

PARK & RECREATION ADVISORY COMMITTEE MEETING Monday, January 9, 2023 at 5:00 PM Caledonia Village Hall – 5043 Chester Lane

- 1. Call to Order
- 2. Approval of Minutes from the November 14, 2022 meeting
- 3. Public Comment (2 minutes/person)
- 4. Gorney Park Project Evaluate the construction of a dog park on the southern portion of the park accessed from 7 Mile Road.
- 5. Maple Park Project Review proposed paving and open-air shelter installation for Maple Park.
- 6. Nicholson Wildlife Refuge Improvements Discuss costs and installation matters regarding the extension of the boardwalk at the refuge.
- 7. Crawford Park Master Grading Plan Project Discuss the status of the planning project related to grading and stormwater management of Crawford Park.
- 8. Adjournment

Dated this January 6, 2023

Joslyn Hoeffert Village Clerk

Only committee members are expected to attend. However, attendance by all Board members (including nonmembers of the committee) is permitted. If additional (non-committee) Board members attend, three or more Board members may be in attendance. Section 19.82(2), Wisconsin Statutes, states as follows: If one-half or more of the members of a governmental body are present, the meeting is rebuttably presumed to be for

the purposes of exercising the responsibilities, authority, power or duties delegated to or vested in the body.

To the extent that three or more members of the Caledonia Village Board actually attend, this meeting may be rebuttably presumed to be a "meeting" within the meaning of Wisconsin's open meeting law. Nevertheless, only the committee's agenda will be discussed. Only committee members will vote. Board members who attend the committee meeting do so for the purpose of gathering information and possible discussion regarding the agenda. No votes or other action will be taken by the Village Board at this meeting.

Committee: Caledonia Trustee Holly McManus, Residents: Michael Lambrecht, Carl Garnetzke, Andrew Kallenbach, Christian De Jong

Excused: Josh Sopzcak, Lee Wishau

Staff/Others: Ryan Schmidt, Peter Wagner

1. Call the meeting to order

Meeting was called to order at 5:04 pm by Chairperson Holly McManus

2. Approval of Minutes

Andrew Kallenbach moved to approve the minutes of the October 10, 2022 Parks & Recreation Advisory Committee Meeting. Seconded by Carl Garnetzke. Motion carried unanimously.

3. Public comment

Rick Baher, Hoy Audubon Society, stated that he is an avid bird watcher, and that Nicholson Wildlife Refuge is a great spot to watch birds. He supports the extension of the boardwalk which would provide better access to the refuge.

Ken Michel, Franksville Beer Garden Owner, thanked the committee and Village staff for their support with the beer garden and stated that the County has been supportive as well and has been improving the park since ownership transferred. He further stated that the beer garden won many best of Racine awards this year and that they have had a successful season.

Tom Devornay, 5329 Sunshine Lane, stated that he is still opposed to the Crawford Park entrance on Sunshine Lane and that the Committee should also know that he wants a berm with trees along the eastern edge of the park to buffer the park from his house.

4. Nicholson Wildlife Refuge Discussion

Sue Schuit presented to the Committee a timeline of how the refuge became into being and the efforts she has led to make the refuge a great place to observe nature. Sue highlighted activities such as marking the boundaries of the refuge, illegal hunting occurring within the refuge, unkept trail system cluttered with weeds and saplings, drainage issues, and the incomplete construction of the boardwalk. She stated that past committee members were in favor of her efforts to improve the refuge and is here before the new committee to explain the history and value of the refuge. The Committee discussed what efforts could be made to address the concerns and lack of action to improve the refuge. The committee directed staff to research the history of the area as it relates to the past road reconstruction abutting the refuge and what drainage issues exists. No action was taken on the agenda item.

5. Adjournment

Christian De Jong moved to adjourn. Seconded by Carl Garnetzke. Motion carried unanimously at 6:00 PM.











SCALE: 1/4" = 1'-0"



COLUMN BASE DETAIL



UNLOADING, HANDLING, & STORAGE OF GLU-LAM & DECKING

LAMINATED MEMBERS ARE WRAPPED FOR PROTECTION IN TRANSIT. THE ERECTOR IS RESPONSIBLE FOR PROTECTION OF MATERIALS AT ALL TIMES AFTER ARRIVAL AT DESTINATION. IF STORED TEMPORARILY, MEMBERS SHOULD BE PLACED ON BLOCKS & LEVELED, WELL OFF OF THE GROUND & SEPARATED WITH WOOD STRIPS SO THAT AIR CAN CIRCULATE AROUND EACH MEMBER. COVER THE TOP & SIDES WITH MOISTURE RESISTANT PAPER OR OPAQUE PLASTIC. USE NON-MARRING SLINGS WHEN HANDLING. ROOF COVERING SHOULD BE APPLIED SOON AFTER ERECTION. PROTECTIVE WRAPPING SHOULD REMAIN ON THE MEMBERS UNTIL DECK HAS BEEN INSTALLED & ROOFING APPLIED. HOWEVER, IF THE PAPER HAS BEEN TORN OR PARTIALLY REMOVED DURING STORAGE OR ERECTION, IT SHOULD BE REPLACED OR ENTIRELY REMOVED TO PREVENT DISCOLORATION OF LAM MEMBERS BY SUNLIGHT.

LAMINATED MEMBERS RECEIVE ONE FACTORY APPLIED COAT OF CLEAR WOOD SEALER. (FACTORY STAIN IS OPTIONAL AT EXTRA COST). IF THEY SHOULD BECOME WET DURING SHIPMENT OR INSTALLATION, OR IF THEY ARE CLEANED IN ANY WAY, THESE LAMINATED MEMBERS SHOULD BE UNIFORMLY RESEALED BEFORE ADDITIONAL STAINING OR FINISHING IS DONE IN THE FIELD.

DECKING WILL BE DELIVERED IN BANDED BUNDLES, WEIGHING APPROXIMATELY TWO TONS. BUNDLES SHOULD REMAIN BANDED UNTIL DECK IS TO BE INSTALLED. A FORKLIFT OR SMALL CRANE WILL BE REQUIRED FOR UNLOADING. BE SURE TO USE NON-MARRING SLINGS.

IT IS THE ERECTORS RESPONSIBILITY TO TALLY THE DECKING UPON ARRIVAL. NOTIFY "MANUFACTURER" AT ONCE OF ANY SHORTAGES.

METAL ROOFING NOTES: CLEAR PROTECTIVE FILM MUST BE REMOVED FROM ALL METAL PRIOR TO INSTALLATION.

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ROOF FRAMING PLAN SCALE: 1/4" = 1'-0"



DURING INSTALLATION, ALL METAL SHAVINGS MUST BE REMOVED IMMEDIATELY TO AVOID RUSTING OF PANELS.



ULTIMATE PRESSURES FOR COMPONENTS & CLADDING

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3	45.7 PSF	49.5 PSF

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COLUMN BASE REACTIONS:
V _{DL+SL UNB.} = 3,140#
V _{0.6*DL+0.6*WL} = -480#
H _{DL+0.6*WL} = 360#
$M_{O.T. DL+3/4(SL+0.6^*WL)} = 2,800\#-ft$



9,000 psi.



¢ FTG. & COL.

COLUMN FOOTING DETAIL

CONCRETE NOTES:

1. Remove all organic material and topsoil from slab area. Verify suitability of subgrade. Footings are to bear on undisturbed, natural soil or engineered fill. Both are to be compacted to 95% Proctor density.

2. Prepare slab with min. 8" compacted sand, gravel, or crushed rock.

3. Concrete slab to be 4" thick. Reinforce slab with 6x6-w1.4xw1.4 welded wire fabric at mid-depth. Lap splices 8". Alt.: Fiber mesh admixture (min. 1.5#/c.y., fibrillated polypropylene).

4. Edge of slab to be thickened to min. 8" deep x 8" wide reinforced with 2-#4 continuous rebars. Lap splices min. 24". 5. In locations subject to frost, install isolation joint, max. 1/8" wide, around column piers using diamond or circular layout. Wire mesh shall be interrupted at isolation joints.

6. Install crack control joints (3/16" wide x 1" deep) at 8' to 12' o.c. 7. Concrete slabs in open areas are to be sloped for drainage from center to edge and away from columns. Surface is to be lightly broomed or have a wood troweled finish.

8. Concrete slab, foundation, re-bar, wire mesh, leveling nuts, grout & anchor bolts (if required) are N.I.C.

10. F'c of concrete to be 3000 psi @ 28 days for foundation. F'c of concrete to be 3500 psi @ 28 days for slab, air-entrained. 11. All concrete work to be in accordance w/ latest ACI code.

12. Assumed allowable soil bearing pressures: 1500 psf vertical bearing, 100 pcf passive lateral bearing. It is the Owner's responsibility to verify that the allowable soil bearing values at the site meet or exceed these assumed values. If the actual values are lower than the assumed values, the foundations must be redesigned (N.I.C.).

13. Leveling nuts have been shown under column base plate. Adjust leveling nuts as required to ensure all column bases are at the same elevation. Fill void between column base plate and top of foundation with non-shrink grout. 14. Grout shall be non-shrink, non-metallic, factory pre-mixed grout in accordance with ASTM C1107 with F'c of not less than

15. Reinforcement shall be securely held in place while placing concrete. If required, additional bars, stirrups or chairs shall be provided to furnish support for bars.

ELECTRICAL CONDUIT NOTE:

If electrical access is required; install conduit in foundation and align with access hole in column base plate. Coordinate with electrical contractor.

SHELTERS AND IS NOT TO BE USED, COPIED, OR REPRODUCED WITHOUT THEIR EXPRESSED WRITTEN PERMISSION LW-G2028-03 ARK RACINE, ш MAPL 0025 NC NC S Ч Ц Ц Ц Ц ഗ L SI ЩЩ FL 34 Т RCP S L D S RĄ 2100 SE I SHELTE I RESTROO PROJ. NO.: 22-232-A 12-8-22 DRAWN: TJE CHK'D: REV 1: REV 2: REV 3: REV 4: SHOP DWG NO .: 22-232 EEC JOB NO.: 14536 R SHEET NO .:

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<u>C. BEAM B-1 (CB-20-03-042-A)</u>

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SIDE ELEVATION SCALE: 3/8" = 1'-0"







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	PROJ. NO.: 22-232-A DRAWN: TJE 12-8-22 CHK'D:
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12/8/22	4 of 5





60 LN. FT. REQUIRED

48 LN. FT. REQUIRED

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TRUE PLAN AT ROOF PLANE 2-REQ'D SCALE: 1/4" = 1'-0"

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03211

NICHOLSON WILDLIFE AREA MANAGEMENT PLAN

TOWN OF CALEDONIA, RACINE COUNTY, WISCONSIN

PREPARED FOR:

Town of Caledonia 6922 Nicholson Road Caledonia, Wisconsin 53108

APRIL 1, 2005

240 REGENCY COURT, SUITE 301, BROOKFIELD, WISCONSIN 53045 OFFICE (262) 796-0440 FAX (262) 796-0445

INTRODUCTION

BACKGROUND

The Nicholson Wildlife Area owned by the Town of Caledonia covers about 128-acres that includes about 94-acres of one continuous wetland complex. The total amount of wetland in the study area is about 133-acres. The study area includes the Nicholson Wildlife Area and the part of the Husher Creek project area located in Township 4 North, Range 22 East, Section 21, Town of Caledonia, Racine County, Wisconsin (Exhibit 1). The study area consists of residential lots, agricultural fields, and floodplains, as well as lands with a direct hydrologic association to the Nicholson and Husher Creek. The Southeastern Wisconsin Regional Planning Commission (SEWRPC) has identified the Caledonia Wildlife Area as a Natural Area of countywide or regional significance.¹

PURPOSE

The Southeastern Wisconsin Regional Planning Commission prepared a wildlife management plan in 1986; the <u>Wildlife Habitat Management Plan for the Nicholson Wildlife Center, Town of Caledonia, Racine</u> <u>County, Wisconsin</u>, CAPR No. 146, SEWRPC 1986. The Town of Caledonia and the Wisconsin Department of Natural Resources (WDNR) are interested in updating this management plan with additional consideration given to establishing a wetland mitigation bank and a possible waterfowl project with an organization like Ducks Unlimited.

The Root River Storm Sewer Utility District has ditches and tile lines in the project area. A damaged tile system is located downstream the ditches and wetland. The District desires to develop a project to address the damaged tile system and manage stormwater in a manner consistent with wildlife management objectives that are acceptable with the WDNR.

INVENTORY FINDINGS

WILDLIFE

Existing Habitat

Nicholson contains mostly high value wildlife habitat as determined by SEWRPC (1985). The majority of the wildlife habitat consists of large monotypic stands of cattails (*Tyhpa* spp.) and reed canary grass, (*Phalaris*

¹ SEWRPC Planning Report No. 42, A Regional Natural Areas and Critical Species Habitat and Protection and Management Plan for Southeastern Wisconsin, September 1997.

arundinacea), seasonally flooded areas and open water. While the vegetative diversity of these areas are relatively low, the value for wildlife remains high because Nicholson still contains a continuous area of wetland containing seasonally flooded areas, open water and adjacent grasslands and woodlands which provide food, shelter, and areas to rear young. Wildlife occurring in and adjacent to the Nicholson Wildlife Area include pheasants, waterfowl, marsh birds, raptors, a variety of mammals such as deer, rabbits, muskrats, fox and small mammals, along with several species of reptiles and amphibians. Nicholson also provides an important staging area for migratory waterfowl and songbirds (SEWRPC 1986).

Threatened and Endangered Species

No State of Wisconsin Threatened or Endangered species have been observed on the site. However, the Northern pintail (*Anas acuta*), a State Species of Special Concern, is known to use the site.² The Butler's garter snake (*Thamnophis butleri*), a State Threatened species including hybrids of the Butler's garter snake and the Prairie garter snake (*Thamnophis rudix*) have been identified within the Town of Caledonia. Suitable habitat for these above mentioned species still exists at the Nicholson Wildlife Area. The Cooper's milkvetch (*Astragalus neglectus*) a State Endangered plant species and a Federal Species of Special Concern; the forked aster (*Aster furcatus*) a State Threatened plant species; the redfin shiner (*Lybrurus umbratilis*) a State Threatened fish species; and the waxleaf meadowrue (*Thalictrum revolutum*) is a State Species of Special Concern plant; are known to exist within the Town of Caledonia and their possible presence should be considered when managing potential habitat.

RECREATION

The Nicholson Wildlife Area provides a gravel parking lot, a mowed lawn area adjacent to the parking lot, and a mowed hiking trail approximately one mile in length overlooking the wetland. Passive recreational trails are an obvious opportunity along the upland edge of the marsh. However, a looped trail can only be possible if additional lands or access rights are purchased from adjacent owners.

WETLAND AND UPLAND COMMUNITIES

Available Data

The United States Geological Survey (USGS) topographic map indicates the presence of one wetland within Nicholson Wildlife Area (Exhibit 1). The Wisconsin Wetland Inventory map indicates that one wetland exist within Nicholson (Exhibit 2). The Racine County Soil Survey (Exhibit 3) shows three mapped hydric soils

on the property: Houghton muck (Ht), Navan silt loam (Na) and Ashkum silty clay loam (AtA). Table 1 describes the soil types found at Nicholson and the surround lands within section 21.

1	Soil Mapping Unit	Soil Classification ²	Potential Plant Communit		
Symbol	Name, texture ¹ , slope %	Son Classification-			
AtA	Ashkum sicl, 0-3	Typic Endoaquoll, fine	Sedge meadow - wet (low) prairie		
AzA	Aztalan sil, 0-2	Aquic Argiudoll, fine-loamy	Mesic prairie		
AzB	Aztalan, sil 2-6	Aquic Argiudoll, fine-loamy	Mesic prairie		
EtA	Elliott sicl, 0-6	Aquic Argiudoll, fine	Wet mesic to mesic prairie		
EtB	Elliott sicl, 2-6	Aquic Argiudoll, fine	Wet mesic to mesic prairie		
HeB2 ³	Hebron 1, 2-6	Typic Hapludalf, fine-loamy	Dry mesic to mesic forest		
Ht	Houghton m, 0	Typic Haplosaprist	Shallow marsh - sedge meadow		
Lu	Loamy land	Typic Udorthent, fine-loamy	Undetermined		
MeB	Markham sil, 2-6	Mollic Oxyaquic Hapludalf, fine	Mesic savanna		
MeB2 ³	Markham sil, 2-6	Mollic Oxyaquic Hapludalf, fine	Mesic savanna		
MzdB	Morley sil, 2-6	Oxyaquic Hapludalf, fine	Mesic forest		
MxdC2 ³	Morley sil, 6-12	Oxyaquic Hapludalf, fine	Mesic forest		
Na	Navan sil, 0	Typic Argiaquoll, fine-loamy	Sedge meadow - wet (low) prairie		
SzB	Symerton 1, 2-6	Typic Argiudoll, fine-loamy	Dry mesic to mesic prairie		
¹ Texture al ² Textural f	bbreviations: $l = loam$, $m = muck$, amily terms: fine > 35% clay, fine ataly aroded (25 - 50% of original	sil – silt loam, sicl – silty clay loam. -loamy < 35% clay			

Table 1 Edaphic Analogs for the Nicholson Wildlife Area and Section 21, Township 4 North, Range 22 East

Wetland Boundary Delineation

Wetlands on the property were delineated on December 8, 2003, and March 3, May 28, June 15 and 30, 2004 using procedures outlined in the 1987 Corps of Engineers' (Corps) Wetland Delineation Manual. The entire property was inspected, with areas of known wetlands or hydric soils prioritized for investigation. If inspection revealed that wetland plant species comprised more than 50 percent of the plant cover, the suspected wetland was further examined for field indicators of hydric soil and hydrology. The Corps-accepted field indicators of hydric soil include: gleyed and low chroma matrix and mottle colors, and iron and manganese concretions. Necessary hydric soil indicators were field verified in all wetland areas. The Corps-approved field indicators of hydrology include: visual observation or photographic evidence of soil inundation or saturation during the growing season, oxidized channels associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, waterstained leaves, surface scoured areas and drainage patterns. Wetland hydrologic criteria were met in all areas delineated as wetland.

² Ibid.

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Lists of observed plant species in the wetland areas were compiled and data were gathered to complete Corps jurisdictional dataforms. Native vegetative quality ratings were calculated using the Floristic Quality Assessment (FQA) of Swink and Wilhelm as published in *Plants of the Chicago Region*, 1994. The FQA method assigns to plant species a rating that reflects the fundamental conservatism that the species exhibits for natural habitats. A native species that exhibits specific adaptations to a narrow spectrum of the environment is given a high rating. Conversely, an introduced, ubiquitous species that exhibits adaptations to a broad spectrum of environmental variables is given a low rating. Utilizing this method, a Floristic Quality Index (FQI) is derived for a given area. The FQI is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality, and above 35 indicates "Natural Area" quality.

During the field visits, the presence of one large wetland was confirmed within the center of the study area. Several wetlands were identified by the Natural Resources Conservation Service (NRCS) outside of the Nicholson Wildlife Area but within the study area. The NRCS identifies wetlands that exist within agricultural fields. Lists of the observed plant species for the wetland are given in Exhibit 4. Delineated wetland and upland plant community area boundaries are shown in Exhibit 5.

Following is a table that describes each of the wetland and upland communities found within the Nicholson Wildlife Area or immediately adjacent.

Wetland	Area (acres)	FQI	Native Mean C ²	Wetland Type	Dominant Vegetation	
1	6.2	7	1.9	Wet meadow, willow thicket and wet-mesic hardwoods	reed canary grass (Phalaris arundinacea) eastern cottonwood (Populus deltoides) sandbar willow (Salix interior)	
2	7.9	12	2.8	Wet meadow, willow thicket and wet hardwoods	reed canary grass sandbar willow black willow <i>(Salix nigra)</i>	
3	8.8	10	3.2	Seasonally flooded basin	pinkweed (Polygonum pensylvanicum) cocklebur (Xanthium strumarium)	
4	39.2	11	3.3	Shallow marsh with pockets of deep marsh and open water	broad-leaved cattail (Typha latifolia)	
5	30.5	14	2.8	Shallow marsh, wet meadow, willow thicket, and scattered stands of wet to wet-mesic hardwoods	broad-leaved cattail reed canary grass cottonwood box elder (<i>Acer negundo</i>)	
6	9.8	13	3.3	Shallow marsh, wet meadow and willow thicket	reed canary grass sandbar willow late goldenrod <i>(Solidago gigantea)</i>	

Wetland	Area (acres)	FQI	Native Mean C ²	Wetland Type	Dominant Vegetation
7	11.7	18	3.4	Wet meadow, willow thicket, and wet to wet mesic hardwoods	reed canary grass black willow cottonwood sandbar willow
Upland	Area (acres)	FQI	Native Mean C ²	Upland Type	Dominant Vegetation
8	2.6	14	3.2	Dry to mesic hardwoods	red oak (Quercus rubra) white oak (Quercus alba) basswood (Tilia americana)
9	11.0	14	3.0	Old field with shrubs	Hungarian brome (Bromus inermis) grey dogwood (Cornus racemosa)
1 The Floris vegetative qu 2 The Native high quality.	tic Quality I ality, 20-35 in Mean C is a	ndex (FQ) dicates hig n indicatio	I) is an indic h vegetative q n of native v	cation of native vegetative qua uality and above 35 indicates "N egetative quality for an area. Are	lity for an area: generally 1-19 indicates low Natural Area" quality. eas with value of 3.5 or greater are considered

Functional Values

Wetland 1 consists of wet meadow, willow thicket and wet mesic hardwoods and a straightened section of Husher Creek dominated by reed canary grass, eastern cottonwood, and sandbar willow. The wetland has low functional value for stormwater detention, nutrient removal, sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of low or insignificant value based on SEWRPC wildlife habitat mapping (1985).

Wetland 2 consists of wet meadow, willow thicket and wet hardwoods and a straightened section of Husher Creek dominated by reed canary grass, black willow, and sandbar willow. The wetland has low functional value for stormwater detention, nutrient removal, sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of low or insignificant value based on SEWRPC wildlife habitat mapping (1985).

Wetland 3 consists of a seasonally flooded basin and a tiled section of Husher Creek dominated by pinkweed, and cocklebur. The wetland has moderate functional value for stormwater detention, nutrient removal, and sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of low value based on SEWRPC wildlife habitat mapping (1985).

Wetland 4 consists of shallow marsh with small pockets of deep marsh and open water dominated by broadleaved cattail. The wetland has high functional value for stormwater detention, nutrient removal,

8

sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of high value based on SEWRPC wildlife habitat mapping (1985).

Wetland 5 consists of shallow marsh, wet meadow, and scattered stands of wet mesic hardwoods dominated by broad-leaved cattail, reed canary grass, cottonwood and boxelder. The wetland has moderate functional value for stormwater detention, nutrient removal, sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of high value based on SEWRPC wildlife habitat mapping (1985).

Wetland 6 consists of shallow marsh, wet meadow, and willow thicket dominated by, reed canary grass, sandbar willow and late goldenrod. The wetland has moderate functional value for stormwater detention, nutrient removal, sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of high value based on SEWRPC wildlife habitat mapping (1985).

Wetland 7 consists of wet meadow, willow thicket and wet to wet mesic hardwoods dominated by, reed canary grass, sandbar willow, black willow and cottonwoods. The wetland has moderate functional value for stormwater detention, nutrient removal, sediment/toxicant retention. The wetland has low native vegetative quality based on the FQA and has wildlife habitat of high value based on SEWRPC wildlife habitat mapping (1985).

Upland 8 consists of dry mesic to mesic hardwoods dominated by red oak, white oak and basswood. The woodland is narrow and small in size causing it to function as woodland edge habitat. The upland has low native vegetative quality based on the FQA and has wildlife habitat of insignificant value based on SEWRPC wildlife habitat mapping (1985).

Upland 9 consists of degraded old field dominated by Hungarian brome and grey dogwood. The grasslands are small in size but do offer some upland buffer and habitat adjacent to the wetland. The upland is of low native vegetative quality based on the FQA and has wildlife habitat of medium and unraked value based on SEWRPC wildlife habitat mapping (1985).

The wetland is under the jurisdiction of both the Army Corps of Engineers and WDNR since its part of waterway connected to Waters of the United States. Therefore, any proposed activities that would require regulatory approval will require coordination with both agencies.

9

DRAINAGE

Water Level Control

A central part of the wetland restoration/wildlife habitat enhancement plan will be water level control on the marsh. The marsh complex does not have the ability to store adequate water for a sustained wildlife community, especially for water birds, muskrats, etc. Because of the ditched outlet stream and active agricultural drain tiles, adequate water is then unavailable for a sustained water level, particularly in the late spring/ summer. This lack of water makes nesting habitat for water birds unpredictable or very susceptible to predation.

With the drainage improvements that were established to promote agriculture, the ditching and tiling has rendered the marsh only seasonally flooded to saturated. The presettlement vegetative community was likely a semi-permanently inundated complex with fluctuations of water levels based on precipitation and runoff volumes. These natural wet-dry cycles would have created a mosaic of habitats, unlike the more monotypic vegetation existing today. It is difficult to estimate a "normal" level for this marsh. It is likely that under presettlement conditions, the marsh complex had 3-4 feet more water in it on a consistent basis– especially in spring. This is based on a review of the topography of the basin, soil types, and other features.

The manipulation of the "normal water level" of the marsh will be complicated by the elevations of neighboring parcels. Since the marsh has been kept at a relatively low water level in recent years, the land uses on the adjacent parcels have adapted to that lower water level. Any plans to manipulate the water levels upwards will need to be cognizant of the constraints imposed by the neighboring properties. Some properties may experience nuisance flooding; others may have constraints from structures, septic fields, etc.

For initial design purposes, a proposed desirable NWL (normal water level) for the marsh would be around elevation 708, with the ability to hold back water up to 710 (Exhibit 6). This amount of water should allow for the improvement of the marsh community to begin to support more open water pockets and improvement waterfowl habitat. To affect change in the marsh community, the water will likely need to be raised for at least one growing season and perhaps two. The raised water level will flood out some of the marsh vegetation. Also, the habitat should be more conducive to a sustained muskrat population which should create additional openings in the marsh.

SEWRPC had proposed to place a water level control dike on the Town's property near the southern line of the Bones' Trust property. A better location would be near the northwestern corner of the Bones' Trust

along a narrower part of the channel. While both locations work, the more northerly location would be much less expensive to construct and would involve less regulatory scrutiny. However, property or at least an easement would need to be purchased from the landowner to place the structure in the northern location.

Watershed

The Nicholson Wildlife Area is in the headwaters of the Husher Creek, which is a tributary to the Root River. Husher Creek flows north in a defined channel beginning near Four Mile Road. It joins the Root River just north of 7½ Mile Road and west of STH 38. The Husher Creek watershed has a drainage area of 10.8 square miles at the confluence with the Root River. At Five Mile Road, the downstream limit of the Wildlife Area, the tributary area is approximately 4 square miles. The Husher Creek watershed extends upstream to Franksville and consists of agricultural lands, residential subdivisions, and commercial land uses.

Drain Tiles

A drainage investigation was conducted to identify the location, sizes, and flow characteristics of the existing drain tile network and related surface ditches. The information is portrayed in Exhibit 7 and is discussed by site geographic quadrant below:

Northwest Quadrant (Town of Caledonia, Swan Farms, Helding Farms, Kortendick) There are three tile systems in this area, the major one coming from the west and passing through the Swan and Helding parcels. This tile is shown as 14-inch on Town plans but is a 12- to 15-inch line that is not functioning well due to tile failures and the dozer value on the main line within the wooded area of the Town property.

In order to improve the situation, the tile line could be intercepted at the west edge of the Town property with flows diverted to a new solid tile line to the north along the west edge of the Town property and then to the maintained portion of the ditch just south of Five Mile Road where the current outlet from the main line dozer valve is located.

There also is an 8-inch clay tile that drains the majority of the interior of the northwest section into the previously mentioned line. It has a connection all the way to a manhole in the ditch of CTH H near the Florian property and may originate west of CTH H.

A third system is a smaller one that is beginning to exhibit multiple failures, probably due to willow root intrusions and blowouts on Town property. This tile drains portions of the Swan Farms property and acquiring portions of the Swan property in this vicinity may be desirable.

The outlets for the tile systems in the northwest quadrant of the study area are all downstream of the proposed water level control structure locations and should not be affected by increased water levels on the main portion of the Town property.

Northeast Quadrant (Prochaska, Bones) Two tile systems were observed in this area. The northern one primarily serves the Prochaska property with minor connections likely to the Bones property. This systems would also be downstream of the proposed water level control and would be unaffected by higher water levels. The second system primarily serves the east half of the Bones property and drains into the northeastern corner of the Town property. This tile is already experiencing some failures on both the Bones and Town properties. Raising water levels as planned would almost certainly increase the pressure to this line, although there may be enough grade on the tile line to bring its water to the surface near the Town property rather than off-site.

Southeast Quadrant (Town of Caledonia, Onnink, Kortendick, Helding, Scheer, Christofferson) The main tile line crosses under Four Mile Road and drains a large area to the south. Numerous tile failures are visible within the swale crossing the Kortendick property. Raising water levels will certainly add to problems experienced with this old line. Raising water levels will also affect portions of the Helding, Scheer, and Christofferson properties due to their proximity to the existing wetland areas. Other small tiles were observed on the Kortendick property but they outlet to the swale well above areas influenced by proposed water levels changes.

Southwest Quadrant (Town of Caledonia, Florian, Zimmerman, PHD Holdings, and miscellaneous small tracts) A small tile drains from J. Kortendick's yard but this would be unaffected by raised water levels. While other tiles likely exist in the area, none were observed. Local anecdotal testimony states that there is not a main tile crossing under CTH H in the southwest quadrant.

The multiple small parcels that are in the southwest quadrant are mostly in the wetland area and may be prime properties to acquire if the owners are willing sellers.

Flood Stages and Floodplain

Floodplain boundaries along Husher Creek were published in the Flood Insurance Study (FIS) for Unincorporated Racine County (published October 1, 1981). The FIS included detailed hydrologic and hydraulic analyses to determine the flood stage elevations and specific floodplain boundaries along Husher Creek from the Root River upstream to approximately 5½ Mile Road extended, approximately 3,000 feet downstream of the Nicholson Wildlife Area.

For this study, the FIS hydraulic data were obtained and used as a starting point to analyze flood flows along Husher Creek downstream of the Nicholson Wildlife Area. The U.S. Army Corps of Engineers HEC-RAS computer program was used to calculate flood stages in this hydraulic analysis. The hydraulic model was extended upstream to include the Nicholson Wildlife Area using Racine County topographic mapping and design plans for the waterway. The floodplain hydraulic analysis determined that the 1% chance of occurrence (100-year recurrence interval) flood stage would be approximately 712.9 feet NGVD upstream of 5 Mile Road at the Nicholson Wildlife Area.

ALTERNATIVES

HABITAT IMPROVEMENT

Even with the water level control structure, it would be advantageous to construct "potholes" in the marsh for improved habitat. This would be achieved through shallow excavation of ½-1 acre ponds, with 1:8 or more gentle side slopes with the spoils removed to an upland location. These potholes would provide more foraging opportunities for waterfowl and enhanced habitat for reptiles and amphibians. Once the water levels have been established, additional emergent marsh seeding would increase the vegetative diversity within the Nicholson wetland. See Appendix A. Clearing of non-native understory brush and controlling garlic mustard in the woodland to the south (Upland 8) would provide better habitat for native spring ephemeral plants. If the spring ephemeral community is limited due to past logging and grazing the next approach would be to restore the woodland to its' former prairie and oak savanna community. The existing woodland functions as a common forest edge habitat, bringing with it nest predators and nest parasites (cowbirds), while contributing little to the entire ecosystem.

Prairie restoration on uplands areas within Nicholson will continue to restore the area to a presettlement landscape. Clearing brush and controlling invasive species in upland areas should be undertaken first. Given the wildlife and waterfowl that currently use Nicholson, upland prairie restoration should emphasize establishment of dense nesting cover. See Appendix A.

Many of SEWRPC's structural wildlife habitat improvements (e.g., brush piles, raptor platforms, etc.) can still be implemented at the marsh. However, without water level controls and some physical modifications to the marsh, Nicholson will continue to support only those wildlife species that it does today.

Burn management may be an option for monotypic stands of wetland vegetation. Burn management units established before a burn management program is attempted.

WETLAND BANKING FEASIBILITY

There does not appear to be an opportunity to create a significant amount of new wetland area outside the existing footprint of the marsh in terms of creating a wetland mitigation bank. There are some opportunities on the Bones' Trust and Prochaska's parcel. However, the acreage is not large. Also, some land could be restored on the PHD Holdings LLP and Korten parcels. But again, the acreages are not large. However, taking some of these lands out of production would increase overall habitat acreage and minimize some non-point source pollution sources.

LAND ACQUISITION OPPORTUNITIES

Any additional lands, wetland or upland, which would provide contiguity to the marsh will add value to the wildlife area. A minimum of 100-200 foot buffer from the marsh edge should be considered. If the parcels cannot be purchased outright, thought should be given to purchasing easement rights to the land adjacent to the marsh to provide additional habitat and flexibility in terms of water level management. Any areas that

are secured could be converted to wetland/upland prairie as additional habitat and provide buffer from adjacent land uses. Ideally, this could include existing stands of oak trees for habitat diversification.

Property owners adjacent to Nicholson not interested in selling portions of their property or deeding portions of their land to a conservation easement might consider participating in U. S. Department of Agriculture, Natural Resource Conservation Service programs such as the Wetlands Reserve Program (WRP) and the Conservation Reserve Program (CRP). This also would allow habitat functions on the periphery of Nicholson to be improved.

RECOMMENDATIONS

WILDLIFE HABITAT ENHANCEMENTS

Water level control will allow the wetland complex to be better managed for wildlife habitat. Periodic higher water levels will allow monotypic stands of cattail to be broken up and a more open marsh environment would be more productive for migratory waterfowl and other wetland bird species including wading birds and shorebirds. Water level manipulation will also allow existing areas of mudflat to be planted with wetland plants offering both wildlife food and cover value. Additional open water area will expand and diversify Nicholson wetland habitat features and improve overall wetland function.

These wetland enhancements will improve the available wildlife habitat base in the Town. In particular, adding the means to control water will improve the ability of the Nicholson wetland community to sustain dependable water levels during critical water bird nesting seasons. The wetland areas already provide good habitat for Canada geese and common puddle duck species such as mallards and bluewing teal; other game birds such as common snipe and woodcock; wading birds such as great blue heron and great egrets; amphibians such as American toads, bullfrogs, western chorus frogs, green frogs, leopard frogs, and salamanders; and mammals such as muskrats and mink. The wetlands and Husher Creek provide habitat for painted turtles, snapping turtles, and perhaps Blanding's turtles. Habitat for all of these creatures would be enhanced through water level control and better vegetation/open water interspersion.

Earlier SEWRPC recommendations to create a mosaic of shallow ponds and potholes through blasting or excavation have become somewhat problematic over the years because wetland protection regulations now tend to discourage such efforts. Such ponds and potholes would still be a useful addition to the habitat value

of the site if the spoils could be economically removed from the wetland area and placed in non-wetland areas on-site or nearby. Spoil removal tends to be a costly proposition, however.

Other wetland habitat enhancements could include construction of elevated nest platforms in hopes of attracting wading bird species and installation of wood duck nest boxes and mallard nesting platforms. Snake populations likely could be augmented by construction of simple excavated hibernacula that would increase suitable over-winter habitat. Snake species likely to use upland and wetland portions of the site include various Garter snake species, fox and milk snakes, and northern water snakes.

Fee simple purchase or conservation easement acquisition of additional land parcels to buffer Nicholson will yield wildlife habitat benefits. Conversion of cropped areas to upland native vegetation buffers will expand the available forage and nesting habitat for these and other species, including upland game species such as rabbits and pheasants. As native plant communities are created in the place of row crop fields, habitats for songbirds, common mammals, herpetofauna, and invertebrates will be improved. Areas of restored prairie adjacent to the marsh should be attractive to such bird species as Eastern Meadowlarks, Goldfinches, Eastern Kingbirds, Song, Savanna, and Swamp sparrows, and Bobolinks. Mesic prairie areas will be well suited to placement of nest boxes attractive to bluebirds and tree swallows. As the prairie buffer areas mature, there will be enhanced habitat for ground-burrowing rodents such as mice and meadow voles that, in turn, should expand the forage base for raptors. Redtail hawks, kestrels, and northern harriers likely would use the expanded prairie for foraging. Other predators and omnivores such as red fox, coyote, raccoon, and skunks will utilize buffer areas as well. Previous SEWRPC recommendations to enhance habitat by providing brushpiles for cover and raptor perches are still valid and worthy of implementation.

With the relatively large size of the marsh basin, there may be an opportunity to create a heron rookery in the interior of the marsh. This would entail erecting artificial nesting platforms to attract herons and egrets and other colonial birds. While somewhat experimental, it may be an interesting project as the overall project.

Over time, a spirit and sense of protective stewardship may develop among regular site visitors who likely can be enlisted for such activities as brush-pile building, native seed collection and dispersal, butterfly monitoring, and nest box installation and monitoring. Scout groups, environmental interest organizations, and local sportsmens' clubs might also be encouraged to provide volunteer labor for site habitat improvements.

If robust stands of wildflowers develop in the upland buffer areas they will be attractive as a nectar source for butterflies and hummingbirds. Long-term prairie viability will greatly depend on periodic controlled burning to control invasive brush and weeds. Optimal burn management will attempt to alternate burn units in successive years to minimize impacts on over-wintering butterfly eggs or larva and other invertebrate species.

RECREATION RECOMMENDATIONS

Recreation opportunities are limited to hiking and trail use, wildlife observation, and hunting. These will continue to be the primary uses in the future although recreational enjoyment will be enhanced if the site's environmental features are enhanced as recommended in this management plan.

- If a sufficient number of adjacent landowners are willing, additional land acquisition would provide multiple benefits. Most importantly from a recreational standpoint, the trail network could be expanded (perhaps even to a full loop configuration) if property owners on Nicholson's perimeter could be induced to provide land. This would allow a loop trail to be built without the extensive wetland impacts that otherwise would negate such a project. Land acquisition might occur through fee simple purchase or perhaps through easement acquisition. In addition to providing space for a trail, additional land would cause the wetland area to be better protected. This would be particularly desirable from a water quality enhancement point of view because it would allow a buffer of native vegetation to be inserted between croplands and the Nicholson wetland and Husher Creek.
- Trail construction should be focused on highlighting wildlife viewing opportunities at respectful
 distances while minimizing impacts to site resources. Key habitat features that could be accented
 include Husher Creek, the oak woodland, and the wetland complex. Observation points with
 interpretive signage would be appropriate at key points to explain at least the basic features of the
 Nicholson/Husher/Root River/Lake Michigan interfaces. Wetland intrusions (e.g. boardwalks)
 should be minimized.

The existing trail surface is probably adequate to sustain low levels of usage, but as visitorship increases with time, it may be desirable to enhance trail surfaces with wood chips. Unless there is compelling public clamor to do otherwise, trail usage should be low intensity for hiking and walking. Trail usage should not be expanded to include equestrian access or usage by motorized vehicles or mountain bikes. Dogs should not be permitted off-leash. The guiding principle for trail usage at Nicholson should continue to be low intensity, low impact human access for wildlife and nature observation. See Exhibit 6 for existing and proposed trail and observation platforms.

As the natural resources of Nicholson are improved, local recreational usage likely will be enhanced. More and more diverse wetland birds, the attractiveness of native prairie in expanded buffer areas, and greater songbird and butterfly populations likely will attract more people to the site.

APPENDIX A

Planting and Seeding Lists

Appendix A-1: Marsh Community Seeding List

SCIENTIFIC NAME

Acorus calamus Alisma subcordatum Asclepias incarnata Bidens cernua Carex comosa Carex lacustris Eleocharis palustris major Iris virginica Juncus effusus Juncus torreyi Leersia oryzoides Mimulus ringens Polygonum amphibium stipulaceum Polygonum coccineum Polygonum hydropiperoides Pontederia cordata Sagittaria latifolia Scirpus acutus Scirpus cyperinus Scirpus pungens Scirpus validus creber Scutellaria epilobiifolia Scutellaria lateriflora Sium suave Sparganium eurycarpum Zizania aquatica

COMMON NAME Sweet flag Common water plantain Swamp milkweed Nodding bur marigold Bristly sedge Common lake sedge Great spike rush Dudley's rush Common rush Torrey's rush Rice cut grass Monkey flower Water knotweed Water heartsease Mild water pepper Pickerel weed Common arrowhead Hard-stemmed bulrush Wool grass Chairmaker's rush Great bulrush Marsh skullcap Mad-dog skullcap Tall water parsnip Common bur reed Wild rice

Appendix A-2: Upland Prairie/Dense Nesting Seeding List

SCIENTIFIC NAME

Allium cernuum Andropogon gerardii Andropogon scoparius Aster azureus Aster laevis Aster novae-angliae Avena sativa Bouteloua curtipendula Coreopsis palmata Echinacea pallida Elymus canadensis Heliopsis helianthoides Lespedeza capitata Liatris aspera Monarda fistulosa Petalostemum purpureum Ratibida pinnata Rudbeckia hirta Silphium terebinthinaceum Solidago rigida Sorghastrum nutans Trifolium pratense

COMMON NAME

Nodding wild onion Big bluestem grass Little bluestem grass Sky blue aster Smooth blue aster New York aster Seed Oats Side oats grama Prairie coreopsis Pale purple coneflower Canada wild rye False sunflower Round-headed bush clover Rough blazing star Wild bergamot Purple prairie clover Yellow coneflower Black-eyed Susan Prairie dock Stiff goldenrod Indian grass Red clover

This upland prairie seeding list can be use as dense nesting cover seeding if the seeding mix is rich in forbs mixed with a lower percentage of tall prairie grasses and few short-lived non-native grasses and forbs

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98-258-918



MEMORANDUM

Date:	December 14, 2022
То:	Finance Committee Village Board
From:	Ryan Schmidt, P.E. Village Engineer
Re:	Crawford Park – Professional Engineering Services – Master Grading Plans

Background Information

The Crawford Park Master Plan was approved on October 3, 2022 and as part of that final plan, a construction phasing schedule was recommended by MSA Professional Services, Inc. During the October 10th Parks Committee Meeting, Staff recommended acquiring Professional Engineering Services for the creation of a Master Grading and Drainage Plan as the first phase into the overall development of the park. This was approved by the Parks Committee and then approved by the Village Board on October 17, 2022.

The Engineering Department created an RFP for engineering services and reached out to 5 consulting firms for the creation of the Master Grading and Drainage Plan that was due on December 5th, 2022. The RFP was approved to utilize Park Impact Fees not exceeding \$40,000. The 5 firms contacted were: Nielsen, Madsen & Barber, Stantec, Clark Dietz, Foth, and MSA Professional Services. Of these 5, the Village received 3 proposals in total. NMBSC respectfully declined providing a proposal for this work and Stantec did not respond at all. The following results came from the 3 proposals:

- MSA Professional Services: \$110,000.
- Foth: \$66,650
- Clark Dietz: \$30,250.

After Staff review of the 3 proposals, Clark Dietz has provided the only proposal to come within budget while also meeting all requirements of the RFP. The other two proposals from MSA and Foth met the requirements of the RFP but have a significant cost increase compared to Clark Dietz. In addition, Clark Dietz has proposed to complete the work by the end of March while the other two have plans being completed by June/July. This timeline benefits the Village because it allows the possibility for work to be out for bid in 2023 for possible Fall construction.

Recommendation

Move to approve Village Staff to enter into an agreement for Professional Engineering Services for the creation of the Master Grading and Drainage Plans for Crawford Park with Clark Dietz.

PROPOSAL

Crawford Park Master Grading and Drainage Plan







Village of Caledonia, WI December 5, 2022

Proposal Contact:

759 N. Milwaukee Street Ste. 624, Milwaukee, WI 53202 414.315.1933 mustafa.emir@clarkdietz.com

Clark Dietz

Engineering Quality of Life®



December 5, 2022

Ryan Schmidt, PE Village Engineer Village of Caledonia 5043 Chester Lane Caledonia WI 53402

RE: Proposal – Crawford Park Master Grading and Drainage Plan

Dear Mr. Schmidt:

This proposal presents a summary of Clark Dietz's professional qualifications to execute the 2 Crawford Park Master Grading and Drainage Plan. Clark Dietz has successfully delivered the 2022 Maintenance Project and we have maintained the same team of professionals to serve you once again.

Wherever we work, we strive to deliver meaningful projects, and we pride ourselves in being accountable to the government and the public. We believe we were able to demonstrate that during the planning and design of the Public Safety Building.

I hope you would agree that our Civil Engineering staff, led by our Team Leader CJ Beyer, demonstrated our values and attention to quality while treating you and the Village with utmost respect. This is the way we will approach our work if we are selected for the Crawford Park Master Grading and Drainage project.

Our team is super familiar with Crawford Park, having worked at the south end. In addition, our experience and familiarity with this parcel goes back many years, to the time of the 2006 Stormwater Management Plan. Our approach to this project rests on three foundations:

1. *Situational Awareness:* This is a multi-year project, and the community has high expectations. We must give the Village financial flexibility while demonstrating progress in the park. Drainage challenges are significant – flat topography, nearby residential neighborhoods, and portions of the parcel adverse to BMP flexibility.

2. Disciplined Project Management: We know that you would prefer to direct your money to construction. We are sensitive to the price pressures you are experiencing and will focus on managing our work to deliver our promises with no amendments or fee increases.

3. *No surprises: Absolutely none.* Our way is to be responsive, fast acting, and honest. We look to getting this grading plan done in such a way that, 2 years from now, when the 4-season shelter is being built, nobody hits a drain tile or finds that the finished-floor elevation is off by a foot.

Thank you for your consideration of our proposal. We remain 100 percent committed to maintaining your trust.

Sincerely, Clark Dietz, Inc.

hiti

Mustafa Emir, PhD, PE Executive Vice President 414.315.1933 mustafa.emir@clarkdietz.com



CONTENTS

1	Firm Background	4
2	Project Team	21
3	Work Samples	27
4	Methodology and Approach	29
5	Timeframe	34
6	References	36
7	Firm Capacity and Project Team	38
8	Cost Breakdown	40
9	Supporting Information	44

CONTENTS

Mustafa Emir, PhD, PE | Clark Dietz, Inc. | 759 North Milwaukee Street, Suite 624 Milwaukee, WI 53202 | 414.315.1933 | mustafa.emir@clarkdietz.com





Firm Background



ABOUT US

Clark Dietz, Inc. is a multi-disciplined consulting engineering firm operating from offices in Illinois, Indiana, Kentucky and Wisconsin. Our primary areas of service include civil and environmental infrastructure, transportation, structural, mechanical, and electrical engineering.

OUR PHILOSOPHY

As experienced consultants, we serve as trusted advisors to our clients. As partners, we become fully vested in achieving their goals. We believe in serving our clients to our utmost capacity, period. We operate with integrity, foster collaboration, and expect excellence in all we do. For more than 60 years we have built a reputation for the integrity of our work, our actions, and our results. With an unwavering commitment to our clients, we stand behind everything we do.

OUR HISTORY

Our roots go back to the 1940's to three University of Illinois Engineering professors; James Clark, Eugene Daily, and Jess Dietz. These three formalized their association by incorporating in 1953. By the late 1970s Clark Dietz was a recognized leader among Midwest-based civil engineering companies serving clients from seven regional offices. The original owners sold the firm and it was ultimately owned by CRS Sirrine, one of the nation's largest engineering and architectural firms. Through an employee buy-out of the Champaign office and the name, Clark Dietz again became a privately held corporation in 1987. Employee ownership has been a key factor in the success of the firm, with approximately 30 percent of current employees now owning stock in the company and all employees participating through an ESOP. Today Clark Dietz employs more than 120 professionals in 10 offices.

Clark ietz

DIVERSITY

We are proud of our diverse professional staff. Approximately 30 percent of our workforce consists of minority or female employees; they also represent over 30 percent of our

shareholders. Additionally, we have established annual scholarships for minorities with the University of Illinois at Urbana-Champaign, University of Illinois at Chicago, University of Wisconsin-Platteville, Purdue University-IN, and the Rose-Hulman Institute of Technology.

SUSTAINABILITY

Nature's most precious assets need our protection and we take this responsibility seriously. Our specialists in environmental science, green infrastructure, and our LEED Accredited professionals thoroughly assess the impact a design may have on energy consumption, waterways, habitat, vegetation, and water quality. At Clark Dietz, we are fully committed to optimizing the benefits of sustainability in every solution we design.





OUR SERVICES

Infrastructure goes beyond the functional. It is the foundation that connects people, revitalizes communities, spurs economic growth, and protects the environment.

It is what we do, who we are, and why we serve.

MUNICIPAL

WATER, WASTEWATER, STORMWATER TRANSPORTATION ELECTRICAL MECHANICAL



OUR LOCATIONS

MILWAUKEE, WI

759 N. Milwaukee Street, Suite 624 Milwaukee, WI 53202 414.727.4990

KENOSHA, WI

625 57th Street, 6th Floor Kenosha, WI 53140 262.657.1550

WAUSAU, WI

500 N. 3rd Street, Suite 703 Wausau, WI 54403 715.845.1333

OAKBROOK TERRACE, IL

1815 S. Meyers Road, Suite 470 Oakbrook Terrace, IL 60181 630.413.4130

CHAMPAIGN, IL

125 W. Church Street Champaign, IL 61820 217.373.8900

CHICAGO, IL

118 S. Clinton Street, Suite 570 Chicago, IL 60661 312.648.9900

EVANSVILLE, IN

21 SE 3rd Street, Suite 200 Evansville, IN 47708 812.471.4802

INDIANAPOLIS, IN

8900 Keystone Crossing, Suite 475 Indianapolis, IN 46240 317.844.8900

NEW ALBANY, IN

120 West Spring Street, Suite 400 New Albany, IN 47150 812.725.8595

LOUISVILLE, KY

312 S. Fourth Street, Suite 700 Louisville, KY 40202 502.587.1748

LEXINGTON, KY

1040 Monarch Street, Suite 200 Lexington, KY 40513 859.286.1140



Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 6

Municipal Engineering



At Clark Dietz, we understand how vital infrastructure is to people. We never forget the importance of those who rely on it. As municipal engineers, our actions support our client's best interests, representing the values and the standards of the community at all times.

MUNICIPAL ENGINEER

Board Meetings Staff Consultant Citizen's Contact Consultant Oversight Public Involvement

ASSISTING BUILDING DEPARTMENT AND PUBLIC WORKS DEPARTMENT

Permitting Reviews Escrow Compliance Roadway Maintenance Ordinance Updates and Reviews Storm, Sewer and Water Main Maintenance Sanitary Sewer Collection Systems

DEVELOPMENT REVIEW

Engineering Review Code/Ordinance Compliance Land Use Plan Compliance Escrow Requirements Permitting Requirements

CONSTRUCTION SERVICES

Construction Letting Awards and Contracting Construction Observation Pay Request and Change Order Processing Preparation of Punch Lists and Assurance of Completion of Punch List Items Recommendations to Village for Acceptance of Improvements

REGULATORY COMPLIANCE AND REPORTS

WDNR NR216 Reporting WDNR CMAR Reporting MMSD CMOM Reporting MMSD Chapter 13 Reporting WisDOT Local Program Funding WisDOT Roadway Inventory CDBG Funding

Clark Dietz

Site/Civil Engineering



Clark Dietz has the broad range of capabilities needed for site civil engineering services in today's environmentally and politically complex environment. Quality surface transportation and environmental sensitivity are essential to the economic vitality and quality of life in our communities.

Site development for major facilities typically involves multiple stakeholders and Clark Dietz has the experience with Context Sensitive Solutions methodology used by Illinois Department of Transportation to help facilitate stakeholder communication regarding site development issues. Our staff is up to date with the ever-changing stormwater regulatory issues and emerging sustainable solutions to provide sustainable site development.

SITE DEVELOPMENT

Master Planning Topo/Legal Survey Streetscaping Water Distribution Sewer Collection Stormwater Detention Parks / Trails

ROADWAYS/TRAFFIC

Traffic Impact Studies Alignment Studies Street Design Parking Lots Traffic Calming Pedestrian/Bike Paths Accident/Conflict Studies



Stormwater



The management of stormwater has a direct impact on public safety, land values, and the overall economic and environmental health of a community.

Our engineers employ a focused approach to stormwater management, identifying targeted, cost-effective solutions that benefit key stakeholders. Our experience runs from master planning through design and construction, providing sustainable solutions that include identification of funding sources to make projects possible.

Our staff is up to date with ever-changing stormwater regulatory issues and emerging technologies. Our technical professionals are experts in advanced hydrologic and hydraulic modeling, using the latest tools to provide our clients with the answers they need to enhance their stormwater systems.

WATERSHED MASTER PLANNING

Capital improvement programs Sewer system modeling Floodplain delineation Riverine system analysis Stream bank restoration Stakeholder involvement

MODELING EXPERTISE

SWMM HEC-HMS/HEC-RAS TR-20/HY8 GIS-based applications

PROJECT IMPLEMENTATION

Design services Construction administration Project funding assistance Program funding (stormwater utilities)





OVERVIEW OF OUR SERVICES

CIVIL ENGINEERING AND STORMWATER MANAGEMENT

Clark Dietz provides civil engineering services including site survey, engineering design and post design services such as staking and construction inspection. We provide these services to public and private clients, including local government, State Governments, and institutional entities such as School Districts, Park Districts and WEC.

Our stormwater services include reports, drainage studies, local code compliance, and local government permitting activities for construction.

ADA REQUIREMENTS

Nearly 100 percent of Clark Dietz's civil design products include ADA compliance, both within buildings and all outdoor facilities including sidewalks, walkways, park and recreation facility access points, building access points, recreational trails, boardwalks, and other facilities with non-vehicular access.

PARKING LOT - WORK YARD LAYOUT; TRAFFIC FLOW

Clark Dietz provides start-to-finish design products for government and institutional workspaces, including yards, parking lots, storage areas, salt sheds, bulk material handling areas, etc. Our services include both internal layout and design and access from nearby roadways, driveways, and traffic impact studies affecting public roads near facilities.

ASPHALT AND CONCRETE PAVEMENT DESIGN

As a roadway and highway design firm, Clark Dietz provides comprehensive asphalt and concrete pavement design services for anticipated use, loading, and wear conditions encountered in driving or storage surfaces.

EROSION CONTROL DESIGN

100 percent of our design products include an Erosion Control Plan, universally required for construction activity in all of our practice jurisdictions. In several of our offices, Clark Dietz personnel also enforce local Erosion Control codes – receiving, reviewing and enforcing erosion control ordinances ON BEHALF of the communities we serve. Clark Dietz staff have also authored about a dozen erosion control ordinances for use within our client communities in Wisconsin.

SITE SURVEYING

Clark Dietz provides full-service site survey, topographic mapping, property surveys, construction staking, and asbuilt survey services throughout our service geography.

STRUCTURAL ENGINEERING

Clark Dietz provides full structural engineering services for public and private clients. Our work includes bridges, retaining walls, underground storage tanks and vaults, water towers, cell phone antennas and similar.

ELECTRICAL ENGINEERING

Clark Dietz has a strong electrical engineering team with four individuals holding State Professional Engineering licensure. Our lighting services include work yard lighting, street lighting, athletic field lighting, and airport lighting. In this capacity, we serve local government as well as State agencies for education facilities and correctional institutions.



In addition to lighting, our services to the State of Wisconsin include the design of security systems in the context of correctional facilities such as Lincoln Hills and Green Bay Correctional. Many of our clients who procure fire stations, police stations, or municipal building also rely on Clark Dietz's security camera expertise.

COST ESTIMATING

Clark Dietz, as a consultant to local government, has a strong practice of capital budgeting, cost estimating and project planning services in infrastructure. Engineers in each of our locations are routinely and intimately involved in fiscal projection and planning activities for capital expenditures.

ENGINEERING PLANS AND SPECIFICATIONS

Nearly 100 percent of our professional products include construction ready plans and specifications used for public bidding purposes. In cases where public bidding is not used, Clark Dietz will produce construction ready documents for contracting purposes as directed by the owner. In these instances, it is customary to have the plan set tailored to the needs of the selected contractor and significant cost savings in engineering effort may be achieved.

CONSTRUCTION INSPECTION AND CONTRACT ADMINISTRATION

Clark Dietz construction services include combinations of full-time construction inspection, resident engineering, and contract administration services for local governments and public agencies including Illinois Department of Transportation, Tri-State Tollway Authority, and State of Wisconsin Facilities.

Clark Dietz provides these services with in-house staff, specially trained for this work, including necessary certifications where applicable.

PERMIT APPLICATIONS

One of Clark Dietz's strengths is our understanding and familiarity with local and state permit requirements in Wisconsin and Illinois. State highway access permits, natural resource permits, and erosion control permits are some of the most commonly encountered requirements.

Clark Dietz is your go-to consultant to navigate this sometimes complicated and always time-consuming phase of the project.

AS-BUILT DRAWINGS - RECORD DRAWINGS

When directed to do so, our field staff, including construction inspectors and surveyors, are familiar with the protocols and requirements of creating as-built and record drawings for the owner. Whenever we are assigned a construction management task, this step is almost always included, and Clark Dietz has the required expertise to deliver the as-built product.



Richard E. Maslowski Park Site Grading, Pavement, and Stormwater Management Design

Glendale, WI



PROJECT DURATION 7/1/2014 - 7/31/2015

PROJECT TEAM

Emily Basalla, PE, CFM Christopher Beyer, PE Mustafa Emir, PhD, PE Brandon Flunker, PE, CFM Thomas Foley, PE Kevin Risch, PE Owen Sharp Andrew Torola

OWNER CONTACT

Charlie Imig Director of Public Works City of Glendale 414.228.1746 c.imig@glendalewi.gov An abandoned landfill had long existed at the west end of Bender Road as open space in the City of Glendale. The City of Glendale and Nicolet High School wished to jointly pursue the development of the Bender Recreational Complex as a multi-use park area with an access road, three ball fields, and an outdoor amphitheater with a playground. Clark Dietz worked in conjunction with the City, an Architect on behalf of the School District, and a Consultant leading the landfill closure, to develop plans for the open site that would meet the desires of the municipality and school. The plan was able to make the best use of the site while providing an access roadway and allowing the continued monitoring and methane venting of the closed landfill.

Clark Dietz was also responsible for the design of an access road, watermain, sanitary sewer, and storm drainage services into and through the complex. The presence of waste cells throughout the site greatly impacted the utility layout and site grading plan. The utilities had to be routed to leave the cells undisturbed. The grading plan ensured that there was no net gain or loss of fill on the site, while also leaving the six foot clay cap intact above the garbage cells. Clark Dietz also submitted documents for regulatory approvals to the Southeast Wisconsin Regional Planning Commission and the Wisconsin Department of Natural Resources.



Clark Dietz designed the water main on-site to loop two existing stubs in the distribution system. Sanitary sewers were also extended to the complex from two different locations. The storm drainage system serves the drainage needs of the access drives and parking lots within the complex. The system is unique in its design since it mostly consists of overland flow due to the inability to trench storm sewer through the cells. Clark Dietz prepared and permitted the Stormwater Management Plan (SWMP) through the City of Glendale and the Milwaukee Metropolitan Sewerage District (MMSD). The SWMP addressed the entire site and included design of two ponds connected by a 600-ft discharge pipe, underground storage beneath the ball fields, and a biofilter. Scope included 3200 TON of 1 ¹/₄ in Base Aggregate, 1300 TON of Asphalt, 2,000 LF of Concrete Curb, 365 LF of 8" Sanitary Sewer, 1000 LF of 8" Watermain, 345 LF of Storm Sewer.

Clark Dietz also secured grant funding in the amount of \$43,000 through a program called Green Solutions for Separate Infrastructure & Sewer Separation (GSSISS) as administered by MMSD. This grant helped to offset additional costs associated with the biofilter, while also providing an opportunity for the City to implement Green Infrastructure technology in an area with complex stormwater challenges.



Public Safety Building Site Grading, Pavement, and Stormwater Management Design

Caledonia, WI



SIZE 13 Acres

PROJECT DURATION 11/1/2021 - Present

PROJECT TEAM

Emily Basalla, PE, CFM Christopher Beyer, PE Devin Carlson Brandon Flunker, PE, CFM Adam Latusek Benjamin Metzler, PE Nirav Patel, PE Kevin Risch, PE Andrew Torola

OWNER CONTACT

Mark Price FGM Architects MarkP@fgmarchitects.com

CLIENT CONTACT

Andrew Mayo FGM Architects 414.346.7284 AndrewM@fgmarchitects.com The Village of Caledonia has been in the process of developing an existing farm field into a Village Campus. The area is generally nestled between existing commercial and residential areas, so public involvement has been key to overall project success. The development had already included the Village Hall building, parking lot and stormwater facilities constructed in 2017, as well as the first stages of Crawford Park. The next phase of the Village Campus was to include a Public Safety building which covered approximately 13 acres of undeveloped farm land. The new building would be approximately 52,000 square feet which would include police, fire and shared office areas. Clark Dietz worked jointly with the Village Campus.

Clark Dietz was responsible for developing the next phase of the Village Campus site which included overall site grading, stormwater management facilities, site drainage, roadway improvements, parking lots, sidewalks, landscaping, and utility work. The existing stormwater management facilities and existing Village Hall building were incorporated into this phase. A significance piece to this project was to ensure that the proposed Public Safety Building, parking lot and roadway configuration, as well as stormwater management facilities met seamlessly with the existing stormwater facilities and existing Village Hall building. The overall grading plan took into account proposed building finished floor elevations, parking and roadway grades, stormwater ponds, as well as existing and proposed drainage patterns. Significant site grading for ponds excavations, parking lots and access roadways were needed; however, the site was designed to eliminate the need to haul spoils on or off the site.

Clark Dietz prepared and permitted the Stormwater Management Plan (SWMP) through the Village of Caledonia. SWMP included two new wet ponds that hydraulic



connected into the existing Village Hall wet pond. The total suspended solids (TSS) and stormwater runoff release rate requirements were met by the use of those two wet ponds which accounted for approximately 270,000 cubic feet of stormwater storage volume. An additional 0.5 acre outlot was included in the SWMP for the future development of multi-family dwellings. The stormwater facilities were uniquely designed to ensure all existing and new stormwater management facilities functioned as an extension of each other.

Clark Dietz also designed all storm sewer, as well as water service and sanitary laterals for the Public Safety building improvements. The storm drainage system serves the access drives, parking lots, and stormwater management facilities within this phase of the Village Campus development. Scope included 550 LF of 8" Sanitary Sewer, 900 LF of 8" Watermain, 800 LF of varying in size (6"-30") Storm Sewer.



David Hobbs Honda Site Grading, Pavement, and Stormwater Management Design

Glendale, WI



PROJECT DURATION 8/1/2017 - 11/8/2017

PROJECT TEAM

Andrew Ashley, PE Emily Basalla, PE, CFM Mustafa Emir, PhD, PE Brandon Flunker, PE, CFM Andrew Torola

OWNER CONTACT

Greg Hobbs David Hobbs Honda 414.800.3001 Clark Dietz provided design and construction services for a vehicle storage area in a newly acquired land east of the existing dealership of David Hobbs Honda. Parking lot layout and pavement design services were performed.

The design included building a parking surface on a layer of 2 to 3 feet of refuse. Clark Dietz developed a pavement plan that drained the paved surface to the pond in accordance with the approved stormwater management plan. Clark Dietz also connected the new surface to existing property in accordance with vehicle movement requirements/desires.

Clark Dietz assisted in coordinating the perimeter fencing to the north to match the desired appearance for neighbors. Clark Dietz also prepared specifications for paving the vehicle storage area and assisted in selecting and executing work by the contractor.

Clark Dietz provided lighting design that included providing layout and specifications to light the proposed lot. Included were lighting controls that minimized neighborhood impact as well and impact to energy bills. Clark Dietz's design included neighborhood sensitive products and operation recommendations.

WDNR permits were submitted by Clark Dietz for impervious surface creation.



Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 16

Site Grading, Pavement, and Stormwater Management Design

Sunvest Solar LLC, Various Locations



PROJECT DURATION 5/4/2020 to Present

PROJECT TEAM

Mustafa Emir, PhD, PE Tonia Westphal, PE, LEED AP Steve Myers, LC, LEED AP Emily Basalla, PE, CFM Ben Metzler, PE Brandon Flunker, PE, CFM Andy Ashley, PE Greg Schanen, PE Ike Dolan, PE CJ Beyer, PE Adam Latusek Andy Torola Kendrick Payne, PE, LEED AP Nirav Patel, PE Lisa Zahrt, PE, LEED AP Scott Kauzlaric, PE Sean Marzano, SE, PE

OWNER CONTACT

Ryan Shannon Vice President of Design and Engineering SunVest Solar, LLC 262.547.1200 rshannon@SunVest.com SunVest Solar is a solar development company, helping building owners invest in sustainable solar energy. Clark Dietz works with the SunVest Solar, delivering civil and solar engineering projects across multiple states. Our team has helped manage projects running concurrently throughout several states. Most projects are design/build including civil, electrical, and structural design, engineering, consulting services and construction phase services for the construction of new ground mount or roof mounted, tracking type PV systems. Our services typically include providing:

- Creation of plans with topography and specifications
- Drainage design
- New Access Road design and perimeter fencing design
- Electrical engineering including designing site electrical plans with detailed layout of solar array equipment
- Coordination study, fault current, and arc flash studies
- Structural analysis and design
- Preparation of IFC documents
- Communication one-line diagrams
- Civil and electrical equipment installations detail
- Construction survey layout
- Permitting assistance
- SWPPP inspections

Project locations include:

- Harley Davidson Powertrain Operations Facility, 2.9 MW Solar DC rooftop, fixed mounted PV System, Menomonee Falls, WI
- University of Wisconsin Parkside 2.8 MW Solar Array Installation, Kenosha, WI
- Lily Lake Community 2.9 MW Solar Garden, Maple Park, IL
- Jones Dairy 2.8 MW Solar Array Installation, Fort Atkinson, WI
- Glenwood 2.6 MW Solar Array Installation, Chicago Heights, IL
- Mazon 2.6 MW Solar Array Installation, Morris, IL
- Discovery World 275 kW Solar Roof Structural Analysis, Milwaukee, WI
- Incobrasa Soybean Processing Facility, 5 MW Solar Array Installation, Gilman, IL
- Talty 1, 2 and 3 3 MW Solar Installation, Streator, IL
- Baileyville 1 and 2, Baileyville 2.9 MW Ground Mount Solar, Baileyville, IL



Campuswide Drainage Improvement Master Plan

Parkland College, Champaign, IL



CONSTRUCTION COST \$10,374,000

TOTAL PROJECT COST \$11,474,000

OWNER CONTACT

James Bustard Physical Plant Director Parkland College 217.351.2211 jbustard@parkland.edu The Master Plan identified and corrected Parkland College's campus-wide surface and subsurface stormwater drainage problems and identified corrective measures with respect to ADA non-compliance and emergency vehicle and service vehicle access. Infrastructure deficiencies were identified with the goal of reducing and/or eliminating these problem areas in order to provide safe and efficient travel ways for both vehicles and pedestrians.

A program of proposed improvements was developed which addressed each of the five major categories of deficiency identified by the engineering database: drainage, safety, access, ADA compliance, and pavements. Specific goals were adopted to guide in the remediation of each area of deficiency.

The improvement program was organized into a series of annual phases based upon the urgency of the needed repairs or restorations and the anticipated magnitude of annual funding. The resulting schedule provided an overview of the areas to be improved during each annual phase as well as a preliminary annual cost estimate. Typical improvements include:

- Drainage improvements and construction of a new west entrance road.
- Reconstruction of existing roadways, parking lots and sidewalks.
- Various drainage improvements including on-site detention basins to accommodate planned building and site expansions and the allowance for oversizing for stormwater storage.
- Site civil services including coordination with architects for design and construction of various building expansions.

Clark Dietz



Prairie Springs Park Grading, Pavement, and Stormwater Management Design

Pleasant Prairie, WI



PROJECT TEAM

Mustafa Emir, PhD, PE Emily Basalla, PE, CFM Brandon Flunker, PE, CFM Andy Ashley, PE CJ Beyer, PE Andy Torola

OWNER CONTACT

Thomas Hupp Manager of Technical Support Village of Pleasant Prairie 262.925.6769 thupp@pleasantprairiewi.gov The RecPlex is the largest municipal recreation facility in America. It is located on the shores of Lake Andrea in Prairie Springs Park, Pleasant Prairie, WI. Due to heavy use and deterioration, the Village needed to reconstruct the large parking lot there, also wishing to improve on site drainage and adding new sidewalk that led to a shared use path.

Clark Dietz was hired to provide site civil engineering services. These services included design and bidding related services for the expansion and reconstruction of the Terwall Terrace Parking Lot. The existing parking lot was reconfigured to allow for future buildings along Terwall Terrace. The improvements included new curb and gutter and a new parking lot layout. In addition, the existing gravel parking area adjacent to the parking lot was improved with asphalt pavement, new curb and gutter and a site drainage plan. Due to the size of the project, total suspended solids removal practices were implemented.

Services performed included Topographic Survey, preliminary site design, stormwater management plan including grading and storm sewer plan, and final design.



Municipal Aquatic Center Grading, Pavement, and Stormwater Management Design

Merrill, WI



CONSTRUCTION COST \$1,500,000

SIZE 2,060 SF

PROJECT TEAM

Tonia Westphal, PE, LEED AP Emily Basalla, PE, CFM CJ Beyer, PE Brandon Flunker, PE, CFM Steve Myers, LC, LEED AP Andy Ashley, PE Kendrick Payne, PE, LEED AP Nirav Patel, PE Lisa Zahrt, PE, LEED AP Nirav Patel, PE

OWNER CONTACT

Daniel Wendorf Director of Parks and Recreation City of Merrill 715.536.7313 dan.wendorf@ci.merrill.wi.us The Merrill Municipal outdoor pool is a public swimming facility that has a large pool with various areas of activities for all ages including slides, lap pools and play area. The bathhouse facility includes a ticketing area, cash room, first aid room, lockers and shower spaces, and quick service food station.

Clark Dietz was part of an architect led team that provided design and construction phase services including site civil, building, pool and site lighting, mechanical and plumbing. The system designs included energy efficient instantaneous gas fired water heaters, chemical room ventilation systems, LED lighting, storm water pump station, site storm water design, and control equipment.

- Potable water and sanitary sewer connections, storm sewer and access path, including stormwater management plan.
- Bathhouse facilities for men and women featuring water saving fixtures.
- Instantaneous gas fired energy efficient water heater for bath houses.
- Pool water heaters interconnected with mechanical ventilation system.
- Restroom exhaust system.
- Power systems for building, pool and site lighting, pool equipment.
- Lift station to fully drain pool and stormwater pond capable of total suspended solids removal and release rate.







Project Team



EXPERIENCE 30 Years

EDUCATION

PhD, Engineering, Concordia University, Montreal, Canada

BS, Engineering, Concordia University, Montreal, Canada

REGISTRATIONS

Wisconsin Professional Engineer #E-34786

PROFESSIONAL AFFILIATIONS

American Council of Engineering Companies, Public Funding Committee

American Water Works Association

American Public Works Association, Wisconsin Chapter Diversity Committee

Wisconsin City/County Managers Association

CIVIC ORGANIZATIONS

Milwaukee Riverkeeper Wisconsin Policy Forum RiverWorks Development Corp. Discovery World Downtown Milwaukee Rotarian

Mustafa Z. Emir, PhD, PE Project Director

Mr. Emir is a highly respected Infrastructure Planning and Management Professional with over 30 years of hands-on engineering experience. He has authored dozens of long-term municipal infrastructure management plans, including sewer collection, stormwater management, flood control, water distribution, open space and parks, etc. for governments throughout the Midwest.

Throughout his career, Mustafa has been involved in long range infrastructure planning for built-out communities. This effort includes assessing and defining ways to improve public facilities, including Village Halls, City Centers, Community Centers, Park Buildings, and Salt Sheds. Mustafa leads a diverse team that will advise local governments and guide the process of renewal.

Leader in Local Government Renewal

Mustafa has been involved in many of the Southeast Wisconsin communities' efforts to improve services to residents. He has led assessment and design efforts for the following initiatives:

- Village of Shorewood Village Hall and Library parking lot reconstruction, with Green Infrastructure elements to retain stormwater at the property.
- Village of Whitefish Bay Village Hall and Police Department Site Civil engineering and stormwater management, including funding, design and construction Green Infrastructure parking area for Police Department.
- City of Glendale City Hall site Civil funding, stormwater management facilities, and green infrastructure design and construction.
- City of Cudahy salt shed feasibility analysis, including financial analysis, structural and civil engineering consulting.
- Richard E. Maslowski Community Center site plan and construction in Glendale.
- City of Glendale salt shed needs assessment, structural and regulatory review and consulting.

Mastery in Public Involvement and Public Communication Skills

As the municipal engineer in communities such as Glendale, Whitefish Bay, Bayside, and River Hills, WI, Mustafa provides day to day management of engineering needs in those communities. Mustafa has gained great insight into the type of respectful and prompt service expected by many area residents.

Mustafa prepared and led dozens of potentially contentious public information meetings that steadily moved from confrontational to peaceful and ended up in a collaborative mood. He has an extraordinary ability to connect to all kinds of people and present complex ideas and foster constructive discussion with the public.





EXPERIENCE 18 Years

EDUCATION

BS, Civil Engineering, University of Missouri, Columbia

REGISTRATIONS

Wisconsin Professional Engineer #E-41026

Indiana Professional Engineer #12100316

Multiple States ASFPM Certified Floodplain Manager #US-17-09577

> Illinois Professional Engineer #062.061744

ADDITIONAL TRAINING

Using Hec-Ras to Model Bridges, Culverts and Floodplains, University of WI - Madison

BMP-LID Design with EPA-SWMM, IAFSM

WinSLAMM for Urban Stormwater Quality Management, NASECA Wisconsin

Designing Bio/Infiltration BMPs for Stormwater Quality Improvement, University of WI-Madison

XP-SWMM Training, XP Software

PROFESSIONAL AFFILIATIONS

Wisconsin Association for Floodplain, Stormwater, and Coastal Management, Member

American Public Works Association, Member

American Council of Engineering Companies

Illinois Association of Floodplain and Stormwater Management, Member

Emily K. Basalla, PE, CFM

Project Manager

Ms. Basalla is a Project Manager with experience in civil, environmental, and municipal engineering projects. She takes a creative approach to every project with the goal of integrating functional roadway, drainage, and storm sewer designs with sustainable solutions in a community context.

Ms. Basalla provides comprehensive solutions to drainage conveyance and maintenance issues, including permitting. Emily has experience in stormwater design, water main relocations, sanitary sewer design, wastewater treatment processes, pavement replacement, and roadway widening projects. Emily brings a strong background facilitating municipal permitting and designing for green infrastructure. Ms. Basalla is a Certified Floodplain Manager with a proven level of expertise in floodplain mapping, national and state level requirements.

Strong Local Municipal Relationships

Ms. Basalla has developed strong working relationships with municipalities throughout Wisconsin and Illinois. She takes a thorough approach to understanding client needs and developing solutions that minimize community and environmental impacts.

Client Communication

Ms. Basalla works hard to ensure clear and consistent communication, leaving nothing to surprise. An important benefit while working with Emily is her ability to maintain close client contact throughout the entirety of the project.

Design Experience

Ms. Basalla has experience in the design of a wide variety of projects. She understands that real solutions come from understanding the client's needs. Whether the goal is to increase capacity, maintain compliance, or achieve energy efficiencies, Emily works closely with her clients throughout the design process to ensure that comprehensive and efficient solutions are achieved for the long term.

Ms. Basalla performs oversight, review and project management roles in the design of water main, sanitary sewer, combined sewer, pavement replacement and roadway widening projects. Additional design experience includes drainage, storm sewer design and overseeing parks and rec recreations facility projects. Emily brings a strong background facilitating municipal permitting and designing for green infrastructure.

Experienced Municipal Engineer

Ms. Basalla is a Municipal Engineer and oversees Clark Dietz engineering staff in fulfilling Village and City Engineering roles in local governments in Wisconsin and Illinois. She is well versed in NPDES permitting processes. Her knowledge, experience, and tenacity ensure that the municipality will experience a smooth and consistent delivery of projects.





EXPERIENCE 7 Years

EDUCATION

BS, Civil Engineering, University of Wisconsin Platteville

REGISTRATIONS

Wisconsin Professional Engineer #47016-6

Illinois Professional Engineer #062.071358

ADDITIONAL TRAINING

WinSLAMM for Urban Stormwater Quality Management

PROFESSIONAL AFFILIATIONS

American Public Works Association, Member

Christopher J. Beyer, PE Lead Designer

Mr. Beyer is a civil engineer with design and construction inspection experience for municipal roadway, water main and parking lot projects. Christopher (CJ) works closely with his clients throughout the design process to ensure that a long term and efficient solution is achieved. His detailed approach to preparing plans, specifications and estimates translates to time and cost savings over the project life cycle. His practical knowledge gained through site visits and construction inspection translates to more accurate design plans, minimizing construction changes and unseen obstacles.

Field Experience Means Efficient Designs

Mr. Beyer's practical knowledge gained through construction inspection translates to more accurate design plans, minimizing construction changes and unseen obstacles. His detailed approach to preparing plans, specifications and estimates translates to time and cost savings over the project life cycle.

To guarantee that infrastructure projects are completed as smoothly as possible, Mr. Beyer makes public involvement one of his key priorities. Andy is committed to ensuring a positive public outreach to the municipality's residents. He addresses any feedback from residents in the project area, and strives to remain open and available.

Municipal Engineering and Service to Community

CJ is an up and coming municipal engineer, learning fast and adapting to the many needs of the communities he serves. In Kenosha he is the go-to consultant for erosion control enforcement, roadway construction inspection, and traffic engineering. In Gurnee, CJ is the lead designer of watermain replacement projects that annually replace over 10,000 feet of watermain.

CJ has strong roadway design experience, including complete road reconstruction and road resurfacing design and bidding, traffic studies or warrant analysis, sanitary and storm sewer design, water main design, and incorporating green infrastructure improvements and other sustainable design elements. His involvement includes both design engineering and project management on municipal projects for the Cities of Kenosha and Racine, Racine and Kenosha Counties, the Villages of Somers and Pleasant Prairie in Kenosha County and the Villages of Shorewood and Whitefish Bay in Milwaukee County.





EXPERIENCE 10 Years

EDUCATION

BS, Civil Engineering- Environmental /Water Resources, University of Wisconsin Milwaukee

REGISTRATIONS

Illinois Professional Engineer #062-071033 (2018)

Multiple States ASFPM Certified Floodplain Manager #US-18-10739 (2018)

Wisconsin Professional Engineer #E-45347-6 (2017)

PROFESSIONAL AFFILIATIONS

Illinois Association of Floodplain and Stormwater Management, Member

Wisconsin Association for Floodplain, Stormwater, and Coastal Management

American Public Works Association, Member

CIVIC ORGANIZATIONS

Milwaukee Watershed - Urban Ecology Center, Milwaukee

Brandon Flunker, PE, CFM

Stormwater Engineering Lead

Mr. Flunker is a civil engineer who has developed a portfolio of municipal infrastructure experience with drainage, storm and sanitary sewers, and road reconstruction projects. Brandon gained first-hand municipal engineering experience during his employment with the Village of Germantown and the City of Mequon. He understands that real solutions come from understanding the client's needs. Brandon works closely with his clients throughout the design process to ensure that a long term and efficient solution is achieved.

Field Experience Translates to Efficient Designs

Mr. Flunker's practical knowledge gained through site visits and construction inspection translates to more accurate design plans, minimizing construction changes and unseen obstacles. His detailed approach to preparing plans, specifications and estimates translates to time and cost savings over the project life cycle.

Relevant Experience

- WPS Oshkosh Service Center Drainage Improvements, Oshkosh, WI
- WPS Storage Yard Paving and SWM, Wausau, WI
- WPS Wausau Storage Yard Construction Services, Wausau, WI
- WEC Energy Group Facility Parking Lot Stormwater Management Plan, Green Bay, WI
- We First Street Steam Pipe Investigation, Milwaukee, WI
- We Marquette University Redundancy Loop, Milwaukee, WI
- Lily Lake CSG Array Installation, Maple Park, IL
- NG IL CSG Mazon Solar, Morris, IL
- O'Shea Urban Solar Farm, Detroit, MI
- Largest Carport Solar Array in Michigan, East Lansing, MI
- Weston Plant Storm Sewer & Outfall Replacement, Rothschild, WI
- 2021 Stormwater Management Services, Bayside, WI
- TMDL Stormwater Management Plan, Bayside, WI
- TMDL Stormwater Management Planning, Milwaukee, WI
- 2018 Stormwater Management Plan, Shorewood, WI
- Cramer Street Reconstruction and Storm Sewer, Whitefish Bay, WI
- Wildwood Storm Sewer Extension, Whitefish Bay, WI
- Nicolet Recreational Park Complex, Glendale, WI
- Timber Ridge Apartments Drainage Improvements, Kenosha, WI
- Terwall Terrace Parking Lot, Pleasant Prairie, WI
- Manor Lane Lift Station, River Hills, WI





EXPERIENCE 8 Years

EDUCATION

Pre - Civil Engineering Technician, College of Lake County

BS, Science in Mining, University of Science and Technology, Krakow Poland

MS, Science in Mining, University of Science and Technology, Krakow, Poland

ADDITIONAL TRAINING

Design of Foundations, Embankments and Earth Structures, IL Institute of Technology

Adam Latusek Survey Lead

Mr. Latusek is an engineering technician with experience providing topographic surveying, construction staking, and construction inspection and documentation for a wide variety of municipal projects. Adam identifies and addresses obstacles before the improvements are built to reduce or prevent errors, delays, and costly overruns. He handles the duties of inspection and surveying. With experience throughout Wisconsin and Illinois, Adam has provided construction observation services for roadway reconstruction and resurfacing, as well as water main and sewer replacement.

Relevant Experience

- David Hobbs Honda Construction Services, Glendale, WI
- We Miller-Coors Steam Service Extension, Milwaukee, WI
- Cramer Street Storm Sewer Design, Whitefish Bay, WI
- CTH H Watermain Extension Construction, Pleasant Prairie, WI
- Cooper Road Extension, Pleasant Prairie, WI
- Village Green Construction, Pleasant Prairie, WI
- 2016 Kenosha County Construction Staking Services, Kenosha, WI
- 2017 Construction Staking Services, Kenosha, WI
- 39th Avenue Construction Inspection, Pleasant Prairie, WI
- Pleasant Prairie Heritage Valley Sewer, Pleasant Prairie, WI
- 2016 Sewer Design, Whitefish Bay, WI
- Berkeley Blvd Street Design, Whitefish Bay, WI
- STH 50 (75th Street), Paddock Lake, WI
- 2016 Street Reconstruction and Combined Sewer Improvements, Shorewood, WI
- 2018 CDBG Sidewalk Construction, Glendale, WI
- 60th Street Reconstruction, Kenosha, WI
- Velodrome As-Built Survey, Kenosha, WI
- CTH W CTH FR to CTH F Reconstruction, Salem, WI
- Staking Services- Palmer Drive Underpass, Elmhurst, IL
- 2015 Roadway Rehab Construction Services, Gurnee, IL
- Churchill Drive Water Main Replacement, Richton Park, IL
- Harrison Street Detention Improvement, Elmhurst, IL
- High Ridge Road Phase III Engineering, Villa Park, IL
- Palmer Drive Underpass, Elmhurst, IL
- Golden Oaks Sewer Replacement, Homer Glen, IL
- Balmoral Drive Water Main Construction, Richton Park, IL
- Camden Court Reconstruction and Water Main Replacement, Richton Park, IL
- Greenfield Subdivision Public Improvements, Richton Park, IL
- Latonia Lane Rehabilitation, Richton Park, IL
- Walmart Construction Inspection, Richton Park, IL
- Cullerton Drive Reconstruction, Franklin Park, IL
- WMRA Parking Improvements Construction, Franklin Park, IL
- 2015 Street Improvements Phase III, Villa Park, IL
- South Michigan Avenue Reconstruction, Villa Park, IL
- N. York Road Field Survey, Elmhurst, IL







Work Samples

WORK SAMPLES

Work samples recently completed by our firm have been provided on the enclosed flash drive.

Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 28





Methodology and Approach

METHODOLOGY

WE ARE SITUATIONALLY AWARE

Challenge: Flat topography

The biggest challenge in creating a working grading plan at this property is topography – or the almost complete lack of it. Therefore, we are already thinking about ways to create some elevation variation across this property to handle surface runoff.

Advantage: South end drainage largely under control

Helping out with this challenge is that drainage and stormwater management in the south end of the property is already figured out, with the new safety Building Pond oversized to accept imperviousness that may occur within the Park (trails and access road to 4 Mile Rd.) or even a multi-family development on Chester Lane, south of Village Hall.



Advantage: Drain tiles everywhere

Advantage: Existing amenities in the northwest

Also helping is that the existing parking lot and the two baseball fields are not going to be relocated – therefore, the elevations and drainage patters are largely set. Accordingly, we will focus our most intensive grading creativity to the northeast quadrant of the Park and make sure that the overall grades fall away towards the north, with the cuts and the additional ponds creating enough dirt to build the sled hill right away.

We would see the splash pad and the playground about the same elevation, possibly higher than the baseball outfield as well as the adjacent parking area.

Challenge: Drain tiles everywhere

We would potentially use the paved parking area in the northeast to convey runoff on the surface to the northern storm facilities INSTEAD of relying on new storm sewers at that location.

Storm pipes in the northeast parking area may have to be too shallow for cover and run into conflicts with drain tiles.

We would not interfere with the existing drain tiles as long as they are functional. These drain tiles are the reason the parcel is buildable in the first place. In fact, we would leverage the tiles to use them for drainage planning for the park to the extent possible or feasible.

In the case of the existing storm pond at Village Hall, as well as the new pond at the Safety Building, existing drain tiles were used as pond outlet pipes instead of installing new storm sewers. We will continue this idea for maximum runoff management and to minimize storm sewer infrastructure costs.

Challenge: Soils unsuitable for infiltration

One of the most cost-effective stormwater management practices would be bioswales or infiltration basins. However, site work we conducted on this property in 2005 to evaluate infiltration capacity showed that the west half of the property has soil conditions NOT suitable for infiltration, or bioswale installation. See Section 9 – Supporting Information for more details on this.

Advantage: East half of the property has infiltration potential

Knowing the soil conditions and the location of the drain tiles means that we would focus on getting runoff



to the east side of the property to take full advantage of soil conditions. In this sense, the BMPS that may be planned by the baseball fields may be better located on the other side of the central hard court amenities if they are going to be bioswales.

WE ARE SERIOUS ABOUT PROJECT MANAGEMENT

By this, we mean that we are serious about making sure that we produce the deliverables you expect completed at the agreed upon time, in exchange for the fee you have agreed to pay us. Clark Dietz approaches every project in a collaborative way. We tailor project plans to meet the needs, goals, and previous experiences of the municipality.

In this case, we know what the product must look like and our commitment is that you will NOT get a fee amendment request because we know what we have to do already. We can say this because we are serious about managing our projects.

- We know that you have set aside funds for the first phase of Crawford Park development and that every dollar you spend on us will take away from a yard of dirt you can move.
- We know that the projected funding in future years means that the full development of the park will take several years – which means it is SUPER important to make each phase count. Otherwise, there will be a risk of the community losing interest and shifting funding priorities elsewhere a few years down the line.
- We know that we have to get ourselves in gear and get the master grading and drainage plan done so that you can build the first phase of the park in 2023. Clark Dietz brings the necessary discipline to allow Caledonia to NOT experience time pressure to bid this thing early in the year and get a good deal in the market.

NO SURPRISES

Our way is to be responsive. We keep you in the loop with our progress, our status, what we're working on, what we're struggling with, what ideas we came up with. We keep you in the loop, so when you're in your department head meeting, when you're at the Public Works Committee or the Parks Committee, or the Village Board meetings and a question comes up, you don't have to say, "I'll find out from the consultant." You will know what we're doing and where we're at. And, we will not surprise you or blind side you. Ever. This is our way.

Although this project is a design assignment, Clark Dietz believes that planning for construction during the design phase is critical to making any infrastructure project a success. *In the most basic sense, engineering design is not just lines on paper, but rather a preview of real-life impacts.*

PROJECT APPROACH

Clark Dietz will provide all of the necessary municipal engineering services to prepare the deliverables for this project. In doing so, we will generally follow the task list provided below.

GOAL SETTING - CONSENSUS BUILDING

We want to be 100 percent part of your team. To accomplish this, we believe it is not sufficient to read the master plan documents, but really delve deep into the planning process and the Village's stance on developing this park.

We will spend as much time as needed without unreasonable expense to fully be on the same page as you before we jump in the engineering of the site.

DATA GATHERING – DIGITAL AND RECORDS

We will work with your staff to gather digital data of nearby infrastructures, including the GIS information for drainage facilities surrounding the Park. Included in this effort is the currently available information on the drain tile network in the property. As the designers of the site for the Safety Building, we will use our own drawings to complement received files from the Village.



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Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 31

DATA GATHERING - FIELD

Clark Dietz will use our own survey team to gather topographic information within and surrounding the parcel. We will pay close attention to include in the survey the road and trail connection points all around the park, with additional data gathered for the design of the 4 Mile Rd. and Sunshine Ln.

We will closely monitor and manage survey operations so that pertinent information for drainage and roadway connection design can occur.

CONCEPT GRADING

We see this as 30 percent grading, mainly distributing the amenities in their correct places, trails in their correct alignments and placing the stormwater facilities where they need to be based on off-site drainage and capacity evaluation.

Concept grading is also where we review and reconvene to revisit our consensus from the beginning of the project. This task is where we recalibrate our ideas to match yours – you get to have a serious look at our direction and provide feedback and input.

At the end of this process, we have a concept where we all agree where things are going to be. Now it is time to work on the details.

MASTER GRADING

This is where the overall grading is designed. Amenities are flat surfaces, and the trails, parking, and roadways are transitions. At Clark Dietz, we use 3-D software to create topographic surfaces and take full advantage of the software to design proposed surfaces that obey site restrictions as defined by the designer.

At this stage, we will deliver a mass grading surface, but will work with you to develop several interim conditions that can guide phased construction as funding allows. For each interim condition, we will provide a constructible grading scheme that fulfills the mass grading plan.

In other words, you can either mass grade at once, or in interim steps and still maintain control of the overall site. For example, you should have the means to bid out the construction of the sled hill without setting elevations for the basketball courts if that's not what is budgeted. To make this happen, we will have a plan that defines what excavation HAS to occur to build the sled hill, and allow you to build just that, for now.

NOTE: an important factor in designing phased grading projects is the protection of park elements that are already in place when the next amenities are being built. We don't want to destroy the trails when the splash pad is being built in 3 years. We are sensitive to this type of future conflict potential and will scenario play to catch as many permutations as possible of future construction to prevent conflicts.

Clark Dietz intends to maximize the use of the existing drain tile network to convey runoff from proposed impervious surfaces, especially in the north side roadway and parking amenities.



STORMWATER MANAGEMENT



The excavation from the stormwater facilities will need to be sufficient to build the sled hill and balance the rest of the site. That is one criteria for BMP design. A second criteria will be pollutant control and water quality improvements for downstream receiving ditches and streams.

Discharges to the north are essentially collected and drain directly north through a ditch system that eventually drains to Lake Michigan. In general, this conveyance has had low erosion potential, but also poor biotic values, certainly in the stretch between 4 $\frac{1}{2}$ Mile Rd. and 5 $\frac{1}{2}$ Mile Rd.

The figure on this page presents the "big picture". Crawford Park drains to Lake Michigan through the relatively developed east side of the Village.

Clark Dietz will build on 2006 Stormwater Management Plan that clearly defines improvement needs for streams and the proposed stormwater BMPs will support the management approaches adopted in that plan.

Accordingly, Clark Dietz will focus on both detention and water quality benefits of BMPs as well as the need to generate excess dirt for our facilities.

NOTE: In our opinion, the Village has a significant background work produced in pursuit of water quality benefits and could be well positioned for stormwater construction grants from the WDNR. The fact that the park construction will be realized over several years certainly gives Caledonia an opportunity to pursue grants every two years and reduce its financial burden. These WDNR construction grants are generally at 50 percent participation, but this could still be a significant contribution to the development of Crawford Park.

COORDINATION

Throughout this project, Clark Dietz staff will be available for public meetings, committee meetings, Board meetings, or otherwise desired staff meetings. While our fee estimate will include a placeholder number for this type of activity, we are NOT going to limit meetings, stop coming to the third meeting because we budgeted for two, etc.

Our philosophy is that we have to be there whenever we need to be there or whenever you call us. It also helps that our chief civil designer lives in Caledonia.






Timeframe

PROPOSED TIMEFRAME

Village of Caledonia Crawford Park Master Grading and Drainage Plan Proposed Schedule

Assumes Award at the DEC 19 2022 Village Board Meeting and contract signed before the end of 2022

Task	Complete on or about
Task 1 – Pre-Design Meeting	Mid January
Task 2 – Data Gathering – Digital/Records	Mid January
Task 3 – Data Gathering – Field Survey	End of January
Task 4 – Concept Grading Plan	Mid – End February
Task 5 – Master Grading Plan	Mid March
Task 6 – Stormwater and Drainage Plan	Mid March
Task 7 – On-Going Project Coordination	On-going
Task 8 – Bid Ready Documents	End of March

We anticipate that the grading contract would be on the street at the end of March, advertised on March 29 and April 5, with bid opening on April 12 2023.

Clark Dietz to provide bid tabulation and award recommendation for the second meeting on April 17, 2023.



Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 35





References

REFERENCES

Client relationships are important to Clark Dietz. We believe strong relationships are built by listening to and understanding our clients. We see our clients as valuable members of our project teams, and we genuinely value our rapport with them. We encourage you to contact our clients listed below to discuss their experiences working with us.

<u>Client References</u>

John Edlebeck

Director of Public Works Village of Whitefish Bay 5300 N. Marlborough Drive Whitefish Bay, WI 53217 414.967.5128 j.edlebeck@wfbvillage.org

Mark Frye

City Administrator City of Oconomowoc 174 E. Wisconsin Ave. Oconomowoc, WI 53066 262.569.2184 mfrye@oconomowoc-wi.gov

Charlie Imig

Director of Public Works City of Glendale 5909 N. Milwaukee River Pkwy Glendale, WI 53209 414.228.1746 c.imig@glendale-wi.gov

Andy Pederson

Village Manager Village of Bayside 9075 N. Regent Road Bayside, WI 53217 414.315.8818 apederson@bayside-wi.gov

Brian Cater, PE

Deputy Director of Public Works City of Kenosha 625 52nd Street, Room 300 Kenosha, WI 53140 262.653.4156 bcater@kenosha.org

Tammy LaBorde

Village Manager Village of River Hills 7650 N Pheasant Lane River Hills, WI 53217 414.352.8213 tlaborde@vil.river-hills.wi.us

Contractor References

Thomas A. Zoulek, PE

President Mid City Corporation 12930 W. Custer Avenue Butler, WI 53007 414.349.0623 tzoulek@midcitycorp.us

Logan Greve

Project Manager Stark Pavement Corporation 12845 W. Burleigh Road Brookfield, WI 53050 920.427.3888 logang@starkcorp.us

Mike Dretzka

Vice President UPI, LLC. 2180 S. Springdale Rd. New Berlin, WI 53146 262.894.2604 mike@upiconstruction.com

Justin Zollitsch

Project Manager Payne and Dolan, Inc. N3W23650 Badinger Road Waukesha, WI 53188 262.524.1255 office 262.366.5168 mobile jzollitsch@walbecgroup.com

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Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 37





Firm Capacity and Project Team Statement

STATEMENT OF AVAILABITY

On behalf of Clark Dietz, I confirm that our staff will begin work on the project and complete the tasks within the timeframe shown in the proposed schedule provided in this proposal Section 5 – Timeframe.

LIST OF PERSONS INVOLVED

Mustafa Emir, Project Director

Mustafa is a highly respected Infrastructure Planning and Management Professional with over 30 years of handson engineering experience. He has authored dozens of long-term municipal infrastructure management plans, including sewer collection, stormwater management, flood control, water distribution, open space and parks, etc. for governments throughout the Midwest.

Emily Basalla, Project Manager

Emily provides comprehensive solutions to drainage conveyance and maintenance issues, including permitting. Emily has experience in stormwater design, water main relocations, sanitary sewer design, wastewater treatment processes, pavement replacement, and roadway widening projects. Emily brings a strong background facilitating municipal permitting and designing for green infrastructure. Emily is a Certified Floodplain Manager with a proven level of expertise in floodplain mapping, national and state level requirements.

CJ Beyer, Lead Designer

CJ is a civil engineer with design and construction inspection experience for municipal roadway, water main and parking lot projects. CJ works closely with his clients throughout the design process to ensure that a long term and efficient solution is achieved. His detailed approach to preparing plans, specifications and estimates translates to time and cost savings over the project life cycle. His practical knowledge gained through site visits and construction inspection translates to more accurate design plans, minimizing construction changes and unseen obstacles.

Brandon Flunker, Stormwater Engineering Lead

Brandon is a civil engineer who has developed a portfolio of municipal infrastructure experience with drainage, storm and sanitary sewers, and road reconstruction projects. Brandon gained first-hand municipal engineering experience during his employment with the Village of Germantown and the City of Mequon. He understands that real solutions come from understanding the client's needs. Brandon works closely with his clients throughout the design process to ensure that a long term and efficient solution is achieved.

Adam Latusek, Survey Lead

Mr. Latusek is an engineering technician with experience providing topographic surveying, construction staking, and construction inspection and documentation for a wide variety of municipal projects. Adam identifies and addresses obstacles before the improvements are built to reduce or prevent errors, delays, and costly overruns. He handles the duties of inspection and surveying.







Cost Breakdown

COST BREAKDOWN

Village of Caledonia Crawford Park Master Grading and Drainage Plan Proposed Design Fee

Task	Total Hours	Total Cost
Task 1 – Pre-Design Meeting	4	\$600
Task 2 – Data Gathering – Digital/Records	4	\$600
Task 3 – Data Gathering – Field Survey	40	\$6,500
Task 4 – Concept Grading Plan	16	\$2,750
Task 5 – Master Grading Plan	60	\$9,200
Task 6 – Stormwater and Drainage Plan	45	\$6,500
Task 7 – On-Going Project Coordination	16	\$2,200
Task 8 – Bid Ready Documents	8	\$1,400
Total Hours and Fee	193	\$29,750
Reimbursable Project Expenses		\$500
Total Not-To-Exceed Design Fee		\$30,250

Billing Rates

Labor billing rates shall be in accordance with Clark Dietz's schedule of general billing rates dated January 1, 2023 for the duration of this project.

Reimbursable Expenses

Project related expenses shall be billed in accordance with Clark Dietz's current schedule of project related expenses.



SCHEDULE OF GENERAL BILLING RATES

CLARK DIETZ, INC.

January 1, 2023

HOURLY RATE
\$255.00
240.00
230.00
220.00
200.00
170.00
155.00
140.00
125.00
170.00
155.00
140.00
125.00
105.00
100.00
90.00

Notes:

The rates in this schedule will be reviewed and adjusted as necessary but not sooner than six months after the date listed above. Rates include actual salaries or wages paid to employees of Clark Dietz plus payroll taxes, FICA, Worker's Compensation insurance, other customary and mandatory benefits, and overhead and profit. All project related expenses and subconsultants will be billed at 110% of actual cost to cover handling and administrative expenses.

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SCHEDULE OF PROJECT RELATED EXPENSES

CLARK DIETZ INC.

Effective January 1 2023

Vehicles Autos Field Vehicles Survey Van	\$65.00/day or \$0.625/mile (per agreement) \$65.00/day or \$0.625/mile (per agreement) \$80.00/day or \$0.75/mile (per agreement)
Robotic Survey Equipment	\$20.00/hour
GPS Survey Equipment	\$30.00/hour
Nuclear Soils Compaction Gauge	\$50.00/day
CADD Usage	\$20.00/hour
Drone Usage	\$35.00/hour
Regular Format Copies* (8.5"x11" or 11"x17") Color Copies* (8.5"x11") Color Copies* (11"x17")	\$0.10/copy \$0.50/copy \$1.50/copy
Large Format Plotting and/or Copying* (12"x18") (22"x34" or 24"x36") (30"x42") (36"x48")	\$0.50/sheet \$1.75/sheet \$2.50/sheet \$3.00/sheet
Large Format Scanning* (12"x18") (22"x34" or 24"x36") (30"x42") (36"x48")	\$.30/sheet \$1.00/sheet \$1.50/sheet \$2.00/sheet
Hotels & Motels Meals Federal Express & UPS Public Transportation Film and Development Supplies	At Cost

Notes:

The rates in this schedule are subject to review and will be adjusted as necessary, but not sooner than six months after the date listed above. Certain rates listed with * are for in-house production. Larger quantities will be sent to an outside vendor.







Supporting Information

Stormwater Infiltration Feasibility Assessment



Project Purpose and Goals

This section of the Caledonia Stormwater Management Plan presents the results of a field investigation to evaluate the effectiveness of infiltration basins in the Village. While the current State standards require the consideration of infiltration basin construction for new development, we had no information regarding how useful or effective this approach will be in Caledonia. Therefore, we investigated the performance of infiltration basins based on the criteria in the NR151 subchapter III and Conservation Practice Standards 1002 & 1003.

We accomplished this by analyzing the United States Department of Agriculture (USDA) soil survey for Racine County and through selective subsurface exploration to confirm infiltration rate data in the soil survey. We performed soil borings at representative locations to identify soil profiles and establish guidelines for the use of infiltration practices in stormwater management in Caledonia.

Summary of Wisconsin's Infiltration Performance Standards

NR151 includes agricultural performance standards and prohibitions, non-agricultural performance standards, transportation performance standards, implementation and enforcement provisions, and a process to develop and disseminate non-agricultural technical standards.

The infiltration standard requires that, to the maximum extent practicable, a portion of the runoff volume be infiltrated. The amount to be infiltrated is different for residential and non-residential (commercial, industrial, institutional) land uses.

Residential – 90 percent of predevelopment infiltration volume or 25 percent of the 2 year-24 hour design storm. No more than 1 percent of the project site is required (cap).

Non-residential – 60 percent of predevelopment infiltration volume or 10 percent of the 2 year-24 hour design storm. No more than 2 percent of the project site is required (cap).

To protect groundwater, this standard identifies areas where infiltration is discouraged: areas associated with Tier 1 industries; storage and loading areas of Tier 2 industries; fueling and maintenance areas; areas near karst features; areas in close proximity to wells; areas with inadequate separation distance to groundwater or bedrock; areas where the soils are contaminated and areas where the soils are too coarse.

For practical reasons, the standard further identifies areas where infiltration is not required, such as areas where the infiltration rate is less than 0.6 inches per hour; areas with less than 5,000 square feet of parking lot or roads in commercial and industrial development; redevelopment areas; in-fill areas less than 5 acres; and certain roads.

Village of Caledonia

Stormwater Management Plan



Based on this standard, those sites which must be evaluated for stormwater infiltration practices need to undergo a four step process. The site evaluation consists of four steps for locating the optimal areas for infiltration, and properly sizing infiltration devices.

- Step A. Initial Screening: The initial screening identifies potential locations for infiltration devices. The purpose of the initial screening is to determine if installation is limited by ss. NR151.12(5)(c)5. or NR151.12(5)(c)6., and to determine where field work is needed for Step B. Optimal locations for infiltration are verified in Step B.
- Step B. Field Verification: Field verification is required for areas of the development site considered suitable for infiltration.
- Step C. Evaluation of Specific Infiltration Areas: This step is to determine if locations identified for infiltration devices are suitable for infiltration, and to provide the required information to design the device. A minimum number of borings or pits shall be constructed for each infiltration device.
- Step D. Soil and Site Evaluation Reporting: The site's legal description and all information required in Steps B and C shall be included in the Soil and Site Evaluation Report. These reports shall be completed prior to the construction plan submittal.

Methods

In order to find out the usefulness or effectiveness of infiltration basins as required by the current State standards, the Village has initiated a program of soil borings at representative locations to identify soil profiles and establish guidelines for the use of infiltration practices in stormwater management. Using digital soils maps, a GIS map was created showing the suitability of filtration as a stormwater management practice in Caledonia. The result was a GIS map of the geographic classification of infiltration potential in Caledonia which guided the field verification and validation phase of the work. The analysis looked at soils information from the USAD Racine County Soil Survey and applied the criteria from NR151 that excludes infiltration on slopes greater than 20% (yellow on map), soils with inadequate separation distance to ground water (hydric soils shown as red on map), and soils with infiltration rates less than 0.6 inches per hour (orange on map). The result is a map showing the potential for stormwater infiltration in Caledonia. The next step in the study was to field verify the map by collecting soil borings in different soil types and drainage basins. As part of the field verification and validation, we selected representative soil boring and sampling locations. Both Lake Michigan and Root River watersheds were targeted in this subsurface exploration program. We provided soils and GIS analysis, soil boring and soil testing services to determine more definitively where, in Caledonia, stormwater infiltration BMP's would be feasible.

□ Results

Village of Caledonia Stormwater Management Plan



94

A total of nine soil samples were collected throughout the Village. Samples 1, 2 and 3 were collected on February 9, 2005 and samples 4-9 were collected on October 19, 2005 (Appendix E). Soil samples 1-3 were recovered from test pits excavated at the site west of SCORE Park. The soil series indicated for the site by the USDA Soil Survey are Sebewa and Elliott, and consist mainly of clayey soils, consistent with profiles encountered in our test pits. However, two of the test pits encountered a 3 to 3.5 foot thick stratum of sandy loam that is absent from the indicated soil series, and a stratum of sand and gravel included in the Sebewa series was not found in the test pits.

In order for Caledonia to be exempt from having to install infiltration devices per NR151.12, the infiltration rate of the soil must be less than 0.6 inches per hour. Per DNR Standard 1002, a site is considered exempt if the least permeable soil horizon within 5 feet of the bottom of the infiltration system is one of the following: sandy clay, clay loam, silty clay loam, sandy clay, silty clay, or clay. The sandy loam encountered in two of the test pits may have an infiltration rate greater than 0.6 inches per hour, however, since this stratum is shallow and is only 3 to 3.5 feet thick and is then underlain by a clay layer with an infiltration rate of 0.07 inches per hour, these sites would be considered exempt.

Samples 4, 5, 6 and 9 encountered clay layers between five and twelve feet in depth with infiltration rates well below the needed 0.6 inches per hour for infiltration BMP's. Samples 7 and 8 had clay layers at eight and ten feet with high groundwater at five and one half feet in depth. This means sample 7 is not suitable for infiltration due to inadequate separation distance to groundwater. Sample 8 is borderline suitable for an infiltration BMP, however it is located within the same soil type as sample 7 and approximately at the same elevation and distance away from a DNR navigable waterway.

Conclusions and Recommendations

Of ten soil samples, nine were determined to be not suitable for stormwater infiltration BMP's. This was due most often to a layer of clay between five and ten feet in depth with a very low infiltration rate (0.07 inches per hour) well below the recommended 0.6 inches per hour needed for effective infiltration. These clay layers would block infiltration below a constructed infiltration device. Only one of the ten samples had acceptable infiltration rates in the five to ten foot zone but the sample was located in close proximity to a waterway and may be subject to high groundwater or flooding. Overall the presence of hydric soils with high groundwater and very clayey sub soils there are few areas where infiltration is practicable in the Village of Caledonia.

As a consequence, we recommend that only areas shown on the attached Stormwater Infiltration Potential Map with acceptable soil permeability be required to investigate a site's potential for stormwater infiltration BMP's.

Village of Caledonia

Stormwater Management Plan



95

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Locations of Soil Borings





Village of Caledonia / Crawford Park Master Grading and Drainage Plan / 49

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