



Exhibit L - High Cost project Worksheet (NOFA #008)

Purpose:

This form, labeled “Exhibit L – High-Cost Project Worksheet,” requires an Applicant to justify its average cost per passing when the cost per passing resides within the top 25% of all applications submitted to NOFA 8 (“High-Cost Threshold”).

It has been determined by the Office that the Application submitted falls within the High-Cost Threshold and seeks justification for the cost per passing indicated within the Core Application. The Office may use this information to determine the sufficiency of the cost and whether to disqualify an application exceeding the High-Cost Threshold.

Separate High-Cost Thresholds have been generated for wireless and wireline delivery platforms.

Applicants must provide additional information to the Office to justify the high deployment costs of their proposed project. This information may include a narrative (one page or less) describing contributing or exacerbating factors leading to the estimated total project costs as identified within the Core Application.

Organization Name: Harmony Telephone Company

Is rurality a contributing factor to high cost? If yes, please explain how the rurality of your deployment is contributing to high cost.

Rurality is a key component to this comprehensive cost analysis conducted by Finley Engineering. High level engineering designs approximate a total of 21.99 miles with only 34 eligible service locations; a ratio of 1.54 subscribers to every route mile indicates the area is extremely rural, furthering the need for long stretches of mainline distribution, longer drops to the household and more electronics such as pedestals spread across the proposed network. Additionally, many of the locations are requiring drops that are longer than normal, further contributing to the high cost per passing. Harmony Telephone Company interpreted the ITQ and V5 mapping process as an opportunity to identify rural areas in Iowa similar to the low-density process in Minnesota. The funds requested in the broadband intervention zone #63 Kendallville/Northwest Bluffton, are necessary to complete this project as without this process, it would be challenging to make a business case for this construction project given its rurality. Harmony Telephone Company is committed to serving the residents of Iowa regardless of rurality and has made lasting and frequent commitments to the betterment of rural broadband in the State of Iowa

Is topography a contributing factor to high cost? If yes, please explain how the topography of your project area is contributing to high cost.

The area is notorious for its difficult geologic and topographic terrain which has long been a deterrent for contractors and ISPs in the immediate area. Fiber being buried at traditionally 18-36" will have to be dug through a Bedrock of Limestone, Dolomite, and a mixture of both. The topsoil's in this area range from soft loamy soils and clays from 0-60 sometimes 80" deep, however the shallow areas range around 20" of topsoil's before hitting the Limestone beds. Attached are geologic maps in this region of Iowa to further the need for high-cost boring processes for both material and labor. The area used to be glacial ice that melted, producing large deposits of sedimentary limestone, dolomite and shale both of which allow for increased rock percentages in both labor and material as drill bits are worn quickly and labor is long.

We estimated 9% of cable footage will be bored for creeks & waterways. Our NOFA007 Winneshiek project as staked came in at 12% cable footage for this itemized expense. This project includes 2% of cable footage included for heavy rock such as limestone at \$72 per ft. Winneshiek as staked came in at 3% cable footage. Regarding cobble and other softer rock, 3% of cable footage was included at a price point of \$26.00. Winneshiek as staked came in at 5% cable footage. Harmony is also working in partnership with MiEnergy to utilize aerial builds to help minimize costs in this rugged terrain. This unique partnership will deploy lower cost quality networks to MiEnergy's electric cooperative members. Attached are project maps and preliminary budgets to justify these high network costs.

Is the cost of the technology being used a contributing factor to high cost? If yes, please explain the technology being used and why this lends to high cost.

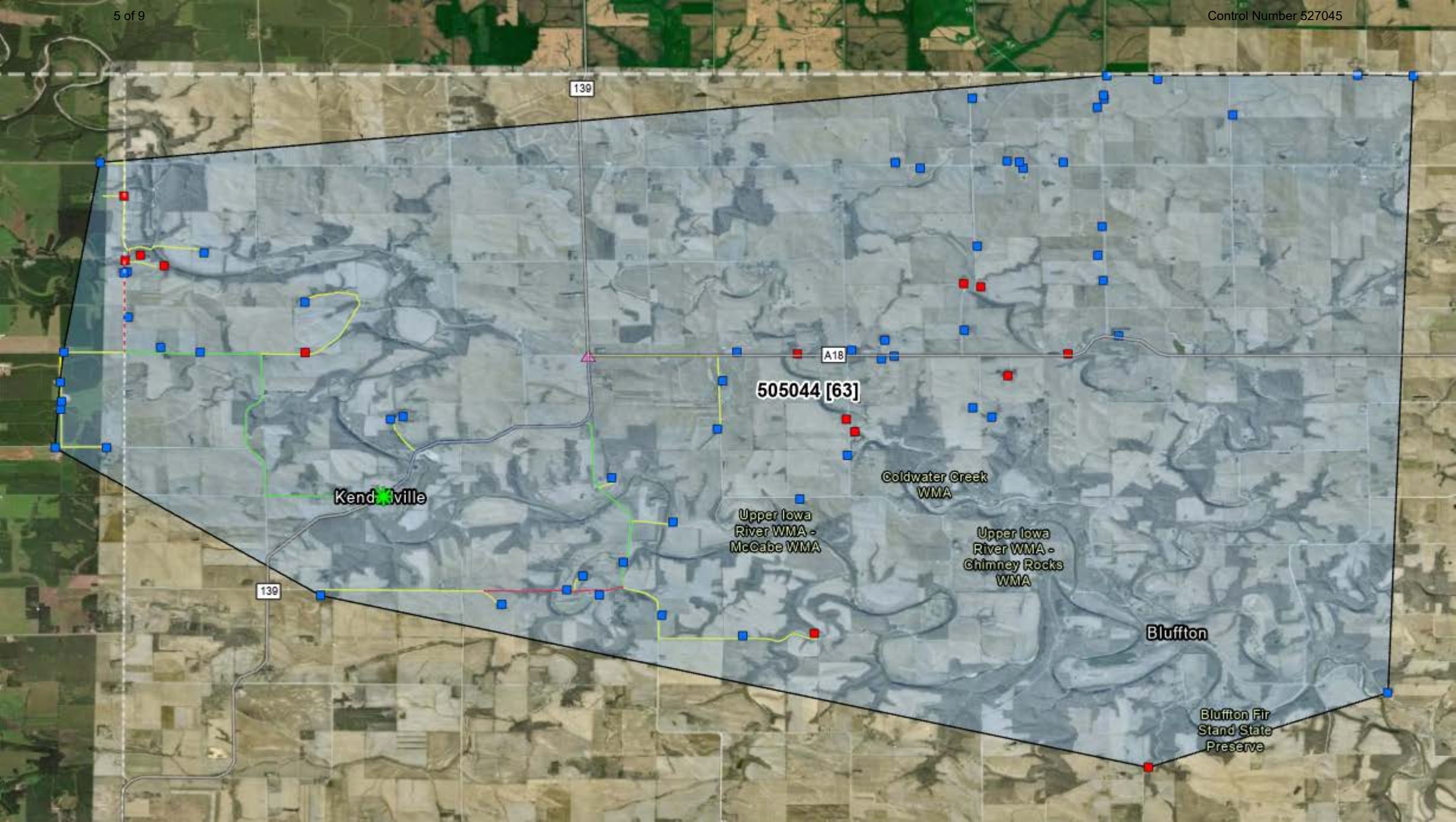
The proposed network is an FTTP XGS-PON network scalable to 10G/10G shared over a 1X32 split ratio. The rugged terrain makes a FTTP network the only viable way to deliver 100Mbps and above service to all locations in the area simultaneously. The downside is that fiber is the most expensive type of network to deploy, the rates for material, and labor associated with the installation of this network come from recent bids from the Winneshiek project that occurred in NOFA007 in a similar region of Iowa combined with other recent area projects. Decade high inflation, inventory availability concerns, and workforce shortages have all attributed to higher costs for similar goods and services juxtaposed to just last year. We have attached a unit cost summary, as well as the previous NOFA007 bid that was referenced indicative of corresponding percentages and pricing sheets for further analysis from the office. This project budget includes a small contingency rate built into its formula to account for these cost considerations, as well as accounting for future increase in both labor and material. Harmony works with Finley Engineering Inc. to develop designs and budgets for all of their projects. Attached are the high-level designs for this project.

Does your project contain a significant amount of Middle Mile that is contributing to high cost? If yes, please explain the distance and approximate location where your middle mile is coming from, the estimated cost of the middle mile portion of your project, and any other relevant information.

There is no significant middle mile expense associated with this project as there are several meet up points available in the immediate area. The close proximity to a prior USDA ReConnect 2, NOFA003 and NOFA007 awards uniquely positions Harmony Telephone Company to build on existing mainline, employ dig once techniques, deploy resources and labor across projects, identifying potential network meet points in the immediate area. Middle mile and mainline costs are expected to decrease due to established partnerships with MiEnergy Electric Cooperative to maximize the use of ADSS aerial assets in the power space, when necessary, as a cost saving mechanism that can also lengthen the construction period window.

Applicants may also provide any additional information, documents or data sets that might further justify the High Cost of the proposed project.

All narrative and additional information should be submitted in a single PDF format named as:
“Application Number -Applicant Name – Exhibit L.” Email the completed PDF to
ociogrants@iowa.gov.



NORTHWEST BLUFFTON

MAINLINE DISTRIBUTION	\$ 1,696,028	\$ 225,776	21.99	34	\$ 1,921,804
SEBO4	\$ 109,096	\$ 6,230			\$ 115,326
NID,GROUND, & SPLICE	\$ 13,383	\$ 5,319			\$ 18,702
Cutover	\$ 14,994	\$ 4,998			\$ 19,992
Electronics	\$ 8,820	\$ 64,478			\$ 73,298
Permitting	\$ 500	\$ -			\$ 500
EAST SCHLEY Total	\$ 1,842,821	\$ 306,801			\$ 2,149,622

CORE APP

\$ 2,149,622.18

\$ -

INCREASE
5% 5%
2024

2023 CONTRACTS

	LABOR	MATERIAL	LABOR	MATERIAL
BA23	\$ 49.35	\$ 47.25	\$ 47.00	\$ 45.00
BDO5A	\$ 357.00	\$ 598.50	\$ 340.00	\$ 570.00
BM2(5/8)(8)	\$ 28.35	\$ 39.90	\$ 27.00	\$ 38.00
MISC	\$ 5.00	\$ 5.00	\$ 5.00	\$ 5.00
PED,POLE & GROUNDING	\$ 439.70	\$ 690.65		
BFO12W	\$ 3.15	\$ 0.58	\$ 3.00	\$ 0.55
BFO12(D)	\$ 1.45	\$ 0.58	\$ 1.38	\$ 0.55
BFO12I	\$ 1.45	\$ 0.58	\$ 1.38	\$ 0.55
BFO12IE	\$ 1.97	\$ 0.58	\$ 1.88	\$ 0.55
BFO24W	\$ 3.15	\$ 0.58	\$ 3.00	\$ 0.55
BFO24(D)	\$ 1.45	\$ 0.63	\$ 1.38	\$ 0.60
BFO24I	\$ 1.45	\$ 0.63	\$ 1.38	\$ 0.60
BFO24IE	\$ 1.97	\$ 0.63	\$ 1.88	\$ 0.60
BFO48W	\$ 3.15	\$ 0.74	\$ 3.00	\$ 0.70
BFO48(D)	\$ 1.45	\$ 0.74	\$ 1.38	\$ 0.70
BFO48I	\$ 1.45	\$ 0.74	\$ 1.38	\$ 0.70
BFO48IE	\$ 1.97	\$ 0.74	\$ 1.88	\$ 0.70
BFO96W	\$ 3.15	\$ 1.16	\$ 3.00	\$ 1.10
BFO96(D)	\$ 1.58	\$ 1.16	\$ 1.50	\$ 1.10
BFO96I	\$ 1.58	\$ 1.16	\$ 1.50	\$ 1.10
BFO96IE	\$ 2.50	\$ 1.16	\$ 2.38	\$ 1.10
BFO144W	\$ 3.15	\$ 1.63	\$ 3.00	\$ 1.55
BFO144(D)	\$ 1.58	\$ 1.63	\$ 1.50	\$ 1.55
BFO144I	\$ 1.58	\$ 1.63	\$ 1.50	\$ 1.55
BFO144IE	\$ 2.50	\$ 1.63	\$ 2.38	\$ 1.55
BFO288W	\$ 3.15	\$ 2.63	\$ 3.00	\$ 2.50
BFO288(D)	\$ 1.58	\$ 2.63	\$ 1.50	\$ 2.50
BFO288I	\$ 1.58	\$ 2.63	\$ 1.50	\$ 2.50
BFO288IE	\$ 2.50	\$ 2.63	\$ 2.38	\$ 2.50
BFOV(1-1.25)PLOW	\$ 6.30	\$ 1.16	\$ 6.00	\$ 1.10
BFOV(1-1.25)	\$ 13.23	\$ 1.16	\$ 12.60	\$ 1.10
BFOV(2-1.25)	\$ 14.18	\$ 2.31	\$ 13.50	\$ 2.20
BFOV(3-1.25)	\$ 15.12	\$ 3.47	\$ 14.40	\$ 3.30
BM53	\$ 31.50	\$ 49.35	\$ 30.00	\$ 47.00
BM60(1.25)	\$ 14.49	\$ 1.16	\$ 13.80	\$ 1.10
BM60(1.25)R	\$ 71.93	\$ 1.16	\$ 68.50	\$ 1.10
BM60(1.25)COBBLE	\$ 25.73	\$ 1.16	\$ 24.50	\$ 1.10
BM71	\$ 25.73	\$ -	\$ 24.50	\$ -
BM72	\$ 31.50	\$ 39.90	\$ 30.00	\$ 38.00
BM73	\$ 31.50	\$ 42.00	\$ 30.00	\$ 40.00
HO1	\$ 44.10	\$ 0.53	\$ 42.00	\$ 0.50
BHF (##x##x##)	\$ 672.00	\$ 1,869.00	\$ 640.00	\$ 1,780.00
HBFO(*)	\$ 299.25	\$ 703.50	\$ 285.00	\$ 670.00
BM2(5/8)(8)	\$ 28.35	\$ 39.90	\$ 27.00	\$ 38.00
BM55	\$ 52.50	\$ 115.50	\$ 50.00	\$ 110.00
HAND HOLE W/ SPLICE CASE	\$ 1,052.10	\$ 2,727.90		
BHF (##x##x##)	\$ 504.00	\$ 2,020.31	\$ 480.00	\$ 1,924.10
HBFO(*)			\$ 285.00	\$ 670.00
BM2(5/8)(8)			\$ 50.00	\$ 35.62
BM55	\$ 52.50	\$ 115.50	\$ 50.00	\$ 110.00
HAND HOLE ONLY	\$ 556.50	\$ 2,135.81		
UNKNOWN5	\$ 100.00	\$ 100.00		
SEB04	\$ 6.83	\$ 0.39	\$ 6.50	\$ 0.37
NID	\$ 91.35	\$ 57.75	\$ 87.00	\$ 55.00
BM83	\$ 21.00	\$ 7.88	\$ 20.00	\$ 7.50
BM2	\$ 24.15	\$ 31.50	\$ 23.00	\$ 30.00
HO1P	\$ 131.25	\$ 9.29	\$ 125.00	\$ 8.85

COST ASSUMPTIONS

BM60R - Hard Rock	2%	of total cable footage
BM71 - Cobble	3%	of total cable footage
BM60 - directional bores, driveways, creeks,...	9%	of total cable footage
BFOV(1-1.25)PLOW -Direct Buried Pipe	10%	of total cable footage

Surficial Geology of the Bluffton (Iowa) 7.5' Quadrangle

GEOLOGIC MAPPING OF THE UPPER IOWA RIVER WATERSHED PHASE 2: Bluffton 7.5' Quadrangle

Iowa Geological Survey
Open File Map OFM-06-5
July 2006

prepared by

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ACKNOWLEDGEMENTS

We thank Lora Friest and Adam Kiel of the Northeast Iowa RC & D for their efforts in helping to initiate this mapping project and for supporting our work in the Upper Iowa River watershed. Luther College in Decorah actively participated in the project through subcontract 05-7380-01 for field mapping support. Luther College student Jared Bendel was a participant in the field work to support the mapping effort. Drilling in selected sites was provided under contract by Aquadrill, Inc. of Swisher, Iowa. Thanks to Joe Arze of the Office of the State Archeologist, Iowa City, for time spent in the field examining Quaternary exposures and for providing drill records from that office. Deborah Quade, Iowa Geological Survey (IGS) lent support with Quaternary field and office expertise, and Brian Witzke (IGS) provided valuable information concerning the Ordovician stratigraphy of the area. Digital cartography was provided by Jim Giglierano (IGS). Thanks to Dave Stanley and staff at Bear Creek Archaeology in Cresco, Iowa, for providing reports and drilling records. We thank Dave Oldert of the Winnebago County Engineers Office for securing bridge sounding logs. Special thanks to the following landowners who graciously allowed access to their land for drilling: Lloyd Gessman, Robert Snell, John Ryan, Delores Gerber and Mike Miller.

LEGEND

Description of Map Units

Cenozoic

Quaternary System

Hudson Episode

Qal - Alluvium (De Forest Formation-Undifferentiated) One to four meters (3 to 13 ft) of massive to weakly stratified, grayish brown to brown loam, silt loam, clay loam, or loamy sand overlying less than three meters (10 ft) of poorly to moderately well sorted, massive to moderately well stratified, coarse to fine feldspathic quartz sand, pebbly sand, and gravel and more than three meters (10 ft) of pre-Wisconsinan or late Wisconsinan Noah Creek Formation sand and gravel. Also includes colluvium derived from adjacent map units in stream valleys, on hillslopes, and in closed depressions. Seasonal high water table occurs in this map unit.

Qallt - Upper Iowa River Valley - Low Terrace/Modern Channel Belt (DeForest Formation-Camp Creek Member and Roberts Creek Member) Variable thickness of less than 1 m to 5 m (3 to 16 ft) of very dark gray to brown, noncalcareous, stratified silt-clay loam, loam, or clay loam, associated with the modern channel belt of the Upper Iowa River valley. Ox-bow lakes and meander scars are common features associated with this terrace level. Post-settlement alluvium thickness varies from 0.5 m (1.5 ft) in higher areas to 2 m (6.5 ft) along the river course and in lower lying areas. Seasonal high water table and frequent flooding potential.

Qallt - Upper Iowa River Valley - Intermediate Terrace (DeForest Formation-Camp Creek Member, Roberts Member and Gunder Member) Variable thickness of less than 1 m to 5 m (3 to 16 ft) of very dark gray to brown, noncalcareous, stratified silt-clay loam to loam that overlies calcareous, medium- to coarse-grained sand and gravel of Wisconsinan (Noah Creek Formation) and/or pre-Wisconsinan age. Occupies low terrace position. Seasonal high water table and frequent flooding potential.

Wisconsin Episode

Qpt - High Terrace - either Late Phase or Early Phase (Peoria Formation - silt and/or sand facies) Two to seven meters (6.5 to 23 ft) of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted sand. May grade downward to poorly to moderately well sorted, moderately to well stratified, coarse to fine feldspathic quartz sand, pebbly sand, loam, or silt loam alluvium (Late Phase) or may overlie a Farmdale Gessol developed in Roxanna Silt which in turn overlies a well-expressed Sangamon Gessol developed in poorly to moderately well sorted, moderately to well stratified, coarse to fine sand, loam, or silt loam alluvium (Early Phase).

Qps - Loess (Peoria Formation—silt facies) Generally 2 to 8 m (6 to 27 ft) of yellowish to grayish brown, massive, jointed noncalcareous grading downward to calcareous silt loam to silty clay loam. Overlies massive, fractured, loamy glacial till of the Pre-Illinoian Wolf Creek or Albion formations with or without intervening clayey Farmdale/Sangamon Gessol. In most areas the Pre-Illinoian till is 1 m to 5 m (3 to 16 ft) thick, but may be up to 10 m (33 ft) thick locally. This mapping unit encompasses upland divides, ridge-tops and convex-side slopes. Well to somewhat poorly drained landscape.

Qpsr - Loess over Bedrock (Peoria Formation—silt facies) Generally 2 to 8 m (6 to 27 ft) of yellowish to grayish brown, massive, jointed noncalcareous grading downward to calcareous silt loam to silty clay loam. Overlies Ordovician bedrock units or colluvium. This mapping unit encompasses upland divides, ridge-tops and convex-side slopes. Well to somewhat poorly drained landscape.

Qwa2 - Loamy and Sandy Sediment Shallow to Glacial Till (sediment associated with erosion surface) One to three meters (3 to 10 ft) of yellowish brown to gray, massive, weakly sorted, loamy, sandy and silty erosion surface sediment. Map unit includes some areas mantled with less than two meters (6.5 ft) of Peoria Formation-silt facies (loess). Overlies massive, fractured, firm glacial till of the Wolf Creek and/or Albion formations. Seasonally high water table may occur in this map unit.

Pleistocene Undifferentiated

Qrc - Rock Core Meanders/Structural Benches - Includes rock core meanders associated with Pre-Wisconsinan river development and terrace deposits overlying bedrock benches. Some areas occupy positions as much as 10 m (33 ft) above the modern floodplain. Consists of undifferentiated alluvial and colluvial fill of unknown age and thickness. May be mantled by 1 to 3 m (3 to 10 ft) of Peoria Formation-silt facies (loess).

Paleozoic

Ordovician System

Om - Shale, Limestone, and Dolomite (Maquoketa Formation.) A nonresistant slope-forming unit of up to 20 m (65 ft) of interbedded argillaceous limestone, dolomite and grey and brown shale. Fragmentary trilobite fossils are common in the basal Elgin Limestone Member. Forms a confining unit that bounds a karst system in underlying Wise Lake and Dunleith formations, and may host sinkholes in its lower portion.

Owd - Limestone and minor Shale (Wise Lake and overlying Dubuque formation) A prominent ledge and cliff-forming unit of up to 31 m (102 ft) of limestone with notable thin interbedded shale in the upper 6 m (20 ft). This map unit is the upper of two successive major cavern and karst-forming bedrock units in the area. The Wise Lake Formation consists of 21 m (67 ft) of massive limestone portions of which exhibit a distinctive botryoidal fabric. The Dubuque Formation consists of 10 m (34 ft) of crinoidal limestone and thin interbedded limestone. Sinkholes are common to abundant within this map unit. Often mantled by 0 m to 2 m (0 to 6 ft) of loess-derived and weathered bedrock-derived colluvium.

Od - Limestone (Dunleith Formation) A prominent ledge and cliff-forming unit of up to 42 m (137 ft) of limestone with minor thin interbedded shale. This is the lower of two successive major cavern and karst-forming bedrock units in the area. The formation consists of fossiliferous limestone and argillaceous limestone with common chert nodules. Major springs occur near the base and sinkholes and karst features are common. Frequently mantled by 0 m to 2 m (0 to 6 ft) of loess-derived and weathered bedrock-derived colluvium.

Odpg - Shale, Limestone, and Dolomite (Decorah, and underlying Plattville and Glenwood formations) A nonresistant slope-forming unit of green-grey shales, dense limestones, argillaceous limestones, and dolomite with average thickness of 26 m to 27 m (85 to 90 ft). Large detached slump-blocks of overlying Dunleith Formation limestone often rest on the upper surface of this unit. Forms a regional confining unit that serves as the basal boundary of the karst system in the overlying Dunleith, Wise Lake and Dubuque formations. The upper division, the Decorah Formation, consists of 12 m to 14 m (39 to 46 ft) of green-grey fossiliferous shales with minor interbedded limestones. The middle division, the Plattville Formation, consists of 7.5 m (25 ft) of limestone, argillaceous limestone, and dolomite. The lower division, the Glenwood Formation, consists of 2 m to 3 m (7 to 9 ft) of green-grey shale with minor siltstone to fine sandstone. This map unit, especially the Decorah and Glenwood subdivisions, is rarely exposed and almost everywhere is mantled by 0 m to 2 m (0 to 6 ft) of loess-derived and weathered bedrock-derived colluvium.

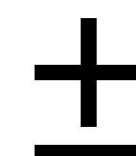
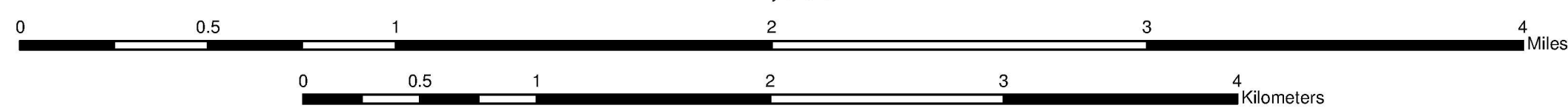
Qpq - Pits and Quarries Sand and gravel pits and rock quarries.

Water Features

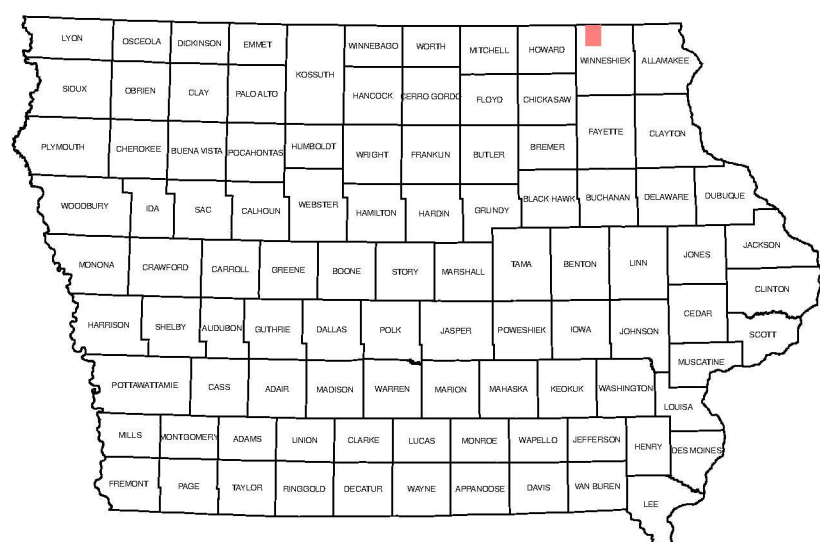
• Drill Holes

D Outcrops

1:24,000



Quadrangle Location



Base map from USGS Bluffton 7.5' Digital Raster Graphic (IGS GIS file DRGB39.TIF) which was scanned from the Bluffton 7.5' Topographic Quadrangle map, published by US Geological Survey in 1981
Topographic contours and land features based on 1975 aerial photography, field checked in 1977
Land elevation contours (20' interval) based on NGVD 1929

Iowa Geological Survey digital cartographic file Blufftonquad06.mxd, version 6/28/06 (ArcGIS 9.0)
Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15, datum NAD83

Adjacent 7.5' Quadrangles

