

Municipality	<b>L O C A L  A G E N C Y</b>	 <b>Illinois Department of Transportation</b>	<b>C O N S U L T A N T</b>	Name Christopher B. Burke Engineering
Township				Address 9575 West Higgins Road, Sute 600
County Lake County – Division of Transportation		City Rosemont, 60188		
Section 13-00999-47-ES		State Illinois		

**Preliminary Engineering  
Services Agreement  
For  
Non-Motor Fuel Tax Funds**

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of January, 2014 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 Wadsworth Road Intersections

Route CH 17 Length 3.05 Mi. 16100.00 FT (Structure No. TBD )

Termini At Dilleys Road (CH 15), US-41, and Kilbourne Road (CH 37)

**Description:**

Phase I Engineering, based on federal project development procedures, for improvements to these intersections and adjacent sections of Wadsworth Road, based on year 2040 travel demand projections.

**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 \$1,472,132.74**

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 166 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 166 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

By \_\_\_\_\_

(Seal)

Title Chairman of the County Board

RECOMMENDED FOR EXECUTION

Paula J. Trigg, P.E.  
Director of Transportation/County Engineer  
Lake County

Executed by the ENGINEER:

Engineering Firm

ATTEST:

Street Address

By \_\_\_\_\_

City, State

By \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

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

# **Wadsworth Road (CH 17) Intersections Dilleys Rd (CH 15), US-41, and Kilbourne Rd (CH 37)**

## **Lake County, Illinois Section 13-00999-47-ES**

### **Phase I Engineering Scope of Work December 2013**

This project includes Phase I Engineering and Environmental Studies (Phase I Study) for improvements to the intersections of Wadsworth Road at Dilleys Road, US-41, and Kilbourne Road. This project is located within the municipal boundaries of the Village of Wadsworth (US-41 and Kilbourne Road) and unincorporated Newport Township (Dilleys Road). This project is anticipated to include intersection improvements to address existing capacity and safety deficiencies and to accommodate projected future travel demand for the year 2040. Alternatives will be evaluated at each intersection and coordinated with project stakeholders to gain their input as part of an ultimate determination of the preferred alternative. The limits of the Phase I Study are anticipated to be as follows based on the field scoping meeting with LCDOT staff on October 18, 2013.

#### Dilleys Road and US-41

The limit of improvements along Wadsworth Road associated with these two intersections will vary based on the alternatives considered at each location. Depending on the preferred alternatives selected, the entire stretch of Wadsworth Road in between these intersections may be improved. For purposes of the topographic survey and the environmental surveys, the potential limit of improvements will extend from the east abutment of I-94 on the west, to the west abutment of the Wadsworth Road bridge over the Des Plaines River on the east, a distance of approximately 4,900 feet. The limits along Dilleys Road will extend 1,000 feet to the south and 500 feet to the north. The limits along US-41 will extend 1,500 feet to the north and the south.

#### Kilbourne Road

The limit of improvements along Wadsworth Road associated with the Kilbourne Road intersection will also vary based on the alternatives considered. The reconstruction limits along Wadsworth Road might extend to the east limit of the current Wadsworth Road reconstruction project (approximately station 53+90) and the west limit of reconstruction for the Delany Road project (approximately station 100+00. To cover this area, the topographic survey will extend from approximately station 52+00 to 103+00 along Wadsworth Road, a distance of 5,100 feet, to cover the match locations for a possible 3-lane proposed improvement along this entire stretch of Wadsworth Road. The limits along Kilbourne Road will extend 1,000 feet to the north, which is north of the roadway sag and associated drainage culvert.

On this basis, the total length of topographic surveys, environmental surveys, and potential improvements is approximately 16,100 feet or 3.05 miles.

The Phase I Study for this project will follow federal project development procedures to ensure eligibility for federal funding as part of project development after completion of the Phase I Study. On this basis, project development will be coordinated with the Illinois Department of Transportation - Bureau of Local Roads and Streets (IDOT-BLRS) and the Federal Highway Administration (FHWA) for reviews and for Phase I Design Approval.

It is anticipated that Phase I Engineering will be documented via a Project Development Report (IDOT-BLR form 22210 – Categorical Exclusion Group II).

A public involvement program utilizing a Stakeholder Involvement Group (SIG) as well as coordination with individual stakeholders as appropriate will be a key part of the project development process, which is described further as part of Task 11.

The following describes the individual work tasks included in the overall scope of work for this Phase I Study.

#### **Task 1 - Data Collection, Compilation, Review and Evaluation**

This task includes obtaining all pertinent data required to proceed with the Phase I Study. Coordination will occur with LCDOT, IDOT, the Lake County Stormwater Management Commission (LCSMC), the Village of Wadsworth, Newport Township, and all other agencies necessary to obtain base data for the project area, including but not necessarily limited to the following information:

- Record roadway and drainage plans, including previous studies/reports, and contract plans for ongoing Wadsworth Road and Delany Road projects.
- Recorded centerline and right-of-way plans for Wadsworth Road, Dilleys Road, US-41, and Kilbourne Road.
- Available traffic data.
- Available crash data.
- Available survey data and control data for tying to the Lake County LiDAR mapping.
- Existing and proposed land use and zoning maps, including School Districts, Park Districts, Forest Preserve Districts, Sanitary/Drainage Districts, and Bike/Ped plans as pertinent/available.
- Soils and geological information.
- Public and private utility plans (CBBEL will work with the LCDOT utility coordinator to obtain this information).
- USGS maps and Flood Insurance Rate Maps.
- Public Service routes including Bus, Mail, and Emergency Services.

CBBEL will coordinate with the Lake County GIS Department to obtain available GIS data for the study area, including aerial photography, LiDAR contour mapping, environmental resources, property lines, roadway names, etc.



CBBEL will determine facility deficiencies based on information gathered, and prepare exhibits of the data collected as appropriate for use as part of other project tasks. This task will include field review of the project area, and contact and/or meetings (as required) with key stakeholders within the project area, including the Village of Wadsworth, Newport Township, the Lake County Forest Preserve District (LCFPD), and the LCSMC to retrieve appropriate base project data.

Specific work items under this task will include:

- Initial project field review(s).
- Project data collection including contact/meetings with key project stakeholders.
- Coordination to obtain base project mapping data (LiDAR) and Lake County GIS data.
- Review, analyze and catalog project data.
- Determine facility deficiencies.

### **Task 2 - Topographic Survey**

This task includes completion of topographic surveys within the project limits in accordance with LCDOT Survey Procedures which is included as Attachment A. As noted above, this includes approximately 16,100 feet (3.05 miles) of topographic survey along Wadsworth Road, Dilleys Road, US-41, and Kilbourne Road.

CBBEL will coordinate with LCDOT to prepare a survey right-of-entry letter for survey work on private property. CBBEL will contact property owners, to the extent possible, in advance of surveying on private property.

The survey will be prepared to be used for both Phase I and Phase II Engineering Services. The topographic survey will extend 20 feet beyond the existing right-of-way line, beyond which the Lake County LiDAR mapping (1 foot contours) will be used. Supplemental field survey will be obtained beyond the existing right-of-way line as necessary to resolve LiDAR mapping voids or to resolve other topographic uncertainties. To ensure sufficient data is collected for possible roundabouts, the topographic survey will extend to a 300 feet by 300 feet square area at the Kilbourne Road and Dilleys Road intersections.

On this basis, CBBEL will perform the following survey tasks in accordance with applicable Lake County Survey Procedures:

**Horizontal Control:** Utilizing state plane coordinates, CBBEL will set recoverable primary control utilizing our GPS equipment, tied to the control for the one-foot contour Lake County LiDAR mapping.

**Vertical Control:** CBBEL will perform a level circuit within the above identified survey limits establishing benchmarks and assigning elevations to the horizontal control points. The elevations will be based on NGVD of 1929 and correlated with available FIRM bench marks for the Des Plaines River, and the NAVD 1988 datum for the one-foot contour Lake County LiDAR mapping.



Stream Survey: No work is anticipated for the bridge carrying Wadsworth Road over the Des Plaines River and therefore stream survey for the Des Plaines River will not be performed. In addition, there are no other named streams within the project limits. Based on a review of project area mapping, and based on LCSMC requirements (tributary area of 20 acres or more, a depressional storage area with a base flood volume of 0.75 acre-feet or more), it is estimated that a BFE determination will be required at the following depressional areas within the project limits:

- Along Wadsworth Road, west of Kilbourne Road.
- Along Kilbourne Road, north of Wadsworth Road.

For each of these depressional areas, one downstream cross section of the overtopping outlet will be surveyed.

Existing Right-of-Way: CBBEL will establish the existing right-of-way along Wadsworth Road, Dilleys Road, US-41 and Kilbourne Road within the identified survey limits, based on monumentation found in the field, and based on available plats of highways, subdivision plats and any other available information.

A title search will also be performed as part of this task, and LCDOT will be notified of any utility easements found in the titles.

Topographic Survey: CBBEL will field locate all pavements, driveways, curb and gutters, pavement markings, signs, drainage structures, driveway culverts, cross road culverts, etc., within the above noted survey limits.

Cross Sections: CBBEL will survey cross sections at 50' intervals within the survey limits, at driveways, roadway culverts, and at all other grade controlling features. The cross sections will extend 20 feet beyond the existing right-of-way line.

Utility Survey: All existing storm and sanitary sewers will be surveyed to determine rim and invert elevations and pipe sizes. Above ground facilities of any additional underground utilities including water main, gas, electric, cable, etc. will also be located. CBBEL will work with the LCDOT Utility Coordinator to retrieve existing utility plans and to determine if any JULIE locates will be required for the Phase I Study.

Tree Survey: CBBEL will locate and size all trees 6 inches in diameter breast height (dbh) and greater within the above noted survey limits. The tree survey will extend 20 feet outside of the existing right-of-way where practical. This information will be used to quantify tree impacts. The located trees will be evaluated for species and health as part of Task 9. Contingent upon the preferred alternative for each intersection, additional tree survey outside of these limits could be required, which would be completed as part of supplemental survey.

Base Mapping: CBBEL will compile all of the above information into one base map at 1"=20' scale that is representative of existing conditions for use in all Phase I and Phase II engineering work in developing the detailed plan, profile and cross sections for the preferred alternative.



Supplemental Field Survey: CBBEL will perform supplement field surveys as necessary over the duration of the project to resolve conflicts such as utilities, drainage features, etc., to complete LiDAR mapping voids due to trees/brush, to pick-up any new developments/features along the corridor as required, and to pick-up additional tree survey areas if required based on the preferred alternative at each intersection.

Specific work items under this task will include:

- Coordination with LCDOT for survey right-of-entry letter.
- Coordination with LCDOT Utilities Coordinator.
- Completion of topographic survey.
- Completion of survey for BFE determination.
- Title search.
- Supplement survey.

### **Task 3 - Traffic Counts, Projections and Analysis**

This task includes the following work related to collection of existing traffic data, development of 2040 traffic projections, and the associated traffic analysis.

Traffic Volume Counts: CBBEL will obtain traffic counts at the following intersections, which will include through and turning movements and vehicle classifications:

- Dilley Road: Six hour count (6-9 a.m. and 3-6 p.m.).
- US-41: Twelve hour count (6 a.m. to 6 p.m.) based on IDOT requirements.
- Kilbourne Road: Six hour count (6-9 a.m. and 3-6 p.m.).
- Six (6) commercial entrances at US-41 intersection: Six hour counts (6-9 a.m. and 3-6 p.m.). These traffic volumes are necessary based on the range of alternatives being considered for the US-41 intersection and potential redistribution of traffic volumes based on redefined access points.
- Wadsworth Road at Cashmore Road and at N. Northwoods Drive: Six hour counts (6-9 a.m. and 3-6 p.m.) each.

Twenty-four (24) hour roadway traffic counts (via traffic counting tube) will also be obtained for Wadsworth Road at five locations (west of Dilley, east and west of US-41, east and west of Kilbourne Road), the south leg of Dilley Road, and Kilbourne Road. IDOT has 24 hour count information available for US-41.

CBBEL anticipates using an experienced traffic counting consultant (i.e.; Fish Transportation Group) as an outside direct cost for this work.

Traffic Projections and Analysis: CBBEL will develop projected 2040 traffic volumes for the project and will coordinate with the Chicago Metropolitan Agency for Planning (CMAP) to obtain concurrence on the projections.

The 2040 projected traffic volumes will be analyzed to determine operational deficiencies based on projected traffic volumes and existing geometry as part of the improvement needs determination.



Based on the traffic counts collected and projected 2040 traffic volumes, traffic signal warrants will be reviewed for Dilleys Road and Kilbourne Road.

CBBEL will provide a technical memorandum summarizing the results of the traffic counts, projections and analysis, and the warrant analysis.

Synchro/SimTraffic Analysis: A Synchro/SimTraffic analysis will be prepared for each intersection for existing conditions and for 2040 No-Build conditions to establish the need for intersection improvements within the timeframe of the regional planning horizon (2040). The analysis will be prepared for both the a.m. and p.m. peak periods at each location. Additional capacity analysis using Synchro/SimTraffic will be performed as part of Task 6 for the initial alternatives feasibility study and preliminary alternatives, and as part of Task 8 for the Intersection Design Study (IDS) for the preferred alternative at each intersection within Tasks 6 and 8 respectively.

VISSIM Simulation: VISSIM Simulation models will be prepared for the two finalist alternatives at each intersection to be presented at the Public Meeting. For Dilleys Road and Kilbourne Road, this is anticipated to include a traditional stop controlled intersection and a roundabout. For US-41, this is anticipated to include an improved at-grade intersection and an interchange alternative. The simulations will be for a single peak hour of traffic (anticipated to be the evening peak) with the simulations anticipated to be 5 minutes long each. The VISSIM simulations will be prepared by **GHD, Inc. (formerly Ourston Roundabout Engineering)**, as a subconsultant.

Specific work items under this task will include:

- Traffic counts.
- Traffic projections and coordination for CMAP concurrence.
- No-Build capacity analysis.
- Signal Warrant analysis.
- Technical Memorandum.
- Synchro/SimTraffic Analysis.
- VISSIM Simulations.

#### **Task 4 - Crash Analysis**

This task includes obtaining the last five (5) years of crash data from LCDOT and IDOT including segment and intersection crash data, in order to prepare a project Crash Analysis Report (CAR). Five years of data is now required by IDOT vs previous three year requirement. It is anticipated that the crash data will be available through the LCDOT TARS system which provides access to State, County and Municipal crash data and collision diagrams. If necessary, IDOT can also provide the intersection collision diagram for the US-41 intersection. CBBEL will prepare supplemental intersection collision diagrams if necessary within the project study area, and other exhibits as necessary to summarize the crash data.

In addition, a crash prediction analysis based on the FHWA Interactive Highway Safety Design Model (IHSDM) will be performed for each intersection based on the two finalist



alternatives at each intersection. A separate technical memorandum summarizing the IHSDM analysis and results will be prepared.

Specific work tasks will include:

- Obtain Crash Data.
- Develop CAR Format.
- Develop CAR Maps, Tables, Exhibits.
- Prepare Preliminary CAR for review.
- Prepare Final CAR with disposition of comments.
- Crash Prediction using IHSDM and technical memorandum.

### **Task 5 - Roadway Drainage**

This task includes development of an Existing Drainage Plan (EDP) and a Proposed Drainage Plan (PDP) within the limits of improvement for the preferred alternative at the Dilley's Road intersection and the Kilbourne Road intersection. It is anticipated that IDOT will require a complete Location Drainage Study (LDS) for improvements associated with the US-41 intersection.

#### **A. Dilley's Road and Kilbourne Road Intersections**

***Existing Drainage Plan:*** Development of the EDP includes an evaluation of existing drainage conditions through a review of record roadway plans, maps, reports and field review. Data collection as part of this task includes obtaining pertinent as-built plans, USGS maps, soils maps, topographic maps, existing FEMA data/studies and other pertinent data. Off-site and on-site drainage areas and existing drainage systems will be delineated on the base project mapping.

CBBEL will coordinate with the Village of Wadsworth, Newport Township, LCDOT, LCSMC, and IDOT regarding drainage patterns and concerns, and sensitive drainage areas and/or outfalls. Based on a review of project area mapping, and based on LCSMC requirements (tributary area of 20 acres or more, a depressional storage area with a base flood volume of 0.75 acre-feet or more), it is estimated that a BFE determination will be required at the following depressional areas within the project limits:

- Along Wadsworth Road, west of Kilbourne Road.
- Along Kilbourne Road, north of Wadsworth Road.

Specific work tasks associated with development of the EDP includes the following:

- Identify the tributary drainage area.
- Identify existing drainage outfalls.
- Evaluate outfall sensitivity and suitability for continued use.
- BFE determination (2 locations anticipated).
- Preparation of the EDP.
- Coordination meetings for the EDP with LCDOT, LCSMC, LCFPD, IDOT, the Village of Wadsworth and Newport Township.



**Proposed Drainage Plan:** Development of the PDP includes an evaluation of proposed drainage conditions for the identified preferred alternative for each intersection. A closed drainage system is anticipated to be provided within the limits of each intersection improvement that would transition to existing open drainage at the project limits. A draft PDP will be prepared in advance of the Public Hearing for LCDOT review, and to confirm the proposed right-of-way/easement requirements. Subsequent to the Public Hearing, the final PDP will be prepared to reflect pertinent Public Hearing comments and any review comments from LCDOT.

Specific work tasks associated with development of the PDP for each intersection include the following:

- Delineate off-site and on-site drainage areas and perform hydrologic analyses. Develop the off-site and on-site drainage concept plans.
- Prepare a PDP to fully describe the proposed drainage concept and reflect drainage calculations for drainage system size, type and location. Prepare the draft PDP in advance of the Public Hearing, and the final PDP after the Public Hearing.
- Evaluate the needs for additional rights-of-way and drainage easements for drainage purposes.
- Evaluate the stormwater detention requirements and any compensatory storage requirements based on proposed conditions and in accordance with the Lake County Watershed Development Ordinance. Runoff volume reduction (RVR) techniques will be reviewed and incorporated in the proposed drainage plan as determined appropriate.
- Coordination meetings for the PDP with LCDOT, LCSMC, LCFPD, IDOT, the Village of Wadsworth and Newport Township.

#### B. US-41 Intersection

It is anticipated that IDOT will require a complete LDS for the US-41 intersection in compliance with the IDOT Drainage Manual and ACEC – Illinois/IDOT 2006 Drainage Seminar. Per IDOT drainage study format, the following scope of work is associated with preparing the LDS. For purposes of this proposal, the LDS limits are assumed to include 1,500 feet along all four legs of the intersection:

- Existing Drainage System
  - Existing Drainage Plan - Review and investigate existing drainage systems through plans, maps, reports and field reconnaissance trips. Obtain all the as-built plans, USGS maps, soils maps, topographic maps, existing FEMA studies and drainage reports, and other pertinent data. Delineate off-site and on-site drainage areas and existing drainage systems on the one-foot contour LiDAR project mapping to be provided by LCDOT.
  - Drainage Investigation – Identify drainage problems by researching IDOT flooding and maintenance records, particularly along US-41, and coordinating with local agencies and conducting site investigations.
  - Base Floodplains – Identify and document existing floodplains and floodways that potentially cross the project, which for this project includes only the Des Plaines River floodplain and floodway to the east of the intersection.



- Major Drainage Features – Based on inspection, since Wadsworth Road sits on or near a USGS ridge line, there are no additional major waterway crossings within the limits of improvement for which hydrologic and hydraulic analysis is anticipated to be required.
- Proposed Drainage System
  - Outlet Evaluation – Evaluate existing outlets to determine their suitability for continued use and sensitivity to an increase in rate and volume of stormwater runoff.
  - Right-of-Way Analysis - Evaluate the needs for additional rights-of-way and drainage easements for drainage purposes.
  - Stormwater Detention Evaluation - Evaluate the stormwater detention requirements for this project based on IDOT criteria, but with consideration for the Lake County Watershed Management Ordinance.
  - Local & Other Agency Coordination - Coordinate drainage related issues with IDOT, LCDOT, LCFPD, LCSMC, the Village of Wadsworth, Newport Township, and other agencies as appropriate.
  - Proposed Drainage Plan – Prepare a Proposed Drainage Plan to fully describe the proposed drainage concept and reflect drainage calculations for drainage system size, type and location.
  - Floodplain Evaluation - Evaluate compensatory storage requirements for any proposed fill in the Des Plaines River floodway and floodplain according to IDNR floodway construction requirements and the spirit of the Lake County Watershed Management Ordinance.
  - Prepare LDS Text and Exhibits – Complete all drainage tasks, sort out all data and exhibits and prepare a completed Location Drainage Study in compliance with requirements listed in ACEC-Illinois / IDOT 2006 Drainage Seminar handouts.

### **Task 6 - Alternate Geometric Studies**

The Alternate Geometric Studies task includes developing preliminary geometry for initial alternatives for coordination with project stakeholders and for presentation at a Public Meeting, with subsequent development of detailed geometry for the preferred alternative to be presented at the Public Hearing and included in the Project Development Report.

### **Initial Intersection Feasibility Study**

An initial feasibility study will be performed for all three intersections (Dilleys, US-41, Kilbourne) for coordination with LCDOT before proceeding with the full Phase I Study and stakeholder coordination. The feasibility study will evaluate existing safety and capacity conditions, the implications of projected year 2040 traffic volumes, traffic signal warrants (Dilleys and Kilbourne), and to evaluate a full range of potential improvement alternatives that would be narrowed to a reasonable range of alternatives to be advanced further as part of the Phase I Study. The range of alternatives evaluated as part of the initial feasibility study is anticipated to include improving the existing geometry for all three intersections (with or without signals for Dilleys and Kilbourne based on the warrant analysis prepared in Task 3), alternative intersection designs including roundabouts at Dilleys and Kilbourne, and potential



grade separated alternatives at US-41, including potential innovative alternatives. A preliminary schematic was shared of a potential grade separated US-41 with “dog-bone” roundabouts on Wadsworth Road as one possible alternative. For the purposes of this proposal, it is assumed that four (4) initial concept alternatives will be evaluated for the US-41 intersection, including an improved at-grade alternative, and three potential innovative alternatives (at-grade and/or grade separation). Capacity analysis using Synchro/SimTraffic or Highway Capacity Software will be prepared for each alternative considered, for the a.m. and p.m. peak periods, or fourteen scenarios.

Concept sketches of each alternative considered will be developed for presentation on 11x17 size exhibits, and programming level estimates of construction costs and right-of-way costs will be developed for alternative comparison. This initial feasibility study will be summarized in a Technical Memorandum. A preliminary Technical Memorandum will be submitted for LCDOT review, and a final Technical Memorandum will be submitted to address LCDOT review comments. Two meetings are anticipated with LCDOT staff associated with development and review of the intersection feasibility study.

#### Preliminary Alternatives Development

Preliminary geometry will be developed for the finalist alternatives for each intersection that advance from the feasibility study and coordination with project stakeholders, and for presentation at a Public Meeting. Preliminary geometry will include plan geometry, preliminary profile, and critical cross sections as necessary to estimate the proposed right-of-way requirements for each alternative. In addition, the preliminary geometry will be developed and evaluated based on the available environmental resource data (collected and/or as provided by IDOT through the environmental survey process), the traffic and crash analysis performed, and initial stakeholder input. Capacity analysis using Synchro/SimTraffic or Highway Capacity Software will be updated based on any refinements with the preliminary alternatives development as compared to the concept alternatives. Preliminary alternative cost estimates will be prepared based on major construction items and applicable contingency costs. This is anticipated to be an iterative process including concept design variations as necessary to address design concerns identified through stakeholder coordination including IDOT, LCDOT, LCSMC, and LCFPD. For purposes of developing the project scope of work, it is assumed that the finalist alternatives will include two alternatives each at Dilleys Road and Kilbourne Road, and three alternatives at US-41 as follows, contingent upon the results of the initial feasibility study.

- Dilleys Road and Kilbourne Road: 1) Improve existing geometry with or without traffic signals based on results of warrant analysis; 2) Roundabout.
- US-41: 1) Improve existing geometry for signalized intersection; 2) Innovative at-grade signalized intersection; 3) Grade-separated interchange.

In addition, the need for a continuous 3-lane cross section along Wadsworth Road from east of Chicago Avenue to west of Delany Road (approximately station 52+00 to station 100+00) will be considered in conjunction with the intersection improvement at Kilbourne Road based on the frequency of access points along this section of Wadsworth Road. For purposes of this proposal, it is assumed that preliminary geometry will be developed for a continuous 3-lane cross section along Wadsworth Road within these limits.



CBBEL will include **GHD, Inc. (formerly Ourston Roundabout Engineering)** as a subconsultant to provide assistance and peer review with respect to development and analysis of roundabout alternatives considered at each intersection. GHD will also provide assistance with developing roundabout simulations for presentation at Public Meeting and/or Public Hearing as determined to be required and if the roundabout alternatives advance.

The following assumptions are also made with respect to development of preliminary geometry:

- Pedestrian and bicycle accommodations will be incorporated with all alternatives compliant with the Lake County NMTI policy.
- A closed drainage system (i.e.; curb and gutter) will be provided within the limits of each intersection improvement to minimize overall right-of-way impacts along the corridor, which would transition to open drainage at the improvement limits.
- Stormwater detention and compensatory storage volume requirements and locations will be estimated for the preliminary alternatives for comparative purposes, and will be finalized as part of the preferred alternative.
- For each preliminary alternative, plan geometry, preliminary profiles, and critical cross sections will be developed to determine preliminary right-of-way requirements for assessment of environmental impacts and development of concept level cost estimates.

As discussed in the public involvement task below, it is anticipated that multiple meetings will be held with project stakeholders to discuss the development and evaluation of the preliminary alternatives. This is anticipated to include meetings with LCDOT, LCSMC, LCFPD, IDOT, the Village of Wadsworth, Newport Township, and business owners as appropriate.

#### Preferred Alternative Development

Based on the results of the alternatives development and comparative analysis, and based on the results of stakeholder coordination and the Public Meeting for alternatives, the preferred alternative will be identified for each intersection. Detailed plan, profile and cross section studies will be developed for the preferred alternative for each intersection as required to complete the Phase I Study. The preferred alternative will be the basis for development of the PDP, the Traffic Maintenance Analysis, and for determination of right-of-way and/or easement requirements for the project. The preferred alternative at each intersection will also be the basis for the discussion of impacts and mitigation in the Project Development Report.

For the preferred alternative at each intersection, CBBEL will prepare proposed plan and profile sheets showing existing and proposed horizontal and vertical geometry at a scale of 1"=20'. The proposed geometry will be set to meet all applicable IDOT and LCDOT design criteria or approved design exceptions. For the purposes of this proposal, the preferred alternative is assumed to be a roundabout at Dilley's Road and Kilbourne Road, a grade separated interchange at US-41, and a continuous 3-lane cross section along Wadsworth Road from east of Chicago Avenue to west of Delany Road.



Existing and proposed cross-sections will be provided at 50' intervals and at all side streets, driveways, roadway cross culverts, and other grade controlling features to determine right-of-way and easement requirements, wetland impacts (if/where present), ditch locations and drainage patterns, and to fine-tune the proposed vertical geometry. These cross-sections will show existing right-of-way, existing and proposed top surface grade elevation, and the proposed right-of-way and easements where necessary. Final Phase I Engineering estimates of probable costs will be prepared for each of the preferred alternatives and for the assumed continuous 3-lane section along Wadsworth Road, east of Chicago Avenue.

This task will include attendance at IDOT/FHWA coordination meetings at the IDOT District One office in Schaumburg to present the project scope and limits, alternatives, results of the Public Meeting, and to request concurrence on environmental processing as a Categorical Exclusion Group II. For the purpose of this proposal, it is assumed that attendance at four (4) IDOT/FHWA coordination meetings will be required to complete the Phase I Study.

This task also includes development of the construction cost estimate for the Preferred Alternative at each intersection.

Specific work tasks will include:

- Initial Intersection Feasibility Study.
- Develop preliminary alternatives for each intersection.
- Comparative analysis of the preliminary alternatives.
- Develop detailed geometry for the preferred alternative at each intersection.
- Determine right-of-way/easement requirements for the preferred alternative based on geometry, drainage, environmental, and pedestrian/bicycle considerations. This will include preparing a separate set of proposed right-of-way plans.
- Coordination meetings with LCDOT, LCSMC, LCFPD, IDOT, the Village of Wadsworth, Newport Township, and business owners as appropriate.
- Attendance at IDOT/FHWA coordination meetings.
- Prepare construction cost estimates for the preferred alternative at each intersection.

### **Task 7 - Traffic Maintenance Analysis**

CBBEL will prepare a Traffic Maintenance Analysis (TMA) for construction of the preferred alternative at each intersection. This will include a determination of the most effective method for construction staging and traffic maintenance, including an evaluation of the need for and implications of maintaining traffic during construction, providing for construction detours, and any associated temporary pavement needs and associated temporary construction easements. This task will be summarized in a TMA report for this project that is anticipated to be included in the Project Development Report as an appendix.

Specific work tasks will include:

- Determine stage construction methodology.
- Determine traffic maintenance requirements.
- Identify detours if determined to be required.
- Determine temporary construction easement needs.
- Prepare TMA report with exhibits.



### **Task 8 - Intersection Design Studies**

CBBEL will prepare an Intersection and/or Interchange (US-41) Design Study (IDS) at a scale of 1" = 20' for the preferred alternative at each intersection, which will include preparing capacity analysis for the preferred alternative at all three intersections using the Highway Capacity Software or Synchro/SimTraffic as applicable, the proposed intersection geometry, the proposed traffic signal layout (if signals are proposed), and the associated design criteria/design exceptions/general notes. The preliminary IDS is anticipated to be submitted to LCDOT and IDOT-BLRS for review, and revised based on any review comments received.

For the purposes of this proposal, it is assumed that an Interchange Design Study will be required for a grade-separated preferred alternative at US-41.

As noted, CBBEL will include **GHD, Inc. (formerly Ourston Roundabout Engineering)** as a subconsultant to provide peer review for development of IDS's for preferred alternatives that include roundabouts.

### **Task 9 - Environmental Surveys, Analysis and Coordination**

This task includes the following work.

#### **Environmental Field Survey and Technical Memorandum**

An environmental field survey of the project area will be completed to determine the limits of any Wetlands/Waters of the U.S. The Wetlands/Waters of the U.S. will be recorded using GPS for direct inclusion in the project mapping and design files. The delineation will be completed based on the methodology established by the U.S. Army Corps of Engineers (USACE). Wetlands/Waters of the U.S. quality ratings will be developed based on the Swink and Wilhelm Methodology (1994).

The results of the Wetlands/Waters of the U.S. field survey will be summarized in a Technical Memorandum that will include the USACE Routine On-Site Data Forms for the identified Wetlands/Waters of the U.S., exhibits depicting the delineated Wetlands/Waters of the U.S. boundaries, National Wetland Inventory sites, Lake County Wetland Inventory sites, Soil Survey information, floodplains, USGS topography, and supporting site photographs.

#### **ESR Submittal to IDOT**

Based on the above Wetlands/Waters of the U.S. field surveys, CBBEL will submit an Environmental Survey Request (ESR) to IDOT for processing in accordance with IDOT procedures based on right-of-way acquisition being anticipated for this project.

Development of the ESRF includes preparation of a photo log of structures within the project limits or adjacent to the project corridor that are approximately 50 years old or older, for completion of the cultural resource review by IDOT.

#### **Tree Tabulation and Evaluation**

The survey of all trees greater than or equal to 6" diameter at breast height (dbh) will be completed as part of Task 2 to include location and size. As part of this task, CBBEL will also



tabulate all surveyed trees and evaluate them with respect to species and health. Each evaluated tree will be assigned a number rating from 1 – 5 based on general observations at the time of the inventory. A rating of 1 (excellent) has the highest value in terms of protection or preservation. A rating of 5 (poor) has the lowest value and represents lower quality individuals. The tree inventory will be included in the Project Development Report and may also be requested by IDOT as part of the ESR submittal.

#### Wetland Impact Evaluation Forms

CBBEL will prepare Wetlands/Waters of the U.S. Impact Evaluation (WIE) forms as required by IDOT for all identified Wetlands/Waters of the U.S. in the project corridor, whether or not they are impacted. The WIE forms will be submitted after identification of the preferred alternative for each intersection for which impacts can be evaluated. This task will include a resource review, preparation of supporting documentation, submittal of the WIE forms, coordination and follow-up with the IDOT reviewer as required.

For purposes of this proposal, based on Lake County Wetland Inventory (LCWI) data, it is assumed that eleven (11) Wetlands/Waters of the U.S. sites will be identified within the project limits that will require a WIE submittal.

#### Preliminary Environmental Site Assessment (PESA)

CBBEL will perform a special waste screening for the project in accordance with IDOT procedures, to determine if a PESA report will be required as part of Phase I Engineering based on current and historical land use within the project limits. For purposes of this proposal, it is assumed that a PESA will be required and will be prepared by CBBEL for Wadsworth Road. IDOT will require that the PESA for US-41 is prepared by IDOT, which will be requested as part of the ESR.

#### Traffic Noise Analysis and Technical Memorandum

A traffic noise analysis is not anticipated to be required as part of the proposed intersection improvements based on the assumption that continuous additional through traffic lanes will not be provided along Wadsworth Road with this project.

#### Air Quality Analysis

Contingent upon the preferred alternative identified at each intersection, and contingent upon whether the preferred alternative will include traffic signals, an air quality screening may be required by IDOT. If required, input data sheets will be provided to IDOT for conducting the air quality analysis using the Illinois Carbon Monoxide Screen for Intersection Modeling (COSIM) screening tool for each signalized intersection. For purposes of this proposal, it is assumed that COSIM input data sheets will be required at each intersection for air quality screening.

If not already complete, CBBEL will coordinate with the Lake County CMAP liaison to ensure the project is included in the regional air quality conformity analysis and that a Transportation Improvement Program (TIP) number is assigned.

#### Section 4(f) – *de minimis* coordination

A Section 4(f) Evaluation is required if the project will impact publicly owned recreational lands and/or any sites/structures eligible for inclusion on the National Register of Historic



Places (NRHP). Based on a review of the Illinois Historic Preservation Agency (IHPA) database, it is not anticipated that any historic buildings or districts will be impacted with this project.

While avoidance of Section 4(f) lands will be an important goal of the project, depending on the preferred alternative identified, this project has the potential to impact property owned by the LCFPD within the northwest quadrant of Kilbourne Road (Wadsworth Savana) and along the east side of US-41 and along Wadsworth Road east of US-41 (Wadsworth Savana and Sedge Meadow).

It is anticipated that the preferred alternative for US-41 and/or Kilbourne Road will be developed in close coordination with LCFPD and as such ultimately agreeable to LCFPD. On this basis, it is assumed that any use of LCFPD property would qualify for a *de minimis* impact finding from FHWA, thus not requiring separate Section 4(f) reports to be prepared. Coordination with LCFPD as well as LCDOT, IDOT and FHWA will be required to document the proposed use of public lands and facilitate the FHWA *de minimis* finding. The proposed *de minimis* determination will be included in the Public Hearing advertisements as appropriate, and letters documenting LCFPD concurrence with the proposed use of LCFPD holdings will be prepared after the Public Hearing in accordance with *de minimis* determination procedures. For the purposes of preparing this proposal, it is assumed that the proposed project will be involved in two independent Section 4(f) sites whether as part of the proposed improvement footprint and/or associated stormwater detention and compensatory storage sites.

Specific work tasks will include:

- Environmental field surveys.
- Prepare and submit ESR to IDOT.
- Tree tabulation and evaluation.
- Prepare and submit WIEs to IDOT.
- Prepare PESA.
- Submit COSIM worksheets to IDOT for air quality screening.
- Coordination with LCDOT and/or CMAP to ensure the project is included in the TIP.
- Section 4(f) *de minimis* coordination and documentation.
- Prepare for and attend an additional IDOT/FHWA coordination meeting for concurrence with the Section 4(f) *de minimis* finding after the Public Hearing.

### **Task 10 - Project Development Report**

This task includes development of the Project Development Report (PDR) in accordance with IDOT-BLR Form 22210 for Categorical Exclusion Group II, and coordinated with LCDOT and IDOT for review/approval. This task includes development of the PDR and all supporting exhibits. It is assumed that a single PDR will be prepared to address all three proposed intersection improvements.

#### **Preliminary PDR**

CBBEL will prepare a complete preliminary PDR for LCDOT and IDOT review prior to the Public Hearing.



Specific work tasks include:

- Compile Maps, Charts, Graphs and Exhibits for the PDR.
- Prepare complete Preliminary PDR and submit to LCDOT and IDOT for review prior to the Public Hearing.
- Revise and resubmit Preliminary PDR based on review comments received.

#### Final PDR

CBBEL will incorporate Public Hearing input/disposition of comments; and address any additional comments received from LCDOT and IDOT, revise the preliminary PDR accordingly and submit to LCDOT and IDOT for Phase I Design Approval.

Specific work tasks will include:

- After the Public Hearing, revise the PDR including maps, charts, graphs and exhibits based on outstanding review comments and comments received at the Public Hearing.
- Submit the final PDR to LCDOT and IDOT for Phase I Design Approval.

#### **Task 11 - Public Involvement**

CBBEL will use Images, Inc. to lead the overall public involvement work for this project with oversight and key support from CBBEL. With approval of this overall scope of work for public involvement, a separate proposal will be requested from Images, Inc. In general, the public involvement program for this project is anticipated to include individual project stakeholder coordination, facilitation of the SIG, a series of Public Meetings, and development and maintenance of a project website. The following is the general scope of work anticipated as part of the overall public involvement program for this project.

#### Initial Coordination

Initial project coordination meetings will be scheduled with the Village of Wadsworth and Newport Township shortly after authorization to proceed, to introduce the project team, review the general project scope of work and overall project development process (including public involvement activities), discuss field survey work anticipated to occur, establish mutual contacts, and to provide an opportunity for early project input. This initial coordination will occur as a lead project task, in advance of the Public Information Meeting described below.

#### Public Involvement Plan Development, Project Logo:

The overall public involvement process will be guided by a Public Involvement Plan (PIP) that will be developed for the Wadsworth Road project. The PIP will summarize the anticipated overall public involvement program including the anticipated SIG process, the key project decision making milestones and schedule, and a list of project stakeholders

The PIP will remain flexible based on the needs of the project, and may be updated throughout the project development process as necessary. The PIP will be presented at the initial SIG meeting for acceptance.

An additional early project public involvement task will be development of the project brand



or logo, which will be used on all subsequent project materials and the project website.

Specific work tasks include the following:

- Develop preliminary PIP and submit to LCDOT for initial review/concurrence.
- Identification of project stakeholders.
- Project logo.

#### Public Informational Meeting

An initial Public Informational Meeting (PIM) will be advertised and held to explain the overall project development process requirements, present the public involvement program, provide an opportunity for early public comment, and solicit additional participants in the SIG. The initial PIM is anticipated to be an Open House meeting with various stations established to describe the project, the federal project development process, the Public Involvement Plan (PIP), the roles and responsibilities of the SIG, and solicit applications for SIG membership.

#### SIG Meetings:

The SIG will provide a structured process by which the project team and project stakeholders will have the opportunity for direct information exchange as part of key decision making milestones within the overall project development process.

Four (4) separate SIG meetings and/or workshops are anticipated for the project. However, this will remain flexible based on actual project needs. SIG meetings are intended to be held in a workshop format as follows:

- SIG Meeting 1: Introduction of project team and SIG members. Review overall project development process and schedule, and discuss the PIP and SIG ground rules. Present traffic data and analysis (including 2040 projections and 2040 No-Action conditions), as well as crash data and analysis. A workshop will be facilitated for development of the SIG Project Problem Statement.
- SIG Meeting 2: Present the project Purpose and Need statement incorporating project analysis and stakeholder input received at the PIM and SIG #1. A workshop will be facilitated to identify project design concerns and opportunities, and the range of alternatives to be considered for each intersection. It is anticipated that the workshop participants would be assigned to one of three groups based on their intersection of primary interest.
- SIG Meeting 3: Present the analysis of the range of alternatives with respect to travel performance, socioeconomic and environmental impacts, and cost. A workshop will be facilitated to further screen the alternatives to identify the finalist alternatives to be presented at a Public Meeting.
- SIG Meeting 4: Discuss the results of the Public Meeting and the identified preferred alternative for each intersection, along with the results of further analysis of the preferred alternative as appropriate. A workshop will be facilitated for SIG input on any remaining design concerns and opportunities associated with the preferred alternative for each intersection, such as aesthetics, maintenance of traffic (MOT), etc., that will be addressed in the project engineering and environmental reports, and for inclusion in the Public Hearing presentation.



Specific work tasks associated with the SIG meetings includes the following:

- Identify location for each SIG meeting with assistance from LCDOT.
- Prepare meeting agenda and submit to LCDOT for concurrence.
- Prepare SIG meeting invite letters and emails, and distribute pre-meeting materials.
- Prepare meeting presentation and materials.
- Prepare for an attend SIG dry run meetings at LCDOT.
- Staff attendance at SIG meetings.
- Prepare SIG meeting minutes/summary and distribute.

Public Meeting and Hearing:

One Public Meeting and One Public Hearing is assumed for the project. The Public Meeting will present the range of alternatives considered and the finalist alternatives for each intersection along with the comparative analysis results, for public review and comment.

The Public Hearing will present the preferred alternative for each intersection along with the factors considered in this determination, for public review and comments. Any further analysis of the preferred alternatives will also be presented.

Specific work tasks for both the Public Meeting and Public Hearing include the following:

- Compile mailing list (including stakeholders and all adjacent property owners).
- Preparation of Public Meeting & Public Hearing Brochures/Handouts.
- Preparation of Public Meeting & Public Hearing Display Exhibits (Aerial Displays with Alternatives, Cross Sections, Traffic Data, Crash Data, Environmental Data, and other displays as appropriate).
- Preparation of Public Meeting & Public Hearing Powerpoint Presentations (Including Script and Storyboard).
- Attendance at Public Meeting & Public Hearing “Dry Runs” with LCDOT.
- Secure location for Public Meeting & Public Hearing Site.
- Preparation of Public Meeting & Public Hearing Newspaper Display Ads and Press Releases.
- Staff attendance at Public Meeting and Public Hearing.
- Preparation of record summaries of the Public Meeting and Public Hearing which will include copies of all notices, presentation material, attendance lists, comments, and responses.
- Preparation of post Public Meeting & Public Hearing project updates for posting on the project website that will summarize the proceedings, general comments received and responses, and an overview of the next steps in project development.
- Prepare individual response letters to uncommon comments received, or requests for information received at the Public Meeting and Public Hearing.

Project Website:

An independent project website will be developed to provide a central location for the exchange of project information between the project team (LCDOT and consultants) and project stakeholders. The website can also be used as a secure location for posting of project information for review by LCDOT only.



The website will be located on a project specific internet domain acquired by the consultant and linked to the LCDOT project website. The website will incorporate graphics and messaging developed specifically for the Wadsworth Road project.

Website content will be developed and maintained throughout the Phase I project development process (anticipated to be approximately two years for purposes of this proposal) by the consultant. All website content will be reviewed and approved by LCDOT before posting. The website will include at least the following information/capabilities for the project team and stakeholders:

- List of project stakeholders including contact information.
- Background project information including schedule.
- Provide a list of Frequently Asked Questions and response.
- Notifications for all Public Meetings and SIG meetings.
- Project team contact information.
- Resource for submitting questions and comments.
- Posting of project documents for information and/or review.

At the conclusion of the Phase I project development process, the website and domain ownership will be assumed by LCDOT unless otherwise specified.

### **Task 12 - Geotechnical and Pavement Analysis**

This task includes obtaining pavement and soil borings along Wadsworth Road to complete a pavement analysis and for design purposes as part of subsequent Phase II engineering.

Borings will be obtained based on LCDOT requirements as applicable within the project limits along the County Highways (Wadsworth Road, Dilley's Road, and Kilbourne Road) and along US-41 (1,500 feet to north and south), a total distance of approximately 16, 100 feet (3.05 miles).

This data will be used to determine the existing pavement composition and condition along Wadsworth Road, Dilley's Road, and Kilbourne Road, and to determine the cost-effectiveness of pavement rehabilitation vs reconstruction along each of these roadways as part of the proposed improvements. For the reconstruction scenario, this task will also include a preliminary pavement design analysis in order to make recommendation with respect to PCC or HMA pavement. For US-41, this data will be used for design of potential pavement widening. CBBEL will utilize Testing Service Corporation (TSC) for this work.

Specific work tasks will include:

- Visual pavement inspection.
- Obtain pavement cores and soil borings as required.
- Pre-field work coordination with IDOT and LCDOT on the boring plan, including traffic maintenance prior to field work.
- Post-field work meeting at LCDOT to discuss results and report preparation.
- Prepare Pavement Analysis Report to present the findings of the above evaluation for review by IDOT and LCDOT.



- Prepare Final Pavement Analysis Report with disposition of comments.
- Prepare Soils Report for pavement design as part of Phase II engineering per IDOT and LCDOT requirements as applicable.

**Task 13 – Bridge Type, Size and Location Drawings**

This task includes preparation of bridge type, size and location (TSL) drawings for a potential Wadsworth Road at US-41 grade separation/interchange. IDOT-BLRS will require TSL preparation as part of Phase I Engineering for review and approval by the IDOT Bureau of Bridges and Structures (BBS) in Springfield. For purposes of estimating the level of effort required, it is assumed that a grade separation scenario would require a single new bridge carrying Wadsworth Road over US-41. It is also assumed that there will not be any proposed retaining walls greater than seven (7) of height, which would also require TSL drawings in Phase I per IDOT-BLRS requirements.

**Task 14 - Preparation of Plats and Legals**

This task will include preparation of Plats and Legal descriptions after Phase I Design Approval has been received from IDOT as a lead-in task to Phase II engineering, or as directed by LCDOT. This will include the preparation of right-of-way plats and legal descriptions for permanent takes and permanent/temporary easements as required for the proposed improvements at each intersection. The required plats and legal descriptions will be prepared in accordance with IDOT/FHWA Property Acquisition Procedures, and Titles II and III of the “Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970” (Public Law 91-646) and any subsequent amendments.

For purposes of this proposal, the potential interchange at US-41 and a potential continuous three-lane cross section for Wadsworth Road from east of Chicago Avenue to west of Delany Road is assumed, along with potential roundabout intersection improvements at Dilleys Road and Kilbourne Road. On this basis, it is estimated that 20 individual property parcels could be affected west of the Des Plaines River, and approximately 20 individual property parcels could be affected east of Chicago Avenue. On this basis, 40 Title Reports are anticipated to be requested as part of this task.

Individual Plat of Highways will be prepared for Wadsworth Road from I-94 to US-41 (Road Section 76), and for Wadsworth Road from US-41 to the Canadian Pacific Railroad System (CPRS - Road Section 66) east of the Des Plaines River.

East of Chicago Avenue as part of the Kilbourne Road intersection improvements, and associated improvements to Wadsworth Road, and contingent upon selected of the preferred alternative, it is estimated that permanent takes and/or permanent/temporary easements could be required from 20 parcels, thus requiring preparation of plats and legal descriptions.

Preparation of Plats and Legals will comply with LCDOT requirements per Attachment A.

**Task 15 - Project Administration and Quality Assurance/Quality Control**

This task includes overall project administration and management, as well as Quality Assurance/Quality Control (QA/QC) reviews associated with major project deliverables.

Project administration includes managing the day to day work effort on the project to ensure an efficient project development process including work force allocations, budget oversight, monthly progress reviews to ensure project milestones are being met to the extent possible, and periodic progress coordination meetings.

QA/QC reviews will occur as part of major project deliverables in accordance with CBBEL's established QA/QC procedures.

Specific work tasks will include:

- General project management/administration including staff resource allocation, task/schedule oversight, quality reviews, etc.
- Prepare monthly progress reports including a copy of the overall project schedule.
- Attend project status/coordination meetings with LCDOT as determined to be necessary. For purposes of this proposal, six separate project status/coordination meetings with LCDOT are anticipated to occur, and would be attended by up to five members of the consultant team.



## ATTACHMENT A

# LCDOT DESIGN SURVEY PROCEDURES (Revised 02/28/13)

### **HORIZONTAL ALIGNMENT**

Unless otherwise specified in the services contract, the CONSULTANT is to provide the horizontal alignment. The CONSULTANT will conduct all surveying, stationing, and preparation of required plans using English units of measure and the U.S. Survey Foot. The CONSULTANT'S SURVEYOR will try to re-establish the original horizontal alignment as shown on the recorded R.O.W. plats. The CONSULTANT shall contact LCDOT's Land Surveyor to obtain R.O.W. plats and field notes before establishing the horizontal alignment and stationing. The CONSULTANT shall notify LCDOT's Surveyor immediately if the alignment cannot be reproduced or if in the CONSULTANT'S opinion the existing alignment information is in error.

The CONSULTANT'S SURVEYOR, prior to construction, shall stake the PCs, PIs, PTs, and POTs so that the alignment location can be verified before construction staking is initiated. The CONSULTANT'S SURVEYOR will provide four reference ties to all U.S. Public Land Survey Monuments that are located within the construction limits. The reference points should be located outside of the anticipated construction limits if practical, so that they can be used after construction to replace the monuments. The CONSULTANT shall record Monument Records for all Section and Quarter Section corners set or found within the construction limits.

The CONSULTANT will mark all 100-foot interval station locations on the survey base line for construction when on paved surfaces with a P.K. or Mag nail and spray paint. The baseline for relocated alignments when off pavement will be marked at the PCs, PTs, and POTs with iron rods. The rods shall be set one foot below the surface in farmed land. The CONSULTANT will advise the County of any pavement alignment variations. In cases where the proposed centerline of construction or survey baseline is different from the existing centerline of R.O.W., both shall be shown and the relationship between them shall be indicated on an Alignment & Tie sheet.

### **ALIGNMENT & TIE SHEET**

An Alignment & Tie Sheet shall be provided as part of the final plans. The plans are to be prepared using English units of measure and the U.S. Survey Foot. The station, offset, and coordinates of the alignment points (PCs, PTs, PIs, and POTs) and survey control (traverse) points shall be shown. It shall be noted whether the coordinates, stationing, and distances shown are state plane grid or ground surface. If the project has been scaled to ground distances and coordinates from state plane grid, the coordinates shall be truncated so that they do not appear to be state plane coordinates. In addition, the drawing shall be scaled about a point of origin of  $(x,y) = (0,0)$ . In either case, Illinois State Plane coordinates must be provided for all alignment points so that they can be located with GPS and to allow the project

to be easily referenced into the County's GIS maps. The state plane coordinates may be shown in a separate table. Metadata shall be provided indicating Illinois State Plane-East Zone, NAD83(adjustment?) and the average grid (combination factor) for the project. The Alignment & Tie sheet shall be signed and sealed by the CONSULTANT'S SURVEYOR.

### **VERTICAL ALIGNMENT**

Vertical control for the project shall be based on NGVD 29 or NAVD 88 benchmarks. Indicate on the plans which Datum is used. NGVD 29 Lake County Mapping Benchmarks are available on-line (<http://gis.lakeco.org/maps/>). NAVD88 benchmarks are available on-line from the National Geodetic Survey. LCDOT's Land Surveyor may also be contacted for benchmarks that may be in the area. The primary benchmarks and site benchmarks shall be listed and described on the Alignment & Tie Sheet. The location of the site benchmarks shall also be shown on the plan sheets with a symbol. Site benchmarks are to be located at less than 1000-foot intervals with a minimum of two (2) on each project.

All benchmarks shall be located on stable objects. LCDOT prefers these objects to be outside the construction limits. Some acceptable benchmark examples are, spikes in poles, bolts on fire hydrant rings, and concrete foundations.

### **TOPOGRAPHY**

The CONSULTANT shall cut cross-sections at 50-foot intervals and at all points needing clarification. For areas of superelevation or requiring greater detail, cross-sections shall be cut at 25-foot intervals. The cross section interval should be defined in the engineering services contract.

Full cross-section profiles will be taken at all cross streets, alleys, cross road culverts, and entrances (commercial, private, and field). Half cross-sections will not be accepted because they skew the computer terrain model.

The CONSULTANT will locate and identify all trees (6 inches in diameter or greater) within the area either side of the centerline, defined by the proposed ROW or construction limits (whichever is greater) plus an additional 10 feet. The trees shall be identified by species and size. The trees shall be located by station/offset and have a ground elevation.

Streams, tributaries, or major drainage ditches located within a lateral distance of 250 feet from centerline (upstream and downstream) shall be surveyed. Alignment, profiles, and cross-sections shall be taken. The stream width shall be shown as the distance measured between the tops of the stream banks. Profile elevations along the bottom of the watercourse shall be taken at a minimum of 50-foot intervals.

The survey shall extend a minimum of 200 feet beyond the roadway construction limits. Cross-sections shall be taken a minimum of 10 feet beyond the proposed R.O.W. or construction limits (whichever is greater). Cross-sections will extend 30 feet beyond the proposed R.O.W. at entrances and 150 feet at minor side roads.

The collected survey data for the existing topography shall have a minimum of 3<sup>rd</sup> Order Accuracy horizontally with readings to the nearest 0.1 feet for vertical on gravel or ground and readings to the nearest 0.01 feet for vertical on all other surfaces.

### **RAILROAD INSURANCE**

The CONSULTANT will comply with the railroad's requirements when conducting a survey on the railroad's R.O.W. Usually, this includes obtaining a permit, paying a fee, obtaining Railroad Protective Liability Insurance, notification of a flagman to be present near the rails during the survey operations, and any other requirements of the railroad. The CONSULTANT is responsible for all of the foregoing requirements.

### **DELIVERABLES**

- I. Copies from the CONSULTANT'S field books, showing benchmarks, level circuits, & structure details, such as size and inverts etc.
- II. Base Drawing at 1:1. All the topographic information shall be plotted electronically. The data shall be recorded in a MICROSTATION .DGN format. All CAD work shall be according to LCDOT CAD Standards. ASCII files, gpk files, and/or InRoads files containing all point information as described below shall be included. A filename "ID" acronym explanation sheet shall be provided. Backup CDs shall be provided.
- III. Point Information:
  - (1) Point number
  - (2) Northing and Easting coordinate values
  - (3) "Z" elevations
  - (4) Point identification by code
  - (5) Notes

## **LAKE COUNTY PLAT OF HIGHWAYS CHECKLIST**

Plats of Highways shall have the following elements:

- Title, Route, Construction Section, and County
- North arrow
- Written and graphic scale shown in feet
- Basis of bearings
- Section, Township, Range at the top of the sheet
- Land lines (i.e. section lines, subdivisions). Use correct line types.
- Label all subdivisions (including the recording date and document number), blocks, and lots.

- If R.O.W. is to be acquired from property in a recorded subdivision, any easement or setback lines shown on the recorded plat are to be shown that affect the subject parcel.
- Show document numbers and recording dates for previously dedicated or acquired R.O.W.
- Indicate and label the existing right-of-way line. Use the proper line type.
- Indicate and label the proposed right-of-way line. Use the proper line type.
- Owner's boundary is to be shown by a solid line and labeled with the Property Line Symbol.
- Use land hooks to show common lines of ownership.
- Show all Fee Takes, Permanent Easements, and Temporary Easements.
- Parcel numbers for parcels to be acquired are to be shown as 3 digits. Use the suffix PE for Permanent Easements or TE for Temporary Easements.
- Dimension the takes and easements. Show distances and bearings as used in the legal descriptions.
- All buildings on the total holding should be shown.
- All buildings within 100 feet of the proposed right-of-way should be dimensioned and tied to the proposed right-of-way.
- All buildings beyond 100 feet from the proposed right-of-way should just be outlined on the plat.
- Show and label existing improvements within proposed right-of-way.
- Label the P.O.C. and the P.O.B. for all parcels to be acquired.
- Total holding should be shown and be identical to the title report.
- Complete the Parcel Table:

Owner's Name
Permanent Index Number
Total Holding Area
Area Taken
Area Previously Used or Dedicated
Remainder
Easement Area
Purpose of Easement
Acquired By

- Show all areas to the nearest 0.001 Acre. All areas less than 0.010 acres should be also shown in square feet.
- The survey line and/or the centerline are to be shown. The existing centerline of right-of-way and the proposed centerline, if different, should be shown and the relationship between them indicated.
- Show bearings on the centerline.
- Label the stationing of the centerline or survey line including all station equations and curve data.
- Label the station and offset at the intersecting property lines with the proposed right-of-way line and at changes in width of the right-of-way.

- Show all found and set monumentation.
- All U.S. Public Land Survey Monuments found or restored and are tied to the Points of Beginning must be shown and recorded in accordance with 765 ILCS 220/9.
- Show the company's name above the project title box.
- Complete the project title box in the lower right-hand corner.
- Surveyor's Certificate.
- County Engineer Certificate.

### **PLAT OF HIGHWAYS ALIGNMENT & TIE SHEET**

An Alignment & Tie Sheet shall be provided as part of the Plat of Highways. The Plat of Highways is to be prepared using English units of measure and the U.S. Survey Foot. The station, offset, and coordinates of the alignment points (PCs, PTs, PIs, and POTs) shall be shown. It shall be noted whether the coordinates, stationing, and distances shown are state plane grid or ground surface. If the project has been scaled to ground distances and coordinates from state plane grid, the coordinates shall be truncated so that they do not appear to be state plane coordinates. In addition, the drawing shall be scaled about a point of origin of  $(x,y) = (0,0)$ . In either case, Illinois State Plane coordinates must be provided for all alignment points so that they can be easily located. The state plane coordinates may be shown in a separate table. Metadata shall be provided indicating Illinois State Plane–East Zone, NAD83(adjustment?) and the average grid (combination factor) for the project.

Three lateral survey ties are needed for all centerline control points (PCs, PTs, and PIs) and proposed right-of-way monuments. All ties should be outside of the proposed right-of-way.

LCDOT's Land Surveyor:

Steve Heuer, PLS  
600 West Winchester Road  
Libertyville, IL 60048  
(847) 377-7488







**Cost Estimate of  
Consultant Services**  
(Cost Plus Fixed Fee)

Firm Christopher B. Burke Engineering, Ltd.  
 Route Wadsworth Road at Dilley's Rd, US-41, and Kilbourne Rd  
 Section 13-00999-47-ES  
 County Lake  
 Job No. TBD

Date 12/17/13  
 Overhead Rate 130.82%  
 Complexity Factor 0.035

Item	Work Hours	Payroll	Overhead & Fringe Benefits	In-House Direct Costs *	Fixed Fee	Outside Direct Costs	Subconsultants		Total	% of Grand Total
							Images (WBE/DBE)	GHD		
1. Data Collection/Evaluation	106	4,037.68	5,282.09	135.60	1,445.26	351.20			11,251.83	0.76%
2. Topographic Survey	1364	53,172.32	69,560.03	542.40	18,852.47	651.50			142,778.72	9.70%
3. Traffic Counts, Projections, Analysis	114	4,507.01	5,896.06	0.00	1,591.31	12,200.80		42,771.63	66,966.81	4.55%
4. Crash Analysis	234	9,507.24	12,437.37	67.80	3,366.60	1,285.60			26,664.61	1.81%
5. Roadway Drainage	1602	67,384.35	88,152.20	180.80	23,817.94	1,459.40			180,994.69	12.29%
6. Alternate Geometric Studies	1944	81,419.28	106,512.70	180.80	28,773.33	1,850.00		44,140.87	262,876.99	17.86%
7. Traffic Maintenance Analysis	144	5,845.27	7,646.78	67.80	2,073.65	465.05			16,098.55	1.09%
8. Intersection/Interchange Design Studies	424	17,660.93	23,104.03	135.60	6,255.30	1,256.60		13,275.95	61,688.41	4.19%
9. Environmental Surveys and Coordination	614	25,420.46	33,255.05	180.80	9,001.55	1,014.10			68,871.96	4.68%
10. Project Development Report	462	18,564.53	24,286.12	0.00	6,554.67	1,130.80			50,536.11	3.43%
11. Public Involvement	438	19,920.32	26,059.76	180.80	7,059.58	2,127.20	250,195.63	6,550.08	312,093.38	21.20%
12. Geotechnical and Pavement Analysis	48	2,172.61	2,842.21	0.00	767.10	62,200.00			67,981.92	4.62%
13. Bridge TSL	300	14,422.24	18,867.18	0.00	5,092.13	144.20			38,525.75	2.62%
14. Plats and Legals	1003	39,952.33	52,265.63	101.70	14,120.91	15,177.80			121,618.38	8.26%
15. Project Administration	304	16,029.77	20,970.14	180.80	5,685.93	318.00		6,790.71	43,184.63	2.93%
<b>TOTALS</b>	9101	380,016.33	497,137.37	1,954.90	134,457.73	101,632.25	250,195.63	113,529.24	1,472,132.74	100.00%



## Average Hourly Project Rates

**Route** Wadsworth Road at Dilleys Rd, US-41, and Kilbourne Rd  
**Section** 13-00999-47-ES  
**County** Lake  
**Job No.** TBD  
**PTB/Item** n/a

**Consultant** Christopher B. Burke Engineering, Ltd.

**Date** 12/17/13

**Sheet** 1 **OF** 3

Payroll Classification	Avg Hourly Rates	Total Project Rates			1. Data Collection/Evaluation			2. Topographic Survey			3. Traffic Counts, Projections,			4. Crash Analysis			5. Roadway Drainage		
		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	70.00	0																	
Engineer VI	70.00	296	3.25%	2.28	2	1.89%	1.32				4	3.51%	2.46	6	2.56%	1.79	42	2.62%	1.84
Engineer V	60.00	446	4.90%	2.94	6	5.66%	3.40										42	2.62%	1.57
Engineer IV	49.18	1382	15.19%	7.47	12	11.32%	5.57	14	1.03%	0.50	22	19.30%	9.49	60	25.64%	12.61	424	26.47%	13.02
Engineer III	41.35	1820	20.00%	8.27	32	30.19%	12.48	14	1.03%	0.42	32	28.07%	11.61	52	22.22%	9.19	604	37.70%	15.59
Engineer I/II	32.68	1030	11.32%	3.70	20	18.87%	6.17				28	24.56%	8.03	48	20.51%	6.70	280	17.48%	5.71
Env. Res. Spec. V	60.00	6	0.07%	0.04															
Env. Res. Spec. IV	50.88	148	1.63%	0.83															
Env. Res. Spec. III	38.46	148	1.63%	0.63															
Env. Res. Spec. I/II	33.19	94	1.03%	0.34															
Env. Res. Technician	33.19	0																	
Survey V	70.00	36	0.40%	0.28				12	0.88%	0.62									
Survey IV	59.59	197	2.16%	1.29				98	7.18%	4.28									
Survey III	51.23	320	3.52%	1.80				256	18.77%	9.61									
Survey II	35.92	706	7.76%	2.79				404	29.62%	10.64									
Survey I	29.80	794	8.72%	2.60				492	36.07%	10.75									
Cad Manager	52.93	18	0.20%	0.10															
Asst. Cad Manager	47.91	148	1.63%	0.78				14	1.03%	0.49	2	1.75%	0.84	6	2.56%	1.23	12	0.75%	0.36
Cad II	42.69	462	5.08%	2.17				30	2.20%	0.94	6	5.26%	2.25	24	10.26%	4.38	24	1.50%	0.64
Cad I	32.93	392	4.31%	1.42				30	2.20%	0.72							96	5.99%	1.97
Engineering Tech IV	53.32	0																	
Engineering Tech III	44.68	0																	
Engineering Tech I/II	29.27	0																	
GIS Specialist III	40.77	70	0.77%	0.31	6	5.66%	2.31						2	0.85%	0.35		6	0.37%	0.15
GIS Specialist I/II	24.05	282	3.10%	0.75	18	16.98%	4.08				6	5.26%	1.27	6	2.56%	0.62	32	2.00%	0.48
Administrative	29.34	306	3.36%	0.99	10	9.43%	2.77				14	12.28%	3.60	30	12.82%	3.76	40	2.50%	0.73
		0																	
		0																	
		0																	
		0																	
<b>TOTALS</b>		9101	100%	\$41.76	106	100%	\$38.09	1364	100%	\$38.98	114	100%	\$39.54	234	100%	\$40.63	1602	100%	\$42.06



## Average Hourly Project Rates

**Route** Wadsworth Road at Dilleys Rd, US-41, and Kilbourne Rd  
**Section** 13-00999-47-ES  
**County** Lake  
**Job No.** TBD  
**PTB/Item** n/a

**Consultant** Christopher B. Burke Engineering, Ltd.

**Date** 12/17/13

**Sheet** 2 **OF** 3

Payroll Classification	Avg Hourly Rates	6. Alternate Geometric Studies			7. Traffic Maintenance Analysis			8. Intersection/Interchange Des			9. Environmental Surveys and C			10. Project Development Repor			11. Public Involvement		
		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	70.00																		
Engineer VI	70.00	48	2.47%	1.73	2	1.39%	0.97	6	1.42%	0.99	12	1.95%	1.37	12	2.60%	1.82	42	9.59%	6.71
Engineer V	60.00	196	10.08%	6.05	12	8.33%	5.00	12	2.83%	1.70				32	6.93%	4.16	62	14.16%	8.49
Engineer IV	49.18	286	14.71%	7.24	24	16.67%	8.20	104	24.53%	12.06	62	10.10%	4.97	100	21.65%	10.64	100	22.83%	11.23
Engineer III	41.35	442	22.74%	9.40	52	36.11%	14.93	116	27.36%	11.31	60	9.77%	4.04	112	24.24%	10.02	92	21.00%	8.68
Engineer I/II	32.68	468	24.07%	7.87				106	25.00%	8.17				80	17.32%	5.66			
Env. Res. Spec. V	60.00										6	0.98%	0.59						
Env. Res. Spec. IV	50.88										148	24.10%	12.26						
Env. Res. Spec. III	38.46										148	24.10%	9.27						
Env. Res. Spec. I/II	33.19										94	15.31%	5.08						
Env. Res. Technician	33.19																		
Survey V	70.00																		
Survey IV	59.59																		
Survey III	51.23																		
Survey II	35.92																		
Survey I	29.80																		
Cad Manager	52.93	12	0.62%	0.33															
Asst. Cad Manager	47.91	32	1.65%	0.79	6	4.17%	2.00	12	2.83%	1.36							4	0.91%	0.44
Cad II	42.69	184	9.47%	4.04				34	8.02%	3.42							24	5.48%	2.34
Cad I	32.93	184	9.47%	3.12	24	16.67%	5.49	34	8.02%	2.64							24	5.48%	1.80
Engineering Tech IV	53.32																		
Engineering Tech III	44.68																		
Engineering Tech I/II	29.27																		
GIS Specialist III	40.77	12	0.62%	0.25							12	1.95%	0.80	10	2.16%	0.88	22	5.02%	2.05
GIS Specialist I/II	24.05	48	2.47%	0.59	24	16.67%	4.01				48	7.82%	1.88	32	6.93%	1.67	68	15.53%	3.73
Administrative	29.34	32	1.65%	0.48							24	3.91%	1.15	84	18.18%	5.33			
<b>TOTALS</b>		1944	100%	\$41.88	144	100%	\$40.59	424	100%	\$41.65	614	100%	\$41.40	462	100%	\$40.18	438	100%	\$45.48



## Average Hourly Project Rates

**Route** Wadsworth Road at Dilley Rd, US-41, and Kilbourne Rd  
**Section** 13-00999-47-ES  
**County** Lake  
**Job No.** TBD  
**PTB/Item** n/a

**Consultant** Christopher B. Burke Engineering, Ltd.

**Date** 12/17/13

**Sheet** 3 **OF** 3

Payroll Classification	Avg Hourly Rates	12. Geotechnical and Pavement			13. Bridge TSL			14. Plats and Legals			15. Project Administration			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	70.00																		
Engineer VI	70.00				60	20.00%	14.00				60	19.74%	13.82						
Engineer V	60.00							8	0.80%	0.48	76	25.00%	15.00						
Engineer IV	49.18	24	50.00%	24.59	24	8.00%	3.93	8	0.80%	0.39	118	38.82%	19.09						
Engineer III	41.35	24	50.00%	20.67	180	60.00%	24.81	8	0.80%	0.33									
Engineer I/II	32.68																		
Env. Res. Spec. V	60.00																		
Env. Res. Spec. IV	50.88																		
Env. Res. Spec. III	38.46																		
Env. Res. Spec. I/II	33.19																		
Env. Res. Technician	33.19																		
Survey V	70.00							24	2.39%	1.67									
Survey IV	59.59							99	9.87%	5.88									
Survey III	51.23							64	6.38%	3.27									
Survey II	35.92							302	30.11%	10.82									
Survey I	29.80							302	30.11%	8.97									
Cad Manager	52.93							6	0.60%	0.32									
Asst. Cad Manager	47.91				12	4.00%	1.92	48	4.79%	2.29									
Cad II	42.69				24	8.00%	3.41	112	11.17%	4.77									
Cad I	32.93																		
Engineering Tech IV	53.32																		
Engineering Tech III	44.68																		
Engineering Tech I/II	29.27																		
GIS Specialist III	40.77																		
GIS Specialist I/II	24.05																		
Administrative	29.34							22	2.19%	0.64	50	16.45%	4.82						
<b>TOTALS</b>		48	100%	\$45.26	300	100%	\$48.07	1003	100%	\$39.83	304	100%	\$52.73	0	0%	\$0.00	0	0%	\$0.00

**Work Hour Estimate**  
**Project Development Report - Categorical Exclusion Group II**  
**Wadsworth Road Intersections**  
**Section Number: 13-00999-47-ES**

	Task	Units	CBBEL	Images, Inc.	GHD, Inc.
<b>1. Data Collection, Compilation, Review and Evaluation</b>					
a	Agency coordination for collection of based project data: LCDOT, LC-GIS, LC LCSMC, LC FPD, IDOT, Village of Wadsworth, Newport Township		32		
b	Compile, review and catalog collected data to determine suitability: traffic data, crash data, record roadway and drainage plans, plat of highways, property owners, utilities, zoning maps, bike/ped facilities and plans, public lands ownership and use, soils data, existing drainage problem areas, etc.)		18		
c	Review data and determine existing facility deficiencies.		24		
d	Field reconnaissance (project photo log, resolve questions from data collected)	2 trips; 2 ppl @ 8 hrs.	32		
SUBTOTAL:			106	0	0
<b>2. Topographic Survey</b>					
a	Coordination with LCDOT for survey right-of-entry letter, survey control, obtain County LiDAR data		8		
b	Coordination with LCDOT Utilities Coordinator		14		
c	Roadway survey (alignment, topography, right-of-way, utilities, BFE sections)		992		
d	Title search		74		
e	Tree survey		92		
f	Compile survey and prepare base mapping		104		
g	Supplemental Survey (pick up survey for LiDAR voids, utility details, new development/access, etc.)		80		
SUBTOTAL:			1364	0	0
<b>3. Traffic Counts, Projections and Analysis</b>					
a	Coordination with traffic count consultant ( <i>Fish - Separate outside direct cost</i> )		4		
b	Traffic projections (prepare and coordinate with CMAP)		24		
c	Existing and 2040 No-Build capacity analysis (HCS or Synchro)	10 hrs/int	30		
d	Warrant analysis (Dilleys and Kilbourne)	4 hrs/int	8		
e	Technical Memorandum		48		
g	GHD: Roundabout Traffic Analysis and VISSIM Simulations for Public Meeting and Public Hearing (see GHD proposal)				400
SUBTOTAL:			114	0	400
<b>4. Crash Analysis</b>					
a	Obtain, Review, Tabulate crash data (latest five years)	32 hrs/int	96		
b	Preliminary CAR report (all 3 intersections)		48		
c	Final CAR report		18		
d	Crash prediction using FHWA IHSDM	24 hrs/int	72		
SUBTOTAL:			234	0	0
<b>5. Roadway Drainage</b>					
i.	<b>Drainage for three Intersections (Dilleys Road, Kilbourne Road, US-41) and 3-lane section Wadsworth Road (east of Chicago Avenue to west of Delany)</b>				

**Work Hour Estimate**  
**Project Development Report - Categorical Exclusion Group II**  
**Wadsworth Road Intersections**  
**Section Number: 13-00999-47-ES**

	Task	Units	CBBEL	Images, Inc.	GHD, Inc.
a	General Location Drainage Map - Overall Project		18		
b	Existing Drainage Plan - Overall Project Survey Area		224		
c	Drainage Outlet Evaluations (determine suitability for re-use)		56		
d	BFE determination and coordination with LCSMC		48		
e	Evaluate identified existing drainage issues (based on coordination with LCDOT, Wadsworth, Newport Township, LCSMC)		58		
f	Determine off-site flows (hydrology) and develop on-site/off-site concept plan		78		
g	Preliminary Proposed Drainage Plan		456		
h	Determine stormwater detention and compensatory storage requirements and incorporate in PDP		136		
i	Right-of-way determination for proposed drainage plan		92		
j	PDP Coordination meetings with LCDOT, LCSMC, Wadsworth, Newport Township	4 mtgs, 2 ppl, 4 hrs	32		
k	Finalize Proposed Drainage Plan based on local coordination and LCDOT and IDOT review		132		
II.	<b>Location Drainage Study Report (US-41 Intersection/interchange only per IDOT requirements)</b>				
a	Erosion and Sediment Control Table		12		
b	BMP White Paper		32		
c	Draft LDS Report		168		
d	Final LDS (with disposition of draft review comments by IDOT)		60		
<b>SUBTOTAL:</b>			<b>1602</b>	<b>0</b>	<b>0</b>
<b>6.</b>	<b>Alternate Geometric Studies</b>				
a	Initial Intersection Feasibility Study (Dilleys, US-41, Kilbourne) including capacity analysis using Synchro/SimTraffic	CBBEL (64hrs each Dilleys and Kilbourne, 160 hours US-41).	288		
b	Initial Concept Program Level Cost Estimates	CBBEL 8 hrs per Alt (2 alts each Dilleys and Kilbourne; 4 alts US-41)	64		
c	Preliminary alternatives development and updated capacity analysis using Synchro/SimTraffic	CBBEL 7 Int alts at 64 hrs each, 96 hours Wadsworth Road 3-lane.	544		
d	Preliminary alternatives cost estimates	CBBEL 20 hours per alt.	140		
e	Detailed Geometry (plan, profile and cross sections) for the Preferred Alternative (Assumed Dilleys and Kilbourne intersections, US 41 interchange) and the continuous 3-lane Section of Wadsworth Road east of Chicago Avenue to west of Delany.	CBBEL 92 hours/int (Dilleys and Kilbourne assumed roundabouts), 320 hours US-41 (assumed full interchange geometry including ramp geometry and 1,500 feet north and south on US-41) , 104 hours Wadsworth Road 3-lane.	608		
f	Right-of-way determination for Preferred Alternative based on detailed geometry.	24 hours/int, 24 hours Wadsworth Road 3-lane	96		
g	Coordination meetings with LCDOT, LCSMC, LCFPD, IDOT, Wadsworth, Newport Township	6 mtgs x 2 ppl x 4 wh	48		
h	Prepare for and attend IDOT/FHWA coordination meetings	4 mtgs x 3 ppl x 3 wh	36		

**Work Hour Estimate**  
**Project Development Report - Categorical Exclusion Group II**  
**Wadsworth Road Intersections**  
**Section Number: 13-00999-47-ES**

	Task	Units	CBBEL	Images, Inc.	GHD, Inc.
i	Preferred Alternative Construction cost estimates	32 hours/int, 24 hours continuous 3-lane section.	120		
j	GHD - Design support/QA and attendance at coordination meetings (see GHD proposal)				318
SUBTOTAL:			1944	0	318
<b>7. Traffic Maintenance Analysis</b>					
a	Determine stage construction method		24		
b	Determine traffic maintenance requirements, including detour requirements		24		
c	Determine temporary pavement needs		24		
d	Determine temporary construction easement needs		12		
e	Prepare TMA report with exhibits (1 report for all 3 intersections)		60		
SUBTOTAL:			144	0	0
<b>8. Intersection Design Studies and/or Interchange Design Studies</b>					
a	Proposed conditions capacity analysis (HCS) based on final geometry (Dilleys and Kilbourne)	8 hrs/int	16		
b	Prepare Intersection Design Study (Dilleys and Kilbourne)	90 hrs/int	180		
c	Proposed conditions capacity analysis (US-41) - HCS		16		
d	Prepare Interchange Design Study (US-41)		180		
e	Coordination meetings with LCDOT and/or IDOT (US-41)	CBBEL (4 mtgs, 2 ppl, 4 hrs)	32		
f	GHD - IDS QA and Peer Review (see GHD proposal)				88
SUBTOTAL:			424	0	88
<b>9. Environmental Surveys, Analysis and Coordination</b>					
a	Environmental Field Survey and Technical Memorandum		64		
b	ESR preparation and submittal to IDOT		96		
c	Tree Tabulation and Evaluation		92		
d	Wetland Impact Evaluation (WIE) Forms		116		
e	Preliminary Environmental Site Assessment (PESA)		132		
f	COSIM screening and CMAP coordination		22		
g	Section 4(f) <i>de minimis</i> coordination		80		
h	Prepare for and attend IDOT/FHWA coordination meetings for environmental processing and clearances	2 mtgs @ 3 hrs ea, 2 ppl	12		
SUBTOTAL:			614	0	0
<b>10. Project Development Report</b>					
a	Preliminary Project Development Report (PDR - CE II, BLR 22210) - All 3 intersections and 3-lane section Wadsworth Road.		342		
b	Address LCDOT and IDOT review comments for preliminary PDR		60		
c	Prepare and submit Final PDR		60		
SUBTOTAL:			462	0	0
<b>11. Public Involvement</b>					

**Work Hour Estimate**  
**Project Development Report - Categorical Exclusion Group II**  
**Wadsworth Road Intersections**  
**Section Number: 13-00999-47-ES**

	Task	Units	CBBEL	Images, Inc.	GHD, Inc.
a	Initial Stakeholder Coordination		32		
b	Public Involvement Plan		4		
c	Project Logo/Brand		4		
d	Public Information Meeting (Prepare and Attend)	CBBEL (40 hrs prep, 3ppl attend at 6 hrs per)	58		
e	Stakeholder Involvement Group Meetings (Four)	CBBEL (coordination, attend dry run (2 ppl), attend SIG (3 ppl) @ 40 hrs per SIG)	160		
f	Public Meeting (Finalist Alternatives)	CBBEL (40 hrs prep, 3 ppl attend at 6 hrs per)	58		
g	Public Hearing (Preferred Alternative)	CBBEL (40 hrs prep, 3 ppl attend at 6 hrs per)	58		
h	Project Website	CBBEL Coord with Images	24		
i	Coordination Meetings with LCDOT	CBBEL (5 mtgs, 2 ppl, 4 hrs per)	40		
j	Images - Public Involvement Lead (See Images Proposal)			1981	
k	GHD - Public Involvement attendance at Public Meeting and Public Hearing and run VISSIM Simulations (see GHD proposal)	CBBEL (5 mtgs, 2 ppl, 4 hrs per)			32
<b>SUBTOTAL:</b>			<b>438</b>	<b>1981</b>	<b>32</b>
<b>12. Geotechnical and Pavement Analysis</b>					
a	Coordination with Geo Tech Consultant ( <i>Testing Service Corp. - Separate outside direct cost</i> ) and attend pre and post field work meetings at IDOT and/or LCDOT.	CBBEL: 32 hrs TSC coordination. 2 LCDOT/IDOT mtgs at 4 hrs each, 2 ppl	48		
<b>SUBTOTAL:</b>			<b>48</b>	<b>0</b>	<b>0</b>
<b>13. Type, Size and Location Drawings</b>					
a	Preparation of TSL for Bridge carrying Wadsworth over US-41 (required by IDOT for Phase I Engineering)		300		
<b>SUBTOTAL:</b>			<b>300</b>	<b>0</b>	<b>0</b>
<b>14. Preparation of Plats and Legals</b>					
a	Plat of Highways (I-94 to US-41; Section 76)		244		
b	Plat of Highways (US-41 to CPRS; Section 66)		199		
c	Plats and legals (20 parcels - Wadsworth Road (east of Chicago Avenue and Kilbourne Road)	28 hrs/parcel	560		
<b>SUBTOTAL:</b>			<b>1003</b>	<b>0</b>	<b>0</b>
<b>15. Project Administration and QA/QC</b>					
a	Project Management and Administration	8 hours/month	192		
b	Monthly Progress Reports	2 wh / month	48		
c	Project Status Meetings (LCDOT, IDOT as required)	CBBEL (8 mtgs, 2ppl, 4 hrs)	64		
d	Images Administration (included within their overall public involvement hours - task 11).				
e	GHD Administration (see GHD proposal)				42
<b>SUBTOTAL:</b>			<b>304</b>	<b>0</b>	<b>42</b>

**Work Hour Totals:      9,101                      1,981                      880**



**Images, Inc**  
**(Subconsultant)**

### PAYROLL ESCALATION TABLE FIXED RAISES

FIRM NAME Images, Inc.  
PRIME/SUPPLEMENT PRIME

DATE 12/17/13  
PTB NO. \_\_\_\_\_

CONTRACT TERM 24 MONTHS  
START DATE 1/1/2014  
RAISE DATE 4/1/2014

OVERHEAD RATE 98.64%  
COMPLEXITY FACTOR 0.035  
% OF RAISE 3.00%

#### ESCALATION PER YEAR

1/1/2014 - 4/1/2014

4/2/2014 - 4/1/2015

4/2/2015 - 1/1/2016

3  
-----  
24

12  
-----  
24

9  
-----  
24

-----

-----

= 12.50%  
= 1.0378

51.50%

39.78%

**The total escalation for this project would be:**

**3.78%**









Wadsworth Road- Phase I		Images, Inc.
	Project total Hours	1,981
<b>11</b>	<b>Public Involvement</b>	
<b>1</b>	<b>Public Outreach Documentation and Branding</b>	
	Project Strategy	16
	Public involvement plan and updates	18
	Public Involment documentation	10
	Project Branding/logo	16
	QA/QC	20
	Administration (24 mos.)	48
	<b>Sub total</b>	<b>128</b>
<b>2</b>	<b>Project Mailing List</b>	0
	ID/Compare Initial Stakeholders	15
	Maintain mailing list (24 mos.)	20
	<b>Sub total</b>	<b>35</b>
<b>3</b>	<b>Stakeholder Involvement Group (4)</b>	0
	Identify and reserve location and needed equipment	8
	Prepare and send/email invitations, manage RSVPs (4)	28
	Prepare and Attend Pre-Dry Run (4)	44
	Prepare and Attend Dry Run (4)	44
	Draft and Design graphics/maps (4 per meeting)	32
	Prepare handouts- badges, sign-in sheets	24
	Prepare and design PowerPoints (4)	144
	Review exhibits	8
	Attend meetings (4)	64
	Prepare meeting summaries and transcriptions (4)	36
	<b>Sub total</b>	<b>432</b>
<b>4</b>	<b>Newsletters/Invitation (2)</b>	
	Prepare content and graphics, edit, and design newsletters-	195
	<b>Sub total</b>	<b>195</b>
<b>5</b>	<b>Website</b>	0
	Prepare website structure,content,graphics, and design	43
	Website content and graphics updates (5)	40
	Build, host,domain, and provide technical maintainence- direct cost	0
	<b>Sub total</b>	<b>83</b>
<b>6</b>	<b>Media Relations and Social Media</b>	
	Prepare, editing, and distribute press releases (4)	20
	Prepare and design meeting ad placements (2)	10
	Media Kits	4
	Monitor media/social media correspondence and maintain 3rd party information (24 months)	32
	<b>Sub total</b>	<b>66</b>
<b>7</b>	<b>Public Information Meeting (2 meetings)</b>	
	Draft & finalize letters to elected officials	18
	Prepare and send invitation e-blast	18
	Identify, reserve, and set up meeting sites and dates; public meeting planning; equipment rental	20
	Meeting materials- sign-in sheets, badges & other meeting supplies	10
	Secure and place ad placements	10
	3rd Party Outreach	10
	Develop, design, edit and review powerpoint and script (voice over)-4 rounds-dry run and final	100

← 1 PIM & 1 PM

<b>Wadsworth Road- Phase I</b>		<b>Images, Inc.</b>
	Project total Hours	<b>1,981</b>
	Develop, design,review, and edit of exhibit boards (up to 15 boards)- 4 rounds (dry run and final)	110
	Prepare and Attend Pre-dry run	32
	Prepare and Attend dry Run	16
	Attend and facilitate Public Meetings- (includes Spanish translator)	48
	Prepare short and detailed summary and workshop/mtg transcriptions	20
	<b>Sub total</b>	<b>412</b>
<b>8</b>	<b><u>Public Hearing (1)</u></b>	
	Draft & finalize letters to elected officials	9
	Identify, reserve, and set up meeting site and date; public meeting planning; equipment rental	10
	Prepare and send invitation e-blast	9
	Meeting materials- sign-in sheets, badges & other meeting supplies	5
	Secure and place ad placements	5
	3rd Party Outreach	5
	Develop, design, and review PowerPoint and script (voice over)	50
	Develop, design, and review of exhibit boards (10 boards)	45
	Prepare and Attend Pre-Dry Run	16
	Prepare and Attend Dry Run	16
	Attend, facilitate Public Meetings (includes spanish translator)	24
	ID and Reserve Court Reporter (1)	4
	Prepare short and detailed summary and workshop/mtg transcriptions	11
	<b>Sub total</b>	<b>209</b>
<b>9</b>	<b><u>LCDOT and Consultant Coordination</u></b>	
	Quarterly Status Meetings (8)	40
	PI Strategy Meetings (5)	20
	LCDOT /Consultant Coordination (24 months)	24
	<b>Sub total</b>	<b>84</b>
<b>10</b>	<b><u>Comment Management/Response</u></b>	
	Monitor and document comments (150)	112
	Initial draft and edit comment responses	150
	Mail/Email Responses	75
	<b>Sub total</b>	<b>337</b>
	<b>Total</b>	<b>1981</b>

Firm Name: Images, Inc.

 PTB/Item No: Wadsworth Road Project

REQUIRED – DIRECT COSTS WILL ONLY BE ACCEPTED FOR INCLUSION IN CONTRACT WHEN DOCUMENTED ON THIS FORM.  
 (Indicate only rate and quantities for this specific project.)

Item	Allowable	Contract (1) Rate	Quantity (n/a for work orders)	Total
*Per Diem	Up to State Rate Maximum			\$0.00
*Lodging (Overnight)	Up to State Rate Maximum			\$0.00
*Lodging (Extended)	Actual Cost (based on IDOT's and firm's policy)			\$0.00
Air Fare Coach Rate (with two weeks' notice)	As Approved			\$0.00
*Vehicles:		\$0.565	1,200.00	
Mileage	Up to State Rate Maximum			\$678.00
Daily Rate (owned or leased)	\$45/day			\$0.00
Overtime	(Premium Portion)			\$0.00
Tolls	Actual Cost			\$0.00
Digital Photo Processing	Actual Cost			\$0.00
Photo Processing	Actual Cost			\$0.00
**Cell Phones – (traffic systems, survey, phase III only)	\$70/month/phone (maximum) – Phase III (max. of three without IDOT approval)			\$0.00
Telephone Usage (traffic system monitoring)	Actual Cost			\$0.00
2-Way Radio (survey or phase III only)	Actual Cost			\$0.00
Overnight Delivery/Postage/Courier Service	Actual Cost	\$35.00	4.00	\$140.00
Copies of Deliverables/Mylars (in-house)	Actual Cost	\$0.50	300.00	\$150.00
Copies of Deliverables/Mylars (outside)	Actual Cost			\$0.00
Specific Insurance (required for project)	Actual Cost			\$0.00
CADD	Actual Cost (max. \$15.00/hour)			\$0.00
Monuments (permanent)	Actual Cost			\$0.00
Advertisements	Actual Cost	\$500.00	6.00	\$3,000.00
Web Site	Actual Cost	\$18,000.00	1.00	\$18,000.00
Facility Rental for Public Meetings & Exhibits/Renderings & AV	Actual Cost	\$800.00	8.00	\$6,400.00
Transcriptions (specific to project)	Actual Cost			\$0.00
Recording Fees	Actual Cost			\$0.00
Courthouse Fees	Actual Cost			\$0.00
Testing of Soil Samples	Actual Cost			\$0.00
***Lab Services	Actual Cost			\$0.00
Storm Sewer Cleaning and Televising	Actual Cost (requires 2-3 quotes)			\$0.00
Traffic Control and Protection	Actual Cost (requires 2-3 quotes)			\$0.00
Aerial Photography and Mapping	Actual Cost (requires 2-3 quotes)			\$0.00
Utility Exploratory Trenching	Actual Cost (requires 2-3 quotes)			\$0.00
Shift Differential	Actual Cost (based on firm's policy)			\$0.00
PROJECT Site Travel	Actual Cost (based on IDOT's and firm's policy)			\$0.00
Equipment Rental and/or Specific Equipment on a as needed basis when requested by IDOT	Actual Cost (requires 2-3 quotes)			\$0.00
	Actual Cost (requires 2-3 quotes)			\$0.00
Meeting exhibit boards	Actual Costs	\$55.00	60.00	\$3,300.00
Court Reporter (1)	Actual Costs	\$500.00	1.00	\$500.00
Newsletters (print and mail)	Actual Costs	\$3.00	2,100.00	\$6,300.00
Meeting materials- comment and sign-in sheets	Actual Costs	\$0.50	300.00	\$150.00

Item	Allowable	Contract (1) Rate	Quantity (n/a for work orders)	Total
Meeting Badges		\$50.00	1.00	\$50.00
TOTAL				\$38,668.00

**GHD, Inc.**  
**(Subconsultant)**



December 16, 2013

Christopher B. Burke Engineering, Ltd.  
9575 W. Higgins Road, Suite 600  
Rosemont, IL 60018

Attention: Michael J. Matkovic, PE

Dear Mike:

**Re: Wadsworth Road Intersection Improvements – Phase I Study  
Lake County Division of Transportation  
Our Proposal No. GHD-13235**

Thank you for your invitation to submit a proposal to provide roundabout design support and public involvement/meeting assistance for the Phase I Study for improvements to the intersections of Wadsworth Road with Dilleys Road, US-41, and Kilbourne Road in Lake County, Illinois. GHD is accustomed to assisting local consultants by providing a range of design, review, oversight, and public education services.

For this project, GHD will undertake the following tasks:

#### **Roundabout Traffic Analysis**

- Operational performance analyses of roundabout alternatives based on delay and queuing criteria for the AM and PM peak hours.
- Review alternative roundabout geometric solutions meeting pre-established operational performance criteria.
- Documentation of roundabout operational analyses.

#### **VISSIM Simulations**

##### **Public Meeting**

- Prepare VISSIM simulations for one peak hour traffic forecast for use at the Public Meeting for the following locations:
  - Wadsworth Road and Dilleys Road (Roundabout and non-roundabout)
  - Wadsworth Road and US-41 at-grade intersection alternative (Non-roundabout)
  - Wadsworth Road and US-41 interchange alternative (Roundabouts at both ramp terminals)
  - Wadsworth Road and Kilbourne Road (Roundabout and non-roundabout)
- Six animation video files, each approximately five minutes long, will be provided for the peak hour.

##### **Public Hearing**

- Refine the VISSIM simulations of the preferred alternative at each intersection for use at the Public Hearing.
- Three updated animation video files, each approximately five minutes long, will be provided for the peak hour.



**Alternate Geometric Studies**

- Provide design support for the development of roundabout alternatives.
- Attendance at up to four design coordination meetings.

**Intersection Design Studies**

- Provide peer review for the development of Intersection Design Studies for preferred alternatives that include roundabouts.

**Public Involvement**

- Attendance by two staff members at one Public Meeting and one Public Hearing.
  - All exhibits prepared by Christopher B. Burke with review by GHD.

**Detailed Information Required**

The following is a detailed list of information required to undertake this review:

- Projected design year turning movements for AM and PM peak hours.
- Anticipated pedestrian and bicycle activity, if applicable.
- Percentage and classification of trucks in the forecast traffic.
- The design vehicle, e.g. WB-65.
- CAD files of base mapping, right-of-way, major utilities and structures.
- Posted and design speeds of approach roadways.
- A digital aerial photo.
- Roadway profiles.
- Direction and clarification of right-of-way constraints, including obtainable /not obtainable priorities and preferences.

**Project Schedule and Fees**

We will interact with Christopher B. Burke on a proposed schedule to be determined at a later date.

For this project, we propose actual costs plus fixed fee not to exceed **\$113,529.24** based on the tabulated rates and estimated hours as shown in the attached.

We look forward to working with you on this project.

**GHD Inc.,**

Kevin Kuhlow, P.E.  
Project Director

Mark  
Service

Linters  
Group Manager

KK/bw  
Attch



Wadsworth Road Intersection Improvements - Phase I Study  
 Lake County Division of Transportation  
 Lake County, Illinois

**Summary of Staff Hours and Direct Labor Costs**

Classification	Principal		Project Manager		Project Engineer		Staff Engineer			
Avg. Hourly Wage	\$66.86		\$48.25		\$42.33		\$29.25		Total Direct Labor	
Task	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
Administration	0	\$0.00	42	\$2,026.50	0	\$0.00	0	\$0.00	42	\$2,026.50
Traffic Analysis	0	\$0.00	20	\$965.00	0	\$0.00	78	\$2,281.50	98	\$3,246.50
VISSIM Simulation - Public Meeting	0	\$0.00	30	\$1,447.50	0	\$0.00	230	\$6,727.50	260	\$8,175.00
VISSIM Simulation - Public Hearing	0	\$0.00	6	\$289.50	0	\$0.00	36	\$1,053.00	42	\$1,342.50
Alternate Geometric Studies	6	\$401.16	112	\$5,404.00	100	\$4,233.00	100	\$2,925.00	318	\$12,963.16
Intersection Design Studies	0	\$0.00	40	\$1,930.00	48	\$2,031.84	0	\$0.00	88	\$3,961.84
Public Involvement	16	\$1,069.76	16	\$772.00	0	\$0.00	0	\$0.00	32	\$1,841.76
<b>TOTAL:</b>	22	\$1,470.92	266	\$12,834.50	148	\$6,264.84	444	\$12,987.00	880	\$33,557.26



Wadsworth Road Intersection Improvements - Phase I Study  
 Lake County Division of Transportation  
 Lake County, Illinois

**Fee Computation Summary by Engineering Task**

Task	Direct Labor Costs (DL)	Overhead Costs (OH)	Fixed Fee (FF)	Direct Expenses (IHDC)	Total
Administration	\$2,026.50	\$3,904.25	\$859.96	\$0.00	\$6,790.71
Traffic Analysis	\$3,246.50	\$6,254.71	\$1,377.68	\$0.00	\$10,878.89
VISSIM Simulation - Public Meeting	\$8,175.00	\$15,749.96	\$3,469.12	\$0.00	\$27,394.08
VISSIM Simulation - Public Hearing	\$1,342.50	\$2,586.46	\$569.70	\$0.00	\$4,498.66
Alternate Geometric Studies	\$12,963.16	\$24,974.82	\$5,589.89	\$613.00	\$44,140.87
Intersection Design Studies	\$3,961.84	\$7,632.88	\$1,681.23	\$0.00	\$13,275.95
Public Involvement	\$1,841.76	\$3,548.33	\$829.49	\$330.50	\$6,550.08
<b>TOTAL:</b>	<b>\$33,557.26</b>	<b>\$64,651.41</b>	<b>\$14,377.07</b>	<b>\$943.50</b>	<b>\$113,529.24</b>

Overhead Rate: 192.66

Fixed Fee: 14.5%

Complexity Factor (R): 0.00

FF = 0.145[DL+R(DL)+OH(DL)+IHDC]



Wadsworth Road Intersection Improvements - Phase I Study  
Lake County Division of Transportation  
Lake County, Illinois

**Direct Expense Summary by Engineering Task**

Task	Meals	Mileage	Total
Administration	\$0.00	\$0.00	\$0.00
Traffic Analysis	\$0.00	\$0.00	\$0.00
VISSIM Simulation - Public Meeting	\$0.00	\$0.00	\$0.00
VISSIM Simulation - Public Hearing	\$0.00	\$0.00	\$0.00
Alternate Geometric Studies	\$48.00	\$565.00	\$613.00
Intersection Design Studies	\$0.00	\$0.00	\$0.00
Public Involvement	\$48.00	\$282.50	\$330.50
<b>TOTAL:</b>	<b>\$96.00</b>	<b>\$847.50</b>	<b>\$943.50</b>

**Direct Expenses by Item**

Item	Unit Amount	Unit Type	Rate	Total Expenses
MEALS	8	EACH	\$12.00	\$96.00
MILEAGE	1500	MILES	\$0.565	\$847.50
<b>TOTAL</b>				<b>\$943.50</b>

# **Fish Transportation Group**

**(Outside Direct Cost)**

December 13, 2013, 2013

William C. Eidson, PE, PTOE, PTP  
Project Manager  
Christopher B. Burke Engineering, Ltd.  
9575 W. Higgins Road, Suite 600  
Rosemont, IL 60018



RE: Wadsworth, Lake County, IL Traffic Count Cost Estimate

Bill –

Thanks for contacting Fish Transportation Group (FTG) regarding the above mentioned project. We are happy to join the Christopher B. Burke Engineering, Ltd. (CBBEL) team. The following traffic counting services have been requested:

1. **Traffic volume counts** - Turning movements and vehicle classifications at ten (10) locations for six (6) hours per location. Counts will include three vehicle classifications (autos, medium, heavy).
  - Dilleys Road at Wadsworth: Six hour count (6-9 a.m. and 3-6 p.m.).
  - Kilbourne Road at Wadsworth: Six hour count (6-9 a.m. and 3-6 p.m.).
  - Six (6) commercial entrances near US-41 intersection: Six hour counts (6-9 a.m. and 3-6 p.m.).
  - Cashmore Road and Wadsworth: Six hour counts (6-9 a.m. and 3-6 p.m.).
  - N. Northwoods Drive and Wadsworth: Six hour counts (6-9 a.m. and 3-6 p.m.).
  
2. **Traffic volume count** - Turning movements and vehicle classifications at one (1) location for twelve (12) hours per location. Counts will include three vehicle classifications (autos, medium, heavy).
  - US-41 at Wadsworth: Twelve hour count (6 a.m. to 6 p.m.).
  
3. **24-hour ADT counts** – traffic volumes by direction at seven (7) locations:
  - Wadsworth west of Dilleys
  - Wadsworth east of US 41
  - Wadsworth west of US 41
  - Wadsworth east of Kilbourne
  - Wadsworth west of Kilbourne
  - Dilleys south of Wadsworth
  - Kilbourne north of Wadsworth

To complete the above traffic counts, anticipated for 2014, we have prepared the following cost estimate for a total of \$11,650 (2014 pricing):

- Ten 6-hour turning movement counts - \$8,500
- One 12-hour turning movement count - \$1,400
- Seven 24-hour ADT directional counts - \$1,750

Please feel free to contact me or Lee with any questions. We appreciate your continued use of Fish Transportation Group for traffic counts and look forward to working with CBBEL on this project.

Thanks.

A handwritten signature in black ink that reads "Cindy Fish". The signature is written in a cursive, flowing style.

Cindy Fish

President

**FISH TRANSPORTATION GROUP**

**Test Service Corporation, Inc.**  
**(Outside Direct Cost)**

December 16, 2013



TESTING SERVICE CORPORATION

*Corporate Office*

360 South Main Place, Carol Stream, IL 60188-2404  
630.462.2600 • Fax 630.653.2988

Mr. Matthew Huffman  
Christopher B. Burke Engineering, Ltd.  
9575 West Higgins Road Suite 600  
Rosemont, IL 60018-4920

RE: P.N. 51,977  
Geotechnical Exploration -Revised December 16, 2013  
**Preliminary Scope of Work**  
Wadsworth Road Improvements  
Lake County, IL

Dear Mr. Huffman:

Testing Service Corporation (TSC) is pleased to submit this revised proposal to provide Geotechnical Engineering Services for the above captioned project. It responds to your email dated November 13 and December 12, 2013. The objectives of the Geotechnical Study are to explore soil conditions and provide recommendations for pavement design in connection with the proposed roadway improvements. TSC is of the understanding that the scope of work developed for this project is preliminary. Once the project is finalized a specific scope of work will be developed.

It is TSC's understanding that a county permit will be required and that the fee for that permit will be waived. An IDOT Permit will be required for the project.

**Project Description:**

Our understanding of limits of the project are as follow:

- Wadsworth Road, I-94 to Des Plaines River, ± 4,900 lineal feet.
- Dilleys Road, North and South of Wadsworth Road, ± 1,500 lineal feet.
- Wadsworth Road Sta 55 + 70 - 93 +70, ± 3,900 lineal feet.
- Kilbourn Road, North of Wadsworth Road, ± 1,000 lineal feet.
- Wadsworth Road over US 41.
- Bedrock is estimated at 150 to 200' deep (Bedrock cores are not required)

If the location or type of the proposed structure(s) are changed, TSC should be promptly contacted to determine the relevance of our proposed boring program to the new project configuration.

**Boring Program:**

We are proposing to drill fifty three (53) soil borings and sixteen (16) pavement cores as part of our Geotechnical Exploration. Site Features , number of boring and cores, and boring depths are presented in the table below.

Site Feature	Number of Borings	Depth of Boring (Feet)	Total Footage	Frequency of Borings	Number of Cores	Frequency of Cores
Wadsworth Road, I-94 to Des Plaines River	16	10	160	±300'	6	±900'
Dilleys Road, North and South of Wadsworth Road	5	10	50	±300	3	±300'
US 41/ Skokie Highway * North & South of Wadsworth Road	10	10	100	±300	0	0
Wadsworth Road Sta 55 + 70 - 93 +70	13	10	130	±300'	5	±900'
Kilbourn Road, North of Wadsworth Road	3	10	30	±300'	2	±900'
Wadsworth Road Over US 41-Two Lane Single Span Bridge- No Retaining Walls	2	75	150	0	0	0
Wadsworth Road Over US 41-Embankment Borings	4	15	60	±100	0	0
<b>TOTALS</b>	<b>53</b>		<b>680</b>		<b>16</b>	

\* Requires IDOT( Illinois Department of Transportation) Permit

**TSC is assuming that a two person flagging crew will be required for a portion of this work.**

The cores will be taken using a 4-inch diameter core barrel. Auger samples will also be obtained of underlying base course/subbase materials. A split-spoon will then be taken of the upper subgrade to a depth of approximately three feet below the top of pavement. The core holes will be patched upon completion using a cold mix asphalt or non-shrink concrete grout.

For the purposes of this proposal we have assumed that the boring locations will be accessible to conventional drilling equipment. In this regard, they should not be located in standing water, within wooded or landscaped areas, or on steeply sloping ground. No provisions have been made for tree/brush clearing or other obstruction removal should borehole access be impeded. Landscape restoration or crop damage (if required) is also not included in the project budget.

TSC will utilize personnel who are trained in layout procedures to stake the borings in the field. Ground surface elevations for each borehole will be determined by level survey methods (benchmark to be provided). Utility clearance for the borings will be obtained by contacting JULIE (Joint Utility Locating Information for Excavators). Secondary and /or private underground utility lines will have to be marked by the property owner or their agents; a private locator can be hired (at an added cost) if necessary.

Soil samples will primarily be obtained by split-spoon methods, with thin-walled tube also taken if conditions dictate. Sampling will be performed at 2½-foot intervals for the first 10 feet and not exceed 5-foot intervals below this level. A representative portion of the split-spoon samples will be placed in a glass jar with screw-type lid for transportation to our laboratory. Groundwater observations will also be made during and following completion of drilling operations, with any boreholes in pavement areas to be backfilled immediately and patched at the surface.

#### **Laboratory Testing:**

Samples obtained from the borings will be examined by experienced laboratory personnel in order to verify field descriptions as well as to visually classify in accordance with the Unified Soil Classification System. Laboratory testing will include moisture content and dry unit weight determinations as well as measurements of unconfined compressive strength by direct or indirect methods, as appropriate. Other tests deemed to be necessary by TSC's Project Engineer may also be recommended for your approval.

#### **Engineering Report:**

Upon completion of drilling and testing, you will receive an engineering report summarizing field and laboratory test data, including a boring location plan and computer generated boring logs. The report will address anticipated soil and groundwater conditions impacting site development, based upon the information obtained from the borings. It will also provide recommendations to guide design and specification preparation pertaining to geotechnical issues relevant to the structure or purpose described in this proposal. These may include the following:

- General earthwork and construction considerations.
- Remedial work and/or treatment of unstable or unsuitable soil types.
- Fill placement and compaction for pavements.
- Foundation recommendations for bridge.
- Pavement analysis.

#### **Fees and Scope:**

In accordance with the Cost Estimate attached, TSC is proposing a not-to-exceed budget amount of Sixty Two Thousand One Hundred Fifty Dollars (\$62,150.00) to provide the Geotechnical Exploration outlined above. Our proposal is based on the understanding that: the boring locations are accessible to a conventional truck or All-Terrain Vehicle (ATV) mounted drill; none of the borings will be located

in standing water; and that the work can be performed during standard business hours. Our fee is further subject to this proposal being accepted by you on or before May 31, 2014.

Should the study reveal unexpected subsurface conditions requiring a change in the scope of work, you will be contacted before we proceed with additional work. Our invoice would then be based on the unit rates given in the attached Cost Estimate or as otherwise agreed upon. While our quoted fee does not include excavation, fill, earthwork, footing or foundation observations during construction phase, the project budget should include a provision for these services. Plan review, preconstruction meetings and/or other consulting and professional services that are provided subsequent to delivery of TSC's report would be covered by separate invoice.

TSC's geotechnical investigation does not include services required to evaluate the likelihood of the site being contaminated by hazardous materials or other pollutants. Analytical testing which would be required in connection with IEPA Form LPC-663, Uncontaminated Soil Certification is also not included. Should an environmental and/or analytical testing be desired, please contact the undersigned for additional details and/or associated cost.

**Closure:**

The geotechnical services being performed are subject to TSC's attached General Conditions. Unless stated otherwise, TSC fees include all state and federal taxes and permits that may be required. However, they do not include any license, permit or bond fees that local governments may impose. The local fees, if any, will be added to the invoice. Unless we receive written instructions to the contrary, invoices will be sent to:

Mr. Matthew Huffman  
Christopher B. Burke Engineering, Ltd.  
9575 West Higgins Road Suite 600  
Rosemont, IL 60018-4920  
Tel: (847) 823-0500  
Fax: (847) 823-0520  
email: [mhuffman@cbbel.com](mailto:mhuffman@cbbel.com)

If this proposal meets with your approval, please indicate your acceptance by signing one copy and returning it to our Carol Stream, Illinois office. When also completing the attached Project Data form, kindly indicate who is to receive copies of TSC's report and other related information.

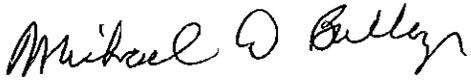
Your consideration of our proposal is appreciated. We look forward to being of service to you on this project.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,

  
Michael V. Machalinski, P.E.  
Vice President

  
Michael D. Billings  
Director of Business Development

MVM:MDB:kw

Enc: Cost Estimate  
General Conditions  
Project Data Sheet

Approved and accepted for \_\_\_\_\_ by:

\_\_\_\_\_  
(NAME)  
\_\_\_\_\_  
(TITLE)  
\_\_\_\_\_  
(DATE)

**COST ESTIMATE**  
*Wadsworth Road Improvements*  
*Lake County, IL*  
*TSC P.N. 51,977*

ITEM	UNITS	QTY	RATE	COST	
<b>STAKING AND UTILITY CLEARANCE</b>					
1.1	Layout Person to Mark Boring Locations, Obtain Surface Elevations and/or Arrange for Clearance of Underground Utilities	Hour	20.0	110.00	\$ 2,200.00
1.2	IDOT Permit, Bonds and Other Direct Charges	Lump Sum	1	800.00	\$ 800.00
1.3	Engineer to Prepare and Submit IDOT Permit	Hours	4	120.00	\$ 480.00
<b>DRILLING AND SAMPLING</b>					
	DRILL RIG WITH 2-MAN CREW (Portal to Portal)				
2.1	Regular Time (Up to 8.0 Hours per Day)	Hour	64.0	340.00	\$ 21,760.00
2.1	Over Time (Over 8 Hour Day)	Hour	16.0	390.00	\$ 6,240.00
<b>OBTAIN PAVEMENT CORES</b>					
Includes coring with 4 inch diameter barrel, retrieving all pavement materials to maximum depth of 18 inches, taking auger samples of base course/subbase materials and split-spoons of upper subgrade.					
3.1	Core Van and One-Man Crew (Regular Time Portal to Portal)	Hour	16.0	150.00	\$ 2,400.00
3.2	Core Van and One-Man Crew (Overtime)	Hour	4.0	175.00	\$ 700.00
3.3	Bit Wear - Per Inch of Asphalt Pavement	Inch	18.0	2.50	\$ 45.00
3.4	Bit Wear - Per Inch of PCC Pavement	Inch	0.0	4.00	\$ 0.00
3.5	Patch Holes with Cold Patch Asphalt or Non-Shrink Grout	Each	16	10.00	\$ 160.00
3.6	Materials Technician to Measure and Describe Core Sample in Laboratory	Each	16	15.00	\$ 240.00
<b>TRAFFIC CONTROL</b>					
4.1	Single Flagman, Regular Time (Portal to Portal)	Hour	0.0	105.00	\$ 0.00
4.2	Single Flagman, Overtime	Hour	0.0	135.00	\$ 0.00
4.3	2-Man Flagging Crew, Regular Time (Portal to Portal)	Hour	40.0	210.00	\$ 8,400.00
4.4	2-Man Flagging Crew, Overtime	Hour	10.0	270.00	\$ 2,700.00
4.5	TSC Pickup and Arrowboard	Day	3	125.00	\$ 0.00
<b>LABORATORY TESTING</b>					
5.1	Examine Samples to Describe by Textural System and Classify Using the Unified Soil Classification System	Each	255	4.00	\$ 1,020.00

ITEM		UNITS	QTY	RATE	COST
5.2	Water Content Determination (Includes Pocket Penetrometer Reading on Cohesive Samples)	Each	250	7.00	\$ 1,750.00
5.3	Unconfined Compressive Strength of Cohesive Soils (or Torvane Shear Strength Measurement)	Each	22	14.00	\$ 308.00
5.4	Dry Unit Weight Determination	Each	30	7.00	\$ 210.00
5.5	Atterberg Limit Determinations	Each	10	100.00	\$ 1,000.00
5.6	Sieve Analysis with #200 Wash	Each	0	90.00	\$ 0.00
5.7	Sieve Analysis with Hydrometer	Each	8	130.00	\$ 1,040.00
5.8	Consolidation Test	Each	0	600.00	\$ 0.00
5.9	Modified Proctor Test	Each	0	190.00	\$ 0.00
5.10	Loss-On-Ignition (Organic Content)	Each	6	45.00	\$ 270.00
<b>ENGINEERING SERVICES</b>					
6.1	Prepare Geotechnical Report with Boring Logs, Location Plan and Pavement Analysis Report	Lump Sum	1	8,500.00	\$ 8,500.00
6.2	Geotechnical Engineer to Perform Pavement Inspection	Hour	8.0	120.00	\$ 960.00
6.3	Geotechnical Engineer to Revise report After Lake County Division of Transportation Makes Comments Perform Pavement Inspection	Hour	8.0	120.00	\$ 960.00
<b>ESTIMATED TOTAL:</b>					<b>\$ 62,143.00</b>
<b>RECOMMENDED BUDGET:</b>					<b>\$ 62,150.00</b>



# TESTING SERVICE CORPORATION

# GENERAL CONDITIONS Geotechnical and Construction Services

**1. PARTIES AND SCOPE OF WORK:** If Client is ordering the services on behalf of another, Client represents and warrants that Client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "Client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by Client are adequate and sufficient for Client's intended purpose. Unless otherwise expressly assumed in writing, TSC's services are provided exclusively for client. TSC shall have no duty or obligation other than those duties and obligations expressly set forth in this Agreement. TSC shall have no duty to any third party. Client shall communicate these General Conditions to each and every party to whom the Client transmits any report prepared by TSC. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

**2. SCHEDULING OF SERVICES:** The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of Client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, Client agrees to pay such additional charges, if any, as may be applicable.

**3. ACCESS TO SITE:** TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If Client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and Client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

**4. CLIENT'S DUTY TO NOTIFY ENGINEER:** Client represents and warrants that Client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this agreement.

**5. DISCOVERY OF POLLUTANTS:** TSC's services shall not include investigation for hazardous materials as defined by the Resource Conservation Recovery Act, 42 U.S.C. § 6901, et seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials are discovered and identified by TSC, TSC's sole duty shall be to notify Client.

**6. MONITORING:** If this Agreement includes testing construction materials or observing any aspect of construction of improvements, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance

with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

**7. DOCUMENTS AND SAMPLES:** Client is granted an exclusive license to use findings and reports prepared and issued by TSC and any sub-consultants pursuant to this Agreement for the purpose set forth in TSC's proposal provided that TSC has received payment in full for its services. TSC and, if applicable, its sub-consultant, retain all copyright and ownership interests in the reports, boring logs, maps, field data, field notes, laboratory test data and similar documents, and the ownership and freedom to use all data generated by it for any purpose. Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

**8. TERMINATION:** TSC's obligation to provide services may be terminated by either party upon (7) seven days prior written notice. In the event of termination of TSC's services, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses. The terms and conditions of these General Conditions shall survive the termination of TSC's obligation to provide services.

**9. PAYMENT:** Client shall be invoiced periodically for services performed. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.

**10. WARRANTY:** TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

Should TSC or any of its employees be found to have been negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, Client, all parties claiming through Client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to \$50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project, whichever amount is greater.

In the event Client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of Client received within five days of Client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit on damages shall be increased to \$500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.

**11. INDEMNITY:** Subject to the provisions set forth herein, TSC and Client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suits, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees or independent contractors. In the event both TSC and Client are found to be negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and Client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

**12. SUBPOENAS:** TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

**13. OTHER AGREEMENTS:** TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.