

Wadsworth Road (CH 17) at US-41

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

Change Order #3 Scope of Work

April 2021

Change Order #3 addresses the following additional level to complete Phase I Engineering (Long Term Improvement) and Phase II Engineering (Wadsworth Road at US-41 Interim Safety Improvement) projects. The Phase II Engineering for the Wadsworth Road at US-41 Interim Safety Improvement was added into this contract in Change Order #1 (September 2018). Change Order #2 consisted of a zero balance change order to re-allocate subconsultant geotechnical investigations while Supplement #3 was being scoped. The original Phase I Engineering contract included the three intersections of Wadsworth Road with Dilleys Road, US-41, and Kilbourne Road. The Dilleys Road intersection has been constructed and Phase I Engineering has been completed for the Kilbourne Road intersection. The US-41 Interim Safety Improvement has been constructed. Following approval of Change Order #1, several items arose for both the Phase I Engineering and Phase II Engineering efforts, which include:

Phase I Engineering – Wadsworth Road at US-41 Intersection Improvement

- LCFPD informed the project team that holdings north and south of Wadsworth Road utilized federal Land and Water Conservation Fund (LCWF), which is contrary to early project information the LCFPD provided. LCFPD holdings on both sides of Wadsworth Road require property acquisition and therefore now requires Section 6(f) evaluation for compliance with federal project development procedures.
- LCFPD Sedge Meadow Forest Preserve parking lot coordination & design re-evaluation
- Detention analysis update for Bulletin 75 considerations
- Construction completed for USACE wetland bank along the project limits where property acquisition is proposed.
- Incorporation of the recently constructed Dilleys Road roundabout and Wadsworth Road interim safety improvement.
- Extended project schedule due to delays with IDOT biological surveys and Section 6(f) coordination. With no subsequent phases of the project funded, IDOT lowered the priority of environmental surveys for this project. With the extended project duration, numerous project elements need to be updated.

These developments require additional level of effort within the following work tasks to complete Phase I Engineering:

- Work Task 2 – Topographic Survey
- Work Task 3 – Traffic Counts, Projections, Analysis
- Work Task 4 – Crash Analysis
- Work Task 5 – Roadway Drainage
- Work Task 6 – Alternative Geometric Studies
- Work Task 8 – Intersection Design Studies
- Work Task 9 – Environmental Surveys & Coordination
- Work Task 10 – Project Development Report

- Work Task 11 – Public Involvement
- Work Task 15 – Project Administration
- Direct Costs

Phase II Engineering – Wadsworth Road at US-41 Interim Safety improvement

- Village of Riverwoods requested sidewalk and pedestrian crossing at US-41 intersection (Fall 2019) as part of the jurisdictional transfer of frontage road from LCDOT to the Village of Wadsworth.
- Inclusion of separate LCDOT led bridge maintenance project into this project's plans and specifications (Winter 2019)
- Following LCDOT inspection east of the Des Plaines River, addition of guardrail, shoulder, and mid-block crossing was included into this project (an extension to the project limits) (Winter 2019)
- Adjusting 60% plans to avoid impacts to LCFPD Section 6(f) properties.
- Additional effort with Phase III Support and Design Modifications

These developments require additional level of effort within the following works tasks to complete Phase II Engineering (Safety Improvement):

- Work Task 6 – Preliminary Plans & Cost Estimate (60%)
- Work Task 12 – Phase III Support
- Work Task 16 – Sidewalk & ADA Curb Ramp Details
- Work Task 17 – Guardrail/Slope Stabilization Design/Mid-Block Crossing

Phase I Engineering – Wadsworth Road at US-41 Intersection Improvement

Following the approval of Change Order #1 in September 2018, several items arose that affected the project development and require an additional level of effort to complete Phase I Engineering:

- In January 2019 LCFPD alerted LCDOT of two Land and Water Conservation Fund (LWCF) federal grants, one utilized for acquisition of parcels north (Wadsworth Savanna) and south (Sedge Meadow) of Wadsworth Road (LWCF #17-00827) and the other for development (i.e., construction) of the Des Plaines River Trail. At this time the project had made significant progress on the roadway, drainage and intersection design.

From prior coordination with the LCFPD it had been conveyed that no state or federal funding sources were utilized for LCFPD holdings affected by the proposed intersection improvement. Per LCWF requirements and conversion of these lands requires approval of IDNR and the U.S. Secretary of the Interior and substitution (i.e., replacement) property must be provided for converted lands. During 2019 and 2020, coordination occurred with IDOT, LCFPD and IDNR regarding proposed conversion as part of this project.

CBBEL assisted LCDOT in preparing information and material to conduct this coordination. IDNR is requiring an updated alternatives memorandum documenting the selection of the preferred alternative. Their concurrence on the selection of the preferred alternative and associated 6(f) property impacts is required for Phase I Design Approval. Prior to IDNR approval, the concurrence on the proposed use of the 6(f) lands must best obtained from the LCFPD (processed via the Section 4(f) process). Based on coordination, IDNR has indicated they agree with the current preferred alternative and only minor design comments are anticipated. LCDOT requested several design alternatives to be evaluated with removal of second westbound through lane and second eastbound through lane. An additional level of effort is required for Tasks: 3, 5, 6, 8, 9, 10, 11, and 15.

- As part of the Section 6(f) and Section 4(f) coordination with the LCFPD, the initial design of the Sedge Meadow access drive and parking lot was requested to be changed. Several

meetings occurred and various design alternatives were investigated by the project team. The final concept design for the access drive, parking lot, path and water quality feature will be incorporated into the Phase I roadway and drainage design. An additional level of effort is required for Tasks 5, 6, and 9.

- From guidance provided by LCDOT, the detention requirements should be evaluated for Bulletin 75 and the existing proposed detention maximized within the existing environmental survey boundary. IDOT has granted approval for use of Bulletin 70 for the US-41 Location Drainage Study. Final drainage design update for Bulletin 75 will be performed during Phase II Engineering. An additional level of effort is required for Tasks: 5 and 6.
- In Fall 2019, a wetland bank (USACE approved site) completed construction along the west side of US-41 south of Wadsworth Road. The limits of the improvement were obtained, but an as-built survey of the final grading is not available. The wetland bank abuts the US-41 right-of-way and this project has proposed property acquisition in that area for drainage and compensatory storage (30-feet of ROW and temp grading easements). A part of this area is within the Mill Creek floodplain. Pick-up survey is required to obtain necessary topographic information and assess necessary drainage/geometric design modifications that may be needed to avoid and/or minimize impacts to the wetland banking site. Wetland surveys are needed in this area to update the wetland delineation report and associated wetland impact evaluation. An additional level of effort is required for Tasks: 2, 5, 6, and 9.
- During design development, LCDOT requested that the design speed be changed for Wadsworth Road, which required adjustments to the geometric design and intersection design study. The speed limit change was made for safety and operation reasons. A roundabout has been constructed at the Dilleys at Wadsworth Road intersection to the west of the intersection, which will slow vehicles approaching the US-41 intersection. An additional level of effort is required for Tasks 6 & 8.
- The crash analysis for the intersection is outdated and needs to be updated for the latest 5-years of data per IDOT requirement. An additional level of effort is required for Task 4.
- Due to the extended schedule of the project from the above items and IDOT biological reviews, an additional level of effort is required for public involvement and project administration. An additional level of effort is required for Task 11 and 15.

Wadsworth Road at US-41 Phase II Engineering Safety Improvement

Following the approval of Change Order #1, which incorporated this interim safety improvement ahead of the larger intersection to address an immediate safety need, an additional level of effort is required to complete Phase II Engineering, including:

- The above mentioned LCWF funding utilized by LCFPD for acquisition Wadsworth Savanna and Sedge Meadow and the construction of the Des Plaines River Trail required design modifications. At the time of notification to LCDOT in January 2019 the project design of the was advanced to preliminary design (60% plans) including alignments, plan geometry, vertical geometry and cross sections. The proposed initial design for the safety improvement was to design the frontage road to mitigate the closure of the Wadsworth Road access to the commercial parcel in the northeast quadrant, and reconfigure the LCFPD Sedge Meadow driveway, parking, and path facilities that were proposed in the preferred alternative for the long term intersection improvement identified the Phase I Engineering study.

Some of the property proposed to be acquired for this project utilized LCWF funding for purchase or improvement by the LCFPD. It was determined by LCDOT that this safety improvement should avoid conversion of LCWF properties to non-recreational uses so that this project could be implemented as soon as possible to address the safety issues on this leg



of the US-41 at Wadsworth Road intersection. As such, this required a redesign of most of the project including shortening the frontage road to intersect with Wadsworth Road at the location of the existing Forest Preserve access on the south side of Wadsworth Road. An additional level of effort is required for Task 6.

- During construction of the project (Phase III), there was additional level of effort to support with design changes in the field during construction. An additional level of effort is required for Task 12.
- Through coordination with the Village of Wadsworth for the transfer of the jurisdiction of the Frontage Road to them, the Village requested additional sidewalk and a pedestrian crossing on the east leg of the signalized US 41 at Wadsworth Road intersection. This required additional engineering including proposed plan geometrics, proposed alignment, proposed profile, detailed ADA grading details, revised cross section, traffic signal modifications for the pedestrian crossing, and coordination with IDOT for a construction permit for work in the State ROW and modifications to their signal. An additional level of effort is required for Tasks 16.
- LCDOT requested CBBEL to include the Wadsworth Road Bridge Joint Replacement Plans by another consultant into the plans set for the Safety Improvement. The summary of quantities, specifications, and plan sheets will be incorporated into the overall plans set assembly. An additional level of effort is required for Task 6.
- During the development of the project, LCDOT inspected the guardrails, shoulders, and mid-block crossing east of the Des Plaines River and requested that CBBEL evaluate recommendations to improve the section of Wadsworth Road east of the bridge. These improvements include removing the guardrail, installing aggregate slope stabilization behind the guardrail, repaving the shoulders including HMS guardrail stabilization, reinstallation of the guardrail, and replacement of existing mid-block crossing. An additional level of effort is required for Task 17.

The following describes the individual work tasks included in the scope of work for this change order.



Phase I Engineering Service

Task 2 - Topographic Survey

This task includes full topographic survey for a portion of one adjacent site (recently constructed wetland bank) along the west side of US-41, 1,400-feet south of Wadsworth Road. The area of survey area is 1,300-feet in length and 150-feet wide. This area is proposed to be utilized for compensatory storage and roadway drainage. As-built survey is not available for the recently constructed site, which is also within the Mill Creek floodplain.

This task also includes additional level of effort for pickup topographic survey for extended project limits along US-41 (additional 2,100 feet) as a result of the preferred alternative selected.

Incorporation of the recently constructed Dilley's Road roundabout and Wadsworth Road interim safety improvement into the existing ground TIN. These area will not be surveyed and the proposed design surface will be utilized for completion of Phase I Engineering. Pickup survey will be required in Phase II Engineering.

Task 3 - Traffic Counts, Projections and Analysis

Traffic Projections and Analysis: CBBEL will develop projected 2050 traffic volumes for the project from Chicago Metropolitan Agency for Planning (CMAP). The design hourly volumes will be updated accordingly and used for the Traffic Noise Analysis and Intersection Design Study.

Synchro Analysis Traffic analysis and modeling will be prepared for the 2050 No-Build and two sub intersection alternatives to evaluate different lane configurations with 2050 projected traffic in the AM and PM peak hours. The basis for this evaluation is to minimize impacts to LWCF/LCFPD property by removing lanes on Wadsworth Road. The results will be summarized in a table format and provided to LCDOT for review and analysis. One sub-alternative will be carried forward and implemented in the IDS (Task 8). A lane utilization assessment will be conducted for through lanes added at the intersection on Wadsworth Road and US-41 using Synchro as the capacity analysis software.

Task 4 - Crash Analysis

The crash analysis memorandum will be updated for the latest 5-years at the time the PDR is submitted for approval. The crash analysis memorandum will be prepared only for the US-41 intersection and adjacent segments.

Task 5 - Roadway Drainage

This task includes updating the Existing Drainage Plan (EDP), Proposed Drainage Plan (PDP), Location Drainage Study (IDOT - US-41), Un-Named Tributary to Des Plaines River Hydraulic Report to incorporate adjacent land use changes and Bulletin 75 detention considerations. It is assumed that design update for Bulletin 75 will occur during Phase II Engineering, which IDOT and LCDOT have concurred with. It is also anticipated that additional design comments will be provided by IDOT given the elapsed time since the last coordination. Detailed tasks include:

- EDP update for land use changes for 1,400 feet of frontage along US-41 (wetland bank).
- Update the hydraulic reports for the two Un-Name Tributaries to Des Plaines River for IDOT approval. The modifications to the adjacent land use will be factored in.
- The stormwater detention needs will be evaluated for Bulletin 75 and maximized within the existing ESR boundary.
- Right-of-way analysis will occur for the areas of the project that will be modified (south leg of US 41 near wetland bank, Dilley's RAB and safety improvement).
- Re-evaluation of impacts to the Mill Creek floodplains encroachment given the modified grading on the private site for the wetland bank.
- The PDP along Wadsworth Road will be modified for minor geometric updates as discussed in Task 6 related to the IDNR Section 6(f) impact coordination, Dilley's roundabout design, interim safety improvement and the Sedge Meadow access drive/parking lot design. The water quality BMP/compensatory storage site will be designed north and south of Wadsworth Road and will be submitted to LCFPD for review and comment.
- The Location Drainage Study will be updated and resubmitted to IDOT for review and approval.

Geometric design, profile and cross section changes resulting from drainage design modifications related to the above will be included in Task 6. The proposed drainage design update will not occur until the final intersection design is determined.

Task 6 - Alternate Geometric Studies

This task includes alternative evaluation, preliminary design of the preferred design alternative (plan, profile and cross section sheets), and cost estimate required to complete the Phase I Study. Detailed sub-tasks include:

- Related to the alternative capacity analysis alternatives developed in Task 3, two geometric design alternatives will be developed to minimize and/or eliminate impacts to the LCFPD properties which utilized 6(f) funding for purchase/improvement along Wadsworth Road. This assumes that the current proposed alignment will be utilized for the development of these alternatives. The alternatives will be packaged and submitted to LCDOT for review.
- Minor geometric changes are assumed to result from the Section 6(f) coordination with IDNR. Plan, profile, and cross sections will be updated for the east leg of the intersection to obtain IDNR concurrence on the intersection design.
- Four access drive/parking concept alternative designs will be developed and exhibits prepared for submittal to LCFPD. One alternative will be selected and incorporated into the Phase I design. Alignment, plan, profile and cross sections will be provided for the final LCFPD access drive to confirm construction limits and associated impacts. It is anticipated that the current parking lot will be converted to a water feature and parking will be consolidated with the trailer parking lot. The improvement will be within the existing ESR boundary.
- With the duration of this project extended due to the Section 6(f), the final Dilley's Road roundabout and US-41 interim safety improvement design will be incorporated into the project plans and CAD 3-D design model. The cross

sections will reflect the safety improvement and Dilleys Road roundabout as the existing ground elevation.

- The alternatives memo will be updated and revised to summarize the alternative development process from the initial concepts to the preferred alternative as requested by IDNR as part of the Section 6(f) review process (Task 9).
- Two additional IDOT/FHWA meetings are included.

Task 8 – Intersection Design Study

The IDS will be updated for 2050 projected traffic. One design update is included to update for minor geometric design changes resulting from Section 6(f) coordination with IDNR and final interim safety improvement. It is assumed that the current alignments will be utilized and that the traffic analysis will be performed under Task 3. The IDS will reflect the constructed safety improvement project. A queue analysis will be performed. Curb ramp details will be updated assuming minor geometric design changes (8 curb ramps). BDE 3100 forms will be adjusted to reflect current design exceptions.

Task 9 - Environmental Surveys, Analysis and Coordination

An additional level of effort is required for environmental surveys, analysis and coordination regarding the US-41 intersection as described below. It is assumed that design modifications will fit within the current environmental survey request limit and the prior wetland delineation report will remain valid.

Wetland Delineation Report Update & Addendum Wetland Impact Evaluation & Biological Clearance Coordination

Wetland/Waters of the U.S. pick-up survey will be completed for the area where the wetland bank was constructed as defined in Task 2. The Wetland Delineation Report (WDR) will be updated accordingly. A Boundary Verification/Jurisdictional Determination will be requested to update per latest federal guidance on wetland jurisdiction.

One Addendum Wetland Impact Evaluation (WIE) will be prepared to update for wetland impact modifications for the newly constructed wetland banking site and also modifications to the previously submitted WIE. The WIE form and exhibits will be submitted to IDOT for review and approval to obtain biological clearance.

PESA Update

The existing PESA was prepared in 2015 and will be updated for the local right-of-way adjacent to the US-41 improvement. IDOT requires that a PESA be no more than 3 years old at the time of Design Approval.

Section 6(f)

Additional coordination is required with IDOT, LCFPD and IDNR related to Section 6(f) for completion of environmental related tasks, and include the following meetings:

- LCFPD (2)
- IDNR (2)

IDNR has requested a complete alternatives memorandum for review prior to granting initial approval of the preferred alternative and associated impacts, which will be updated under Task 6.

IDNR's concurrence on the preferred alternative design and associated impacts to Section 6(f) will be obtained and documented in the project development report (Task 10). It is anticipated that IDNR will have comments that will result in minor design changes and will be addressed via Tasks 3, 5, 6 and 8. Two design submittals to IDNR are included to obtain their concurrence. Based on prior coordination with IDOT and FHWA, a design commitment will be included in the project development report to comply with Section 6(f) guidelines for LCWF per the U.S. National Parks Service. For completion of Phase I, IDNR concurrence on the proposed impacts to 6(f) properties are only required.

Task 10 - Project Development Report

An update to the Project Development Report (BLR 22210) to incorporate the latest project data (updated crash/traffic data) and incorporate the 6(f) components of the project and associated resulting minor geometric/drainage/intersection design changes.

Task 11 - Public Involvement

This task includes additional coordination with stakeholders/property owners. Due to the elongated project schedule and potential design modifications from the Section 6(f) and also the recently constructed wetland bank additional meetings/coordination include:

- Property owner of detention facility location (1)
- BP/McDonalds & Graham C-Stores (1)
- Land and Lakes Development Co (Managers of the wetland bank site) (1)
- Village of Wadsworth (2)
- Shell Gas Station (1)

Lake County Forest Preserve District and Illinois Department of Natural Resources coordination is included under Task 9. IDOT coordination is included under Task 6.

It is anticipated that the Public Meeting will be a virtual format for the project. Images, Inc. will assisting with the Public Meeting.

Task 15 - Project Administration and Quality Assurance/Quality Control

Due to the extended duration of the project an extra level of effort is require for this task. It is anticipated that Phase I Design Approval will be obtained by December 2021. This task manages 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.

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 change order, two separate project status/coordination meetings with LCDOT are anticipated to occur and would be attended by up to two members of the consultant team.

Change Order #3
Work Hour Estimate - Phase I Engineering
US-41 at Wadsworth Road Intersection
Section Number: 13-00999-47-ES

	Task	Units	Total
PHASE I ENGINEERING - US 41 AT WADSWORTH ROAD			
2.	Topographic Survey		
a	Topographic Survey for wetland bank site		72
b	Additional level of effort for topographic survey for extended project study limits along US-41		128
c	Existing ground surface update to incorporate the Wadsworth Road interim safety improvement and Dilleys RAB projects.		24
		SUBTOTAL:	224
3.	Traffic Counts, Projections and Analysis		
a	Traffic projections, DHV assignment, and associated exhibits (related to alternative development)		12
b	Synchro Analysis (2050 No-build, 2 Alternatives) AM&PM; Summary and coordination		48
c	US-41 Lane utilization evaluation & memo		16
		SUBTOTAL:	76
4.	Crash Analysis		
a	Crash Analysis Update & Memo Update		64
		SUBTOTAL:	64
5.	Roadway Drainage		
a	6x6 Hydraulic Report Update		8
b	3x3 Hydraulic Report Update		8
c	EDP Update		16
d	Stormwater Detention Evaluation & Update for Bulletin 75 considerations		34
e	Right-of-way analysis	0.2 hr/xs x 180 xs	18
f	PDP Update	IDOT Resubmittal & PDP Update at Dilleys RAB tie in & Safety Improvement	72
g	Floodplain Encroachment Evaluation	New wetland area along US-41 & Wadsworth Road revisions	32
h	LDS assembly and IDOT coordination/submittal		44
i	LCFPD BMP/comp design	2 basins (one south and one north of wasworth road)	32
		SUBTOTAL:	264
6.	Alternate Geometric Studies		
a	Wadsworth Road alternative development for 6(f) avoidance	2 alts (16 hours / alt)	32
b	LCFPD Sedge Meadow alternative access drive and parking lot design	4 alternative designs and LCFPD coordination	88
c	Minor geometric changes for Section 6(f) (RPP, site model and XS changes)	4 shts x 16 hours	48

Change Order #3
Work Hour Estimate - Phase I Engineering
US-41 at Wadsworth Road Intersection
Section Number: 13-00999-47-ES

	Task	Units	Total
d	Alternatives Memo updated for IDNR & 6(f)	Existing memo prepared for initial alternatives assessment; build out this memo for the selection of the preferred alterantive	68
g	Incorproation of LCFPD access drive/parking lot/water quality BMP/comp storage basin (RPP sheets, alignment, profile, xs, site model)		56
h	Incorporation of safety improvement and Dilleys RAB into project design and cross sections as existing conditions		40
i	IDOT/ FHWA meetings	2 mtgs (2ppl x 3 hrs + 2 hrs prep. + 2 hrs minutes)	20
		SUBTOTAL:	352
8. Intersection Design Studies			
a	Update IDS for 2050 Traffic & Queue table & Design exceptions		24
b	IDS Update for geometric udpates	update 5 sheets (2 hrs / sheet)	10
c	Curb ramp detail modifications (8)	8 ramps x 2 hours	16
		SUBTOTAL:	50
9. Environmental Surveys, Analysis and Coordination			
a	Wetland pickup (Wetland banking stie) & WDR Update & Biological Clearance Coordination		40
b	Addendum WIE		48
c	PESA Update (local ROW)		40
d	Section 6(f) Coordination & Documentation		96
		SUBTOTAL:	224
10. Project Development Report			
a	Update PDR		24
		SUBTOTAL:	24
11. Public Involvement			
a	6 stakeholder/property owners meetings	6 mtgs (2 ppl x 3 hrs + 4 hours prep + 2 hours minutes)	72
b	Virtual Public Meeting Facilitation & QA/QC		40
		SUBTOTAL:	112
15. Project Administration and QA/QC			
a	Project Management and Administration	4 hours/month x 12 months	48
b	Monthly Progress Reports	1 wh / month x 12	12
c	Project Status Meetings (LCDOT)	CBBEL (1 mtgs, 2ppl, 4 hrs) (4 hours/mtg for prep and minutes)	16
d	Supplement preparation		40
		SUBTOTAL:	116
Work Hour Totals:			1506

Change Order #3
Work Hour Estimate - Phase I Engineering
US-41 at Wadsworth Road Intersection
Section Number: 13-00999-47-ES

	Task	Units	Total
PHASE II ENGINEERING - INTERIM SAFETY IMPROVEMENT			
6.	Preliminary Plans and Cost Estimate (60%)		
a	Evaluation of design alternatives for the frontage road and LCFPD entrance to avoid use of LCFPD 6(f) parcels		40
b	Preferred design incorporated into the preliminary plans and cost estimate		108
		SUBTOTAL:	148
12.	Phase III Support		
a	Support for design adjustments considered/made during construction		48
		SUBTOTAL:	48
16.	Sidewalk & ADA Curb Ramp Details		
a	Sidewalk along north side of Wadsworth Road and associated geometric changes to Wadsworth Road and Frontage Road. A separate alignment and profile for the sidewalk.	4 hours/month	64
b	Curb Ramp Details (2)	8 hrs/ramp x 2 ramps	16
c	IDOT Permit		6
		SUBTOTAL:	86
17.	Guardrail / Slope Stabilization Design / Mid-Block Crossing		
a	Guardrail, aggregate slope stabilization, repaving shoulders, reinstallation of guardrail, and reinstallation of existing mid-block crossing		54
		SUBTOTAL:	54
Work Hour Totals:			288

COST PLUS FIXED FEE COST ESTIMATE OF CONSULTANT SERVICES

FIRM Local Agency Section Project Job No:	<u>Christopher B. Burke Engineering, Ltd.</u> <u>LCDOT</u> <u>13-00999-47-ES</u> <u>Wadsworth Road Intersection Improvements</u>	OVERHEAD RATE COMPLEXITY FACTOR	<u>129.05%</u> <u>0</u>	DATE <u>04/22/21</u>
			Cost Plus Fixed Fee 2 14.50% [DL+R(DL) +1.4(DL)+IHDC]	

ITEM	MANHOURS	PAYROLL	OVERHEAD & FRINGE BENF	IN-HOUSE DIRECT COSTS	FIXED FEE	Outside Direct Costs	SERVICES BY OTHERS	DBE TOTAL	TOTAL	% OF GRAND TOTAL
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(B-G)		
Phase I Engineering Services										
2. Topographic Survey	224	11,225.52	14,486.53		3,906.48				29,618.53	12.78%
3. Traffic Counts, Projections, Analysis	76	3,157.62	4,074.91		1,098.85				8,331.38	3.60%
4. Crash Analysis	64	2,786.38	3,595.82		969.66				7,351.86	3.17%
5. Roadway Drainage	264	12,828.80	16,555.57		4,464.42				33,848.79	14.61%
6. Alternative Geometric Studies	352	17,153.54	22,136.64		5,969.43				45,259.62	19.53%
8. Intersection Design Studies	50	2,410.52	3,110.78		838.86				6,360.16	2.74%
9. Environmental Surveys & Coordination	224	10,922.28	14,095.20		3,800.95				28,818.44	12.44%
10. Project Development Report	24	1,153.92	1,489.13		401.56				3,044.62	1.31%
11. Public Involvement	112	5,740.72	7,408.40		1,997.77				15,146.89	6.54%
15. Project Administration	116	6,453.44	8,328.16		2,245.80				17,027.40	7.35%
Direct Costs				1,380.00		827.60			2,207.60	0.95%
Sub-Total	1506	73,832.74	95,281.15	1,380.00	25,693.79	827.60			197,015.28	
Phase II Engineering Services										
6. Preliminary Plans & Cost Estimate (60%)	64	3,248.56	4,192.27		1,130.50				8,571.33	3.70%
12. Phase III Support	48	2,704.08	3,489.62		941.02				7,134.72	3.08%
16. Sidewalk & ADA Curb Ramp Details	86	4,222.90	5,449.65		1,469.57				11,142.12	4.81%
17. Guardrail/Slope Stabilization Design/Mid-Block Crossing	54	2,979.12	3,844.55		1,036.73				7,860.41	3.39%
Sub-Total	252	13,154.66	16,976.09	0.00	4,577.82				34,708.57	
Subconsultant DL									0.00	
TOTALS	1,758	86,987.40	112,257.24	1,380.00	30,271.62	827.60	0.00	0.00	231,723.85	100.00%

AVERAGE HOURLY PROJECT RATES

FIRM Christopher B. Burke Engineering, Ltd.
Local Agency LCDOT
Section 13-00999-47-ES
Project Deerfield Road
Job No: _____

DATE 04/21/21

SHEET 1 OF 2

PAYROLL CLASSIFICATION	AVG HOURLY RATES	TOTAL PROJECT RATES			2. Topographic Survey			3. Traffic Counts, Projections, Analysis			5. Roadway Drainage			6. Alternative Geometric Studies			8. Intersection Design Studies		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	60.00	0																	
ENGINEER VI	70.00	16	0.91%	0.64				2	2.63%	1.84				2	0.57%	0.40	2	4.00%	2.80
ENGINEER V	66.83	146	8.30%	5.55							40	15.15%	10.13	6	1.70%	1.14			
ENGINEER IV	55.12	458	26.05%	14.36	6	2.68%	1.48	8	10.53%	5.80	56	21.21%	11.69	72	20.45%	11.27	12	24.00%	13.23
ENGINEER III	45.84	310	17.63%	8.08				28	36.84%	16.89	56	21.21%	9.72	80	22.73%	10.42	12	24.00%	11.00
ENGINEER I/II	34.03	286	16.27%	5.54				38	50.00%	17.02	64	24.24%	8.25	80	22.73%	7.73	12	24.00%	8.17
SURVEY V	60.00	8	0.46%	0.27	8	3.57%	2.14												
SURVEY IV	60.00	0																	
SURVEY III	58.75	36	2.05%	1.20	36	16.07%	9.44												
SURVEY II*	48.50	60	3.41%	1.66	60	26.79%	12.99												
SURVEY I*	35.83	60	3.41%	1.22	60	26.79%	9.60												
ENGINEERING TECHNICIAN	60.00	12	0.68%	0.41															
ENGINEERING TECHNICIAN	52.17	24	1.37%	0.71															
ENGINEERING TECHNICIAN	48.13	32	1.82%	0.88															
ENGINEERING TECHNICIAN	22.33	12	0.68%	0.15															
CAD MANAGER	60.00	146	8.30%	4.98	54	24.11%	14.46				8	3.03%	1.82	72	20.45%	12.27	4	8.00%	4.80
ASST. CAD MANAGER	51.33	56	3.19%	1.64							24	9.09%	4.67	24	6.82%	3.50	8	16.00%	8.21
CAD II *	47.25	0																	
GIS SPECIALIST III	51.00	16	0.91%	0.46							4	1.52%	0.77						
GIS SPECIALIST I/II*	34.00	64	3.64%	1.24							12	4.55%	1.55	8	2.27%	0.77			
LANDSCAPE ARCHITECT	58.00	0																	
ENVIRONMENTAL RESOUR	60.00	0																	
ENVIRONMENTAL RESOUR	53.80	16	0.91%	0.49										8	2.27%	1.22			
ENVIRONMENTAL RESOUR	41.00	0																	
ENVIRONMENTAL RESOUR	28.00	0																	
ENVIRONMENTAL RESOUR	40.00	0																	
ADMINISTRATIVE*	37.19	0																	
ENGINEERING INTERN	16.10	0																	
TOTALS		1758	100%	\$49.48	224	100.00%	\$50.11	76	100%	\$41.55	264	100%	\$48.59	352	100%	\$48.73	50	100%	\$48.21

AVERAGE HOURLY PROJECT RATES

FIRM Christopher B. Burke Engineering, Ltd.
Local Agency LCDOT
Section 13-00999-47-ES
Project Deerfield Road
Job No:

DATE 04/21/21

SHEET 2 OF 2

PAYROLL CLASSIFICATION	AVG HOURLY RATES	9. Environmental Surveys & Coordination			10. Project Development Report			11. Public Involvement			15. Project Administration			6. Preliminary Plans & Cost Estimate (60%)			12. Phase III Support		
		Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg
PRINCIPAL	60.00																		
ENGINEER VI	70.00	4	1.79%	1.25							4	3.45%	2.41						
ENGINEER V	66.83													24	37.50%	25.06	24	50.00%	33.42
ENGINEER IV	55.12	80	35.71%	19.69	16	66.67%	36.75	84	75.00%	41.34	112	96.55%	53.22						
ENGINEER III	45.84													24	37.50%	17.19	24	50.00%	22.92
ENGINEER I/II	34.03	16	7.14%	2.43				8	7.14%	2.43				16	25.00%	8.51			
SURVEY V	60.00																		
SURVEY IV	60.00																		
SURVEY III	58.75																		
SURVEY II*	48.50																		
SURVEY I*	35.83																		
ENGINEERING TECHNI	60.00	12	5.36%	3.21															
ENGINEERING TECHNI	52.17	24	10.71%	5.59															
ENGINEERING TECHNI	48.13	32	14.29%	6.88															
ENGINEERING TECHNI	22.33	12	5.36%	1.20															
CAD MANAGER	60.00	8	3.57%	2.14															
ASST. CAD MANAGER	51.33																		
CAD II *	47.25																		
GIS SPECIALIST III	51.00	12	5.36%	2.73															
GIS SPECIALIST I/II*	34.00	24	10.71%	3.64	8	33.33%	11.33	12	10.71%	3.64									
LANDSCAPE ARCHITEC	58.00																		
ENVIRONMENTAL RES	60.00																		
ENVIRONMENTAL RES	53.80							8	7.14%	3.84									
ENVIRONMENTAL RES	41.00																		
ENVIRONMENTAL RES	28.00																		
ENVIRONMENTAL RES	40.00																		
ADMINISTRATIVE*	37.19																		
ENGINEERING INTERN	16.10																		
TOTALS		224	100%	\$48.76	24	100%	\$48.08	112	100%	\$51.26	116	100%	\$55.63	64	100%	\$50.76	48	100%	\$56.34

AVERAGE HOURLY PROJECT RATES

FIRM Christopher B. Burke Engineering, Ltd.
Local Agency LCDOT
Section 13-00999-47-ES
Project
Job No:

DATE 04/21/21

SHEET 3 OF 3

PAYROLL CLASSIFICATION	AVG HOURLY RATES	16. Sidewalk & ADA Curb Ramp Details			17. Guardrail/Slope Stabilization Design/Mid-Block			4. Crash Analysis									#REF!		
		Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg	Hours	% Part.	Wgt'd Avg
PRINCIPAL	60.00																		
ENGINEER VI	70.00							2	3.13%	2.19									
ENGINEER V	66.83	28	32.56%	21.76	24	44.44%	29.70												
ENGINEER IV	55.12							12	18.75%	10.34									
ENGINEER III	45.84	32	37.21%	17.06	30	55.56%	25.47	24	37.50%	17.19									
ENGINEER I/II	34.03	26	30.23%	10.29				26	40.63%	13.82									
SURVEY V	60.00																		
SURVEY IV	60.00																		
SURVEY III	58.75																		
SURVEY II*	48.50																		
SURVEY I*	35.83																		
ENGINEERING TECHNI	60.00																		
ENGINEERING TECHNI	52.17																		
ENGINEERING TECHNI	48.13																		
ENGINEERING TECHNI	22.33																		
CAD MANAGER	60.00																		
ASST. CAD MANAGER	51.33																		
CAD II *	47.25																		
GIS SPECIALIST III	51.00																		
GIS SPECIALIST I/II*	34.00																		
LANDSCAPE ARCHITE	58.00																		
ENVIRONMENTAL RES	60.00																		
ENVIRONMENTAL RES	53.80																		
ENVIRONMENTAL RES	41.00																		
ENVIRONMENTAL RES	28.00																		
ENVIRONMENTAL RES	40.00																		
ADMINISTRATIVE*	37.19																		
ENGINEERING INTERN	16.10																		
TOTALS		86	100%	\$49.10	54	100%	\$55.17	64	100%	\$43.54	0	0%	\$0.00	0	0%	\$0.00	0	0%	\$0.00

Direct Cost Estimate

US 41 at Wadsworth Road Change Order #3 - Phase I Engineering

Task	In-House						Outside											
	Mileage		Pakring		Tolls		Messenger/Fed Ex		81/2 x 11 B/W Copies		81/2 x 11 Color Stock		81/2 x 11 Card Stock		81/2 x 11 Color Laser		11x17 B/W copies	
	Miles @0.575	Cost	\$25 Each	Cost	\$0.80 Each	Cost	Each @ \$25	Cost	Pages @ 0.08	Cost	Pages @ 0.10	Cost	Pages @ 0.12	Cost	Pages @ 0.90	Cost	Pages @ 0.12	Cost
2. Topographic Survey	300	172.5	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3. Traffic Counts, Projections, Analysis	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5. Roadway Drainage	75	43.1	0.0	0.0	0	0.0	2	50.0	0	0.0	80	8.0	80	9.6	0	0.0	40	4.8
6. Alternate Geometric Studies	120	69.0	0.0	0.0	0	0.0	2	50.0	0	0.0	80	8.0	80	9.6	0	0.0	0	0.0
8. Intersection Design Study	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9. Environmental Surveys and Coordination	855	491.6	0.0	0.0	0	0.0	2	50.0	0	0.0	120	12.0	120	14.4	0	0.0	40	4.8
10. Project Development Report	0	0.0	0.0	0.0	0	0.0	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11. Public Involvement	900	517.5	0.0	0.0	0	0.0	0	0.0	0	0.0	80	8.0	80	9.6	0	0.0	40	4.8
15. Project Administration	150	86.3	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0

Task	Outside															In-House Totals	Outside Totals	Total Direct Costs	
	11x17 Colored Paper		11x17 Card Stock		11x17 Color Laser		Digital Bond Prints		Color Inkjet Plots		Plastic Report Jackets		Plan Sheet B/W Copies		Misc Direct Costs (See Below Notes)				
	Pages @ 0.16	Cost	Pages at \$0.19	Cost	Pages @ 1.5	Cost	Sq Ft @ 0.135	Cost	Sq Ft @ 2.40	Cost	Ea @ 1.25	Cost	Ea @ 0.80	Cost					
2. Topographic Survey	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	172.50	0.00	172.50
3. Traffic Counts, Projections, Analysis	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.00	0.00	0.00
5. Roadway Drainage	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	43.13	72.40	115.53
6. Alternate Geometric Studies	0	0.0	0.0	0.0	80	60.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	69.00	127.60	196.60
8. Intersection Design Study	0	0.0	0.0	0.0	20	30.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.00	30.00	30.00
9. Environmental Surveys and Coordination	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	491.63	81.20	572.83
10. Project Development Report	0	0.0	0.0	0.0	20	30.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.00	80.00	80.00
11. Public Involvement	0	0.0	0.0	0.0	20	30.0	0	0.0	160	384.0	0	0.0	0	0.0	0	0.0	517.50	436.40	953.90
15. Project Administration	0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	86.25	0.00	86.25
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	0.00	0.00	0.00
TOTALS:	0	0.00	0.00	0.00	140	150	0	0	160	384	0	0	0	0	0.00	1,380.00	827.60	2,207.60	

Notes