transparency Act including the following:
  - GATA Uniform Grant Application
  - GATA Uniform Budget
  - GATA Programmatic Risk Assessment
  - GATA Grantee Conflict of Interest Form
  - Detailed Cost Estimate
  - Project Location Map
  - Colored Photographs
  - Local Assurance Page
  - Government Resolution
  - Public Involvement
  - Letters of Support

## 2. TOPOGRAPHIC SURVEY

- *Topographic Survey:* Perform topographic survey within the project limits and at 50-foot intervals including driveways and cross streets in accordance with the LCDOT's Design Survey Procedures (Revised 03/10/2017). According to the Study Limits Map for the limits of the topographic survey, approximately 9900-feet total will be surveyed in addition to a supplementary survey on topography of all parkways, and pond topographic survey on the existing detention pond area which is located on the west leg of intersection, and a full topography of the potential detention pond area on east leg of the subject intersection). State plane coordinates and NAVD 88 will be used for horizontal and vertical controls.

Ten (10') feet outside the anticipated right-of-way, County contours shall be utilized for approximating compensatory storage, detention, borrow excavation, and mass grading design elevations. Supplemental Survey (below) will be provided upon identifying these off-site locations.

- *Photos:* Collect photographs along the project route to assist with design drawings and exhibits.
- *Structures:* Collect drainage structure condition, inverts, size, and flow direction.
- *Tree Survey:* Conduct a survey of trees exceeding 6" diameter within the area of impact that includes size, species, and condition. The tree survey limits will match the topographic survey limits as shown on the Study Limits Map. Provide a summary of findings and anticipated replacement values.
- *Terrain Model:* Download and develop digital terrain model for use in design and plan preparation.
- *Right of Way:* Field-locate existing property corners and conduct research at the County Recorder office to obtain recorded documents for determining the limits of existing right of way and easements.
- *Supplemental Survey:* As approved by LCDOT, provide additional topographic survey for areas identified for compensatory storage, detention facilities, borrow excavation, and mass grading adjacent to the project site. These areas may include survey within previously identified compensatory storage concepts, planned detention facilities, remnant parcels, and proposed stormwater facilities for accurate calculations during Phase I design and future permitting.

### 3. TRAFFIC ANALYSIS –

- *Traffic Forecasting:* Based on traffic data collected, develop projected 2040 traffic volumes at the following intersections per FHWA guideline:
  - Washington Street at Hunt Club Road (Potential Geometric Changes)
  - Washington Street at White Oak Lane (No Geometric Changes Anticipated)
  - Washington Street at Almond Road (No Geometric Changes Anticipated)
  - Washington Street at Cemetery Road (No Geometric Changes Anticipated)
  - Washington Street at Tri State Parkway (No Geometric Changes Anticipated)
  - Hunt Club Road at Gages Lake Road (No Geometric Changes Anticipated)
  - Hunt Club Road at Wildflower Lane (No Geometric Changes Anticipated)
  - Hunt Club Road at Orchard Valley Drive (No Geometric Changes Anticipated)

Coordinate with the LCDOT and Chicago Metropolitan Agency for Planning (CMAP) for concurrence on 2040 traffic projections.

- *Capacity Analysis:* Complete an intersection capacity analysis (AM & PM) using Highway Capacity Software (HCS) for the Hunt Club Road at Washington Street intersection improvements to be utilized as part of the Intersection Design Study. The following alternatives will be evaluated:
  - Existing Traffic (based on Miovision Traffic Counts) with existing configuration
  - Existing Traffic (based on Miovision Traffic Counts) with proposed configuration
  - 2040 Traffic with existing configuration
  - 2040 Traffic with proposed configuration



Utilize Synchro (Version 10) simulation software to prepare traffic models for three geometric alternatives. Synchro 10 format files will be provided to LCDOT. Miovision traffic counts will be utilized to establish the existing conditions model. It is assumed LCDOT will provide Synchro files and all necessary timing data for the intersections within the study limits. The Synchro analysis will be utilized to investigate corridor sufficiency and will assist in establishing recommended signal phasing for Phase II signal and intersection design.

The Synchro model will analyze the existing condition and proposed improvements for the weekday AM and PM peak hour and will include the following intersections:

- Washington Street at Hunt Club Road (Potential Geometric Changes)

The Synchro model will update the County's model at the following intersections based on future traffic conditions once intersection improvements are made at Hunt Club Road and Washington Street:

- Washington Street at White Oak Lane
- Washington Street at Almond Road
- Washington Street at Cemetery Road

- *Traffic Simulation:* Simulations utilizing SimTraffic by Trafficware will be prepared for use in Public Involvement meetings.
- *Alternative Capacity Analysis:* Complete a capacity analysis (AM & PM) using PTV Vissim software for the Continuous Flow Intersection alternative at Hunt Club Road and Washington Street. Analysis will include existing traffic and 2040 projected traffic with the following customized signal timing evaluation:
  - Accurate signal timing and logic (Customized Ring-Barrier Cycle)
  - Prioritization rules and conflict areas/Optimization
  - Non-motorized users signal timing

#### 4. ALTERNATIVE ANALYSIS

- *Alternative Geometric Development:* Analyze and schematically develop alternative alignments, configurations, and geometrics to establish the preferred alternative on Hunt Club Road and Washington Street utilizing 3R Criteria and posted 40 mph design speed along all legs except east leg which is 45 mph. Review critical cross sections, right-of-way, impacts, and design constraints. Compile alternatives and summarize findings of the analysis with recommendations. A maximum of 3 major Intersection alternatives were introduced for the Hunt Club Road at Washington Street Intersection improvements. Additionally other minor alternatives were also included for non-motorized user facilitations, access driveways, and U-turn configurations.
  - Intersection Alternatives
    - Dual left turn lanes
      - Symmetric vs. Asymmetric widening
      - Right turn lanes on east, west and south leg
    - Single left turn Continuous Flow Intersection
      - Full (Hunt Club Road and Washington Street)
      - Partial (Washington Street only)
    - Michigan Lefts Intersection
      - Full (Hunt Club Road and Washington Street)
      - Partial (Washington Street only)

- Other Alternatives
  - Pedestrian Underpass
    - North leg and West leg
    - North leg only
  - Shared drive in northwest quadrant
  - U-turn lanes on Washington Street (Vehicles 22 ft or less)
  - Bike Path Route – North Leg

Concept sketches of each alternative considered will be developed and the analysis will include conceptual development of the following items:

- Access control
  - Alternative multi-use trail/pedestrian accommodations
  - Programming level cost estimates
  - Right of way impacts
  - Building structure impact alternatives
  - Interim solutions
  - Detention, compensatory storage, and wetland mitigation concepts will be included
- *Intersection Design Report:* Prepare an intersection design report in accordance with the LCDOT Design Standards and submit to LCDOT for concurrence to assist in determination of the preferred alternative.

#### 5. PRELIMINARY DESIGN OF PREFERRED ALTERNATIVE

Initial development of plans will be performed according to the LCDOT Plan Preparation Guidelines.

- *ROW Analysis:* Determine the preferred improvement right-of-way requirements and need for acquisition. Recommend and identify necessary temporary construction easements, permanent easements, or right-of-way acquisition to complete the proposed improvements.
- *Intersection Design Study:* Prepare an Intersection Design Study (IDS) for the Hunt Club Road and Washington Street signalized intersection.
  - Prepare a 1 in = 20 ft scale plan view layout of the intersection, including a Capacity Design Analysis table for 2040 traffic, DHV turning movement diagram, Traffic Data table, property lines, and existing and proposed right of way.
  - Prepare profile sheets at a 1 in = 20 ft scale for roadway profiles greater than 1%.
  - Prepare Truck Turning Movement sheets at a 1 in = 20 ft scale for the design vehicle using Autoturn design software.
- *Preferred Alternative Geometric Design:* Develop the preferred improvement plan, profile, and cross sections throughout the project. Identify design constraints including clear zone, obstructions, drainage limitations, and potential design exceptions. Include development of the following items in the preferred improvement:
  - Alternative multi-use trail/sidewalk
  - Driveways and adjacent intersections
  - Drainage facilities



- *Typical Sections:* Prepare typical sections for the existing and proposed improvements, showing dimensions for roadway surfaces, bases, subbases, subgrade treatments, gutters, curb and gutters, medians, sidewalks, bike paths, ditches, backslopes, and right of way.
- *Cross Section Design:* Design roadway cross sections at 50-foot intervals and all cross streets, driveways and cross-road culverts utilizing Bentley's MicroStation Select series 4 Corridor Design Program in order to provide sufficient detail to determine ROW, including varying slopes to limit ROW impacts.
- *Traffic Management Plan:* Prepare a technical memorandum to summarize traffic staging in order to accommodate the construction of the proposed alternative in accordance with IDOT District 1 Circular Memorandums regarding traffic control and staging. The memorandum will include Maintenance of Traffic typical sections per stage and a queuing analysis.
- *Conceptual Barrier Warrant Investigation:* Conceptually lay out the limits of required guardrail, and other roadside barrier. The limits will be used to assist with impacts to adjacent properties, floodplain fill, structure types, and cost estimating. Final barrier warrant analysis will be completed during Phase II.
- *Estimate of Cost and Schedule:* Develop preliminary cost estimates for the preferred improvement and anticipated schedule for construction. Local agency cost participation estimate will be prepared for the Village of Gurnee including sidewalk and bike path estimate costs.
- ADA Curb Ramp Details to be provided at the following locations listed below where either new ramps will be constructed, existing ramps will be impacted or where existing locations are not current standard. Locations that do not warrant a detectable warnings are not considered ADA curb ramps. Details will not be provided for those locations.

HUNT CLUB ROAD AT WASHINGTON STREET  
LAKE COUNTY DIVISION OF TRANSPORTATION

MAIN ROUTE	CROSSROAD	QUADRANT	CONTROL TYPE	DETECTABLE WARNING REQ.
Hunt Club	Wildflower Ln	W, NE, SE	STOP SIGN	YES
Hunt Club	34240 Hunt Club Rd	W	NONE	NO
Hunt Club	295 Hunt Club Rd	E	NONE	NO
Hunt Club	Gurnee Glen	SW,NW	STOP SIGN	YES
Hunt Club	PNC Bank Ent.	NE, Island N/S, SE	STOP SIGN	YES
Hunt Club	Washington St	SE,SW,NE,NW	SIGNAL	YES
Hunt Club	Gas Station Ent.	SW, Island N/S, NW	STOP SIGN	YES
Hunt Club	Private Ent.	SE, NE	NONE	NO
Hunt Club	Lakeland Church Ent.	SW, NW	STOP SIGN	YES
Hunt Club	Senior Living Ent.	SE, NE	STOP SIGN	YES
Hunt Club	Sunrise Ent.	SW, NW	STOP SIGN	YES
Hunt Club	35066 Hunt Club Rd	SW, NW	NONE	NO
Hunt Club	Orchard Valley Dr	SE, NE	SIGNAL	YES
Hunt Club	Community Center Ent.	SW, NW	SIGNAL	YES
Washington St	17112 Washington St	NW, NE	NONE	NO
Washington St	Gas Station Ent.	NW, NE	STOP SIGN	YES
Washington St	6498 Washington St	NW, NE	NONE	NO
Washington St	16962 Washington St	NW, NE	NONE	NO
Washington St	16926 Washington St	NW, NE	NONE	NO
Washington St	16894 Washington St	NW, NE	NONE	NO
Washington St	16862 Washington St	NW, NE	NONE	NO
Washington St	16840 Washington St	NW, NE	NONE	NO
Washington St	16824 Washington St	NW, NE	NONE	NO
Washington St	16796 Washington St	NW, NE	NONE	NO

6. DRAINAGE ANALYSIS

- *Location Drainage Technical Memorandum (LDTM):* Prepare a Location Drainage Technical Memorandum of the project site including an analysis of the existing drainage system, an analysis of existing outlets, an evaluation of the need for storm water detention and compensatory storage, and design of proposed drainage improvements. Identify sensitive outfalls and complete the drainage report in accordance with the 2014 ACEC/IDOT Drainage Seminar requirements and the requirements of the Lake County Watershed Development Ordinance.
- *Stormwater Detention and Water Quality BMP Implementation:* Identify and recommend a preferred stormwater detention and water quality BMP strategy based on requirements of the Lake County Watershed Development Ordinance. Provide preliminary design of detention facilities that includes anticipated layout, outfalls, volume, and elevations.
- *Drainage Analysis Approach:* The following approach will be followed for the Phase I Study:

- Investigate reconfiguration/modifications to the existing storm sewer/detention to prevent future ponding.
- Investigate proposed storm sewer and detention requirements based on the new net impervious area created by the preferred alternative.

## 7. ENVIRONMENTAL COORDINATION AND PERMITTING

- *Environmental Survey:* Prepare the Environmental Survey Request Form and related exhibits. Submit required permitting to IDOT and coordinate in order to determine potential environmental impacts. Biological, Archeological, and Historical surveys will be performed by the State. Wetland delineation and the special waste screening for Hunt Club Road and Washington Street will be performed by Baxter & Woodman. Section 4f impacts are not anticipated as part of this project.
- *Permit Agency Early Coordination:* Initiate coordination with the following regulatory agencies to obtain preliminary design comments:
  - *Lake County Stormwater Management Commission (LCSMC)*
  - United States Army Corp of Engineers – Chicago District (USACE)
- *Wetlands:* Perform wetland delineation in the project corridor during the growing season; including documentation of baseline vegetation, hydrology, and soils information. Prepare a Wetland Delineation Report and Exhibits that summarize the methodology used, site description, and results of survey.
- *Wetland Mitigation:* Complete an alternatives analysis to determine if there are any feasible alternatives to minimize impacts to wetlands. Coordinate with LCSMC for development of any alternative strategies.
- *Wetland Impact Evaluation:* Prepare a wetland report detailing the work within a regulatory wetland, including a description of the wetlands being impacted, avoidance, minimization, and mitigation efforts. Submit to IDOT for review and approval.
- *Traffic Noise Analysis:* Coordinate with IDOT to determine the need for a noise analysis due to the potential relocation of through traffic lanes on Hunt Club Road and Washington Street. The Noise Analysis will include the following items:
  - Determine existing traffic noise levels
  - Predict future traffic noise levels (No-Action and Build)
  - Identify the possible traffic noise impacts
  - Consider and evaluate abatement measures to mitigate highway traffic noise impacts
  - Evaluate potential construction traffic noise impacts, if necessary
  - Propose implementation of feasible and reasonable abatement measures
  - Document the traffic noise evaluation process
  - Communicate the results to the public and local officials

- PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT (PESA) –

- *Historical Records Review:* Review and document historical data sources for the project area, including aerial photographs, topographic maps, fire insurance maps, County resources, and other readily available development data.
- *Environmental Regulatory Records Review:* A computer search of Federal, State, Tribal, and local government agency records will be performed to determine if the Site or adjacent properties are included within the selected regulatory databases. Based on the results of this query, the Site and its surrounding properties shall be evaluated for recognized environmental concerns (REC). Queries shall be performed, but not be limited to, the following regulatory databases:
  - National Priority List (NPL) of Hazardous Waste Sites;
  - Hazardous Waste Treatment, Storage, Disposal Facilities (TSDF);
  - Underground Storage Tank or Leaking Underground Storage Tank Locations (UST/LUST);
  - Sanitary Landfill and Solid Waste Sites (SL/SWS);
  - State Hazardous Waste Sites (SHWS);
  - CERCLIS sites
  - Small and Large Quantity Hazardous Waste Generators (RCRIS-SQG/LGG)
  - RCRA
- *Report Preparation:* Based on Environmental Screening results and site visit, prepare a PESA using the processes described in *A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Infrastructure Projects*, Second edition, January 2012.
- Prepare a letter report summarizing the activities and results of the assessment. The report will include pertinent documentation to support the screening results of the assessment. It will also provide a summary of conclusions from the limited information collected. A Preliminary Site Investigation (PSI) will not be included within this scope of work.
- No Further Remediation (NFR) Review and Coordination – Request and Review existing NFR letter from Illinois Environmental Protection Agency (IEPA) for the gas station located in the northwest quadrant of the intersection. Analyze the conditions of the agreement and potential impacts to engineered barrier. Create an exhibit showing location of existing engineered barrier (if necessary) and potential impacts.

8. MEETINGS AND PUBLIC INVOLVEMENT

- *Meetings:* The following meetings (33) are anticipated for this project:
  - LCDOT (5 total) (Kickoff, Alternatives, Concept, Preliminary, Prefinal)
  - Regulatory Agencies (2 total): LCSMC (2)
  - IDOT (2) (Kickoff and Review)
  - IDOT/FHWA Coordination Meetings (2)
  - Public Agency Meetings (3 total): Village of Gurnee and Township (3 – Kickoff, alternatives & preferred)
  - Individual Property Meetings (10)
  - Utility Coordination Meetings (2)



- Pace Bus Meeting (1)
    - LCDOT/Geotechnical Meetings (2 – pre bore & post bore)
    - CFI Miscellaneous Meetings (4)
  - *Public Meetings:* Prepare advertisement, exhibits, videos, handouts, and attend two Public Meetings and/or Hearings. Prepare meeting minutes to document public comments. Prepare mailings to property owners identified with land acquisition.
    - *Drone Video and Processing:* Licensed Pilot will coordinate drone activity with the Federal Aviation Administration (FAA) and the Waukegan Airport to fly a drone within the project limits to capture video and images. The video and images will be used to demonstrate weekday peak hour traffic and existing conflicts at the Public Meetings.
  - *Project Website:* The design, maintenance and hosting of project website is not included in scope. Will provide project Data to LCDOT upon request.
  - *Social Media:* No social media participation is anticipated.
9. PROJECT DEVELOPMENT REPORT
- *Phase I Documentation:* Prepare a Local Project Development Report for a State Approved Categorical Exclusion and submit the report to IDOT-BLRS and the Federal Highway Administration for review and approval. Prepare all other required documentations, forms and related exhibits. Preliminary, Pre-final, and Final submittals are anticipated. Maintain an updated PPI form and funding application with CMAP and Council of Mayors if necessary.
10. GEOTECHNICAL REPORT
- *See scope prepared by Interra, Inc. Structure borings and Structure Geotechnical Report have been deferred to Phase II pending Phase I design.*
11. RIGHT OF WAY AND BOUNDARY
- *Plat of Highways:* Perform legal surveys and develop plats, legal descriptions and title commitments according to LCDOT's Plat Guidelines (03/10/17) as well as IDOT guidelines for a maximum of fifty-five (55) adjacent parcels of land to be acquired for R.O.W., permanent easements or temporary construction easements. Prepare all required documentations, forms and related exhibits including R.O.W Impacts Table.
  - *Private Property Investigation:* Assist with identifying well and septic locations on private property within right of way to be acquired. Research Lake County health department records for available information.

12. QA/QC

- Perform in-house peer and milestone reviews by senior staff during project initiation, conceptual review, preliminary, pre final, and final submittals. Conduct milestone reviews of subconsultants and provide feedback throughout the progress of work.

13. MANAGE PROJECT

- Plan, schedule, and control the activities that must be performed to complete the project including budget, schedule, and scope. Coordinate with LCDOT and project team to ensure the goals of the project are achieved. Prepare and submit monthly invoices, coordinate invoices from sub-consultants, and provide regular updates to the LCDOT.

HUNT CLUB ROAD (CH 29) AT WASHINGTON STREET (CH 45)  
LAKE COUNTY DIVISION OF TRANSPORTATION  
ENGINEERING SERVICES - MANHOUR SUMMARY

	Task Manhours	Total Manhours
<b>1- EARLY COORDINATION AND DATA COLLECTION</b>		
Data Collection:	40	
Field Evaluation (3 visits - 2 staff members - 6 hrs/visit)	36	
Crash Data, Agency Coordination and Crash Analysis Report	80	
Traffic Counts and Origin-Destination Evaluation		
24 hour traffic count installation (8 loc. at 2 people x 2 days x 3 hrs)	96	
HSIP, CMAQ and ITEP Submittal	80	
<b>Total task manhours</b>		<b>332</b>
<b>2- TOPOGRAPHIC SURVEY</b>		
Topographic Survey		
Field Work	300	
CADD Processing & Management (SS4 Model)	120	
Tree Survey	16	
Supplemental Survey	40	
<b>Total task manhours</b>		<b>476</b>
<b>3- TRAFFIC ANALYSIS</b>		
Traffic Forecasting	12	
Capacity Analysis		
HCS		
4 hrs x 3 alternatives x 2 sub-alternatives x 1 intersection and existing conditions	28	
Synchro simulations		
8 hrs/model x 2 peak periods x 6 alternatives (3-ex. & 3-2040)	96	
Traffic Simulation (SimTraffic by Trafficware)	32	
Alternative Capacity Analysis - PTV Vissim w/ custom signal timing	116	
<b>Total task manhours</b>		<b>284</b>
<b>4- ALTERNATIVE ANALYSIS</b>		
Develop Design Criteria	4	
Alternative Geometric Development		
Intersection Alternatives		
Dual left turn lanes - two alternatives (including exhibits)	120	
Single left turn lane CFI - two alternatives (including exhibits)	160	
Michigan lefts - two alternatives (including exhibits)	120	
Other Alternatives		
Underpass - two alternatives (including concept exhibits)	40	
Shared drive in NE quadrant (including concept exhibit)	24	
U-turn lanes on Washington Street (including concept exhibit)	16	
Bike Path route in north leg (including concept exhibit)	24	
Intersection Design Report	60	
Limited X Sections for evaluation purposes - 40 @ 2 hrs	80	
		<b>648</b>
<b>5- PRELIMINARY DESIGN OF PREFERRED ALTERNATIVE</b>		
ROW Analysis	32	
Intersection Design Study (1 intersection)	80	
Preferred Alternative Geometric Design		
Alternative multi-use trail/sidewalk	16	
Driveway and adjacent intersections	32	
Plan & Profiles (11 sheets - 1"=20' @ 30 hrs/sheet)	330	
Plan & Profiles - Bike Path Only (3 sheets - 1"= 20' @ 24 hrs/sheet)	72	
Typical Sections (12 typical sections @ 4 hrs/section)	48	
Cross Sections		
Build 3D Model	240	
Roadway - 140 x sections @ 0.5hrs/section	70	
Bike Path only - 40 x sections @ 0.5hrs/section	20	
Miscellaneous (shared drives, etc.) - 10 x sections @ 0.5hrs/section	5	
Traffic Management Plan		
Technical memorandum narrative	32	
Exhibits	40	
Conceptual Barrier Warrant Investigation	16	
ADA Curb Ramp Details (33 @ 6hrs/detail)	198	
Estimate of Cost and Schedule	40	
<b>Total task manhours</b>		<b>1271</b>

HUNT CLUB ROAD (CH 29) AT WASHINGTON STREET (CH 45)  
LAKE COUNTY DIVISION OF TRANSPORTATION  
ENGINEERING SERVICES - MANHOUR SUMMARY

	Task Manhours	Total Manhours
<b>6- DRAINAGE ANALYSIS</b>		
Location Drainage Technical Memorandum (LDTM)		
Narrative	40	
General Location Drainage Map	8	
Existing Drainage Plan (6 sheets - 1"=50' @ 28 hrs/sheet)	168	
includes StormCAD modeling of existing system		
Identified Drainage Problems	8	
Identified Base Floodplains	6	
Major Culverts (not requiring Hydraulic Report - assume 2)	32	
Design Criteria	6	
Outlet Evaluation	40	
Right-of-way Analysis (evaluation)	24	
Storm water detention		
Ex sewer cleaning recommendations (televising not included)	4	
Ex detention modifications		
Analysis - re-evaluate restrictors/reconfigure storm sewer	40	
Exhibit	36	
Prop detention pond		
Analysis - type, volume and release rates required.	80	
Exhibit	36	
Proposed Drainage Plan (7 sheets - 1"=50' @ 36 hrs/sheet)	252	
includes StormCAD modeling of proposed system		
Study Assembly	8	
Water Quality BMP Implementation	24	
<b>Total task manhours</b>		<b>812</b>
<b>7- ENVIRONMENTAL COORDINATION AND PERMITTING</b>		
Environmental Survey Request (7 sheets @ 8 hrs/sheet)	56	
Permit Agency Early Coordination (does not include meetings)		
LCSMC	6	
USACE	6	
Wetland - Delineation and Report	40	
Wetland Impact Evaluation	24	
Traffic Noise Analysis	80	
Preliminary Environmental Site Assessment (PESA)		
Historical Records Review	40	
Environmental Regulatory Records Review	40	
Report preparation	16	
IEPA NFR Research/Coordination	32	
<b>Total task manhours</b>		<b>340</b>
<b>8- MEETINGS AND PUBLIC INVOLVEMENT</b>		
Meetings (2 staff members @ 6 hrs/meeting)		
LCDOT (5)	60	
Regulatory Agencies (2)	24	
IDOT (2)	24	
IDOT/FHWA Coordination Meetings (2)	24	
Public Agencies (3)	36	
Individual Property Meetings (10)	120	
Utility Coordination Meetings (2)	24	
Pace Bus Meeting (1)	12	
LCDOT/Geotechnical Meetings (2)	24	
CFI Miscellaneous Meetings (4)	48	
Public Meetings (2)		
Drone Flight & Video Processing	40	
Exhibit Preparation	160	
Notification letters & Supporting Exhibits	16	
Minutes/Court Reporter	20	
Staff Attendance at Dry Run (2 - 2 persons @ 4hrs/person)	16	
Staff Attendance at Meetings (2 - 4 persons @ 8 hrs/person)	64	
Address Public Comments	32	
	12	
<b>Total task manhours</b>		<b>756</b>



HUNT CLUB ROAD (CH 29) AT WASHINGTON STREET (CH 45)  
 LAKE COUNTY DIVISION OF TRANSPORTATION  
 ENGINEERING SERVICES - MANHOUR SUMMARY

	Task Manhours	Total Manhours
<b>9- PROJECT DEVELOPMENT REPORT</b>		
Prepare Draft PDR		
Format draft report; compile maps, charts, graphs, and exhibits	60	
Narrative	60	
Print, Bind and submit copies to LCDOT and IDOT BLRS	8	
Address comments	24	
Print, Bind and submit copies to LCDOT and IDOT BLRS	8	
Prepare Final PDR		
Incorporate Public Meeting Information	16	
Revise Narrative and Exhibits	40	
Print, Bind and submit copies to LCDOT and IDOT BLRS	8	
<b>Total task manhours</b>		<b>224</b>
<b>10 - GEOTECHNICAL REPORT</b>		
Coordination	8	
<b>Total task manhours</b>		<b>8</b>
<b>11- RIGHT OF WAY AND BOUNDARY</b>		
Plat of Highways		
Plat, Legal Description, and Title Commitment Prep (55 parcels)	330	
Plat of Highway Preparation	180	
Private Property Investigation	16	
<b>Total task manhours</b>		<b>526</b>
<b>12- QA/QC</b>		
Review of milestone Submittals	200	
<b>Total task manhours</b>		<b>200</b>
<b>13- MANAGE PROJECT</b>		
Administration - 4 hrs/month at 18 months	72	
<b>Total task manhours</b>		<b>72</b>
<b>TOTALS</b>	<b>5949</b>	<b>5949</b>

Exhibit D

PAYROLL ESCALATION TABLE  
FIXED RAISES

FIRM NAME	<u>Baxter &amp; Woodman, Inc.</u>	DATE	<u>04/13/18</u>
PRIME/SUPPLEMENT	<u>PRIME</u>	PTB NO.	<u>N/A</u>
CONTRACT TERM	<u>18</u> MONTHS	OVERHEAD RATE	<u>145.34%</u>
START DATE	<u>5/15/2018</u>	COMPLEXITY FACTOR	<u>3.00%</u>
RAISE DATE	<u>1/1/2019</u>	% OF RAISE	

ESCALATION PER YEAR

<div>5/15/2018 - 1/1/2019</div> <div>8</div> <div>18</div>	<div>1/2/2019 - 11/1/2019</div> <div>10</div> <div>18</div>	<div></div> <div></div> <div></div>	<div></div> <div></div> <div></div>	<div></div> <div></div> <div></div>
= 44.44%	= 57.22%			
= 1.0167				
The total escalation for this project would be:		1.67%		

Subconsultants

FIRM NAME

PRIME/SUPPLEMENT

PSB NO.

Baxter & Woodman, Inc.

PRIME

N/A

DATE

04/13/18

NAME	Direct Labor Total	Contribution to Prime Consultant
Interra, Inc.	5,609.00	560.90
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Total	5,609.00	560.90





## AVERAGE HOURLY PROJECT RATES

FIRM Baxter & Woodman, Inc.  
 PSB N/A  
 PRIME/SUPPLEMENT PRIME

DATE 04/13/18SHEET 1 OF 3

PAYROLL CLASSIFICATION	AVG HOURLY RATES	TOTAL PROJECT RATES			Early Coordination and Data Collection			Topographic Survey			Traffic Analysis			Alternative Analysis			Preliminary Design of Preferred Alternative		
		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	74.00	40	0.67%	0.50	2	0.60%	0.45				2	0.70%	0.52	8	1.23%	0.91	8	0.63%	0.47
Sr. Engineer IV	64.03	108	1.82%	1.16															
Sr. Engineer III	52.14	1250	21.01%	10.96	118	35.54%	18.53	40	8.40%	4.38	50	17.61%	9.18	72	11.11%	5.79	90	7.08%	3.69
Sr. Engineer II	46.84	652	10.96%	5.13										136	20.99%	9.83	120	9.44%	4.42
Sr. Engineer I	41.85	484	8.14%	3.40							132	46.48%	19.45				272	21.40%	8.96
Engineer III	34.04	0																	
Engineer II	29.49	1020	17.15%	5.06	188	56.63%	16.70				100	35.21%	10.39	240	37.04%	10.92			
Engineer I	28.47	420	7.06%	2.01													420	33.04%	9.41
Sr Geologist I	52.26	120	2.02%	1.05															
Engineer Tech V	49.85	280	4.71%	2.35				112	23.53%	11.73				16	2.47%	1.23			
Engineer Tech IV	47.41	0																	
Engineer Tech III	38.61	0																	
Engineer Tech II	32.40	224	3.77%	1.22				224	47.06%	15.25									
Engineer Tech I	21.87	0																	
Cadd Tech IV	47.41	1289	21.67%	10.27	24	7.23%	3.43	100	21.01%	9.96				176	27.16%	12.88	361	28.40%	13.46
Cadd Tech III	38.61	0																	
Cadd Tech II	32.40	0																	
Cadd Tech I	21.87	0																	
Administrative Supp	17.04	0																	
Administrative Supp	27.61	62	1.04%	0.29															
		0																	
		0																	
		0																	
		0																	
		0																	
		0																	
		0																	
		0																	
		0																	
<b>TOTALS</b>		5949	100%	\$43.40	332	100.00%	\$39.11	476	100%	\$41.32	284	100%	\$39.54	648	100%	\$41.57	1271	100%	\$40.41

## AVERAGE HOURLY PROJECT RATES

**FIRM** Baxter & Woodman, Inc.  
**PSB** N/A  
**PRIME/SUPPLEMENT** PRIME

**DATE** 04/13/18

**SHEET** 2 **OF** 3

PAYROLL CLASSIFICATION	AVG HOURLY RATES	Drainage Analysis			Environmental Coordination and Permitting			Meetings and Public Involvement			Project Development Report			Geotechnical Report			Right-of-way and Boundary		
		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	74.00							16	2.12%	1.57	4	1.79%	1.32						
Sr. Engineer IV	64.03	8	0.99%	0.63															
Sr. Engineer III	52.14	70	8.62%	4.50	18	5.29%	2.76	392	51.85%	27.04							300	57.03%	29.74
Sr. Engineer II	46.84	240	29.56%	13.84	18	5.29%	2.48				76	33.93%	15.89	8	100.00%	46.84			
Sr. Engineer I	41.85							80	10.58%	4.43									
Engineer III	34.04																		
Engineer II	29.49	314	38.67%	11.41	24	7.06%	2.08	74	9.79%	2.89	80	35.71%	10.53						
Engineer I	28.47																		
Sr Geologist I	52.26				120	35.29%	18.44												
Engineer Tech V	49.85				140	41.18%	20.53	12	1.59%	0.79									
Engineer Tech IV	47.41																		
Engineer Tech III	38.61																		
Engineer Tech II	32.40																		
Engineer Tech I	21.87																		
Cadd Tech IV	47.41	180	22.17%	10.51	16	4.71%	2.23	158	20.90%	9.91	48	21.43%	10.16				226	42.97%	20.37
Cadd Tech III	38.61																		
Cadd Tech II	32.40																		
Cadd Tech I	21.87																		
Administrative Support	17.04																		
Administrative Support	27.61				4	1.18%	0.32	24	3.17%	0.88	16	7.14%	1.97						
<b>TOTALS</b>		812	100%	\$40.88	340	100%	\$48.85	756	100%	\$47.50	224	100%	\$39.88	8	100%	\$46.84	526	100%	\$50.11

**AVERAGE HOURLY PROJECT RATES**

**FIRM** Baxter & Woodman, Inc.  
**PSB** N/A  
**PRIME/SUPPLEMENT** PRIME

**DATE** 04/13/18

**SHEET** 3 **OF** 3

PAYROLL CLASSIFICATION	AVG HOURLY RATES	QAQC			Manage Project														
		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	74.00																		
Sr. Engineer IV	64.03	100	50.00%	32.01															
Sr. Engineer III	52.14	100	50.00%	26.07															
Sr. Engineer II	46.84				54	75.00%	35.13												
Sr. Engineer I	41.85																		
Engineer III	34.04																		
Engineer II	29.49																		
Engineer I	28.47																		
Sr Geologist I	52.26																		
Engineer Tech V	49.85																		
Engineer Tech IV	47.41																		
Engineer Tech III	38.61																		
Engineer Tech II	32.40																		
Engineer Tech I	21.87																		
Cadd Tech IV	47.41																		
Cadd Tech III	38.61																		
Cadd Tech II	32.40																		
Cadd Tech I	21.87																		
Administrative Support	17.04																		
Administrative Support	27.61				18	25.00%	6.90												
<b>TOTALS</b>		200	100%	\$58.09	72	100%	\$42.03	0	0%	\$0.00	0	0%	\$0.00	0	0%	\$0.00	0	0%	\$0.00



**PAYROLL RATES**

<b>FIRM NAME</b>	<b>Baxter &amp; Woodman, Inc.</b>	<b>DATE</b>	<b>04/13/18</b>
<b>PRIME/SUPPLEMENT</b>	<b>PRIME</b>		
<b>PSB NO.</b>	<b>N/A</b>		

<b>ESCALATION FACTOR</b>	<b>1.67%</b>
--------------------------	--------------

CLASSIFICATION	CURRENT RATE	CALCULATED RATE
Principal	\$72.79	\$74.00
Sr. Engineer IV	\$62.98	\$64.03
Sr. Engineer III	\$51.29	\$52.14
Sr. Engineer II	\$46.07	\$46.84
Sr. Engineer I	\$41.16	\$41.85
Engineer III	\$33.48	\$34.04
Engineer II	\$29.01	\$29.49
Engineer I	\$28.00	\$28.47
Sr Geologist I	\$51.40	\$52.26
Engineer Tech V	\$49.03	\$49.85
Engineer Tech IV	\$46.63	\$47.41
Engineer Tech III	\$37.98	\$38.61
Engineer Tech II	\$31.87	\$32.40
Engineer Tech I	\$21.51	\$21.87
Cadd Tech IV	\$46.63	\$47.41
Cadd Tech III	\$37.98	\$38.61
Cadd Tech II	\$31.87	\$32.40
Cadd Tech I	\$21.51	\$21.87
Administrative Support I	\$16.76	\$17.04
Administrative Support II	\$27.16	\$27.61

HUNT CLUB ROAD (CH 29) AT WASHINGTON STREET (CH 45)  
 LAKE COUNTY DIVISION OF TRANSPORTATION  
 ENGINEERING SERVICES - EXPENSE SUMMARY

	Travel			Postage	Copies (Outside)	Additional Expense
	Miles	Days	Mileage Cost			
	@\$0.54	@\$65				
<b>1- EARLY COORDINATION AND DATA COLLECTION</b>						
Vehicle Expense (22 - 53 miles @ \$0.545/mi)	1166		\$635.47			
Miovision (\$24.25/hr/intersection) = 8 loc. X 24 hrs x \$24.25						\$4,656.00
<b>2- TOPOGRAPHIC SURVEY</b>						
Vehicle Expense (Topographic)		17	\$1,105.00			
Vehicle Expense (Tree Survey) 2 - 53 miles @ \$0.545/mi	106		\$57.77			
Vehicle Expense (County Research) 2 - 70 miles \$0.545/mi	140		\$76.30			
<b>3- TRAFFIC ANALYSIS</b>						
<b>4- ALTERNATIVE ANALYSIS</b>						
<b>5- PRELIMINARY DESIGN OF PREFERRED ALTERNATIVE</b>						
<b>6- DRAINAGE ANALYSIS</b>						
2 submittals to LCDOT and IDOT				\$100.00		
<b>7- ENVIRONMENTAL COORDINATION AND PERMITTING</b>						
Vehicle Expense (3-53 miles @ \$0.545/mi)	159		\$86.66			
Database research and equipment rental				\$ 800.00		
<b>8- MEETINGS AND PUBLIC INVOLVEMENT</b>						
Vehicle Expense (36 - 60 miles @ \$0.545/mi)	2160		\$1,177.20			
Postcards/Advertising				\$250.00	\$2,000.00	
Exhibits					\$1,000.00	
Facility Rental (2 meetings @ \$400/meeting)					\$800.00	
Court Reporter					\$1,000.00	
Drone						\$250.00
<b>9- PROJECT DEVELOPMENT REPORT</b>						
Draft PDR				\$ 250.00	\$250.00	
Final PDR				\$ 250.00	\$250.00	
<b>10 - GEOTECHNICAL REPORT</b>						
<b>11- RIGHT OF WAY AND BOUNDARY</b>						
Wheatland Titles - 55 parcels @ \$500/parcel						\$27,500.00
<b>12- QA/QC</b>						
<b>13- MANAGE PROJECT</b>						
<b>Subtotals</b>	<b>3,731</b>	<b>miles</b>	<b>\$3,138.40</b>	<b>\$1,650.00</b>	<b>\$5,300.00</b>	<b>\$32,406.00</b>

Total Expenses \$42,494.40

## PROJECT MILESTONE SCHEDULE

Local Agency: Lake County Division of Transportation  
 Project: Hunt Club Road at Washington Road  
 Scope of Work: Intersection Improvements  
 TIP #: \_\_\_\_\_  
 TIP Years (Ph II / Const): \_\_\_\_\_  
 Section #: 17-00095-19-CH  
 Last Constr & E3 Cost (date: \_\_\_\_\_): \$ \_\_\_\_\_  
 Current Constr & E3 Cost (date: \_\_\_\_\_): \$ \_\_\_\_\_

### Contact Information

County	<u>Matt Emde</u>
Council/Liaison	_____
Consultant	<u>Baxter &amp; Woodman, Inc</u>
IDOT	<u>Alex Househ</u>

Date Prepared: 4/13/2018

Date Revised: \_\_\_\_\_

### Projected Dates

1. Project Scoping
2. IDOT Phase I Kick-off Meeting
3. 1st State/Federal Coordination Meeting
4. Categorical Exclusion Concurrence
5. Design Variance Concurrence
6. Submit Draft Phase I Report (PDR) to IDOT (a)
7. Public Hearing/Meeting (or N/A)
8. Right-of-Way Kick-off Meeting (or N/A)
9. Submit Final Phase I Report (PDR) to IDOT (b)
10. Submit Phase II Engr. Agreem't to IDOT (or N/A)
- 11. Phase I Design Approval**
12. ROW Aquisition Initiation (or N/A) ( c )
13. Phase II Engr. Agreement Approval (or N/A)
14. Submit Pre-Final Plans and Estimates (d)
15. Submit Phase III Engr. Agreement to IDOT
16. Submit Final Plans, Specs & Estimates (PS&E) (e)
17. ROW Acquisition Complete
- 18. Construction Letting**

Initial Est.	Kick-Off	Revised/Actual	Notes
N/A			
6/1/2018			
11/1/2018			
11/1/2018			
11/1/2018			
5/15/2019			
7/1/2019			
8/1/2019			
9/1/2019			
N/A			
11/1/2019			
12/1/2019			Plats and Legals will be prepared in Phase I
N/A			
8/10/2020			
N/A			
10/8/2020			
11/28/2020			
1/18/2021			

### Notes:

- (a) 3 to 6 month review required per complexity and submittal quality
- (b) 1 to 3 month review
- (c ) Minimum 9 to 18 months required from plats to acquisition
- (d) 1 to 4 month review
- (e) 7 to 10 days before Springfield BLR due date

See IDOT Local Roads' **Mechanics of Project Management**  
 "Federal Aid Project Initiation to Completion" Flow Chart for  
 sequence of events and estimated review times.

Proposal No. 3537  
4/11/2018

Mr. Jim McNally, PE  
Baxter & Woodman Consulting Engineers  
8678 Ridgefield Rd.  
Crystal Lake, IL 60012

**Cost Estimate**  
**Geotechnical Investigation**  
**Hunt Club Road and Washington Street Improvements**  
**Lake County Division of Transportation**  
**Gurnee, Illinois**

Dear Mr. McNally:

Interra, Inc. (INTERRA) is pleased to submit this cost estimate to perform geotechnical subsurface soil exploration for the above referenced project in Gurnee, Illinois. We understand that the proposed improvements would consist of addition of dual left turn lanes and reconstruction or resurfacing of roadway. The improvements will also include installation of traffic signal poles and mast arms.

**Proposed Scope of Work**

Our scope of work includes locating and drilling 22 (22) borings along Hunt Club Road, Washington Street and at the intersection. 16 borings will be drilled to a depth of 7.5 feet each for the proposed roadway improvements. The roadway borings will be spaced approximately 300 feet apart and staggered, in general accordance with the IDOT Geotechnical Manual guidelines. Six (6) borings will be drilled to varying depths between 5.0 feet and 15.0 feet from the existing ground/pavement surface for the proposed sidewalk and detention pond improvements. In addition, 8 pavement cores will be collected on Hunt Club Road and Washington Streets to document the existing pavement condition. The approximate locations of the proposed roadway boreholes and pavement cores are presented in the attached exhibit.

The location of the borings will be finalized upon consultation with the client. The borings will be located by our crew. The location of the borings will be adjusted based on field conditions, accessibility and utility conflicts. Traffic control signage and/or flaggers will be utilized during pavement coring and borings, as needed to ensure safety of the crew and traffic.

The borings will be drilled with a truck-mounted drill rig. Soil sampling in the borings will be performed in general accordance with American Society for Testing and Materials (ASTM) standards, D 1586 "Penetration Test and Split Barrel Sampling of Soils". Observation for groundwater will be made during and immediately after the completion of the drilling. After the completion of the drilling, the boreholes will be backfilled with the soil auger cuttings from the same borehole. Where required, the surface will be patched with asphalt to match surrounding elevations.

All field sampling and laboratory testing will be performed in general accordance with IDOT specifications. Laboratory testing includes moisture content tests and unconfined compressive strength tests using a Rimac/pocket penetrometer on all recovered soil samples. Atterberg Limits, Grain Size Analysis, Standard Proctor tests and Illinois Bearing Ratio tests will be performed on bulk samples recovered from the proposed roadway areas. Draft Roadway Geotechnical Report (RGR) will be provided in accordance with IDOT Geotechnical Manual guidelines. The draft report will be followed by Final Report which will address any review comments.

### **Cost Estimate**

The cost to provide the above mentioned services is provided in the attached CECS and Direct Costs estimate. If the scope of work is increased or decreased, the final invoice amount will be calculated according to the unit rates in the attached CECS and Direct Costs estimate.

### **Schedule**

The fieldwork could be started within a few days of receiving authorization to proceed. We anticipate the fieldwork to be completed in four to five days. Pre-drilling and post-drilling meetings or conference calls will be conducted. The final geotechnical report will be issued





600 Territorial Drive, Suite G  
Bolingbrook, IL 60440

p: 630-754-8700  
f: 630-754-8705

within four weeks of completion of field work.

INTERRA very much appreciates the opportunity to submit this proposal. Should you at any time require any additional information or clarifications, please do not hesitate to call us.

Very truly yours,

**Interra, Inc.**

Ashok Guntaka, EI  
Project Engineer

Sanjeev Bandi, Ph.D., P.E.  
Project Manager



# Boring & Pavement Core Location Map

Hunt Club Road & Washington Street  
Gurnee, Illinois  
Section: 17-00095-19-CH  
Lake County Division of Transportation

## Legend

- Pavement Core
- Roadway Boring



Google Earth



## PAYROLL ESCALATION TABLE FIXED RAISES

FIRM NAME  
PRIME/SUPPLEMENT  
Prepared By

Interra, Inc.  
PRIME  
Ashok Guntaka

DATE 04/11/18  
PTB-ITEM# 000-Hunt Club & Washington

CONTRACT TERM 9 MONTHS  
START DATE 4/1/2018  
RAISE DATE 1/1/2019  
  
END DATE 12/31/2018

OVERHEAD RATE 161.08%  
COMPLEXITY FACTOR 0  
% OF RAISE 3%

### ESCALATION PER YEAR

<u>year</u>	<u>First date</u>	<u>Last date</u>	<u>Months</u>	<u>% of Contract</u>
0	4/1/2018	12/31/2018	9	100.00%

---

The total escalation = 0.00%

**PAYROLL RATES**

FIRM NAME Interra, Inc. DATE 04/11/18  
 PRIME/SUPPLEMENT PRIME  
 PTB-ITEM # 000-Hunt Club & Washington

ESCALATION FACTOR 0.00%

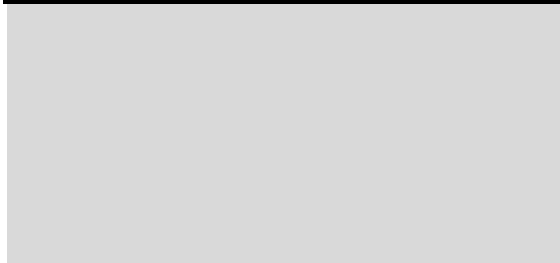
CLASSIFICATION	IDOT PAYROLL RATES ON FILE	CALCULATED RATE
Principal Engineer	\$70.00	\$70.00
Project Manager	\$62.17	\$62.17
Project Engineer	\$43.08	\$43.08
Staff Engineer	\$28.80	\$28.80

## Subconsultants

FIRM NAME Interra, Inc.  
PRIME/SUPPLEMENT PRIME  
PTB-ITEM # 000-Hunt Club & Washington

DATE 04/11/18

NAME	Direct Labor Total	Contribution to Prime Consultant
------	--------------------	----------------------------------



Total

0.00

0.00

## REV 10/05/2017

OVERHEAD RATE	161.08%
COMPLEXITY FACTOR	<u>0</u>

**04/11/18**

Prepared By: Consultant 14,644 Printed 4/11/2018 10:00 AM  
DBE 100.00%



## AVERAGE HOURLY PROJECT RATES

FIRM  
PTB-ITEM#  
PRIME/SUPPLEMENT

Interra, Inc.  
000-Hunt Club & Washington  
PRIME

DATE 04/11/18

SHEET 1 OF 5

PAYROLL CLASSIFICATION	AVG HOURLY RATES	TOTAL PROJ. RATES			Project Management			Field Engineering			Geotechnical Report			QA/QC			Post Contract Coordination		
		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 Engineer	70.00	22.0	16.30%	11.41	2	14.29%	10.00	6	10.34%	7.24	12	20.00%	14.00	1	100.00%	70.00	1	50.00%	35.00
Project Manager	62.17	15.0	11.11%	6.91	12	85.71%	53.29				2	3.33%	2.07				1	50.00%	31.09
Project Engineer	43.08	22.0	16.30%	7.02				6	10.34%	4.46	16	26.67%	11.49						
Staff Engineer	28.80	76.0	56.30%	16.21				46	79.31%	22.84	30	50.00%	14.40						
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<b>TOTALS</b>		135.0	100%	\$41.55	14.0	100.00%	\$63.29	58.0	100%	\$34.54	60.0	100%	\$41.96	1.0	100%	\$70.00	2.0	100%	\$66.09

PTB NUMBER: **000-Hunt Club & Washington**

TODAY'S DATE: 4/11/2018

*\*If other allowable costs are needed and not listed, please add in the above spaces provided.*

### LEGEND

W.O. = Work Order

J.S. = Job Specific