



VILLAGE OF DEFOREST

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June 9, 2023

Nicholas Bower, P.E.
Environmental Engineer
Capital Area Regional Planning Commission
100 State Street, Suite 400
Madison, WI 53703

Dear Nick:

I am pleased to submit the attached application to add lands to the Northern Urban Service Area (NUSA), as authorized by the DeForest Village Board in collaboration with the Town of Burke.

The amendment area covers nearly 90 acres southwest of the interchange of Interstate 39-90-94 and U.S. Highway 51. Also referred to as the "Daentl Road Industrial Area," it will be served by DeForest utilities and partially in the Village of DeForest and partially in the Town of Burke.

The Daentl Road Industrial Area abuts the current NUSA to the north and east, with Daentl Road at its south end and the Canadian Pacific Railroad just off its west end. The Industrial Area has been long-planned and is well-suited for industrial development on municipal utilities. It is proximate to Interstate 39-90-94 interchanges and nearby industrial development, and has excellent site suitability.

The Village and Town have been working with the current owner of nearly all of the Daentl Road Industrial Area, and with a prospective industrial developer of most of that area which intends to develop much of the Industrial Area as soon as practical. It will be developed in a manner that fully meets regional and local water quality standards.

Please contact me if you have any questions regarding this application.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Chang".

Bill Chang
Village Administrator

Attachment: Northern Urban Service Area Amendment Application, Appendices

NORTHERN URBAN SERVICE AREA AMENDMENT APPLICATION

VILLAGE OF DEFOREST

This information supports the Village of DeForest's application to amend the Northern Urban Service Area (NUSA) to include all or part of five parcels plus adjacent public rights-of-way, all totaling 88.9 acres. These include undeveloped parcels 0810-053-8420-0, 0810-052-9340-2, and 0810-052-9310-8 (except for north corner already in NUSA), plus the developed southwestern 11.7 acres of parcel 0810-053-8350-0 and the 0.8-acre residentially developed parcel 0810-053-8790-9. The parcels are currently addressed at 4334 (partial), 4410, and 4458 Daentl Road, southwest of the interchange of Interstate 39-90-94 and U.S. Highway 51.

Submitted: June 9, 2023

Prepared by: Village of DeForest

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1 Introduction

Map 1 indicates the proposed Northern Urban Service Area (NUSA) expansion area, including existing public rights-of-way. For purposes of this application, the proposed NUSA expansion area is referred to as the “Daentl Road Industrial Area” or “Industrial Area.” The Daentl Road Industrial Area encompasses 78.3 acres of real estate plus adjacent existing public rights-of-way southwest of the interchange of Interstate 39-90-94 and U.S. Highway 51.

At time of writing, the real estate was within two separate ownerships, with all but 0.8 acre owned by BUI Properties LLC. Approximately 53 undeveloped acres in the Industrial Area owned by BUI Properties LLC are subject to a sales agreement with Likewise Partners LLC. Likewise Partners intends to develop that acreage with between 600,000 and 700,000 square feet of industrial, warehouse, distribution, and office space.

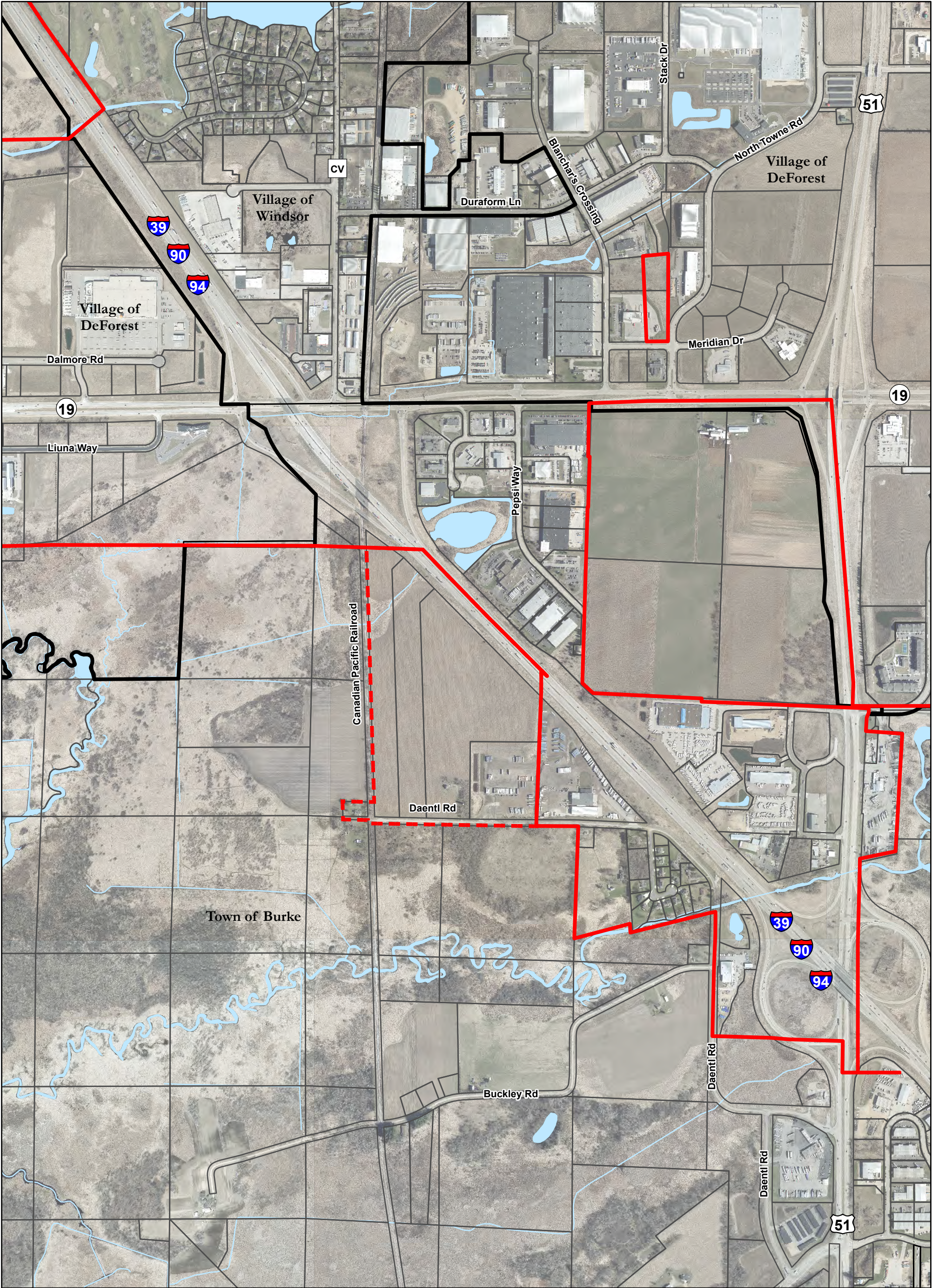
The Daentl Road Industrial Area is ready for inclusion in the NUSA. The Industrial Area adjoins the existing NUSA and industrial development on its north and east, has beneficial highway visibility and access, is adjacent to utilities, and has few natural limitations for development.


At time of writing, the Industrial Area was entirely within the Town of Burke. For the following reasons the Village of DeForest is the NUSA expansion applicant with Town support:

- Pursuant to the *Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan*, the Village is the designated provider of municipal sanitary sewer and water service to the Industrial Area and nearby lands.
- Pursuant to that *Cooperative Plan*; the pending *Attachment and Revenue Sharing Agreement* between the Village of DeForest and the Town of Burke (Appendix C); and a pending *Pre-development Agreement Between Likewise Partners LLC and Village of DeForest* (Appendix D), all of parcels 0810-052-9310-8 and 0810-052-9340-2 and the western 22 acres of parcel 0810-053-8420-0 will be attached (annexed) to the Village in 2023 with both municipalities sharing property tax revenues until 2035.
- The Industrial Area is within a Village-administered extraterritorial zoning area established collaboratively between Burke and DeForest in 2008.

Industrial Area development will allow the Village and Town to accomplish the following goals:

- Facilitate continued manufacturing, warehousing, and transshipment development on larger parcels, for which DeForest is regionally well-positioned but are in short supply (see further analysis below).
- Over time and per the *Pre-development Agreement Between Likewise Partners LLC and Village of DeForest*, loop the local water utility system that currently dead-ends along Daentl Road to the east.
- Manage stormwater and promote infiltration in accordance with the Village’s progressive stormwater management ordinance and practices.
- Help advance and fund plans to improve road access to the Industrial Area and existing development to the east in the Daentl Road corridor.
- Implement and dovetail with multiple plans affecting the Industrial Area, including the *North Yahara Future Urban Development Area (FUDA) Study*; *Village of DeForest Comprehensive Plan*; *Town of Burke Comprehensive Plan*; *Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan*; and the pending *Attachment and Revenue Sharing Agreement* between the Village of DeForest and Town of Burke.





Proposed Northern Urban Service Area Amendment

Map 1

June 2, 2023


05901,1801,770

Feet

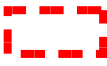



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Sources: Dane County LIO, CARPC, MDROffers, Vierbicher

-  Proposed USA Expansion
-  Existing USA Boundary
-  Village of DeForest Municipal Boundary (Dec 2022)
-  Parcels (May 2023)

2 Plan Consistency and Need

The Burke-DeForest Extraterritorial Zoning Committee in October 2022 determined that the addition of the Daentl Road Industrial Area to the NUSA is consistent with both DeForest's and Burke's comprehensive plans (see Appendix B). The *Town of Burke Comprehensive Plan* is available [here](#), and the *Village of DeForest Comprehensive Plan* is available [here](#).

As described more fully in Appendix B, both Town and Village comprehensive plans identify the Daentl Road Industrial Area for future industrial and business park use on public sewer and water services. The Town and Village both have very limited improved vacant land for industrial development elsewhere, particularly for larger footprint users that are increasingly common. Within the Town, the Pepsi Way corridor north of the NUSA expansion area is fully developed, the East Metro Business Park to the east has just one 3.8 acre vacant lot that was proposed for a storage use at time of application, and the handful of remaining vacant lots south of the Interstate/Highway 51 interchange are zoned for commercial or residential use. At the north edge of the Village, the DeForest Business Park has three vacant lots totaling 17 acres, not including lands already committed to development or future business expansion. Near the south edge of the Village, the North Towne Corporate Park arguably has only one 3.4 acre vacant lot available for industrial development, not including lands already committed to development or future business expansion, or currently zoned for commercial rather than industrial purposes.

Among all of the afore mentioned developments, the largest vacant lot for industrial development is 7.4 acres. This is smaller than required for most modern industrial development projects. Recently developed or pending industrial uses in DeForest have generally required between 15 and 40+ acres each.

Inclusion of the Industrial Area in the NUSA is also consistent with the growth phasing policy within the *DeForest Comprehensive Plan*. That policy indicates that the Village will utilize the following factors in making decisions on the timing of new development, including whether and when to request urban service area expansions. The Village's phasing policy points are in italics below, with commentary related to this application in normal type.

1. *The desire to promote an orderly, sequential pattern of land use and community development in order to ensure that the provision of public services, roads, and utilities keep pace with development.* The Daentl Road Industrial Area is immediately west of existing urban development and utility services. Lands to the south and west of the Industrial Area are largely undevelopable (see Natural Resources section below).
2. *The projected impact on other Village goals of preserving agriculture or the natural environment in the same general area, if applicable.* Proposed development of the Industrial Area will meet the Village's strict stormwater ordinance and preserve environmental corridors. The Village also desires to thoughtfully transition to the Cherokee Marsh Wildlife Area to the southwest. The planned land uses for the Industrial Area are consistent with all County and local comprehensive and farmland preservation plans.
3. *The projected impact on Village desires to redevelop or infill other parts of the Village (e.g., downtown).* The Industrial Area will facilitate larger scale manufacturing, warehousing, and transshipment uses not present and not viable on smaller redevelopment and infill sites in the Village.

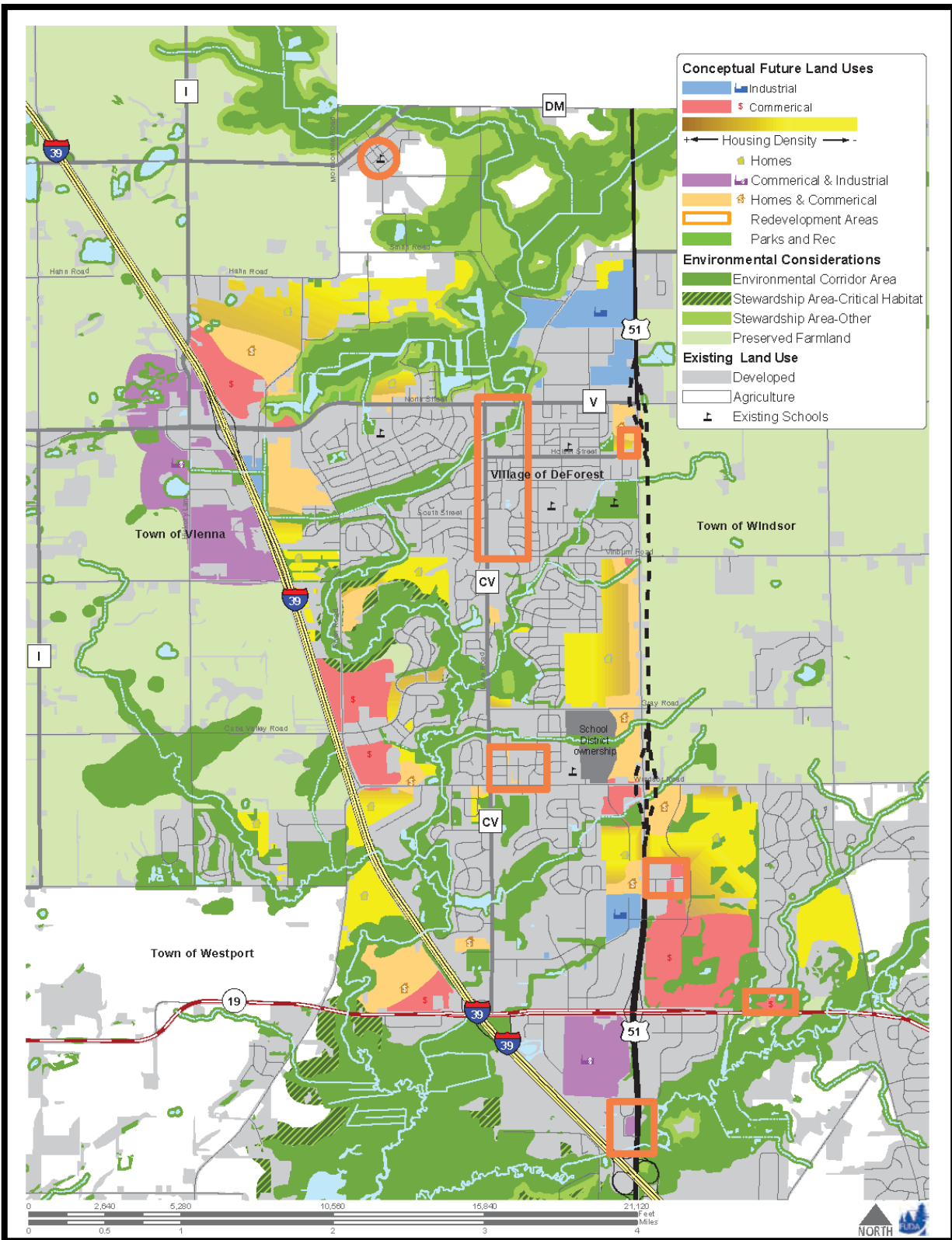
4. *Whether the proposed development provides a unique asset or special amenity desired by the Village, as specified in Village plans or as otherwise indicated by the Village Board.* The shortage of improved land in the DeForest-Burke area for industrial development—particularly of a larger scale—is documented above.
5. *The availability of public infrastructure such as road capacity, utility availability or capacity, and pedestrian and other public facilities to serve the proposed development.* Utility availability and capacity is documented later in this application. Daentl Road has adequate capacity to serve projected development in the Industrial Area, particularly once it is resurfaced and its bridge over the Token Creek is replaced in conjunction with planned industrial development. A preliminary cross section for the Daentl Road resurfacing is included within Appendix J. At time of writing, the Wisconsin Department of Transportation (WisDOT) and the Federal Highway Administration (FHWA) were conducting the I-39/90/94 Corridor Study between Highway 12/18 in Madison and Highway 12/16 in Wisconsin Dells. That study will assess how best to address existing and future traffic demands, safety issues, and the aging and outdated infrastructure along this portion of I-39/90/94. As part of that study, the Village is advocating for WisDOT to include an over/underpass connecting Daentl Road to Pepsi Way through the Industrial Area. Such an over/underpass would improve service, employee, and product movement in the area. Likewise Partners intends to construct a public road north from Daentl Road that would lead to that future over/underpass. A preliminary road cross section is included in Appendix J.
6. *If such public infrastructure is unavailable, the projected timing of and funding for public infrastructure improvements to serve the proposed development.* Utility availability and capacity is documented later in this application. The *Attachment and Revenue Sharing Agreement* between the Village of DeForest and Town of Burke (Appendix C); and a *Pre-development Agreement Between Likewise Partners LLC and Village of DeForest* (Appendix D) document infrastructure funding arrangements, and a final development agreement between Likewise and the Village will further detail responsibilities.
7. *The ability of the Village to cost-effectively provide community services to the proposed development or area, and the advice of other units of government such as the DeForest Area School District (DASD) to provide services under their control.* By *Cooperative Plan*, the Village has committed to providing utility services to the Industrial Area, and the pending *Attachment and Revenue Sharing Agreement* (see Appendix C) addresses the maintenance of Daentl Road. Both municipalities are currently providing services to existing industrial and heavier commercial uses in the vicinity of the Industrial Area. Current Fire and EMS providers have been notified of this application (see Appendix E); it is possible that such districts may change following annexation. There is no projected population/student enrollment from the Industrial Area. The DASD has recently expanded schools to accommodate enrollment growth that may indirectly result from more jobs in the Industrial Area.
8. *Whether the proposed development area has been or will be annexed or attached to the Village, where annexation or attachment is specified by adopted intergovernmental agreements/cooperative plans or otherwise anticipated prior to development.* As described earlier, most of the Industrial Area will be annexed to the Village in 2023 with agreement from the Town, with the remainder expected to be incorporated into the

Village upon the dissolution of Burke in 2036 pursuant to the *Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan*.

9. *The degree of compatibility with other aspects of adopted intergovernmental agreements/cooperative plans to which the Village is a party.* Compatible. See above including Section 3 of this application for more information.
10. *For proposed urban (publicly sewerer) development, whether the proposed development area is within the Urban Service Area and MMSD boundary, or the Village reasonably expects the development area to be added to the Urban Service Area and MMSD boundary in the near term.* The Industrial Area is already in the regional and local FUDA. It will need to be annexed to the MMSD service area following addition to the NUSA, and the Village has been in contact with MMSD staff regarding that process.

The proposed addition of the Daentl Road Industrial Area to the NUSA is also consistent with the recommended development scenario in the 2012 *North Yahara FUDA Study* (see Map 2); the *Dane County Comprehensive Plan* and *Farmland Preservation Plan*; and the *Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan*.

Map 2: Recommended Scenario, North Yahara FUDA Study



3 Intergovernmental Cooperation

The Village and Town have made special effort to unify their comprehensive plans as they affect the Daentl Road Industrial Area and collaborate on extraterritorial zoning over the Industrial Area. The Village and Town also intend to this summer enter the *Attachment and Revenue Sharing Agreement* (see draft as Appendix C), which enables immediate annexation of much of the Industrial Area and property tax revenue sharing. Both the Village and Town are in support of this NUSA expansion application.

There are no other municipalities adjacent to or closer than one mile from the Industrial Area.

The City of Sun Prairie Fire Department provides much of the Town of Burke, including the Daentl Road Industrial Area, with fire protection services. The City of Madison Fire Department provides much of the Town of Burke, including the Industrial Area, with emergency medical services. The Village notified each of these departments of this NUSA expansion application and associated development proposal via the letter included as Appendix E, with Madison's response also included. It is possible that Fire and EMS districts may change in the future once parts of the Industrial Area is annexed to the Village.

4 Land Use

Map 3 shows the existing land use pattern within and around the Daentl Road Industrial Area. Most of the developable acreage is currently in agricultural use, gently sloped and ranging from about 865 feet to 885 feet in elevation, but also includes the following existing land uses:

- Within the 53 acres that Likewise Partners intends to develop, there is also an existing single-family residence that will be demolished and a wetland documented in the Natural Resources section below.
- An approximately 11.7 acre area developed in 2015 for outdoor semi-truck trailer storage plus stormwater basins, mainly included in this NUSA application because the remainder of this business (Northcentral Utility) is on the same tax parcel to the east that is already in the NUSA.
- An approximately 12.7 acre undeveloped area north of the 11.7 acre developed area, currently in cropland but intended for future Northcentral Utility outdoor semi-truck trailer storage with stormwater basins (see Appendix I).
- A 0.8 acre lot developed with a single-family residence on well and septic systems at the west end of Daentl Road. While there are no known issues with the systems, including this lot in the NUSA would facilitate future utility connection if required.

Map 4 shows the proposed and planned land use pattern, in and around the Industrial Area. This includes delineated wetlands and conceptual stormwater basins that currently form the basis for the mapped "Proposed Environmental Corridor (in proposed USA expansion)," described more fully in the Natural Resources section below. Conceptual stormwater management areas are indicated on Map 4 in appropriate general locations; each is envisioned to serve either a large development site or multiple smaller sites. Actual locations, sizes, and configurations of stormwater management areas will likely vary.

Map 4 also shows existing, proposed, and potential future road rights-of-way. The Village anticipates that a roadway will be constructed within the proposed right-of-way as part of Likewise Partners' development. This new road will be built to the Village's urban road

standards for industrial areas, which it has used or required in other recent industrial parks (see proposed cross section in Appendix J). The separate “potential future road right-of-way” shown on Map 4 would likely be dedicated and improved only in conjunction with an Interstate over/underpass. The Village is advocating WisDOT for such over/underpass as part of its in-process Interstate study, including bike and pedestrian facilities. By agreement and with federal funding support, Daentl Road will be improved in conjunction with industrial development to better handle traffic, using the cross section indicated in Appendix J.

Development is expected to occur from south to north. Because the Industrial Area contains fewer than 100 acres, no staging boundaries are included with this application. No new housing is planned.

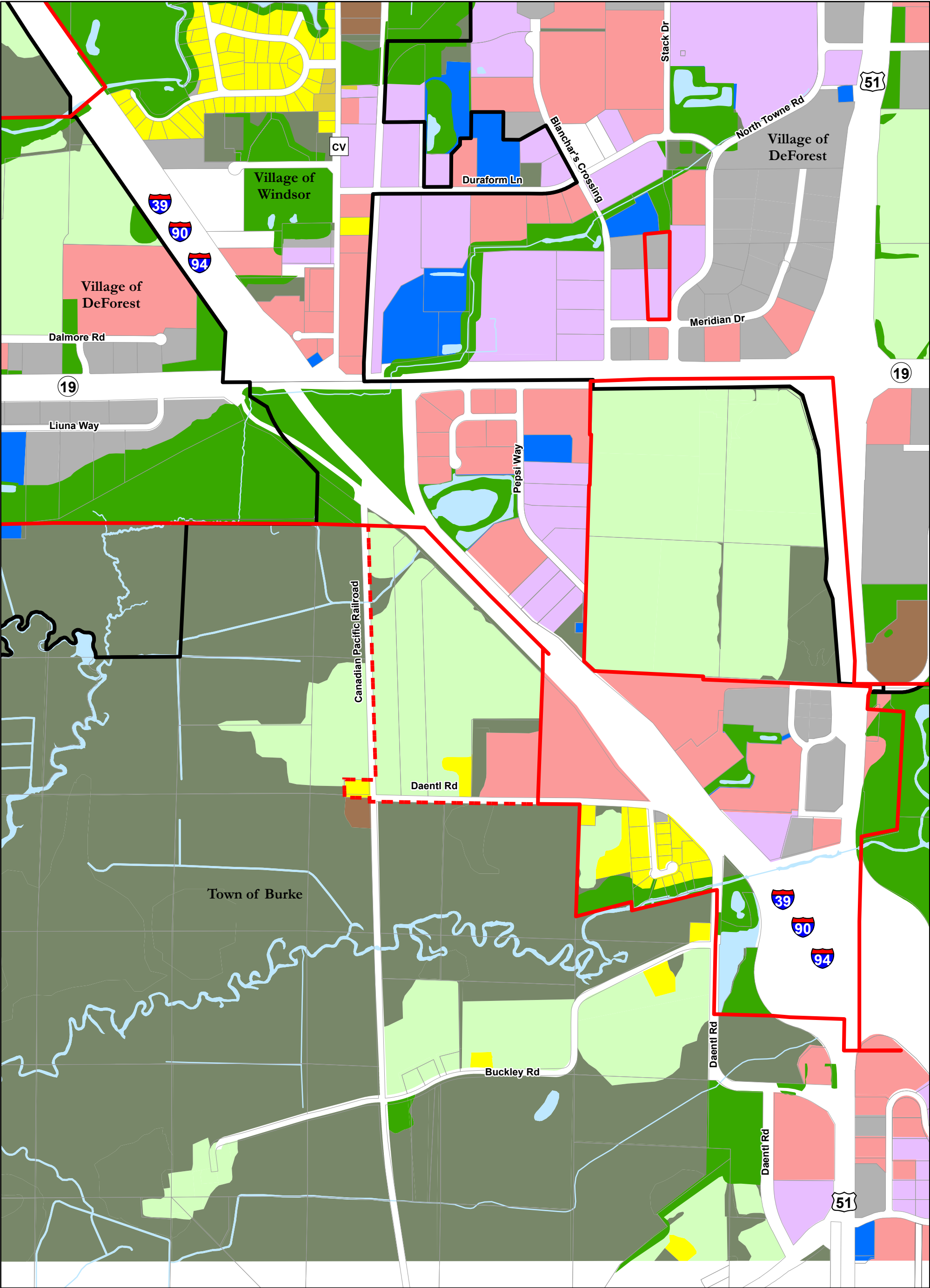
Table 1 quantifies the existing and proposed land use pattern within the Daentl Road Industrial Area.


Table 1: Existing and Proposed Land Use, Daentl Road Industrial Area

Proposed Land Use	Number of Acres			Number of Housing Units
	Total Area	Existing Development	Environmental Corridor ³	
Single-Family Residential	0.8	1.5		2 (1 to be demolished)
Other Type Residential				
Residential Total	0.8	1.5		
Commercial				
Industrial	57.2	8.4		
Institutional				
Street/Rail R-O-W ¹	13.0	10.6		
Parks				
Stormwater Mgmt. ²	12.1	3.3	12.1	
Other Open Space	5.8	65.1	5.8	
TOTAL	88.9	87.4	17.9	2 (1 to be demolished)

Notes:

- 1 “Street/Rail R-O-W, Total Area” and “Street/Rail R-O-W, Existing Development” both include all existing rights-of-way that are in the proposed NUSA expansion area, including for Daentl Road and the Interstate (10.3 acres) and the Canadian Pacific Railroad (0.3 acre). Most of this acreage is included to establish contiguity to the existing NUSA. “Street/Rail R-O-W, Total Area” also includes the “proposed right-of-way” for the north-south street on Map 4, but not the “potential future road right-of-way” shown on that map. The latter is excluded because that potential road would depend on WisDOT approval and construction of an overpass or underpass of the Interstate.
- 2 Based on existing and conceptual stormwater management areas indicated on Map 4. Actual locations, sizes, and configurations of stormwater management areas will likely vary.
- 3 Based on the proposed environmental corridors shown on Map 4. Actual locations may vary with final stormwater management locations.





Existing Land Use

Map 3

June 7, 2023

0


590

1,180


1,770

Feet
















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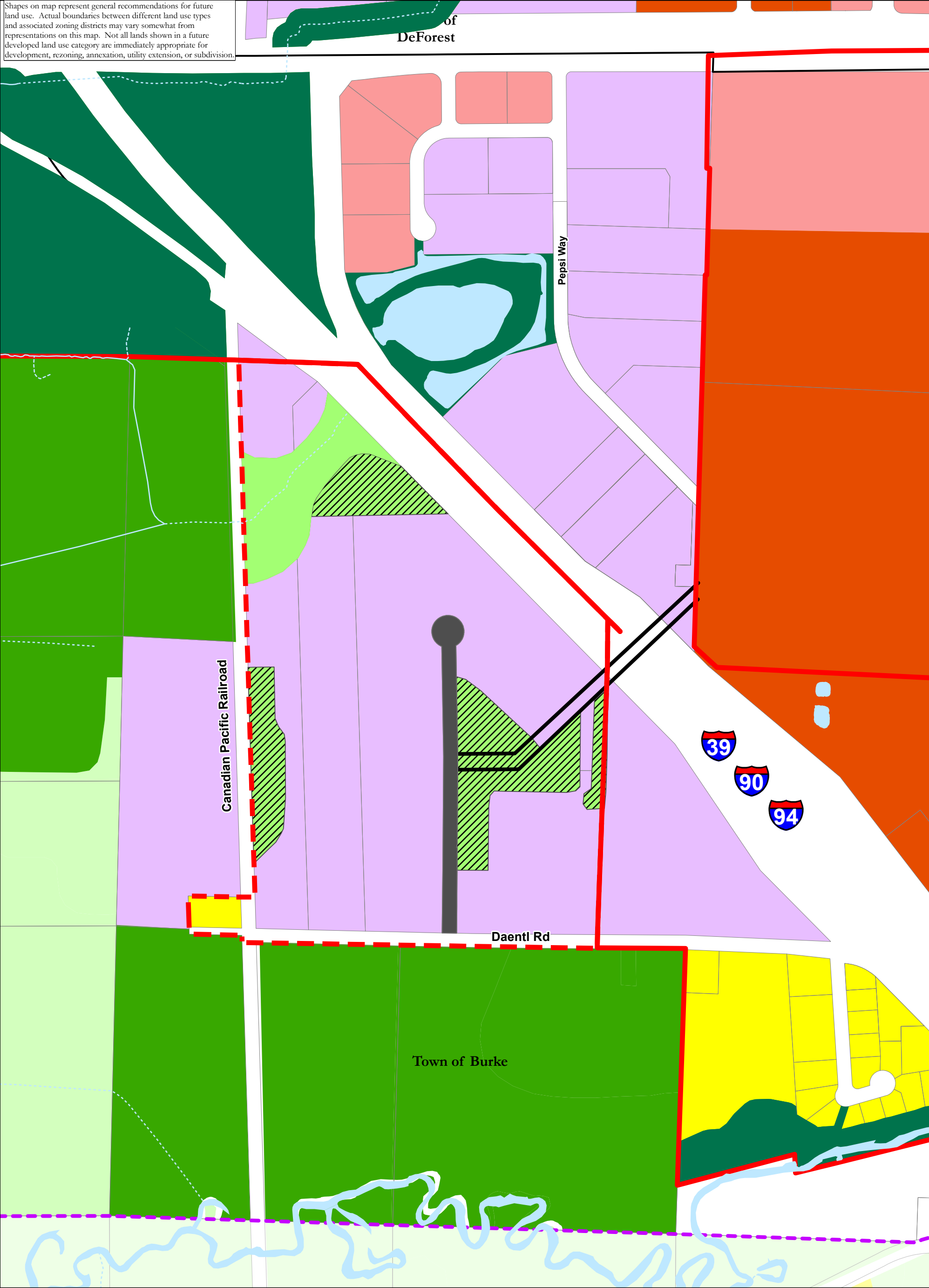



Sources: Dane County LIO, CARPC, MDROffers, Vierbicher

	Proposed USA Expansion		Two Family Residential		Environmental Corridor (in existing USA boundary)
	Existing USA Boundary		Multifamily Residential		Agricultural
	Village of DeForest Municipal Boundary (Dec 2022)		Commercial		Woodlands/Other Open Land
	Parcels (May 2023)		Industrial		Developing and Vacant Subdivided Land
	Single Family Residential		Government/Institutional		Surface Water

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Shapes on map represent general recommendations for future land use. Actual boundaries between different land use types and associated zoning districts may vary somewhat from representations on this map. Not all lands shown in a future developed land use category are immediately appropriate for development, rezoning, annexation, utility extension, or subdivision.





Planned Development Pattern

Map 4

June 7, 2023

0 500 1,000 Feet

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Sources: Dane County LIO, CARPC, MDRoffers, Columbia County LIO, Vierbicher

	Municipal Boundaries (Dec. 2022)		Low Density Village Residential		Existing USA Boundary
	Parcels (May 2023)		Shopping and Services		Proposed USA Expansion
	DeForest Extraterritorial Jurisdiction (ETJ)		Industrial and Business Park		Potential Future Right-of-way
	Surface Water		Mixed or Flex Commercial/Industrial		Existing and Proposed Rights-of-way
	Agricultural Preservation		Environmental Corridor (in existing USA boundary)		
			Proposed Environmental Corridor (in proposed USA expansion)		
			Other Protection/Stewardship Areas (outside USA boundary/expansion)		
			Existing and Conceptual Stormwater Management		

5 Natural Resources

The Daentl Road Industrial Area is in the Upper Yahara River Watershed, just northwest of the Token Creek Watershed. The Yahara River is designated by the WisDNR as a warm water sport fishery. Per the *North Yahara FUDA Environmental Conditions Report*, this stretch of the River plays an important role in providing spawning habitat for a wide variety of sport fish. The Industrial Area is not within a thermally sensitive area, as designated by the WisDNR.

In November 2021, Ruekert & Mielke, Inc. completed a wetland delineation for the Industrial Area under contract to Likewise Partners (see Appendix G). The Assured Wetland Delineator identified a 3.1 acre farmed wetland/wet meadow complex near the north corner of that site. This wetland is generally located in a broad, flat swale within an active agricultural field. A small portion of the wetland is located up-slope from the main body of the wetland along the Interstate right-of-way. This offshoot is connected to the main wetland by a narrow swale along the right-of-way fence. Dominant vegetation is fall panic grass (*Panicum dichotomiflorum*), reed canary grass, hybrid cattail (*Typha x glauca*), barnyard grass (*Echinochloa crus-galli*), and nut grass (*Cyperus esculentus*). The farmed portions of the wetland also included stunted corn, suggesting they were tilled and seeded in the early growing season.

Wetland hydrology appears to be supported predominantly by surface water. This wetland is interconnected with the substantially larger Cherokee Marsh wetland complex to the west across the Canadian Pacific Railroad, and with an 11-acre public stormwater basin complex serving the Pepsi Way industrial area northeast of the Interstate.

In January 2023, Likewise Partners LLC requested an artificial wetland exemption for this 3.1 acre farmed wetland. In February 2023, WisDNR “mostly denied” that request, except that WisDNR exempted a strip along the Interstate that is out of a stream and hydric soil corridor associated with the main wetland area and appears to be affected by Interstate drainage (see Appendix H). The environmental corridor indicated on Map 4 does not include the exempted wetland, or any buffer around it.

Aside from these existing wetlands and stormwater basins serving North Central Utility, there are no surface waters or drainageways within the Daentl Road Industrial Area.

There are few areas of unique vegetation or mature trees within the Industrial Area. There are a cluster of mature trees near Daentl Road east of the driveway serving the residence on the 53 acres that Likewise Partners intends to develop. The quality of these trees is mixed. Village ordinance will require this grove to be examined prior to development, and if containing non-invasive trees, mature woodland preservation/mitigation requirements will apply.

There are no steep (12%+) slopes in the Daentl Road Industrial Area, except at the edges of existing stormwater basins. There are also no highly erodible soils or other limiting soil types, except within wetlands. According to the NRCS Web Soil Survey:

- Approximately 72% of the undeveloped soils within the Industrial Area are PeB (Pecatonica silt loam, 2 to 6 percent slopes), which is non-hydric.
- 20% are VwA (Virgil silt loam, gravelly substratum, 0 to 3 percent slopes), which has hydric components and mostly coincides with the mapped wetland and adjacent areas.
- 5% are KeB (Kegonsa silt loam, 2 to 6 percent slopes), which is non-hydric and limited to the northern corner of the Industrial Area.
- The remaining 3% are other soil types.

There is no floodplain or other known areas with physical constraints for development. Per the *North Yahara FUDA Environmental Conditions Report*, in the Industrial Area:

- Depth to bedrock is greater than 50 feet.
- Depth to water table is greater than 6 feet over a vast majority of the Industrial Area, except near the 3.1 acre wetland near the north corner.
- Groundwater recharge over the Industrial Area is 9-11 inches per year. This is generally classified at the “medium” level.
- There was potential for threatened or endangered aquatic species in the one-mile section that includes the Industrial Area based on general Natural Heritage Inventory maps. In January 2023, a Likewise Partners representative submitted to WisDNR the form on the WIDNR - Natural Heritage Inventory (NHI) Public Portal, and receipt was confirmed but at time of writing had not yet received any further response.



Aside from existing and conceptual stormwater basins, the environmental corridor indicated on Map 4 includes delineated/non-exempt wetland and a 75 foot wide vegetative buffer around the non-exempt wetland. This and other environmental corridor delineations within the Industrial Area meet CARPC standards.

Stormwater basins serving multiple development sites and/or public roadways will be owned and managed by the Village. Basins serving a single development site will likely be privately owned and managed, subject to recorded maintenance agreements. The precise locations of these basins and publicly-owned outlots are unknown at this time.

6 Utilities—Sanitary Sewer Service

The proposed sanitary sewer configuration is shown on Map 5: Overall Utility System Configuration. The Industrial Area will be provided with sanitary sewer service through westerly extension of Village of DeForest sanitary sewer main along Daentl Road. The topography within

the Industrial Area indicates that gravity sewer is not possible. Sewer service will include providing an on-site private lift station within the Industrial Area, which Likewise Partners has agreed to install and will connect with the existing main along Daentl Road. Sewage from the force main will be pumped into an existing gravity sewer main that will convey sewage to the existing Daentl Road Lift Station. Sewage from that lift station is pumped into the MMSD's Northeast Interceptor - Highway 19 Extension, which then flows into the DeForest Extension of the MMSD Northeast Interceptor. These interceptors are shown on Map 6.

The estimated average daily flow that will be generated from the Daentl Road Industrial Area is 23,107 gallons per day (gpd), with an estimated peak flow rate of 92,428 gpd (64 gpm) as shown in Table 2.

Table 2: Estimated Wastewater Flows – Daentl Road Industrial Area

Land Use	Acres	Number of Units	Population	Average Daily Flow Rate (gpd)	Peak Flow Rate (gpd)	Peak Flow Rate (mgd)	Peak Flow Rate (gpm)
Street Right-of-Way	13.00			0	0	0.000	0
Environmental Corridor-Existing	17.90			0	0	0.000	0
Industrial & Business Park	57.20			22,880	91,520	0.092	64
Single Family Residential	0.80	1	2.67	227	908	0.001	1
Totals =	88.90			23,107	92,428	0.092	64

Factors:

Single-Family Residential Capita per Unit ¹ =	2.67
Per Person Demand/Sewage Generation Rate ² =	85.0 gals./day*person
Industrial & Business Park Generation Rate ³ =	400.0 gals./acre*day
Peaking Factor ⁴ =	4.0

Footnotes: (1) Persons per household, 2017-2021, US Census Bureau.

(2) 50 gpcd water demand per Village of DeForest 2021 water sales + 35 gpcd infiltration and inflow allowance.

(3) Typical generation rate for warehouse land use.

(4) NR 110.13(1)(c)2., Wisc. Admin. Code.

The design pumping capacity of the Village of DeForest's Daentl Road Lift Station is 400 gpm. A review of the 2022 pumping records indicates that each pump runs an average of 1.0 hour per day. As such, the average daily flow to this lift station is estimated to be 48,000 gpd. Utilizing a peaking factor of 4.0, the estimated peak flow to the lift station is 133 gpm. The sum of the existing peak flow to the station and that estimated from the Industrial Area is approximately 200 gpm, which is less than the 400 gpm capacity of the lift station. Therefore, the Daentl Road Lift Station has adequate capacity to serve the Industrial Area.

The 2018 *MMSD Collection System Evaluation* included the Northeast Interceptor. The future service area for this interceptor included the Daentl Road Industrial Area. Through this evaluation, the interceptor was estimated to have adequate capacity beyond the year 2040. The interceptor capacity evaluation tables from the *MMSD Collection System Evaluation* appear as Table 3.

The sum of the estimated peak flow from the Industrial Area and the estimated year 2040 peak flow in both the Highway 19 Extension (MH14-416 to MH14-134) and the DeForest Extension (MH14-102 to MH14-134) of the Northeast Interceptor is less than the capacities of any of the segments in the interceptor extensions. Therefore, both the Highway 19 and DeForest Extensions of the Northeast Interceptor have adequate capacity to serve the Industrial Area.

Table 3: Northeast Interceptor – DeForest and Highway 19 Extensions Capacity Evaluation

Table 4-33: Northeast Interceptor - Highway 19 Extension

From	To	Length (ft)	Pipe Dia. (in)	Nominal Capacity (mgd)	Peak Flows (mgd) / Percent Nominal Capacity													
					2010		2015		2020		2025		2030		2035		2040	
MH14-416	MH14-415	193	12	1.15	0.23	20%	0.31	27%	0.31	27%	0.36	31%	0.43	37%	0.48	41%	0.50	43%
MH14-415	MH14-411	1,619	15	2.21	0.72	33%	1.10	50%	0.81	37%	0.93	42%	1.06	48%	1.14	52%	1.22	55%
MH14-411	MH14-409	622	15	3.23	0.72	22%	1.10	34%	0.81	25%	0.93	29%	1.06	33%	1.14	35%	1.22	38%
MH14-409	MH14-407	771	18	3.32	0.72	22%	1.10	33%	0.81	24%	0.93	28%	1.06	32%	1.14	34%	1.22	37%
MH14-407	MH14-134	3,059	18	2.35	0.72	31%	1.10	47%	0.81	34%	0.93	40%	1.06	45%	1.14	49%	1.22	52%
Junction with DeForest Extension (Table 4-32)																		

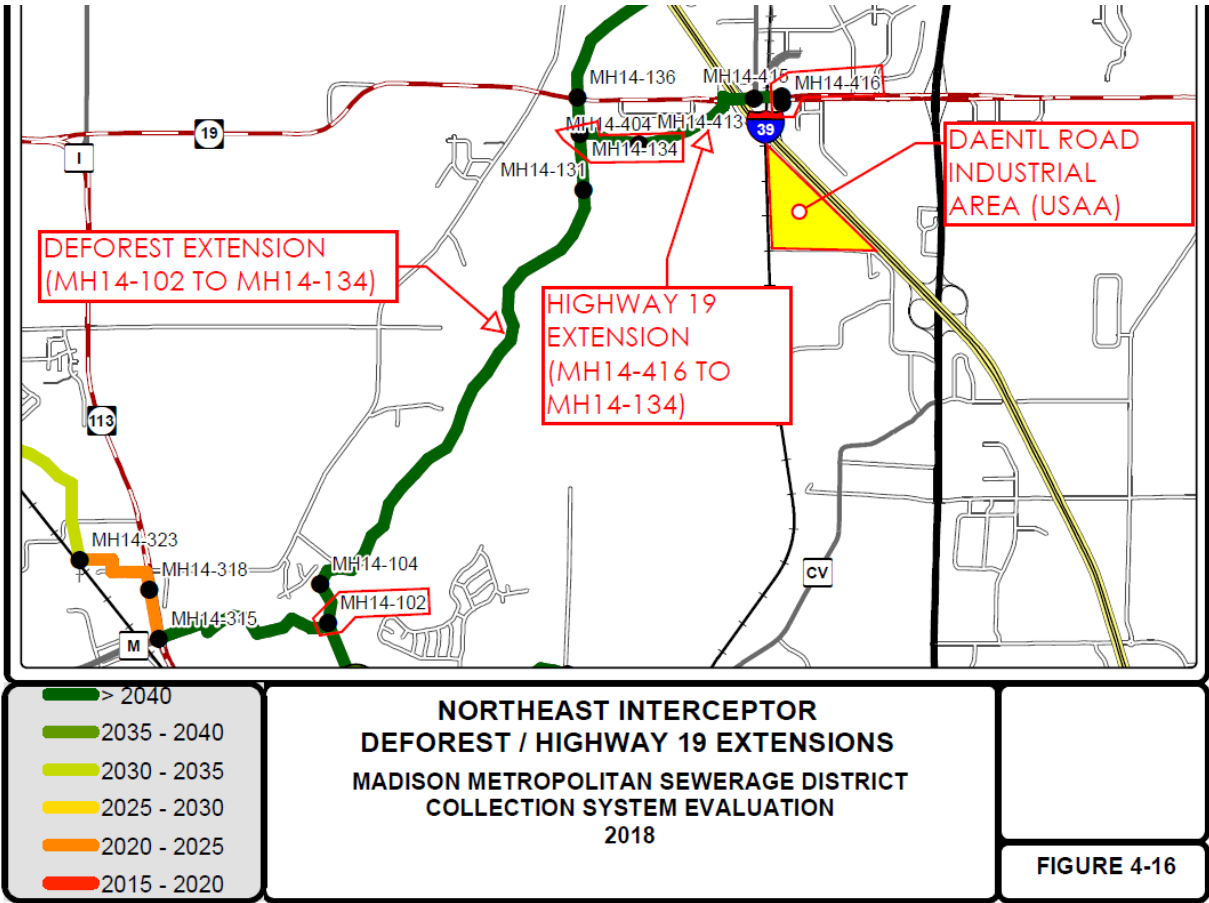
Table 4-32: Northeast Interceptor – DeForest Extension

From	To	Length (ft)	Pipe Dia. (in)	Nominal Capacity (mgd)	Peak Flows (mgd) / Percent Nominal Capacity													
					2010		2015		2020		2025		2030		2035		2040	
MH14-209	MH14-196	4,386	21	3.39	1.78	53%	1.53	45%	1.81	53%	1.83	54%	1.83	54%	1.87	55%	1.87	55%
MH14-196	MH14-193	1,203	21	3.39	2.67	79%	2.29	67%	2.68	79%	2.72	80%	2.76	81%	2.79	82%	2.87	85%
MH14-193	MH14-182	4,062	21	5.51	2.86	52%	2.43	44%	2.84	52%	2.88	52%	2.92	53%	3.00	54%	3.08	56%
MH14-182	MH14-171	5,724	21	5.51	2.86	52%	2.43	44%	2.84	52%	2.88	52%	2.92	53%	3.00	54%	3.08	56%
MH14-171	MH14-166	2,351	21	5.51	2.98	54%	2.57	47%	3.00	54%	3.04	55%	3.08	56%	3.16	57%	3.23	59%
MH14-166	MH14-165	488	21	5.51	3.99	72%	3.41	62%	4.00	73%	4.09	74%	4.16	76%	4.22	77%	4.29	78%
MH14-165	MH14-162	1,401	24	7.01	3.99	57%	3.41	49%	4.00	57%	4.09	58%	4.16	59%	4.22	60%	4.29	61%
MH14-162	MH14-156	2,687	24	7.01	4.32	62%	3.84	55%	4.42	63%	4.53	65%	4.63	66%	4.71	67%	4.78	68%
MH14-156	MH14-145	4,625	27	9.17	5.34	58%	4.46	49%	5.29	58%	5.41	59%	5.51	60%	5.59	61%	5.65	62%
MH14-145	MH14-143	964	30	9.18	5.46	59%	4.78	52%	5.56	61%	5.71	62%	5.82	63%	5.91	64%	5.97	65%
MH14-143	MH14-134	4,895	36	9.63	5.46	57%	4.78	50%	5.56	58%	5.71	59%	5.82	60%	5.91	61%	5.97	62%
Junction with Highway 19 Extension (Table 4-33)																		
MH14-134	MH14-102	16,679	36	9.63	6.12	64%	5.75	60%	6.28	65%	6.52	68%	6.74	70%	6.88	71%	7.00	73%
Junction with Waunakee Extension (Table 4-34)																		



MAP 5: OVERALL UTILITY SYSTEM CONFIGURATION
VILLAGE OF DEFOREST, WISCONSIN
JUNE 2, 2023

Map 6: Northeast Interceptor - Highway 19 Extension, DeForest Extension of the MMSD Northeast Interceptor



7 Utilities—Municipal Water Service

The Village of DeForest owns and operates the municipal water supply system that will serve the Industrial Area. The whole system includes the historic DeForest (“DeForest North”) system plus the former Token Creek Sanitary District (“DeForest South”) system, acquired in 2005. In 2021, the Village completed an interconnection between DeForest North and South systems within lands northwest of the interchange of Interstate 39-90-94 and Highway 19. The interconnection between the North and South systems includes a booster station with a pressure control valve. The station can pump water from the South to the North or allow flow from the North to the South.

In total, the system includes active Well Nos. 2, 3, 4, and 6 as well as three elevated tanks. Well Nos. 2, 3 and 4 are in DeForest North while Well No. 6 is in DeForest South. Two elevated tanks (300,000 gallon and 600,000 gallon) are in DeForest North and a 200,000 gallon elevated tank is in DeForest South.

Supply

Well No. 6 is located along Pepsi Way across Interstate 39-90-94 from the subject property and has a pumping capacity of 810 gallons per minute (gpm). The entire system (North and South) has a well capacity of 3,560 gpm. Based on the year 2021 pumping records, the average daily demand of the DeForest system is 893,277 gallons per day (gpd), and the maximum day demand was 1.757 mgd (1,220 gpm). Applying a peak hour to maximum day factor of 2.0 to the maximum day demand, the peak hourly demand is estimated to be 2,440 gpm.

Storage

Storage is provided primarily by the 200,000 gallon elevated tank in DeForest South, which has an overflow elevation of 1,060 feet, a high water level of 1,058 feet, and a low operating level of 1,049 feet (USGS Datum). Static pressures would range from 73 pounds per square inch (psi) at the highest elevation within the Daentl Road Industrial Area (881.00 feet) to 85 psi at the lowest elevation (861.00 feet) throughout the operating levels within the elevated tank. This range of static pressures falls within the acceptable range of 35 psi to 100 psi per Chapter NR 811 of the Wisconsin Administrative Code.

Distribution

Map 5 depicts the proposed water distribution system to serve the Industrial Area.

Currently, the Village of DeForest water distribution system is extended along Daentl Road with a 12” diameter main to within approximately 300 feet from the eastern boundary of the Industrial Area.

To provide initial service to the Industrial Area, a new 12” water main will be extended from the terminus of the current main along Daentl Road, then northerly into the Industrial Area as it develops. Looping internal to the Industrial Area will be required, with the actual route for looping to be determined based on development layout.

The water distribution system will be externally looped to existing water main either on the northeast side of the Interstate or northwest to Highway 19/Luina Way, with both options represented on Map 5. By pre-development agreement between the Village and developer of 53 acres of the Industrial Area (see Appendix D), that water main loop is scheduled to be installed upon the sooner of following events: (i) any building that results in a total of 300,000

square feet or greater of total gross building floor area is approved for construction on the 53 acres, (ii) the second principal building in that 53 acres is approved for construction.

System Evaluation

A typical ISO recommended fire flow for industrial areas is 3,500 gpm for a duration of 3.0 hours to be provided under the maximum day demand condition. The current estimated maximum day demand of the DeForest system is 1,220 gpm. The Daentl Road Industrial Area is projected to generate a maximum day demand of 32 gpm as shown in Table 4. Therefore, the total estimated maximum day demand of the current DeForest system plus the Industrial Area is 1,252 gpm.

Table 4: Estimated Water Demands – Daentl Road Industrial Area

Land Use	Acres	Number of Units	Average Daily Water Demand (gpd)	Maximum Day Water Demand (gpd)	Maximum Day Water Demand (gpm)	Peak Hour Water Demand (gpm)
Street Right-of-Way	13.00		0	0	0	0
Environmental Corridor	17.90		0	0	0	0
Industrial & Business Park	57.20		22,880	44,845	32	63
Single Family Residential	0.80	1	136	267	1	1
Totals=	88.9		23,016	45,111	32	64

Factors:

Per Residential Customer Water Demand ¹ =	136.0 gals/day*customer
Industrial & Business Park Demand ² =	400.0 gals./acre*day
Maximum Day/Average Day Factor ³ =	1.96
Peak Hour/Maximum Day Factor ⁴ =	2.0

Footnotes: (1) Per Village of DeForest year 2021 residential water sales reported to PSCW.

(2) Typical demand for predominantly warehouse land use.

(3) Village of DeForest 2021 maximum day/average day water sales ratio.

(4) Typical peak hour/maximum day factor.

An evaluation of the system capacity to provide the peak hourly demand plus fire flow follows:

Maximum Day Demand: 1,252 gpm

Fire Flow: +3,500 gpm

Pumping Capacity: - 3,560 gpm

Rate Required from Storage: 1,192 gpm

Volume Required from Storage:

$$(1,192 \text{ gpm})(3.0 \text{ hrs})(60 \text{ min/hr}) = 214,560 \text{ gallons}$$

As such, with all well pumps in operation, 214,560 gallons of storage is required to provide the recommended fire flow for the recommended duration.

The Village presently has 200,000 gallons of total storage with the DeForest South elevated tank completely full. Since elevated tanks are usually not operating completely full, the “effective” storage is considered to be 80% of total storage. This leaves approximately 160,000 gallons of

available “effective” storage. In addition, the North-South system interconnection allows the 300,000 gallon and the 600,000 gallon elevated tanks in the North system to contribute additional storage volume to the South system in the event of a fire. Adding in 80% of the total storage from both the North and South systems, the total available effective storage volume is 880,000 gallons. The effective elevated storage of 880,000 gallons is greater than the required 214,560 gallons. Therefore, the system has adequate capacity to provide for fire flow.

Calculations for the available fire flow at the high point in the Industrial Area is based on a February 2023 field fire flow test completed at the west end of Daentl Road. This test yielded an estimated fire flow of 3,590 gpm at a minimum residual pressure of 20 psi. Therefore, the Village’s distribution system has adequate capacity to provide the typical ISO recommended fire flow of 3,500 gpm for an industrial area.

8 Stormwater Management

The Daentl Road Industrial Area is within the Upper Yahara River watershed. The Industrial Area generally slopes from a high point near its center/east center to the west and northwest. The Area generally sheet flows at present.

Stormwater management for the Industrial Area will be regulated by the Village of DeForest's Chapter 24 Erosion Control and Stormwater Management Ordinance and Section NR 151 of the Wisconsin Administrative Code. Stormwater management plans and practices will meet these local and State requirements for peak flow control, TSS removal, infiltration, and groundwater recharge. Village ordinance standards meet State and County requirements, and include:

- Groundwater recharge rates meeting or exceeding average annual recharge rates as estimated by the Wisconsin Geological and Natural History Survey in a report titled "Groundwater Recharge in Dane County, Wisconsin Estimated by a GIS-Based Water Balance Model."
- Maintain pre-development peak runoff rates for the 1-year, 2-year, 5-year, 10-year, 25-year, 100-year, and 200-year, 24-hour storm events.
- 80% TSS Controls
- 90% pre-development infiltration

Plans for stormwater management and erosion control will include the installation of specific BMPs in strategic locations prior to any other ground disturbing activities. Erosion control practices will consist of BMPs necessary to limit sediment from leaving the site during ground disturbing activities. Ground disturbing activities will be limited to phases as much as practical to reduce the area of exposed soil. Temporary sedimentation basins may be constructed to prevent soil from leaving the site. Infiltration practices will be implemented following substantial grading and restoration of the site.

Preliminary stormwater management studies for undeveloped lands within the Industrial Area are included as Appendices F and I. Based on those studies, conceptual stormwater basins are shown on Map 4, though precise configurations and locations are likely to change. These basins may, in certain cases, serve a single large user and on other occasions may serve multiple development sites and users. Where serving multiple development sites and users, the basins will generally be Village owned and maintained. Where serving a single user, the basins will generally be owned and maintained by that user. The Village requires the recording of stormwater management maintenance agreements prior to the finalization of any stormwater management permit associated with stormwater facilities that are to be privately maintained.

9 List of Appendices

- A. Village Board Resolution Authorizing NUSA Expansion Application
- B. DeForest-Burke Extraterritorial Zoning Committee Resolution Verifying Comprehensive Plan Consistency
- C. Attachment and Revenue Sharing Agreement between the Village of DeForest and Town of Burke
- D. Pre-development Agreement Between Likewise Partners LLC and Village of DeForest
- E. Notice to Sun Prairie and Madison Fire Departments and Response
- F. Likewise Partners – Technical Memo on Preliminary Stormwater Modeling, Pinnacle Engineering Group
- G. Daentl Road Development Wetland Delineation, Ruekert & Mielke, November 9, 2021
- H. WisDNR Response to Likewise Partners Artificial Wetland Exemption Request
- I. North Central Utility – Urban Service Area Amendment Application, Support Memo, JSD Professional Services, 9/2/22
- J. Daentl Road Industrial Area Typical Roadway Sections

NORTHERN URBAN SERVICE AREA AMENDMENT APPLICATION

VILLAGE OF DEFOREST

The following and attached appendices support the Village of DeForest's application to amend the Northern Urban Service Area (NUSA) to include all or part of five parcels plus adjacent public rights-of-way, all totaling 88.9 acres.

- A. Village Board Resolution Authorizing NUSA Expansion Application
- B. DeForest-Burke Extraterritorial Zoning Committee Resolution Verifying Comprehensive Plan Consistency
- C. Attachment and Revenue Sharing Agreement between the Village of DeForest and Town of Burke
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- I. North Central Utility – Urban Service Area Amendment Application, Support Memo, JSD Professional Services, 9/2/22
- J. Daentl Road Industrial Area Typical Roadway Sections

Submitted: June 9, 2023

Prepared by: Village of DeForest

RESOLUTION 2023 - 002

**A RESOLUTION AUTHORIZING THE VILLAGE'S REQUEST TO CARPC TO AMEND
THE NORTHERN URBAN SERVICE AREA TO ENCOMPASS LANDS ALONG THE
NORTH SIDE OF DAENTL ROAD, SOUTHWEST OF THE INTERSTATE 39-90-
94/HIGHWAY 51 INTERCHANGE**

WHEREAS, the Village of DeForest through its Comprehensive Plan ("Plan") recommends lands along the north side of Daentl Road that are southwest of the Interstate 39-90-94/Highway 51 interchange ("Daentl Road Area") for future Industrial/Business Park development; and

WHEREAS, while the Daentl Road Area is presently within the Town of Burke, by cooperative boundary plan, it will be incorporated into the Village no later than 2036 and is to be provided municipal sanitary sewer and water services by the Village regardless; and

WHEREAS, the Subject Property in the Daentl Road Area consists of the undeveloped parcels 0810-053-8420-0, 0810-052-9340-2, and 0810-052-9310-8, plus the developed southwestern 11.7 acres of parcel 0810-053-8350-0 and the 1.0 acre developed parcel 0810-053-8790-9, together consisting of 78.9 acres plus adjoining rights-of-way, all as represented in the attached Exhibit A; and

WHEREAS, with minor exception the Subject Property is not within the Northern Urban Service Area ("NUSA"), and sanitary sewer service may be connected to the Subject Property only once in the NUSA; and

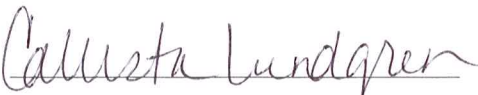
WHEREAS, the prospective developer of 53.0 undeveloped acres of the Subject Property has requested that the Village extend sanitary sewer and water services to facilitate development of approximately 625,000 square feet of manufacturing, warehousing, distribution, and office space on that acreage; and

WHEREAS, the Plan places the Subject Property (excepting the 1.0 acre developed parcel 0810-053-8790-9) within the "Future Urban Development Area" and, based on the factors to be used for making growth phasing decisions included in the Plan, the Village Board has determined that it is timely to include the Subject Property in the NUSA; and

WHEREAS, under State law and intergovernmental agreement, the process for including the Subject Property in the NUSA requires application to the Capital Area Regional Planning Commission ("CARPC"), CARPC recommendation to the Wisconsin Department of Natural Resources ("WDNR"), and WDNR approval.

NOW, THEREFORE, BE IT RESOLVED that the Village of DeForest Board of Trustees hereby authorizes a Village application to CARPC in 2023 to amend the NUSA to include the Subject Property as described above and in Exhibit A, with the exact timing for submittal determined by the Village Administrator.

Adopted at a regular Village Board meeting this 17th day of January, 2023.

Attest: 
Callista Lundgren, Village Clerk

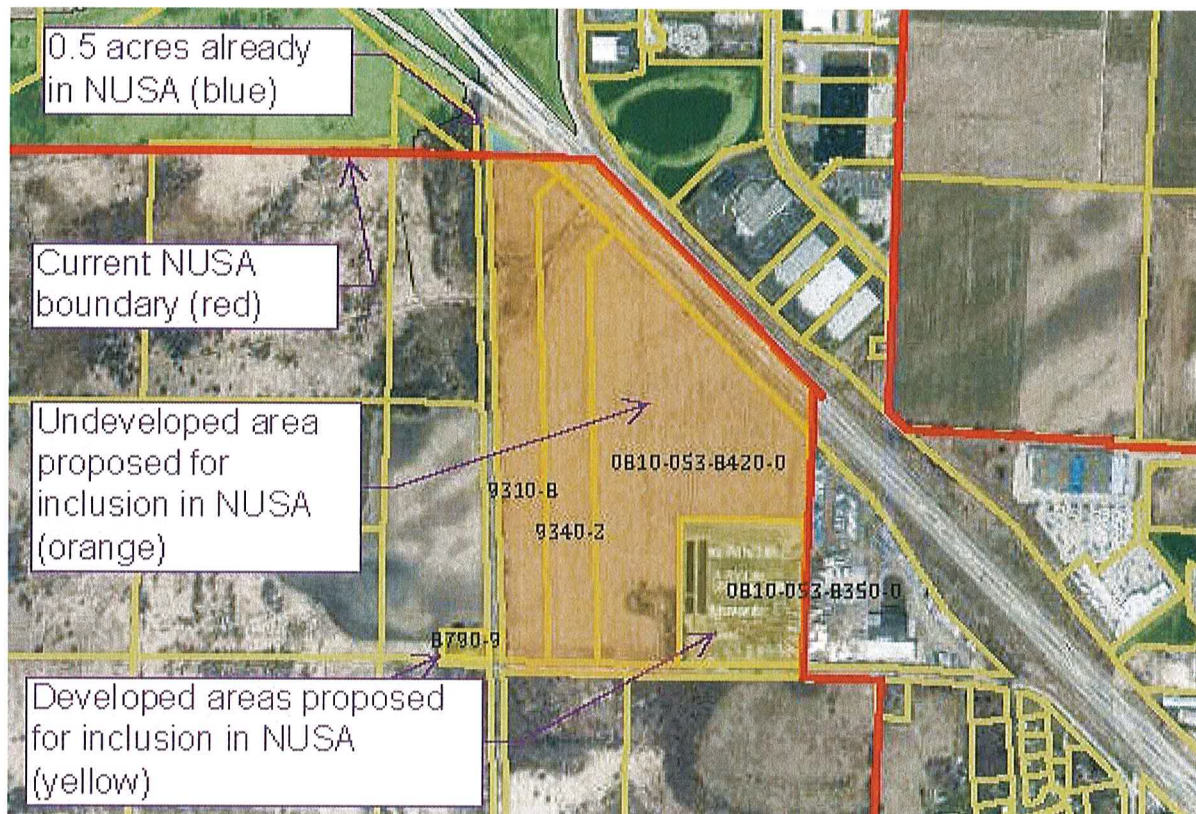

Jane Cahill Wolfram, Village President

Vote: 7-0

Appendix A

EXHIBIT A: SUBJECT PROPERTY

Subject Property includes those areas shaded in orange and yellow on the map below, plus the 0.5 acres at the north end of parcel 9310-8 that is already in the NUSA



**DEFOREST-BURKE EXTRATERRITORIAL ZONING COMMITTEE
RESOLUTION 2022-701**

**A RESOLUTION ADVISING THAT A PENDING DAENTL ROAD URBAN SERVICE
AREA APPLICATION IS CONSISTENT WITH THE VILLAGE OF DEFOREST AND
TOWN OF BURKE COMPREHENSIVE PLANS**

WHEREAS, the Village of DeForest (“Village”) Comprehensive Plan (“DeForest Plan”) and the Town of Burke (“Town”) Comprehensive Plan (“Burke Plan”) both make recommendations for future non-residential growth along the north side of Daentl Road southwest of the Interstate 39-90-94/Highway 51 interchange area (“Daentl Road Area”); and

WHEREAS, while the Daentl Road Area is presently within the Town, by cooperative boundary plan, it will be incorporated into the Village no later than 2036 and is to be provided municipal sanitary sewer and water services by the Village; and

WHEREAS, the Subject Property in the Daentl Road Area consists of the undeveloped parcels 0810-053-8420-0, 0810-052-9340-2, and 0810-052-9310-8, plus the developed southwest 11.7 acres of parcel 0810-053-8350-0 and the 1.0 acre developed parcel 0810-053-8790-9, together consisting of 78.9 acres plus adjoining rights-of-way, all as represented in the attached Exhibit A; and

WHEREAS, the Subject Property is presently not within the Northern Urban Service Area (“NUSA”), and municipal sanitary sewer service may be connected to the Subject Property only once it is within the NUSA; and

WHEREAS, the prospective developer of 53.0 undeveloped acres of the Subject Property (“Developer”) has requested that the Village extend sanitary sewer and water services to facilitate development of approximately 625,000 square feet of indoor manufacturing, warehousing, distribution, and office space on that 53.0 acres; and

WHEREAS, at the request of the Developer and in cooperation with the Town, the Village intends to apply to the Capital Area Regional Planning Commission (“CARPC”) that the Subject Property be included in the NUSA, pending authorization from the Village Board; and

WHEREAS, CARPC requests a determination of consistency with the associated municipal comprehensive plan(s) to be submitted with any application to expand the NUSA; and

WHEREAS, the DeForest Plan places the Subject Property (excepting the 1.0 acre developed parcel 0810-053-8790-9) within the “Future Urban Development Area” and, based on the factors to be used for making growth phasing decisions included in the DeForest Plan, the DeForest-Burke Extraterritorial Zoning Committee has determined that it is timely to include the Subject Property in the NUSA; and

WHEREAS, the DeForest Plan further identifies the Subject Property (excepting the 1.0 acre developed parcel 0810-053-8790-9) as appropriate for future “Industrial/Business Park” development, with such future land use category intended for high-quality manufacturing, warehousing, distribution, office, research and development, and support uses and other

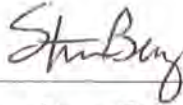
Appendix B

compatible uses such as day care, health club/fitness, and bank, all served by a public sewer system; and

WHEREAS, the Burke Plan identifies the vast majority of Subject Property as appropriate for future “Industrial/Business” development, with such future land use category intended for indoor manufacturing, warehousing, distribution, and office uses, with outdoor storage areas, and also seeks to direct large-scale commercial and industrial development into areas where public utilities are available.

NOW THEREFORE BE IT RESOLVED that the DeForest-Burke Extraterritorial Zoning Committee hereby finds that the proposed application to add the Subject Property to the NUSA is consistent with both the DeForest Plan and the Burke Plan.

Enacted this 10th day of October, 2022



Steve Berg, Extraterritorial Zoning Committee Chair

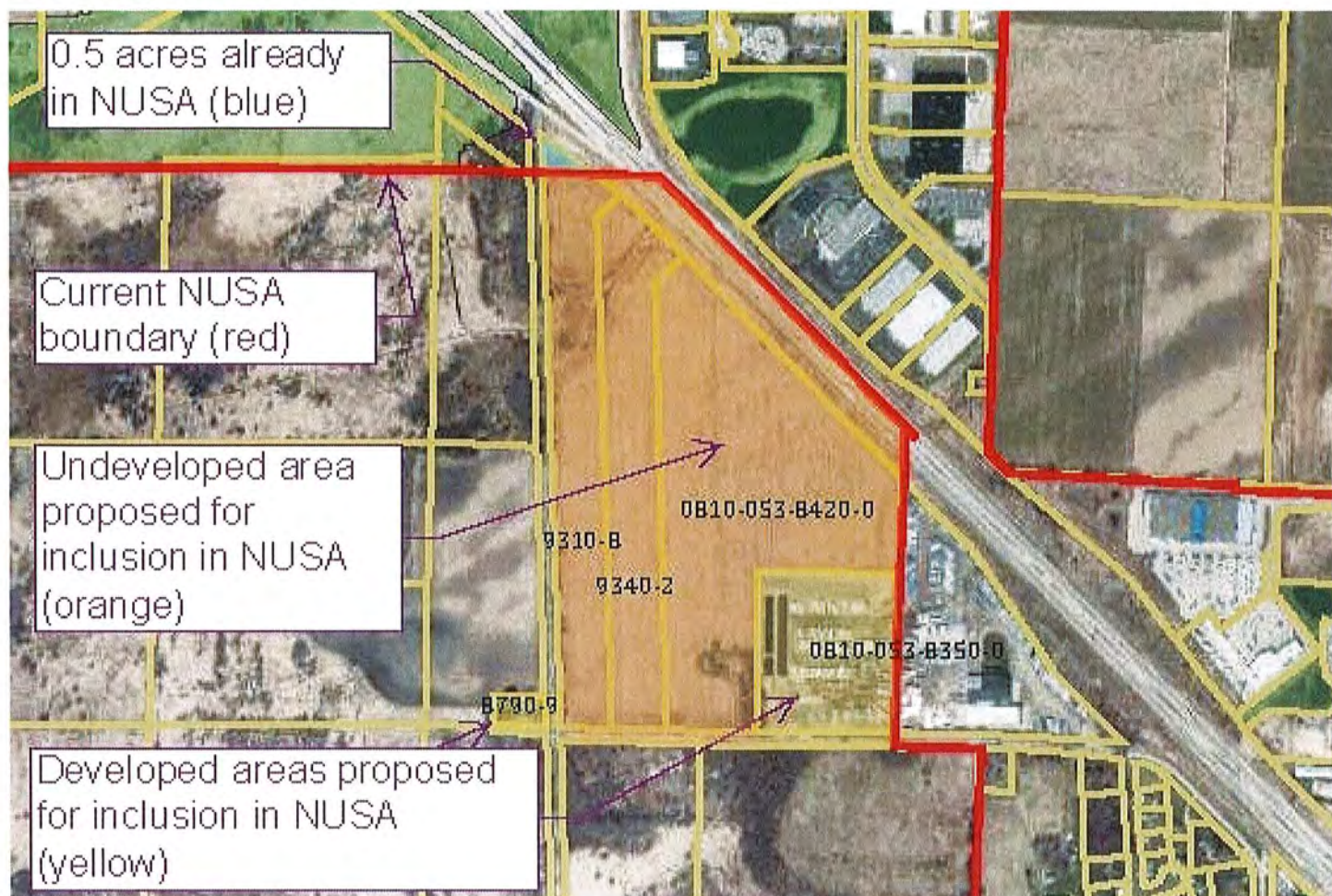
Attested By:



Brandi Cooper, Village Zoning Administrator

Vote: 5-0

EXHIBIT A: SUBJECT PROPERTY



ATTACHMENT AND REVENUE SHARING AGREEMENT

THIS ATTACHMENT AND REVENUE SHARING AGREEMENT (the “Agreement”) is made and entered into by and between the VILLAGE OF DEFOREST, a Wisconsin municipal corporation located in Dane County, Wisconsin (“DeForest”), and the TOWN OF BURKE, a Wisconsin body politic and corporate located in Dane County, Wisconsin (“Burke”).

RECITALS

- A. DeForest, Burke, the City of Sun Prairie (“Sun Prairie”), and the City of Madison (“Madison”) entered into a Cooperative Plan pursuant to Wis. Stats. §66.0307 entitled “Final Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan”, dated January 5, 2007 which became effective upon approval by the Wisconsin Department of Administration on May 4, 2007 (the “Cooperative Plan”). DeForest, Sun Prairie, and Madison are referred to in this Agreement as the “Incorporated Municipalities”.
- B. Section 9.B. of the Cooperative Plan prohibits the Incorporated Municipalities from annexing or otherwise attaching lands from Burke within the areas described in the Cooperative Plan as the “Protected Areas” without the consent of Burke.
- C. DeForest has received a development proposal for lands currently within Burke and located within the Protected Area on Parcel No. 081-0052-9340-2, Parcel No. 081-0052-9310-8, and the western approximately 22 acres of Parcel No. 081-0053-8420-0 (collectively the “Project Site”) which will require Village services. The Project Site is described in Exhibit A attached hereto and incorporated herein and shown on the map attached hereto and incorporated herein as Exhibit B.
- D. Section 9.C.(5) of the Cooperative Plan recognizes the benefits of including public roadways bordering the Town and an Incorporated Municipality within the jurisdiction of an Incorporated Municipality. The proposed development and the Project Site is served by Daentl Road, a Town road, part of which will be attached to DeForest pursuant to this Agreement (the “Daentl Road Attachment Segment”) with the remainder to be attached to DeForest in the future pursuant to the Cooperative Plan. The Daentl Road Attachment Segment is shown on Exhibit B.
- E. Section 66.0305 of the Wisconsin Statutes allows municipalities to enter into agreements to share revenues derived from taxes and special charges, as defined in Wis. Stats. §74.01 (4).
- F. Sections 66.0301 and 66.0305(4)(b) of the Wisconsin Statutes allow municipalities to enter into agreements for the cooperative provision of municipal services.

- G. Sections 23. and 24.A. of the Cooperative Plan contemplate the possibility of additional intergovernmental agreements adjusting boundaries and obligations for services between the parties to the Cooperative Plan and possible additional revenue sharing agreements.
- H. DeForest and Burke have determined it to be in their mutual interest to allow the attachment of the Project Site to DeForest, to attach the Daentl Road Attachment Segment to DeForest, and to share the revenues derived from real property taxes generated on the Project Site on the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the covenants and promises contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby mutually acknowledged, Burke and DeForest agree as follows:

1. Early Attachment of Project Site and the Daentl Road Attachment Segment.

As authorized by Section 9 B. of the Cooperative Plan and pursuant to the terms and conditions of this Agreement, Burke hereby consents to the early attachment to DeForest of both the Project Site and the Daentl Road Attachment Segment upon request by the owner(s) of all property comprising the Project Site (the “Owners”). For the avoidance of doubt, the Owners’ request for attachment shall be deemed to include the attachment of both the Project Site and the Daentl Road Attachment Segment. The attachments shall be accomplished in accordance with the procedures for Intermediate Attachments as outlined in the Cooperative Plan, including Section 10 of the Cooperative Plan, and shall be subject to all of the provisions of Section 9.C of the Cooperative Plan, except that the provisions of Section 9.C.(3), as they relate to revenue sharing for years following the year of attachment shall not apply. A single Attachment Ordinance (as the term is defined in Section 10(1) of the Cooperative Plan) shall be used to attach the Project Site and the Daentl Road Attachment Segment to DeForest.

With regard to the Project Site, the attachment will become effective at 12:01 a.m. on the next Monday after DeForest’s adoption of the Attachment Ordinance attaching the Project Site. With regard to the Daentl Road Attachment Segment the attachment will become effective at 12:01 a.m. on the date that is thirty (30) days after Burke provides written notice to the Village Administrator and the Village Clerk that either (i) Burke has been awarded a STP-Local Grant from the Wisconsin Department of Transportation to construct improvements to the entire length of Daentl Road (the “Grant”) – not including the Token Creek Bridge B-13-0096 -- and the improvement to Daentl Road covered by the Grant has been completed and accepted by Burke; or (ii) Burke was not awarded the Grant. Burke will take reasonable measures to pursue the award of the Grant and will provide reasonable documentation to DeForest regarding Burke’s

application for the Grant and the improvement to Daentl Road covered by the Grant. Burke shall provide a copy of the plans and specifications for the improvements to the Daentl Road Attachment Segment to DeForest prior to final approval thereof by Burke, and shall consider in good faith any revisions requested by DeForest. Burke shall not be obligated to approve any changes that increase the project costs unless DeForest agrees to pay for such increases. DeForest shall also have the right to participate in construction observation during the improvements made to the Daentl Road Attachment Segment. The contract for the Daentl Road improvements shall provide for proof rolling of the base and DeForest shall be provided not less than 24 hours' written notice to allow for observation of the proof rolling. DeForest shall have the right, at DeForest's sole cost, to direct that any areas deemed substandard be undercut and replaced with suitable material. For purposes of this Agreement, written notice to the Village Administrator and Village Clerk shall mean written notice delivered by regular mail or certified mail to the Village Hall, 120 S. Stevenson Street, DeForest, WI 53532 or by email to changb@vi.deforest.wi.us and lundgrenc@vi.deforest.wi.us. The Village may change its notice recipients by providing notice to Burke. Upon attachment of the Daentl Road Attachment Segment to DeForest, unless otherwise agreed by the parties in writing, DeForest shall be responsible for the maintenance, repair, and removal of snow and ice from the Daentl Road Attachment Segment.

In the event DeForest has not adopted the Attachment Ordinance contemplated by this Section 1 by on or before October 31, 2023, this Agreement shall automatically terminate and be of no further force or effect.

2. Revenue Sharing.

- (a) *General.* If the Project Site is attached to DeForest pursuant to Section 1 of this Agreement, DeForest shall pay Burke an amount equal to fifty percent (50%) of DeForest's local share of the real property taxes levied and paid on the Project Site in each year commencing with the year after the attachment becomes final. In the event all or part of the Project Site becomes part of a tax increment district created by DeForest, the payment by DeForest for the portion of the Project Site included in the tax incremental district shall be determined as if such portion of the Project Site was not included in a tax increment district; and paid on the same payment schedule specified in Section 2(b) of this Agreement. All payments required by this Agreement shall continue until a final payment of the 2035 tax roll payable in February of 2036. Provided, however, that in no event shall DeForest's payments to Burke under this Agreement in any year be less than Burke's local share of real estate taxes levied against the Project Site in the year of attachment of the Project Site.
- (b) *Time of payment.* Payment by DeForest shall be made in arrears not later than 30 days after the date established for settlement by the county treasurer with a local taxation district under Wis. Stats. §74.29 or any subsequent statutory provision for final settlement.

3. DeForest Contribution for Improvement of Daentl Road. In the event Burke is awarded the Grant and constructs improvements to the entire length of Daentl Road, the road shall be reconstructed with pulverized and overlay aggregate base material and 5” of hot mix asphalt. The parties acknowledge that the 5” of hot mix asphalt exceeds the typical town road standard of 4” applied in Burke and, in consideration thereof, DeForest shall pay Burke the additional cost for 1” of hot mix asphalt installed on the Daentl Road Attachment Segment upon completion and acceptance of the road improvements by Burke.
4. Effective Date and Term.
 - (a) This Agreement shall become effective upon approval and execution by the governing bodies of both parties following: (i) the publication of a Class 3 notice; (ii) the holding of a public hearing hereon, as provided in Wis. Stats. §66.0305(3); and (iii) consideration by the governing bodies of both parties of the results of any advisory referendum held pursuant to §66.0305(6)(a), Wis. Stats. The effective date hereof shall be the date of the last signature as indicated in the signature blocks below.
 - (b) This Agreement shall continue in effect through October 26, 2036, unless earlier terminated pursuant to Section 1 of this Agreement or by the mutual consent of the parties in writing.
5. General Provisions.
 - (a) *Entire Agreement.* This Agreement represents the entire agreement between the parties with respect to the specific subject matter hereof, except to the extent the Cooperative Plan remains applicable thereto, and may be amended only by a written agreement executed by both parties.
 - (b) *Severability.* The various provisions in this Agreement are intended to be severable. In the event that any single term in this Agreement is determined to be invalid or unenforceable, such determination shall not affect any of the remaining provisions which shall continue in full force and effect. Notwithstanding anything in this Section 5(b) to the contrary, in the event a court of competent jurisdiction invalidates or holds Section 2 of this Agreement to be unenforceable, DeForest and Burke shall negotiate an enforceable revenue sharing provision that provides for the same financial benefit to Burke.
 - (c) *Governing Law.* This Agreement shall be governed by, and construed according to, the laws of the State of Wisconsin. In the event of a dispute, venue shall lie for all parties in Dane County, Wisconsin.

- (d) *Section Captions.* The captions or headings of the various sections of this Agreement are intended for ease of reference only and shall not be deemed to define, limit or describe the scope or intent of this Agreement and are not part of this Agreement.
- (e) *Effect.* This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors or assigns.
- (f) *Neutral Construction.* The parties acknowledge that this Agreement is the product of negotiations between the parties and that, prior to the execution hereof, each party has had full and adequate opportunity to have this Agreement reviewed by, and to obtain the advice of, its own legal counsel with respect hereto. Nothing in this Agreement shall be construed more strictly for or against either party because that party's attorney drafted this Agreement or any part hereof.
- (g) *No Third-Party Beneficiary.* This Agreement is intended to be solely between DeForest and Burke. Nothing in this Agreement accords any third-party any legal or equitable rights whatsoever.
- (h) *No Special Assessments against Property in the Town.* DeForest acknowledges and agrees that, during the Protected Period (as that term is defined in Section 5.A. of the Cooperative Plan), in the event the Daentl Road Attachment Segment is attached to DeForest pursuant to this Agreement and DeForest improves the Daentl Road Attachment Segment, DeForest will not levy special assessments for such public improvements against any parcel of property in Burke benefitted by such public improvements.

In witness whereof, the parties have executed this Agreement on the date(s) set forth in the signature blocks below.

[Signature blocks appear on following page]

ATTEST:

VILLAGE OF DeFOREST

Callista Lundgren (Date)
Village Clerk

By: _____
Jane Cahill Wolfgram (Date)
Village President

TOWN OF BURKE

By: _____
Kevin Viney (Date)
Town Chairperson

ATTEST:

P.J. Lentz (Date)
Clerk/Treasurer

DRAFT

**PRE-DEVELOPMENT AGREEMENT BETWEEN
LIKEWISE PARTNERS LLC
AND
VILLAGE OF DEFOREST**

This Agreement made and entered into this ____ day of June, 2023, by and between the Village of DeForest, a municipal corporation (hereinafter referred to as “Village”), and Likewise Partners LLC (hereinafter referred to as “Developer”).

WHEREAS, the Developer desires to develop between 600,000 and 700,000 square feet of industrial, warehouse, distribution, and/or office space (“the Development”) on approximately 53 acres north of Daentl Road currently in the Town of Burke, Wisconsin (“Town”), and consisting of Dane County tax parcel 081005293108, parcel 081005293402, and the western approximately 22 acres of parcel 081005384200, also represented in Exhibit A (“the Subject Property”); and

WHEREAS, the Development is currently envisioned to be constructed in phases, with the first building anticipated to be constructed in 2023, following all applicable approvals including municipal site plan approval; and

WHEREAS, the Village in 2007 entered into the Town of Burke, Village of DeForest, City of Sun Prairie and City of Madison Cooperative Plan (“Boundary Agreement”), which allows the Village to provide municipal sanitary sewer and water services to the Subject Property, specifies the attachment of the Subject Property to the Village by October 27, 2036, and allows for earlier attachment with consent of the Town, Village, and property owner; and

WHEREAS, the Village and the Town have negotiated an Attachment and Revenue Sharing Agreement whereby the Town consents to attachment to the Village of DeForest of the Subject Property and a certain segment of Daentl Road; and

WHEREAS, the Village has approved, via Resolution 2023-042, a Cost Share Agreement with the Town by which the Town will cause the replacement of the bridge carrying Daentl Road over Token Creek and the Village will contribute \$30,400 toward the additional cost of replacement over the cost of repair; and

WHEREAS, the Development requires the extension of municipal sanitary sewer and water services; and

WHEREAS, the Subject Property is not currently within the Urban Service Area, as specified by the Wisconsin Department of Natural Resources (“WDNR”) following the recommendation of the Capital Area Regional Planning Commission (“CARPC”), or the service territory of the Madison Metropolitan Sewerage District

(“MMSD”), with both such designations required before municipal sanitary sewer service may be extended to the Subject Property; and

WHEREAS, the Development contributes to the need for improvement of Daentl Road and its bridge over Token Creek east of the Subject Property, and enhances the need for a second roadway route into and out of the Daentl Road area including the Subject Property, which may best be facilitated by a crossing of Interstate 39-90-94 to its northeast; and

WHEREAS, the parties understand that this Agreement is intended to establish the general terms for the provision of public infrastructure to the Development before the Village applies to CARPC for expansion of the Urban Service Area to include the Subject Property, and is not intended to replace or supplant the need for a complete development agreement prior to the commencement of construction of any public improvements within or associated with the Development.

NOW THEREFORE, for and in consideration of the premises and the mutual covenants and agreements hereinafter set forth, the parties agree as follows:

1. Developer Obligations.

Developer shall be responsible for the following obligations and liabilities, and Developer shall perform and discharge such obligations in a timely manner, as provided for herein:

- a. Developer shall pursue the Development (i) generally in the manner represented by the options presented in Exhibit A, subject to adjustments in its sole discretion based on changes in market conditions, zoning approvals, and other factors, and (ii) with total municipal water usage that is within the capacity of the existing system without the addition of new water supply or storage facilities and wastewater disposal volumes not exceeding the capacity of current downstream sanitary sewer mains and interceptors as determined by the Village. No proposed building(s) on, or use of, the Subject Property that would require increases in the Village’s current sewer or water system generation, storage, or transmission capacities shall be approved unless a separate agreement is entered into under which the Developer agrees to pay the cost of such modifications.
- b. Developer shall be responsible for all actual and reasonable third-party or out-of-pocket Village expenses in the review and approval of such Development, including consultant cost reimbursement, provided, the Village shall notify and obtain the approval of Developer, such approval not to be unreasonably withheld, in advance of what third-party consulting or other services it intends

to engage in order to review the Development in accordance with this Agreement.

- c. Developer shall use commercially reasonable efforts to cause the owner of the Subject Property to request, consent to, and not object to or oppose the attachment of the Subject Property to the Village, along with adjacent road rights-of-way as directed by the Village. Owner shall make such request and provide such consent before the Developer, owner, or either's agent applies for any zoning approval for the Development, unless the Village first informs the Developer that immediate attachment will not be practical based on the lack of Town or Village consent.
- d. Developer shall be responsible for all expenses associated with the amendment to the Urban Service Area and MMSD service territory to include the Subject Property, including the full amount of the application fees, area charges and connection fees that are attributable to the Subject Property.
- e. Developer shall be responsible for all expenses associated with the design, construction, and inspection of the extension of sanitary sewer service to and within the Subject Property and acknowledges that such expenses will likely include construction and maintenance of a private sewage lift station and force main on and serving the Subject Property and may include the acquisition of off-site easements from other property owners.
- f. Developer shall be responsible for all expenses associated with the design, construction, and inspection of the extension of municipal water service to and within the Subject Property. Such expenses shall include initial extension of a single water main to and within the Subject Property, any looping internal to the Development as may be required to meet its fire protection requirements, plus the extension of a second water main to and within the Subject Property to establish a municipal water system loop pursuant to paragraph 2c.
- g. Developer acknowledges and agrees that, in the event the Town is awarded a STP-Local Grant from the Wisconsin Department of Transportation to construct improvements to the entire length of Daentl Road (the "Grant"), the entire length of Daentl Road shall be improved to the standards described in Exhibit D. Developer also acknowledges that the Town and the Village have negotiated an Attachment and Revenue Sharing Agreement whereby the Village has agreed to pay the Town the additional cost for one inch of hot mix asphalt installed on the entire length of Daentl Road upon completion and acceptance of the road improvements by the Town. Developer hereby acknowledges and agrees that, in the event the entire length of Daentl Road is improved to the standards described in Exhibit D, it will contribute one-third (1/3) of the Village's total cost for the additional one inch of hot mix asphalt

and agrees that such cost allocation to the Subject Property is fair and reasonable and, for itself, its successors in interest and assigns covenants and agrees not to contest any allocation of the costs to the Subject Parcel that does not exceed 1/3 of the Village share of the additional costs. The Developer, its successors in interest or assigns shall make payment upon receipt of an invoice from the Village and according to terms provided therein.

- h. At such time as the Development includes a driveway connection to Daentl Road at any point further than 80 feet west of the southeast corner of parcel 081005384200, Developer shall improve the segment of Daentl Road adjacent to the Subject Property to the standards described in Exhibit B unless the segment has already been improved or is scheduled to be improved in accordance with subsection 1.g. Developer shall also be responsible for the full cost to design and construct all new public roads within the Development, including their intersection(s) with Daentl Road. All such construction shall also be consistent with the standards in Exhibit B. The costs of any future bridge or underpass across Interstate 39-90-94 or the extension of roads beyond the development to connect to such bridge are beyond the scope of this Agreement.
- i. The Developer shall pay a fee, not to exceed \$12,000, equal to one-third of the Village's share of the cost for replacement of the bridge on Daentl Road crossing Token Creek ("Daentl Road Bridge Fee"). The Village's cost shall reflect the benefit of State of Wisconsin bridge funding. This fraction is based on the Subject Property's share of the developable land area that is within the primary service area for the improvements as shown in Exhibit E. The Daentl Road Bridge Fee shall be paid in installments of a minimum of \$3,000 with each building permit obtained on the Subject Property until the total Daentl Road Bridge Fee is paid. If the Daentl Road Bridge Fee is not fully paid on or before June 1, 2028, the Developer shall pay the remaining amount in one installment. The development agreement described in paragraph 1.k will further detail the payment schedules.
- j. Developer acknowledges and agrees that Daentl Road between the southeast corner of parcel 081005384200 and the Daentl Road bridge will be improved in the future to the standards described in Exhibit C if the Town has not already caused the segment of Daentl Road to be improved in accordance with subsection 1.g.. Developer further acknowledges and agrees that at the time such improvements are made, it will contribute one-third (1/3) of the Village's total cost for the project and agrees that such cost allocation to the Subject Property is fair and reasonable and, for itself, its successors in interest and assigns covenants and agrees not to contest any allocation of the project costs to the Subject Parcel that does not exceed 1/3 of the Village share of the total project cost. The Developer, its successors in interest or assigns shall make

payment upon receipt of an invoice from the Village and according to terms provided therein.

- k. Developer shall support Village efforts to advocate to the Wisconsin Department of Transportation (“WDOT”) for a public roadway overpass or underpass of Interstate 39-90-94 and will accommodate in the Development right-of-way for such an over/underpass and/or its connector road to Daentl Road if constructed.
- l. Before proceeding with the Development, Developer shall enter into a development agreement with the Village specifying the terms and conditions of construction of any public improvements by Developer in accordance with Village ordinances and standard practices.

2. Village Obligations.

Upon receipt of either the owner’s request to attach the Subject Property to the Village pursuant to paragraph 1c or notification that the Town does not consent to such attachment, Village shall be responsible for the following obligations and liabilities, and Village shall perform and discharge such obligations in a timely manner, as provided for herein:

- a. Village shall submit and support applications to CARPC to expand the Urban Service Area and to MMSD to expand its service territory to include the Subject Property, and shall support such approvals through the associated CARPC, WDNR, and MMSD processes, but cannot guarantee such approvals. Village may combine such applications with those for other property in and around the Village at its discretion, but Developer’s expense shall be limited to its proportionate share of the land included in the application(s).
- b. Village shall design, construct, and inspect, or collaborate with the Developer to design, construct, and inspect, public sanitary sewer and an initial public water main extension to and within the Subject Property. The sanitary sewer main extension and the initial water main extension shall be from the east of the Subject Property from their respective current termini, and may also include water main looping internal to the Development as may be required to meet its fire protection requirements.
- c. Village shall not require of the Development any subsequent water main extension beyond that described in paragraph 2b. to establish a municipal water system loop in the area of the Subject Property until the soonest of following events: (i) any building that results in a total of 300,000 square feet or greater of total gross building floor area on the Subject Property is approved

for construction, (ii) the second principal building in the Subject Property is approved for construction.

- d. Village shall process all complete requests and applications for attachment, zoning and other approvals.
- e. Village shall itemize and provide all invoices to the Developer for expenses incurred by the Village that Developer is obligated to reimburse.
- f. Village shall advocate to WDOT for a public overpass or underpass of Interstate 39-90-94 in the vicinity of the Subject Property, in a manner and location that does not unduly interfere with the Developer's Development as generally reflected in Exhibit A. The Village does not guaranty that such approval will be obtained or that an Interstate crossing will be constructed.

3. Binding Effect; Other Agreements; Recording.

This Agreement shall bind and inure to the benefit of the successors and assigns of the Developer and the Village. Nothing herein shall affect or change any other agreements entered into between the Village and the Developer, nor shall anything herein be construed to release the Developer from the obligation to execute a development agreement containing customary provisions prior to the commencement of any construction work in connection with the Development. The parties consent to the recording of this Agreement at the option of either party hereto.

4. Separability.

It is understood that in the event any provision of this Agreement shall be deemed invalid by a court of competent jurisdiction, then the invalidity of said provision shall not affect the validity of any other provisions hereof, and the parties agree that the balance of this Agreement shall be and remain in full force and effect.

5. Assignment.

No assignment of rights and liabilities under this Agreement by either party shall be made without the consent of the other party hereto, which shall not be unreasonably delayed or withheld.

6. Waiver.

Waiver of any provisions hereof shall be effective only if done in writing and signed by an authorized representative of the party waiving such provisions.

This instrument drafted by:

Allen D. Reuter
Reuter, Whitish & Evans, S.C.
Madison, WI

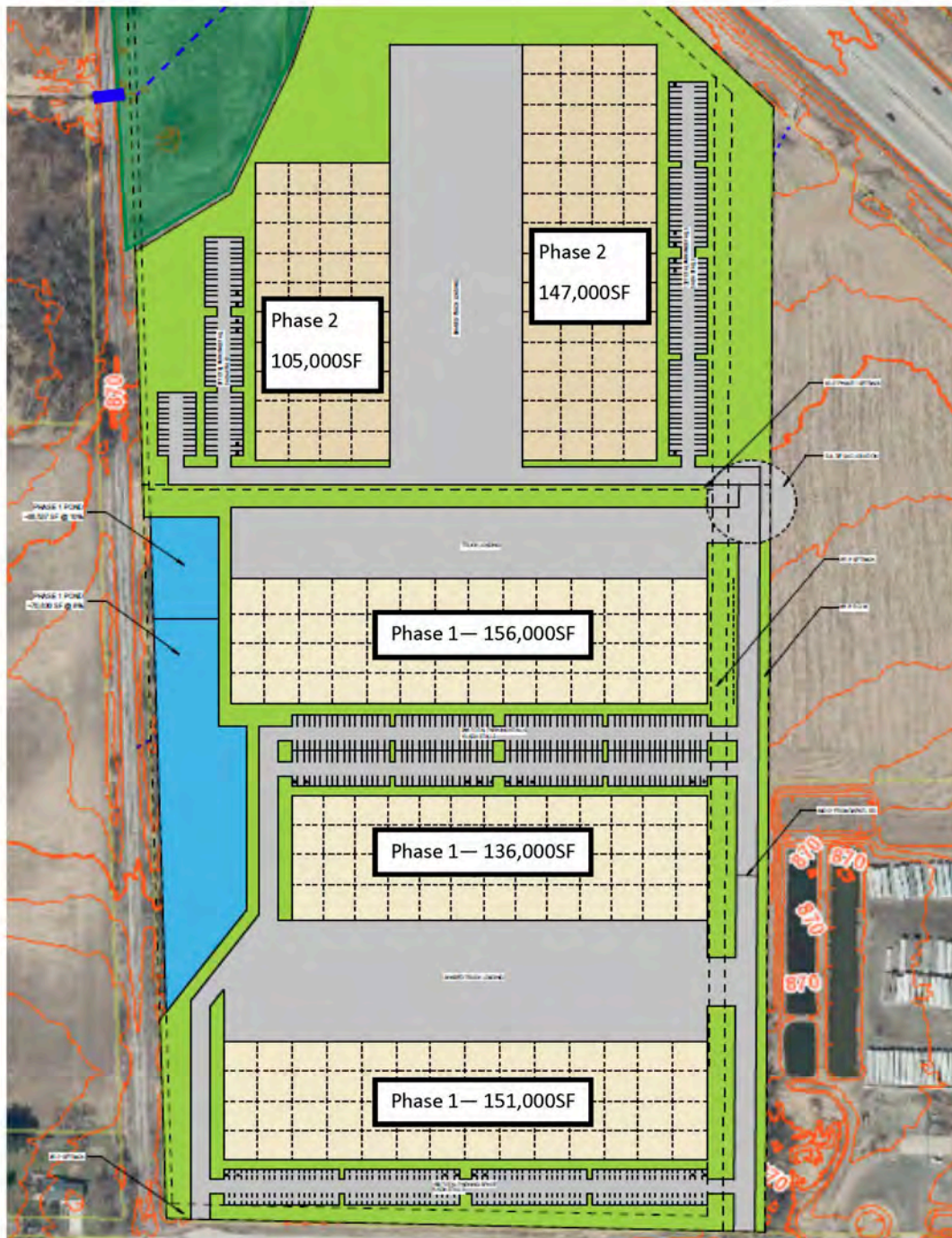
DRAFT

EXHIBIT A: SUBJECT PROPERTY AND DEVELOPMENT (TWO CURRENT DEVELOPMENT OPTIONS)

DRAFT

SITE PLAN - CONCEPT 1

Madison Logistics Park
4410 Daentl Road | DeForest, WI 53532



CHRIS CAULUM, CCIM, SIOR
(608) 443-1040
ccaalum@oakbrookcorp.com

BRYANT MEYER, CCIM
(608) 443-1004
bmeyer@oakbrookcorp.com



SITE PLAN - CONCEPT 2

Madison Logistics Park
4410 Daentl Road | DeForest, WI 53532



CHRIS CAULUM, CCIM, SIOR
(608) 443-1040
ccaalum@oakbrookcorp.com

BRYANT MEYER, CCIM
(608) 443-1004
bmeyer@oakbrookcorp.com

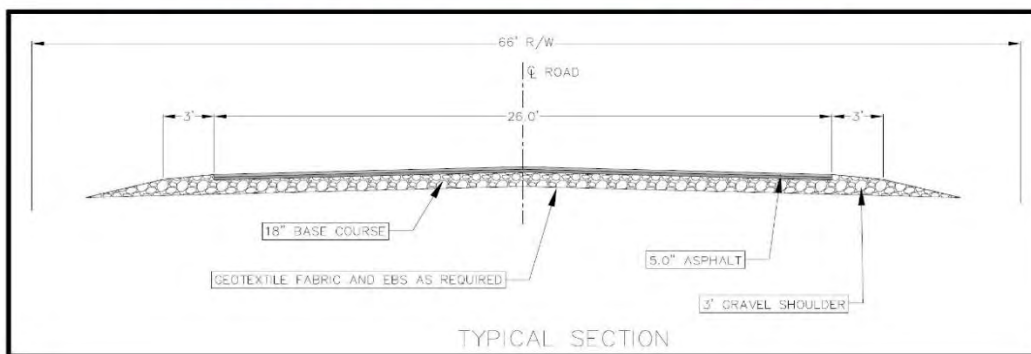


EXHIBIT B: OPINION OF PROBABLE COST AND DESIGN STANDARDS, DAENTL ROAD STREET RECONSTRUCTION ADJACENT TO SUBJECT PROPERTY



EXHIBIT B Opinion of Probable Cost November 10, 2022 Daentl Road Village of DeForest

	Construction Cost	Contingency (10%)	Engineering (15%)	Total Cost
Daentl Road Street Reconstruction	\$ 236,737.50	\$ 23,673.75	\$ 39,061.69	\$ 299,472.94
			Total Project	\$ 299,472.94



**EXHIBIT C: OPINION OF PROBABLE COST AND DESIGN STANDARDS,
DAENTL ROAD STREET RECONSTRUCTION BETWEEN THE SOUTHEAST
CORNER OF PARCEL 081005384200 AND DAENTL ROAD BRIDGE**

DRAFT



EXHIBIT C
Opinion of Probable Cost
 December 5, 2022
 Daentli Road
 Likewise Partners SE corner to Yahara River Bridge
 Village of DeForest

	Construction Cost	Contingency (10%)	Engineering (15%)	Total Cost
Daentli Road Street Reconstruction	\$ 725,230.00	\$ 72,523.00	\$ 119,662.95	\$ 917,415.95
Total Project				\$ 917,415.95

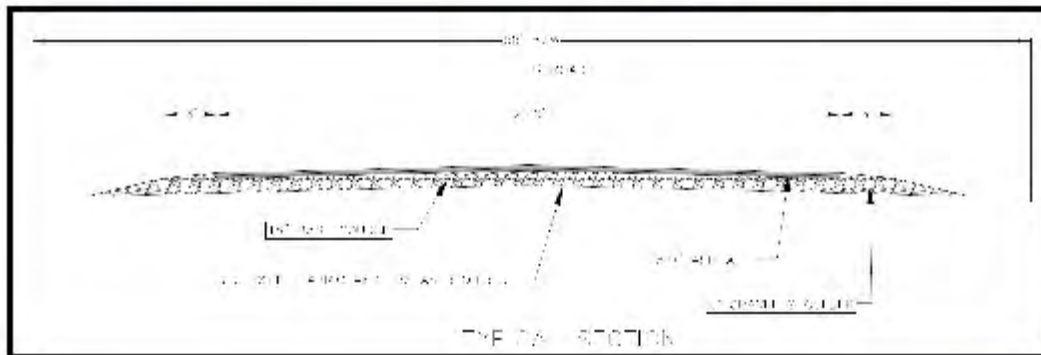


EXHIBIT D: OPINION OF PROBABLE COST AND DESIGN STANDARDS,
ADDITIONAL ONE INCH OF ASPHALT FOR DAENTL ROAD STREET
RECONSTRUCTION BETWEEN US HIGHWAY 51 AND THE NORTHWEST
TERMINUS OF DAENTL ROAD

Opinion of Probable Cost

May 18, 2023

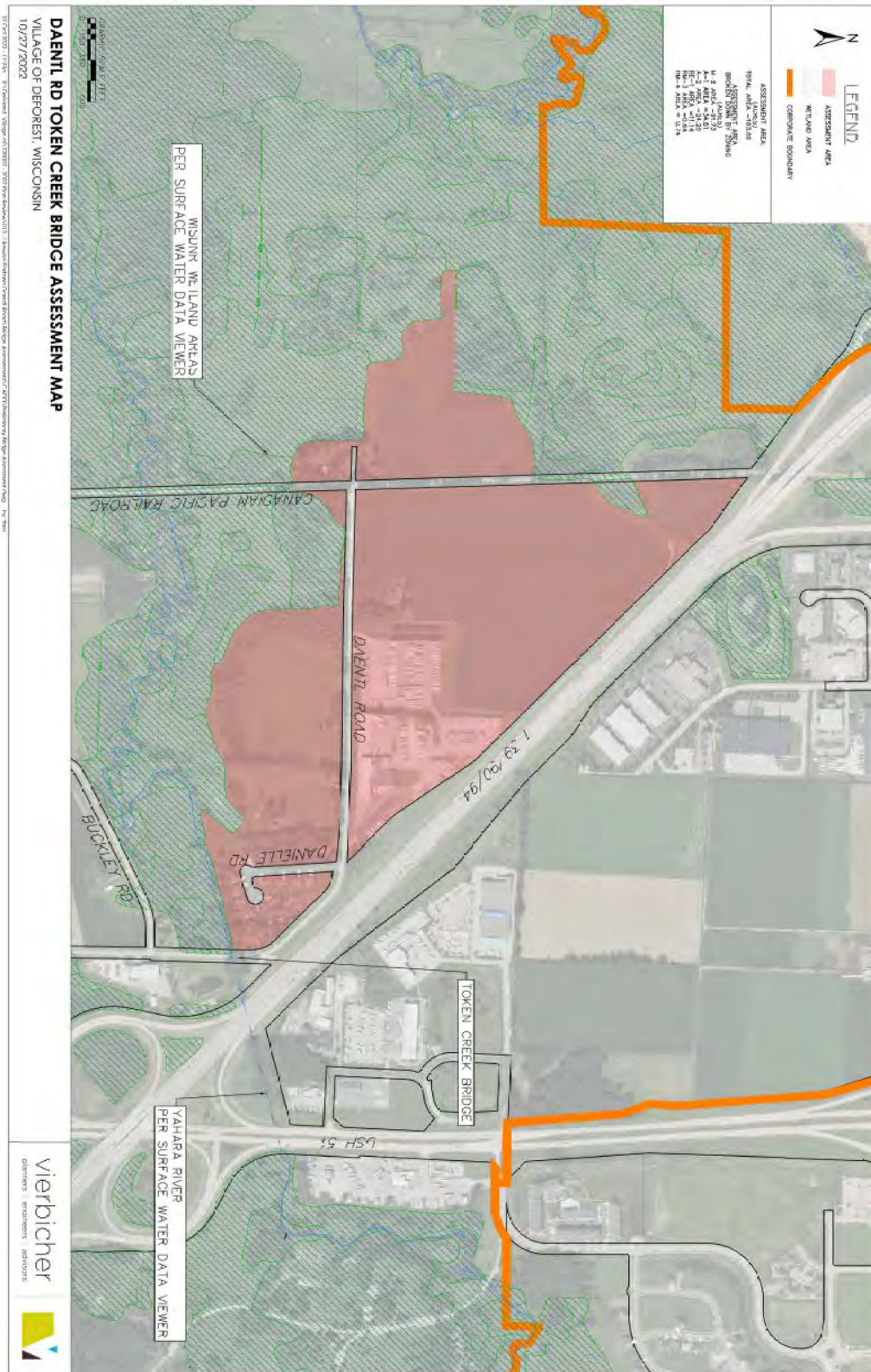
Daentl Road

Additional cost of 1" of Asphalt from USH 51 to Terminus
Cost estimates provided by Town of Burke on May 18, 2023

<u>Description</u>	<u>Length</u>	<u>Cost</u>
HMA Pavement - 1" Thick – 30' wide	3,787 LF	\$58,500
HMA Pavement – 1" Thick – 26' wide	3,158 LF	\$47,800
	Total	\$106,300

Reconstruction Method: The road shall be reconstructed with pulverized and overlay aggregate base material and five inches (5") of hot mix asphalt. The typical Town of Burke standard for hot mix asphalt is four inches (4"). The Village of DeForest has requested an additional one inch (1") of hot mix asphalt and has been provided the opinion of probable cost from the Town of Burke included in this exhibit.

EXHIBIT E: DAENTL ROAD TOKEN CREEK BRIDGE ASSESSMENT MAP





January 16, 2023

Chris Garrison, Chief
Sun Prairie Fire Department
cgarrison@cityofsunprairie.com

Chris Carbon, Chief
Madison Fire Department
ccarbon@cityofmadison.com

Che Stedman, Medical Affairs
Madison Fire Department
cstedman@cityofmadison.com

Dear Chiefs and Mr. Stedman—

This letter is intended to notify you of a pending request to expand the Northern Urban Service Area (NUSA) to include lands currently provided fire protection by the Sun Prairie Fire Department and EMS by the Madison Fire Department.

The Village of DeForest, in collaboration with the Town of Burke, intends to apply to the Capital Area Regional Planning Commission to expand the NUSA to include 79 acres along the north side of Daentl Road in the Town. Approximately 53 acres are proposed for development of between 600,000 and 700,000 square feet of industrial, warehouse, distribution, and office space. We do not yet have a final development proposal, but the following page has one initial concept. Nearly all of the rest of the 79 acres is or will be used for semi-truck trailer storage/parking by Northcentral Utility, which is a business that has been operating along Daentl Road for many years. This map shows the proposed NUSA expansion and industrial development area in orange and yellow:



Inclusion in the NUSA is required before municipal utilities may be extended. By intergovernmental agreement, DeForest will provide municipal sanitary sewer and water services to this area. Such services will be provided via westerly extensions to existing sewer and water mains along Daentl Road. The Village also has an agreement with the prospective developer of the 53 acres to fund a water main loop from the north to serve the second industrial building on that acreage, or any building that results in 300,000+ square feet of floor area on that acreage.

We intend to submit the NUSA expansion application in early February, and also expect a request for zoning approvals for the 53 acre industrial development project in spring.

Should you have any questions or comments on this application or proposal, please forward them to me no later than February 1, 2023 if possible.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark Roffers', with a stylized, cursive script.

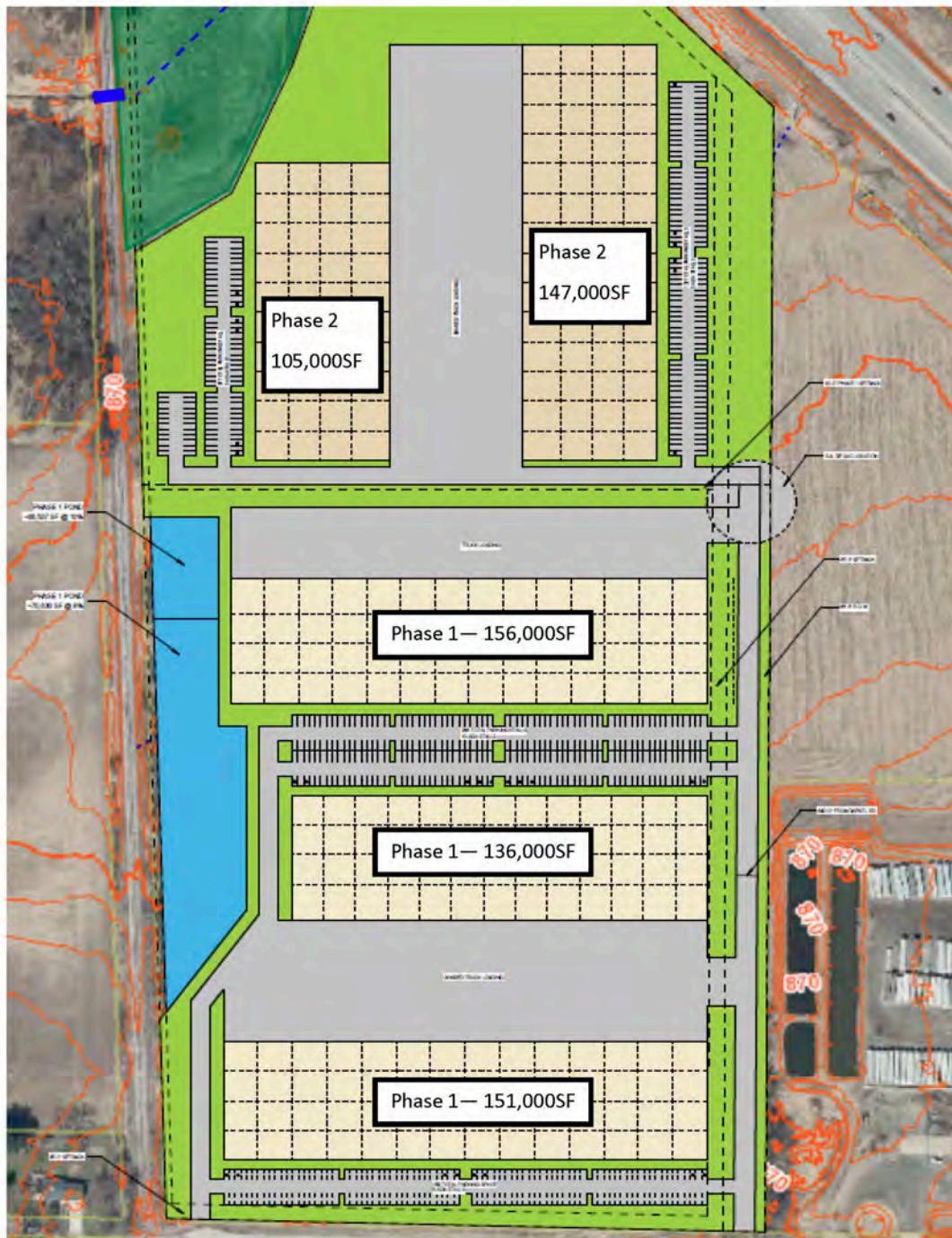
Mark Roffers

Consulting Village Planner, Village of DeForest

Attachment: Conceptual development proposal for 53-acre tract along Daentl Road

SITE PLAN - CONCEPT 1

Madison Logistics Park
4410 Daentl Road | DeForest, WI 53532



CHRIS CAULUM, CCIM, SIOR
(608) 443-1040
ccaulum@oakbrookcorp.com

BRYANT MEYER, CCIM
(608) 443-1004
bmeyer@oakbrookcorp.com



Appendix E

From: [Carbon, Christopher](#)
To: [Mark Roffers](#); [Stedman, Che](#); [Sullivan, William](#)
Subject: RE: DeForest/Burke Urban Service Area Request, Daentl Road
Date: Thursday, January 26, 2023 1:28:27 PM

Hi Mark,

Thanks very much for reaching out. We do not have any immediate concerns regarding the ability to provide EMS coverage in this area, however we would request the opportunity to be advised of any final development proposals to assure the type of building and scope of services do not have an unanticipated impact on our service capability in this regard.

If amenable, we would also like to request the opportunity to review any proposed site and building plans for development, as it relates to the perspective of fire service. While we do not provide services presently, we know that if anything were to change, that it would be beneficial to share our feedback. If it is irrelevant at the time, then we would obviously decline the input, however knowing there is the potential for variability, we would like to be included and provided with the opportunity for review if appropriate.

Thanks again for reaching out, and please let me know if any additional information is needed.

Sincerely,

Chris

Chris Carbon

Fire Chief

City of Madison Fire Department

314 W. Dayton St.

Madison, WI 53703

Office: 608.266.6564

Cell: 608.577.8584

ccarbon@cityofmadison.com

www.madisonfire.org



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Appendix E

it from your computer system.

From: Mark Roffers <Mark@mdroffers.com>

Sent: Monday, January 16, 2023 9:03 AM

To: Carbon, Christopher <CCarbon@cityofmadison.com>; Stedman, Che
<CStedman@cityofmadison.com>; cgarrison@cityofsunprairie.com

Cc: Judd Blau <Blauj@vi.deforest.wi.us>; Craig Mathews <cmat@vierbicher.com>

Subject: DeForest/Burke Urban Service Area Request, Daentl Road

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Chief Garrison, Chief Carbon, and Mr. Stedman—

Please see the attached letter notifying you of a pending request to expand the urban service area to lands along Daentl Road in the Town of Burke.

I am copying the DeForest Public Services Director and consulting Village Engineer on this email.

Thank you!

Mark

Mark Roffers, AICP

Village of DeForest, consulting village planner

MDRoffers Consulting

(608)770-0338

www.mdroffers.com

06/07/2023

To whom it may concern:

This technical memorandum provides a summary of the preliminary stormwater modeling that was completed for an existing site located south of I-90/I-39 and north of Daentl Rd within the Village of DeForest, Dane County. The site is currently being analyzed for future development.

All stormwater management facilities will be designed to meet the Village and County's stormwater management requirements. An outline of those requirements are as follows:

- For new development, retain soil particles greater than 5 microns on the site (80% reduction) resulting from a one-year 24-hour storm event (2.5 inches over 24-hour duration)
- Treat the first 0.5 inches of runoff using the best oil and grease removal technology available
- Maintain predevelopment peak runoff rates for the 1-year, 2-year, 10-year, 100-year, and 200-year 24-hour storm events
- Outlets discharging from the development site must be capable of carrying designed flow at a non-erosive velocity
- Infiltrate runoff volume equal to 90% of the pre-development infiltration volume and provide adequate pre-treatment prior to infiltration -or- use minimum 2% of the project site for infiltration and meet or exceed the annual pre-development recharge rate
- Implement best management practices to reduce the temperature of runoff for sites within watersheds with cold water community streams
- No wetlands may be used to meet any of these requirements

Currently, this 54 AC site is entirely farmland, except for a driveway and house on the southeast corner of the site. The site is currently in the Town of Burke and is part of an extraterritorial zoning area that will eventually be annexed to the Village of DeForest. Planning and development decisions for the site are made jointly between the Town of Burke and the Village of DeForest, with the Village taking the lead on the CARPC application. The site is split by a drainage divide that runs from east to west, with roughly half of the site draining southwest and the other half draining northwest. This preliminary modeling is for the Phase 1 work, which consists of the southern portion of the project site. The Phase 1 vs Phase 2 dividing line roughly follows the existing drainage divide, and this modeling will show that the proposed Phase 1 work will meet stormwater management requirements as compared to the existing southwest drainage. There is an existing offsite area to the northeast that drains onto the project site. It is expected that the northeast site will be developed soon, and when it is developed the discharge will be reduced to or below existing levels, per DeForest stormwater management requirements. This information is depicted in greater detail in the attached ***Existing Drainage Area Map***.

A geotechnical report has not yet been completed for the project site. A NRCS web soil survey report was generated for the site and the site primarily consists of silt loam soils mapping to hydrologic soil group B. Due to this, curve numbers for HSG B are utilized in the stormwater modeling.

A HydroCAD model was created utilizing variables from the Village of DeForest Stormwater Management Ordinance. Please refer to the attached model report with “EX” Nodes. See the following table for a flow summary for the existing condition.

Table 1: Existing Peak Inflow/Discharge Summary

Discharge Pt	Area (ac)	1-year (cfs)	2-year (cfs)	10-year (cfs)	100-year (cfs)	200-year (cfs)
ED-PT1	36.23	8.75	13.92	37.43	98.74	121.48

The proposed development is an industrial application with 3 buildings and accompanying infrastructure to be constructed as part of Phase 1. This Phase 1 work includes the installation of a stormwater management facility on the west side of the site, where the surface water generally drains in the existing condition. The facility will discharge into a swale that runs to the south on the west edge of the site. In this preliminary stage, the stormwater management facility is modeled as a large wet pond. In future iterations of design we expect to replace a portion of the pond with a sediment forebay for pre-treatment along with an infiltration basin to meet infiltration requirements.

For the proposed condition curve numbers, it is assumed that the site will be 80% impervious and 20% pervious open space to plan for the most conservative proposed condition. The 20% minimum pervious open space was taken from the Village of DeForest Zoning Ordinance for industrial zoning. To assess the impact of the proposed Phase 1 development, a second HydroCAD model was created that reflects the anticipated proposed conditions. Please refer to the attached model report with “PR” Nodes.

Table 2: Proposed Peak Inflow Summary

Node	Area (ac)	1-year (cfs)	2-year (cfs)	10-year (cfs)	100-year (cfs)	200-year (cfs)
P1	40.43	54.55	65.57	106.68	194.25	224.30

Table 3: Proposed Storage/Discharge Summary

Node	100-yr High Water Lvl (HWL)	200-yr High Water Lvl (HWL)	Spillway Elev	Top of Bank	Peak Site Discharge (cfs)				
					1-year	2-year	10-year	100-year	200-year
P1	871.95	872.37	872.00	873.40	4.64	7.54	21.54	76.18	95.20

As can be seen by comparing Table 3 to Table 1, the proposed condition peak flows are being reduced to less than the existing condition peak flows. A preliminary WinSLAMM model has been run for the site and we are confident that the 80% TSS removal requirement will be met as designed. Please note that the proposed condition inflow area is greater than the existing condition inflow area. That is due to the Phase 1 development extents extending over the existing drainage divide in the northwest corner. Additionally, a portion of the Phase 2 area is routed through the proposed

Phase 1 pond as “offsite” area because it will drain to the Phase 1 facility until the Phase 2 development is constructed, at which point it will drain to the Phase 2 facility at the north end of the site. This information is depicted in greater detail in the attached ***Proposed Drainage Area Map***.

Plans will be created and proper erosion control measures will be installed prior to any actual development of the property. Both the stormwater plan and erosion control plan will conform to Village standards and ordinances. Erosion control practices will include installing silt fencing in areas where soil is being disturbed during the grading and construction process, potentially installing sediment basins and other best management practices necessary to limit sediment from leaving the site during ground disturbing activities.

Sincerely,

PINNACLE ENGINEERING GROUP

Dylan Crisp, E.I.T.

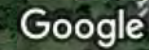
Senior Project Engineer

Enclosures:

- Vicinity Map
- Web Soil Survey Reports
- Existing Drainage Area Map
- Existing HydroCAD Model Report
- Proposed Drainage Area Map
- Proposed HydroCAD Model Report


Google Maps

Vicinity Map



Imagery ©2022 Maxar Technologies, USDA/FPAC/GEO, Map data ©2022 500 ft



MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils
 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points
Special Point Features

Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features

Streams and Canals

Transportation

Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dane County, Wisconsin

Survey Area Data: Version 20, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 13, 2020—Jul 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DnB	Dodge silt loam, 2 to 6 percent slopes	0.3	0.4%
KeB	Kegonsa silt loam, 2 to 6 percent slopes	3.9	5.4%
Os	Orion silt loam, wet	1.3	1.8%
PeB	Pecatonica silt loam, 2 to 6 percent slopes	50.5	69.8%
RaA	Radford silt loam, 0 to 3 percent slopes	0.0	0.0%
TrB	Troxel silt loam, 0 to 3 percent slopes	0.9	1.3%
VwA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	15.4	21.3%
Totals for Area of Interest		72.4	100.0%

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

Appendix F

Engineering Properties---Dane County, Wisconsin

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.



Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Dane County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
DnB—Dodge silt loam, 2 to 6 percent slopes														
Dodge	85	C	0-6	Silt loam	CL	A-4	0- 0- 0	0- 0- 0	93-98-100	92-98-100	86-96-100	76-89-99	25-30-43	7-9 -19
			6-9	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	93-96-100	92-96-100	87-95-100	81-90-96	36-38-40	17-18-19
			9-29	Silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	88-91-98	87-91-98	83-90-98	78-86-98	37-39-51	19-20-29
			29-40	Clay loam	CL	A-7-6	0- 0- 0	0- 0- 0	80-85-95	79-84-94	69-78-94	49-60-77	37-41-52	19-21-29
			40-79	Sandy loam, gravelly sandy loam	SC	A-2-4	0- 0- 0	0- 1- 2	56-72-84	54-70-84	36-55-84	17-30-49	18-26-31	3-10-13

Appendix F

Engineering Properties---Dane County, Wisconsin

Engineering Properties--Dane County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
KeB—Kegonsa silt loam, 2 to 6 percent slopes														
Kegonsa	100	B	0-12	Silt loam	CL	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	70-80-90	20-25-30	5-8 -10
			12-29	Silt loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	30-38-45	10-15-20
			29-33	Sandy clay loam, clay loam, loam	CL	A-6	0- 0- 0	0- 0- 0	90-95-100	80-90-100	65-83-100	30-55-80	30-38-45	10-15-20
			33-60	Gravelly coarse sand	SW	A-1-b	—	0- 3- 5	40-63-85	35-60-85	15-25-35	0- 3- 5	0-0 -14	NP
Os—Orion silt loam, wet														
Orion variant, wet	90	B/D	0-4	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	95-98-100	90-95-100	80-90-100	25-35-45	7-14-20
			4-44	Silt loam, loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	95-98-100	90-95-100	80-90-100	30-38-45	10-15-20
			44-60	Silt loam, sandy loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	90-95-100	80-90-100	55-75-95	45-65-85	25-35-45	5-13-20
PeB—Pecatonica silt loam, 2 to 6 percent slopes														
Pecatonica	100	B	0-10	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	25-33-40	3-9 -15
			10-21	Silt loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	30-35-40	8-12-15
			21-37	Sandy clay loam, clay loam, loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-95-100	80-85-90	60-75-90	30-38-45	10-15-20
			37-60	Sandy loam, loam	CL-ML	A-4	0- 1- 1	0- 3- 5	90-95-100	90-95-100	60-75-90	30-50-70	15-23-30	3-7 -11



Appendix F

Engineering Properties---Dane County, Wisconsin

Engineering Properties--Dane County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
RaA--Radford silt loam, 0 to 3 percent slopes														
Radford	90	B/D	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	94-100-100	78-89-96	18-19-29	2-2 -7
			9-23	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-100-100	85-93-100	30-31-41	10-11-18
			23-36	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	96-100-100	89-95-99	36-37-40	16-16-17
			36-56	Silty clay loam, silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	91-100-100	79-93-100	18-36-52	2-16-29
			56-79	Silt loam	CL-ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	99-100-100	92-93-100	21-23-38	6-7 -18
TrB--Troxel silt loam, 0 to 3 percent slopes														
Troxel, wet substratum	85	B	0-31	Silt loam	ML	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	97-100-100	90-96-100	37-42-48	13-15-18
			31-54	Silty clay loam, silt loam	CL	A-7-6	0- 0- 0	0- 0- 0	83-96-100	83-96-100	78-95-100	74-91-100	35-41-47	17-21-25
			54-79	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	79-92-100	78-92-100	72-91-100	59-77-88	26-34-38	9-16-19



Appendix F

Engineering Properties---Dane County, Wisconsin

Engineering Properties--Dane County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
VwA—Virgil silt loam, gravelly substratum, 0 to 3 percent slopes														
Virgil, gravelly substratum	90	B/D	0-9	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	93-99-100	86-92-98	30-38-45	9-14-18
			9-13	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	93-99-100	86-92-98	26-32-38	10-14-19
			13-44	Silty clay loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	91-95-99	37-42-47	19-22-25
			44-49	Sandy loam	SC	A-6	0- 0- 0	0- 0- 0	79-89-100	78-89-100	54-72-84	29-44-52	16-29-31	2-12-13
			49-79	Gravelly sand, stratified gravel to sand	GP-GM	A-1-a	0- 0- 0	0- 0- 0	36-45-54	33-43-52	19-26-32	4- 6- 9	0-0 -16	NP-0 -2

Data Source Information

Soil Survey Area: Dane County, Wisconsin

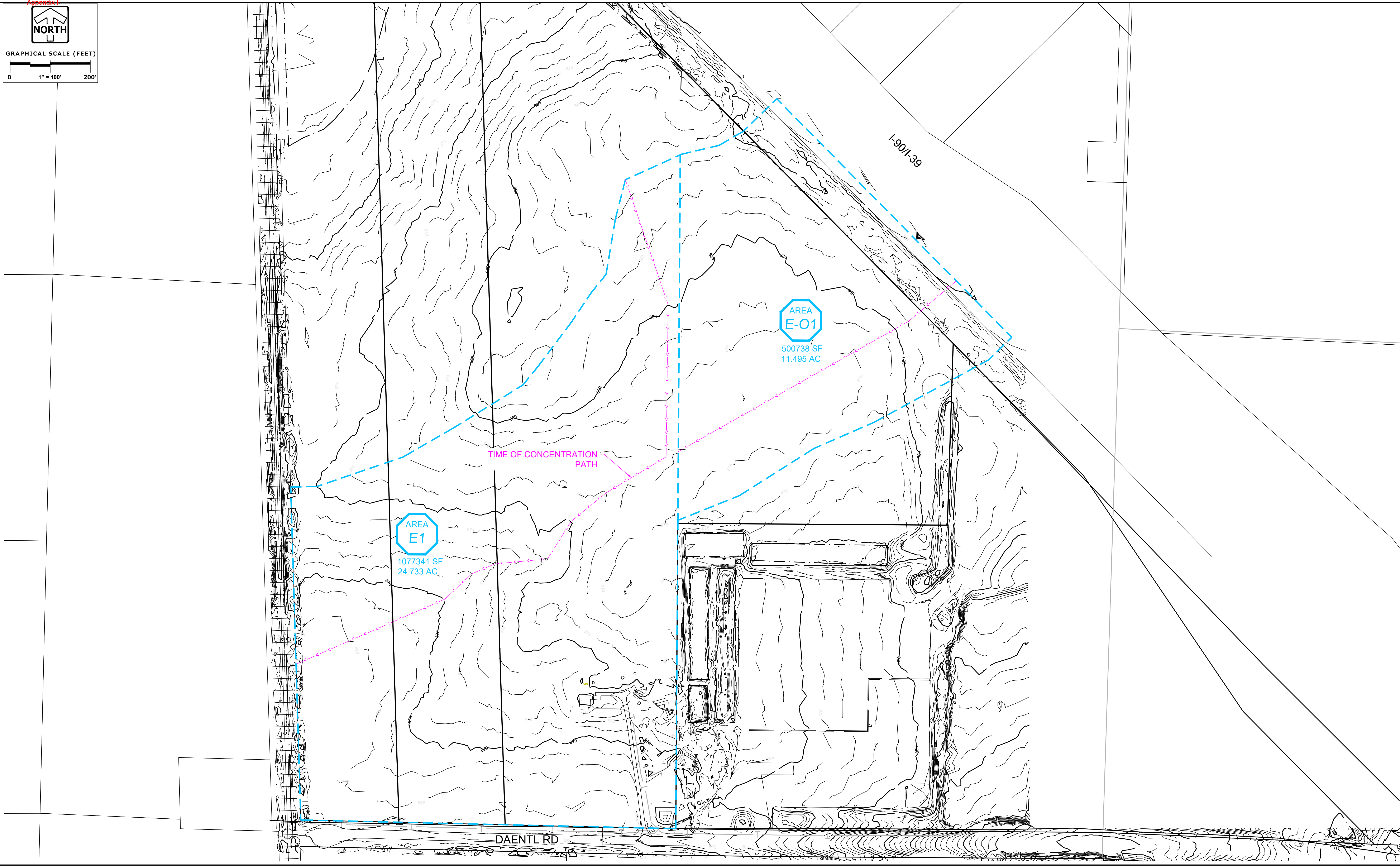
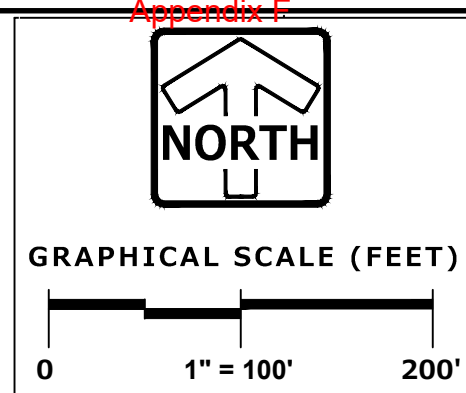
Survey Area Data: Version 20, Sep 7, 2021



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/30/2022
Page 7 of 7



Z:\PROJECTS\2021\2901.00-W\CAD\EXHIBITS\2901.00 EXISTING DRAINAGE AREA MAP.DWG 6/7/2023 10:45 AM



EXISTING DRAINAGE AREA MAP - SWMP

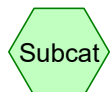
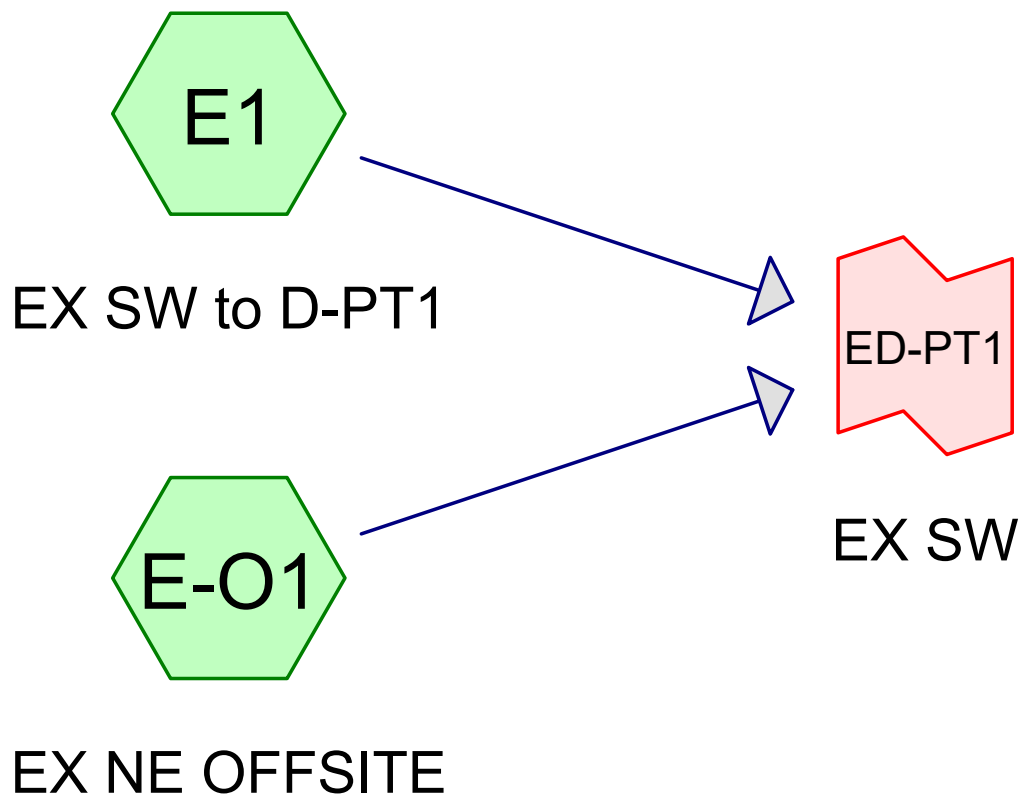
PINNACLE ENGINEERING GROUP

20725 WATERTOWN ROAD | SUITE 100 | BROOKFIELD, WI 53186 | WWW.PINNACLE-ENGR.COM |

PLAN | DESIGN | DELIVER

PEGJOB# 2901.00

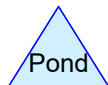
6/7/23



Subcat



Reach



Pond



Link

Routing Diagram for 2901.00 SWMP

Prepared by Pinnacle Engineering Group, Printed 6/7/2023
HydroCAD® 10.00-22 s/n 07894 © 2018 HydroCAD Software Solutions LLC

2901.00 SWMP

Prepared by Pinnacle Engineering Group

HydroCAD® 10.00-22 s/n 07894 © 2018 HydroCAD Software Solutions LLC

MSE 24-hr 4 1-yr Rainfall=2.49"

Printed 6/7/2023

Page 2

Summary for Subcatchment E-O1: EX NE OFFSITE

Runoff = 2.64 cfs @ 12.50 hrs, Volume= 0.367 af, Depth= 0.38"

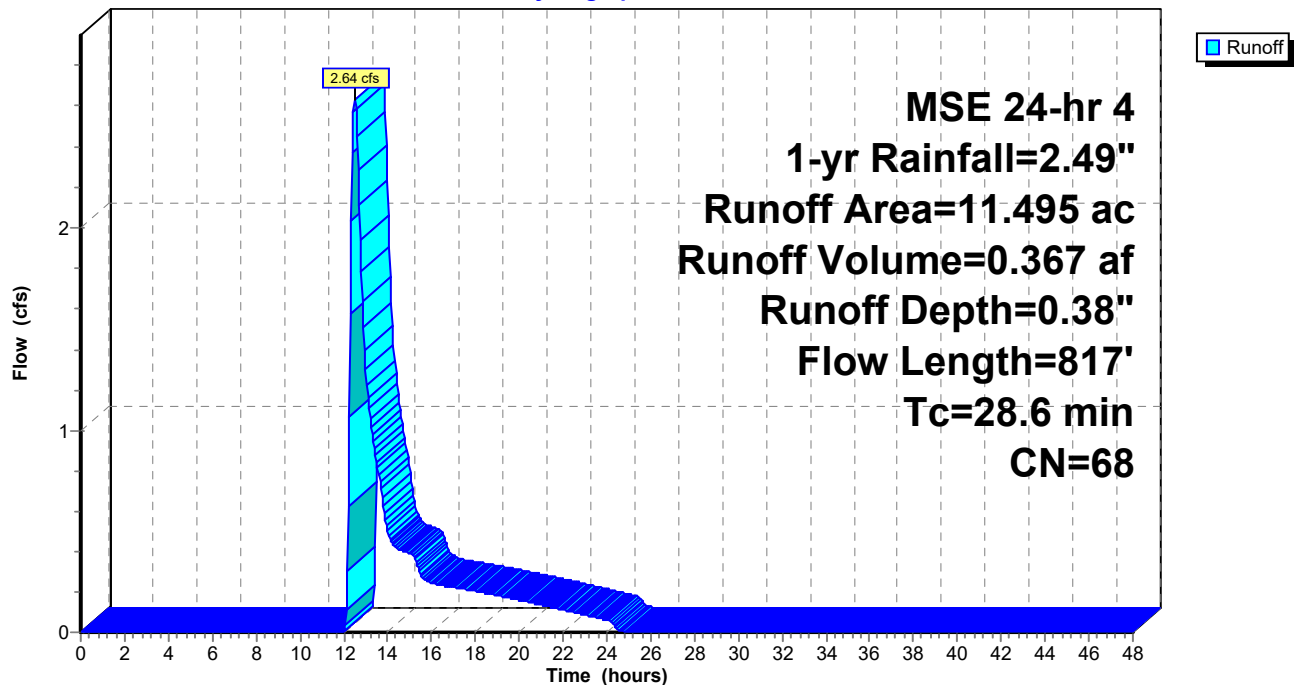
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment E-O1: EX NE OFFSITE

Hydrograph



2901.00 SWMP

Prepared by Pinnacle Engineering Group

HydroCAD® 10.00-22 s/n 07894 © 2018 HydroCAD Software Solutions LLC

MSE 24-hr 4 1-yr Rainfall=2.49"

Printed 6/7/2023

Page 3

Summary for Subcatchment E1: EX SW to D-PT1

Runoff = 6.21 cfs @ 12.43 hrs, Volume= 0.790 af, Depth= 0.38"

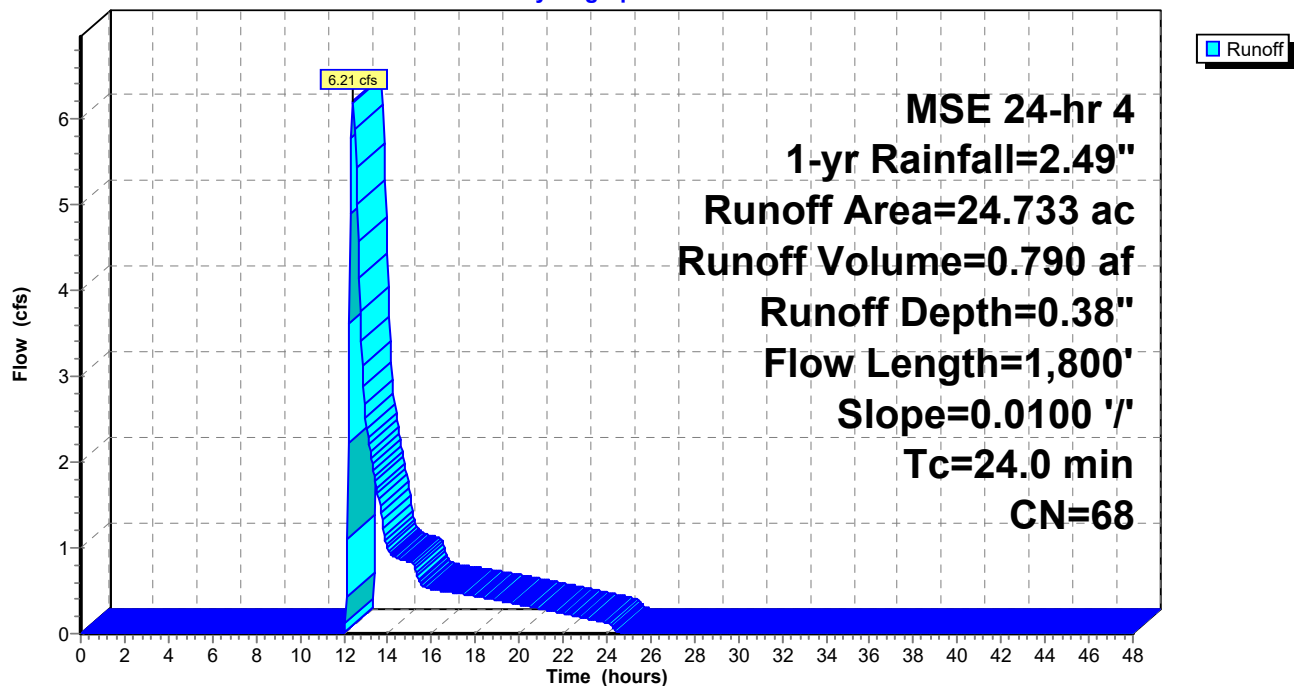
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

Area (ac)	CN	Description
* 24.733	68	CODE Max Pre-Dev B (Cropland)
24.733		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
10.2	550	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
4.3	1,100	0.0100	4.26	297.86	Channel Flow, Grass Area= 70.0 sf Perim= 140.0' r= 0.50' n= 0.022 Earth, clean & straight
24.0	1,800	Total			

Subcatchment E1: EX SW to D-PT1

Hydrograph



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MSE 24-hr 4 1-yr Rainfall=2.49"

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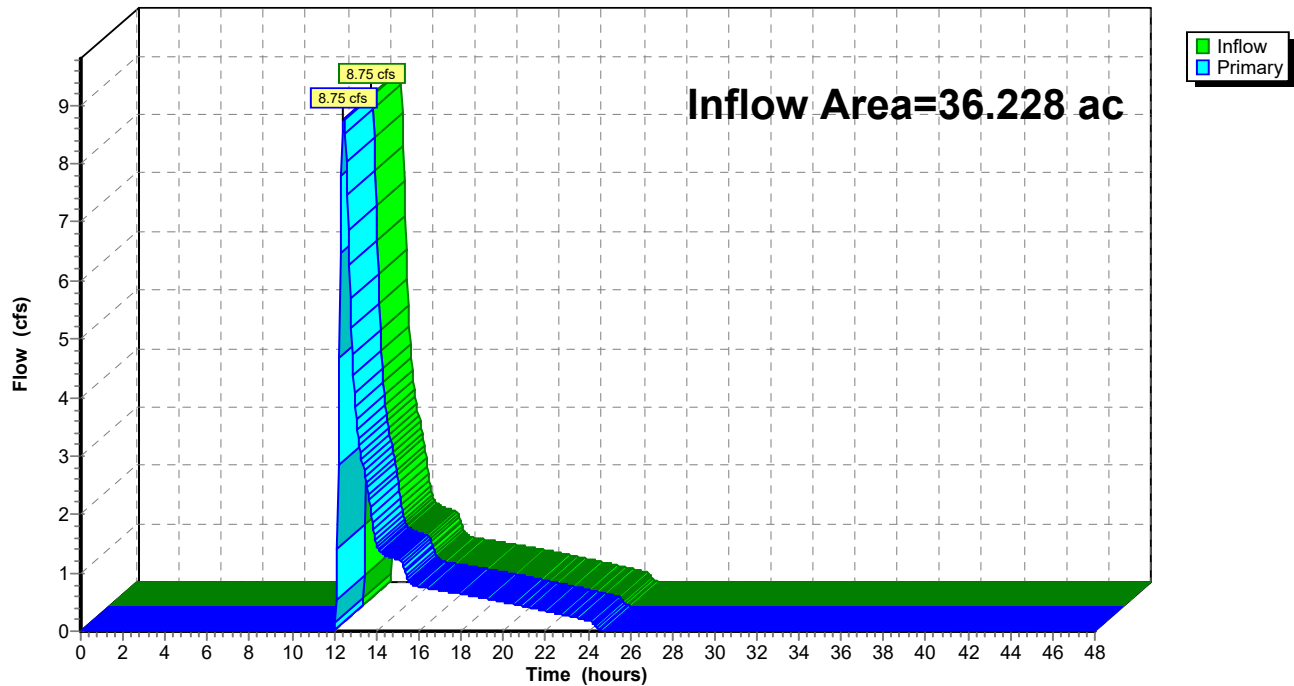
Summary for Link ED-PT1: EX SW

Inflow Area = 36.228 ac, 0.00% Impervious, Inflow Depth = 0.38" for 1-yr event
Inflow = 8.75 cfs @ 12.45 hrs, Volume= 1.158 af
Primary = 8.75 cfs @ 12.45 hrs, Volume= 1.158 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link ED-PT1: EX SW

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Subcatchment E-O1: EX NE OFFSITE

Runoff = 4.17 cfs @ 12.48 hrs, Volume= 0.523 af, Depth= 0.55"

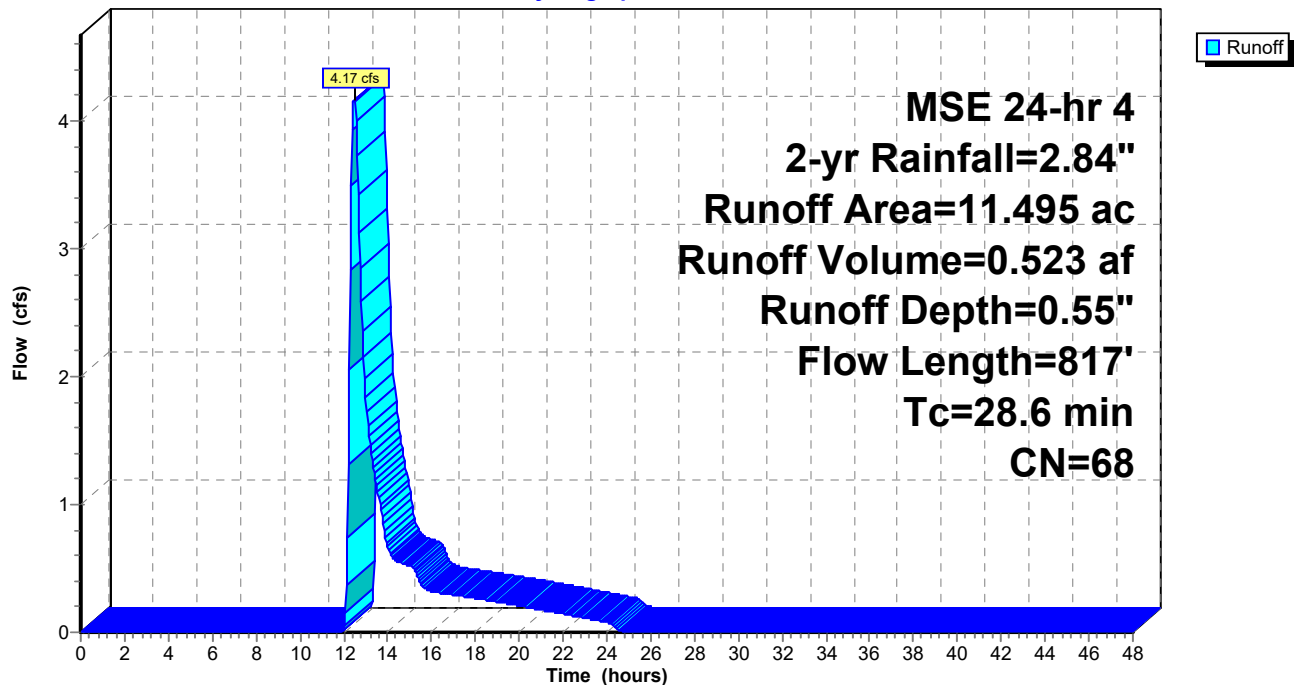
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment E-O1: EX NE OFFSITE

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Subcatchment E1: EX SW to D-PT1

Runoff = 9.90 cfs @ 12.41 hrs, Volume= 1.125 af, Depth= 0.55"

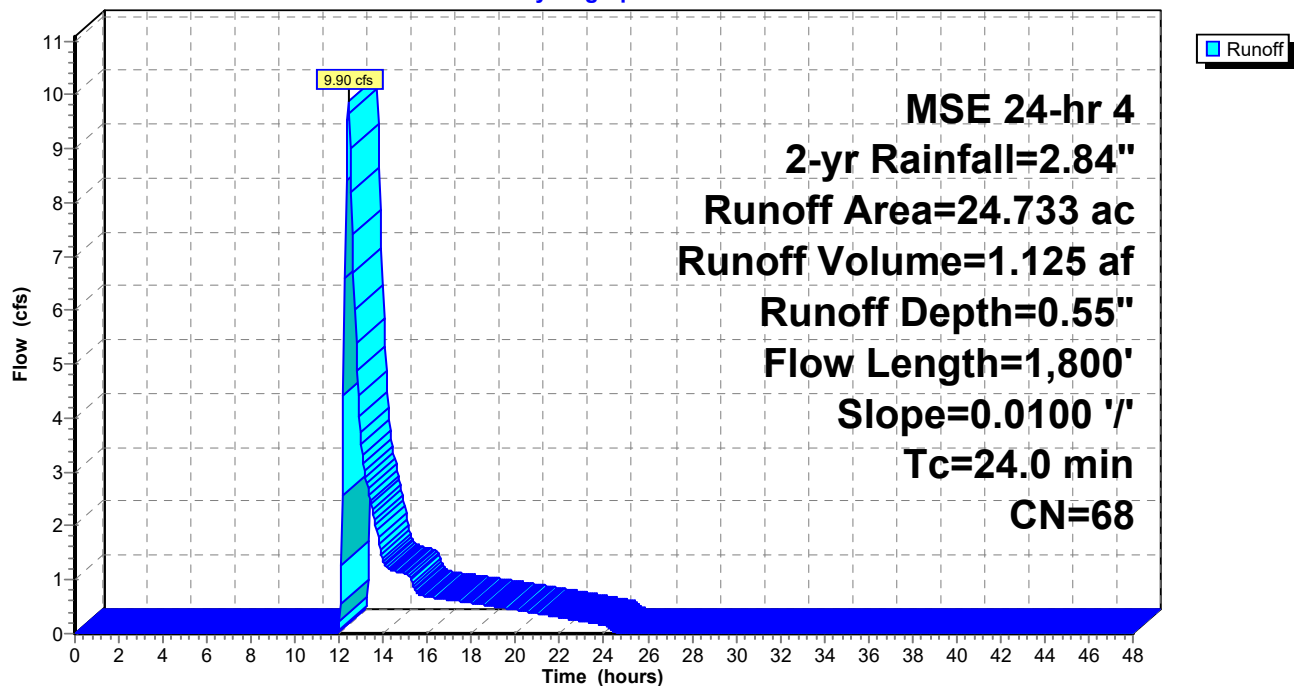
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

Area (ac)	CN	Description
* 24.733	68	CODE Max Pre-Dev B (Cropland)
24.733		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
10.2	550	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
4.3	1,100	0.0100	4.26	297.86	Channel Flow, Grass Area= 70.0 sf Perim= 140.0' r= 0.50' n= 0.022 Earth, clean & straight
24.0	1,800	Total			

Subcatchment E1: EX SW to D-PT1

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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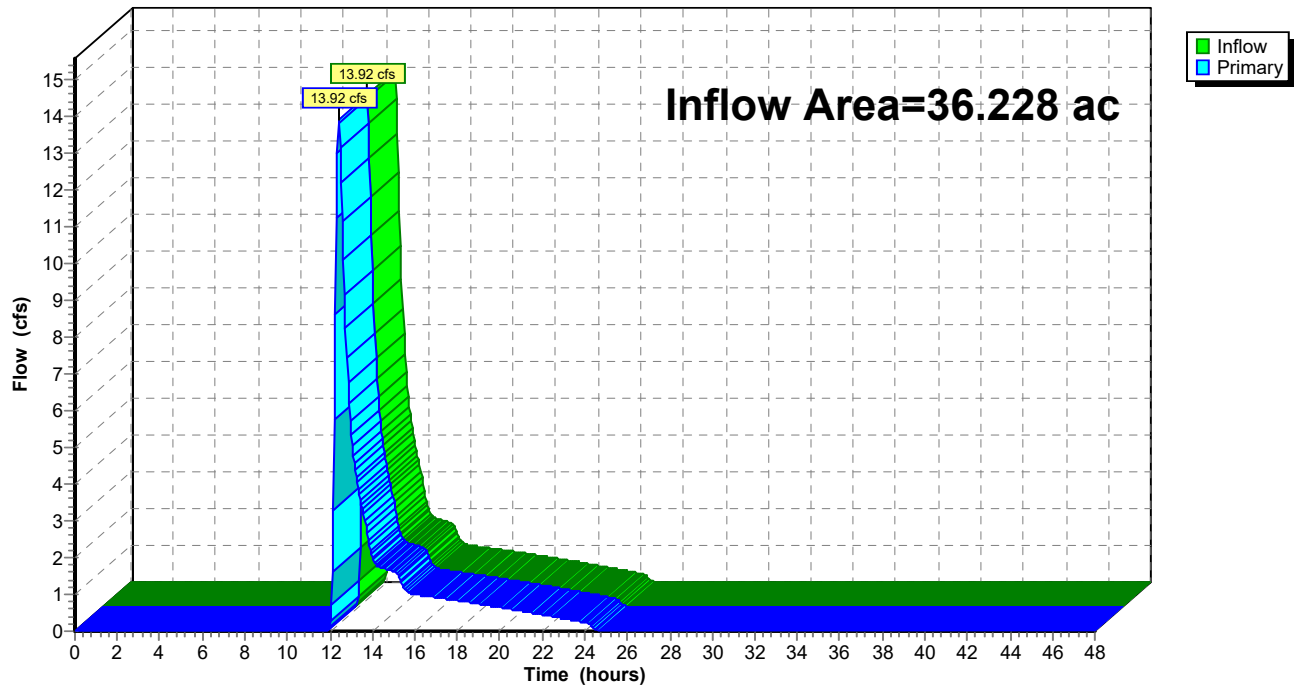
Summary for Link ED-PT1: EX SW

Inflow Area = 36.228 ac, 0.00% Impervious, Inflow Depth = 0.55" for 2-yr event
Inflow = 13.92 cfs @ 12.42 hrs, Volume= 1.648 af
Primary = 13.92 cfs @ 12.42 hrs, Volume= 1.648 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link ED-PT1: EX SW

Hydrograph



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MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Subcatchment E-O1: EX NE OFFSITE

Runoff = 11.20 cfs @ 12.44 hrs, Volume= 1.209 af, Depth= 1.26"

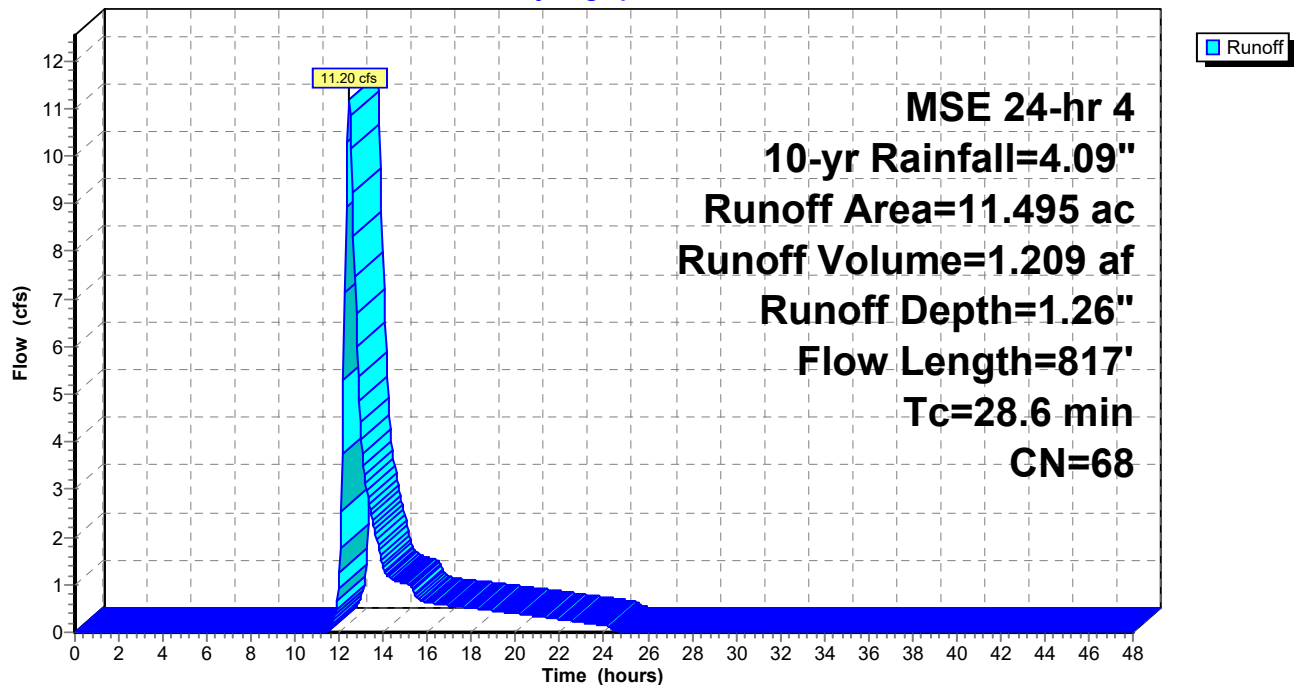
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment E-O1: EX NE OFFSITE

Hydrograph



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MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Subcatchment E1: EX SW to D-PT1

Runoff = 26.66 cfs @ 12.37 hrs, Volume= 2.602 af, Depth= 1.26"

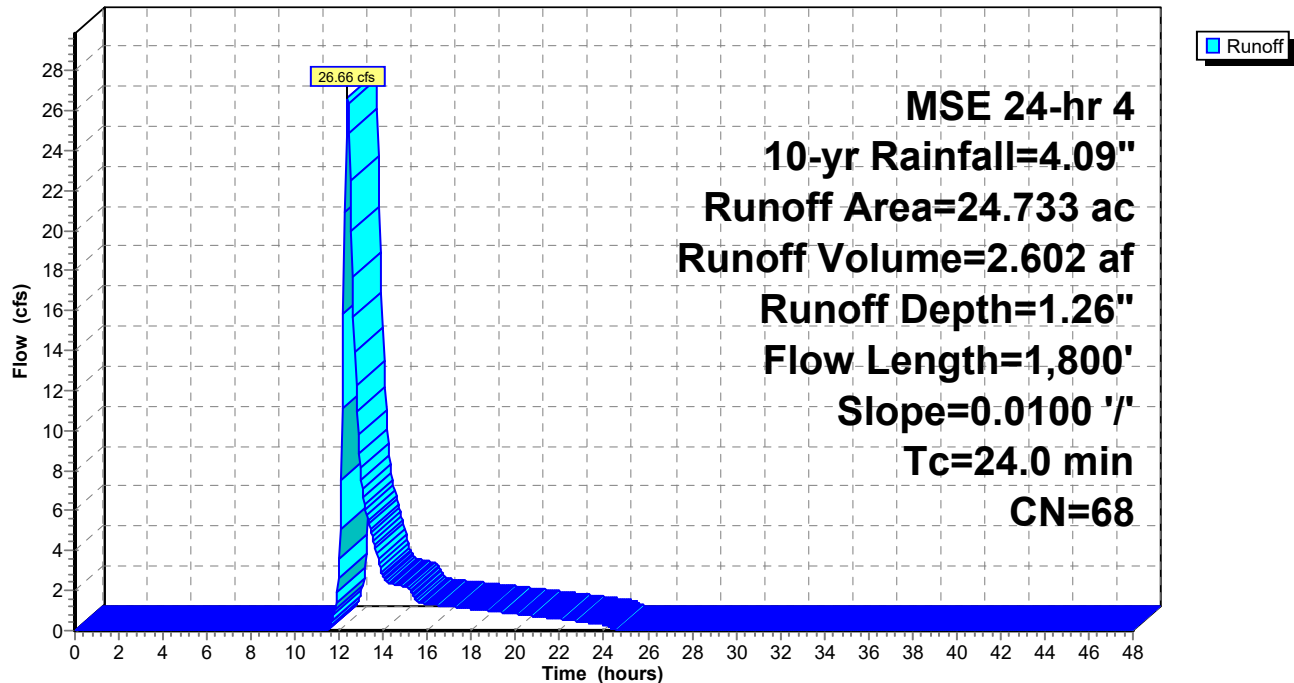
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

Area (ac)	CN	Description
* 24.733	68	CODE Max Pre-Dev B (Cropland)
24.733		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
10.2	550	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
4.3	1,100	0.0100	4.26	297.86	Channel Flow, Grass Area= 70.0 sf Perim= 140.0' r= 0.50' n= 0.022 Earth, clean & straight
24.0	1,800	Total			

Subcatchment E1: EX SW to D-PT1

Hydrograph



2901.00 SWMP

MSE 24-hr 4 10-yr Rainfall=4.09"

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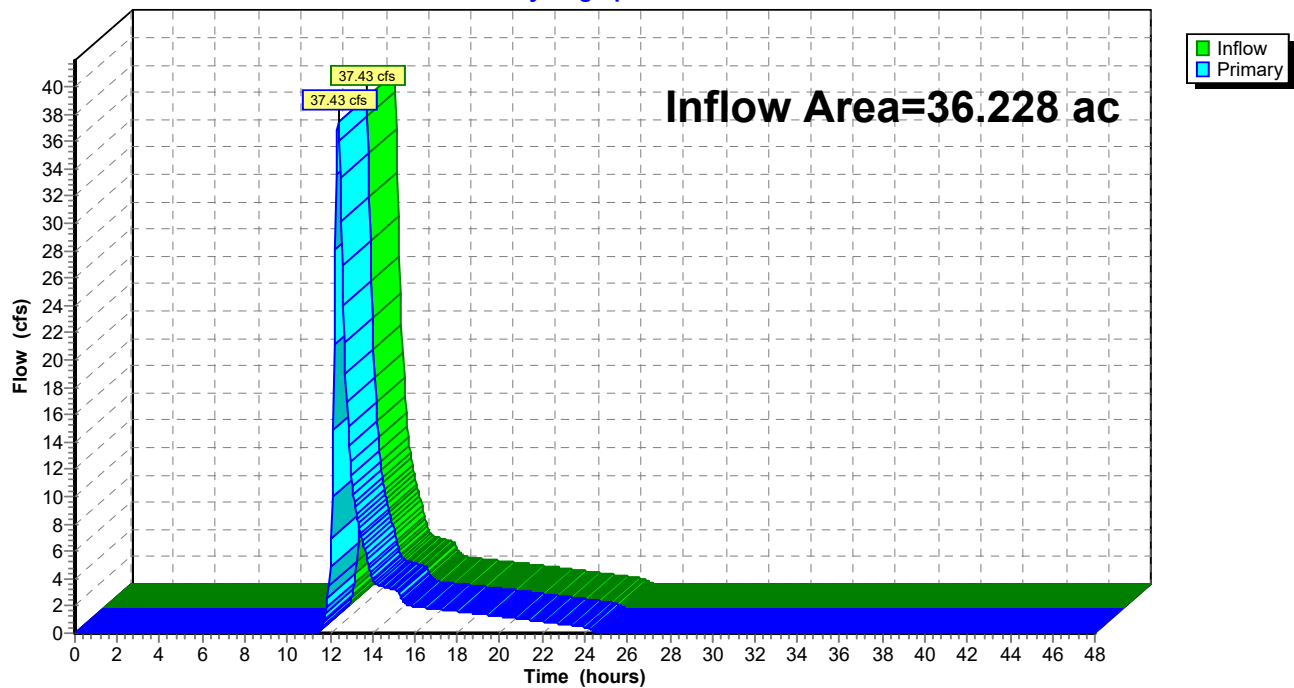
Summary for Link ED-PT1: EX SW

Inflow Area = 36.228 ac, 0.00% Impervious, Inflow Depth = 1.26" for 10-yr event
Inflow = 37.43 cfs @ 12.39 hrs, Volume= 3.811 af
Primary = 37.43 cfs @ 12.39 hrs, Volume= 3.811 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link ED-PT1: EX SW

Hydrograph



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MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Subcatchment E-O1: EX NE OFFSITE

Runoff = 29.51 cfs @ 12.42 hrs, Volume= 3.005 af, Depth= 3.14"

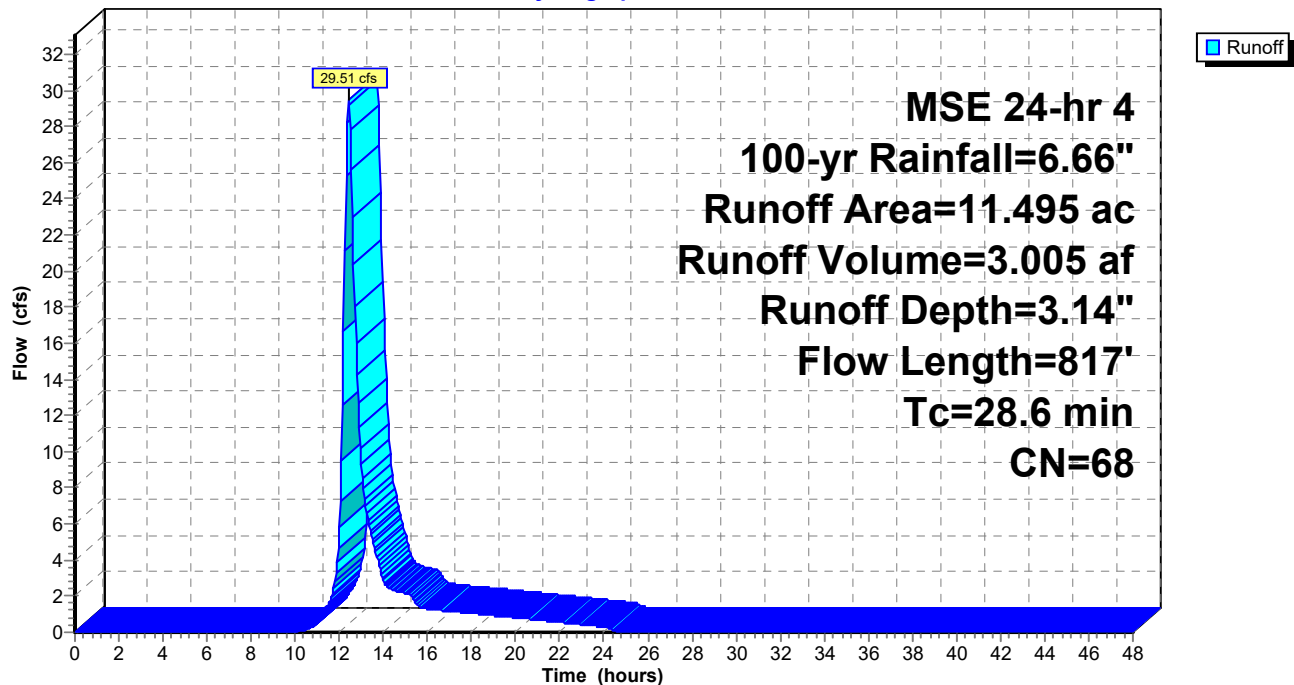
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment E-O1: EX NE OFFSITE

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Subcatchment E1: EX SW to D-PT1

Runoff = 70.08 cfs @ 12.36 hrs, Volume= 6.466 af, Depth= 3.14"

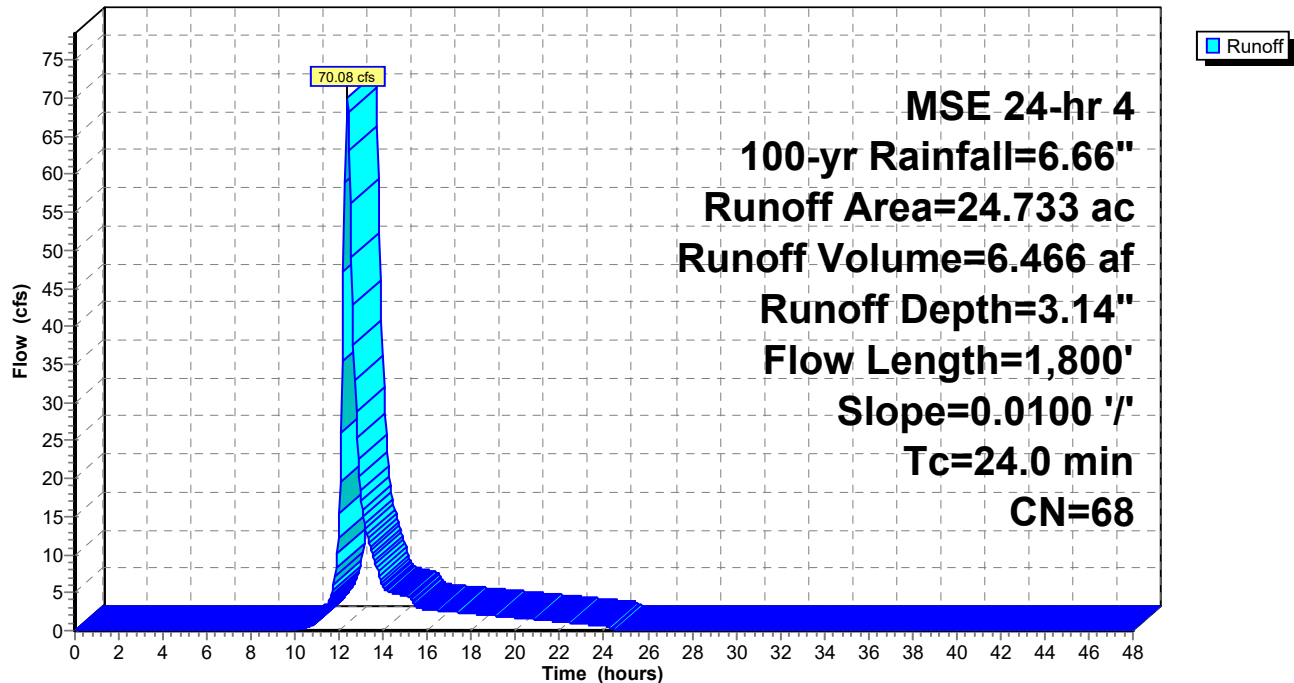
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

Area (ac)	CN	Description
* 24.733	68	CODE Max Pre-Dev B (Cropland)
24.733		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
10.2	550	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
4.3	1,100	0.0100	4.26	297.86	Channel Flow, Grass Area= 70.0 sf Perim= 140.0' r= 0.50' n= 0.022 Earth, clean & straight
24.0	1,800	Total			

Subcatchment E1: EX SW to D-PT1

Hydrograph



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MSE 24-hr 4 100-yr Rainfall=6.66"

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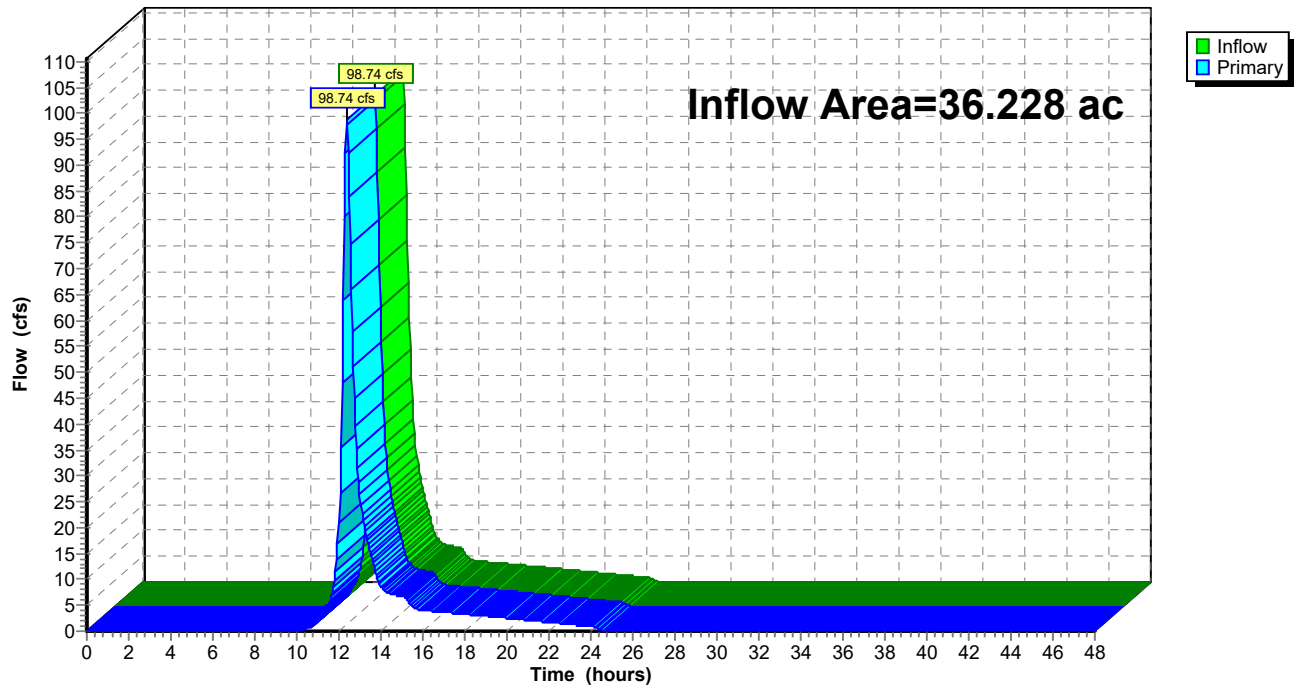
Summary for Link ED-PT1: EX SW

Inflow Area = 36.228 ac, 0.00% Impervious, Inflow Depth = 3.14" for 100-yr event
Inflow = 98.74 cfs @ 12.37 hrs, Volume= 9.471 af
Primary = 98.74 cfs @ 12.37 hrs, Volume= 9.471 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link ED-PT1: EX SW

Hydrograph



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MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Subcatchment E-O1: EX NE OFFSITE

Runoff = 36.31 cfs @ 12.41 hrs, Volume= 3.682 af, Depth= 3.84"

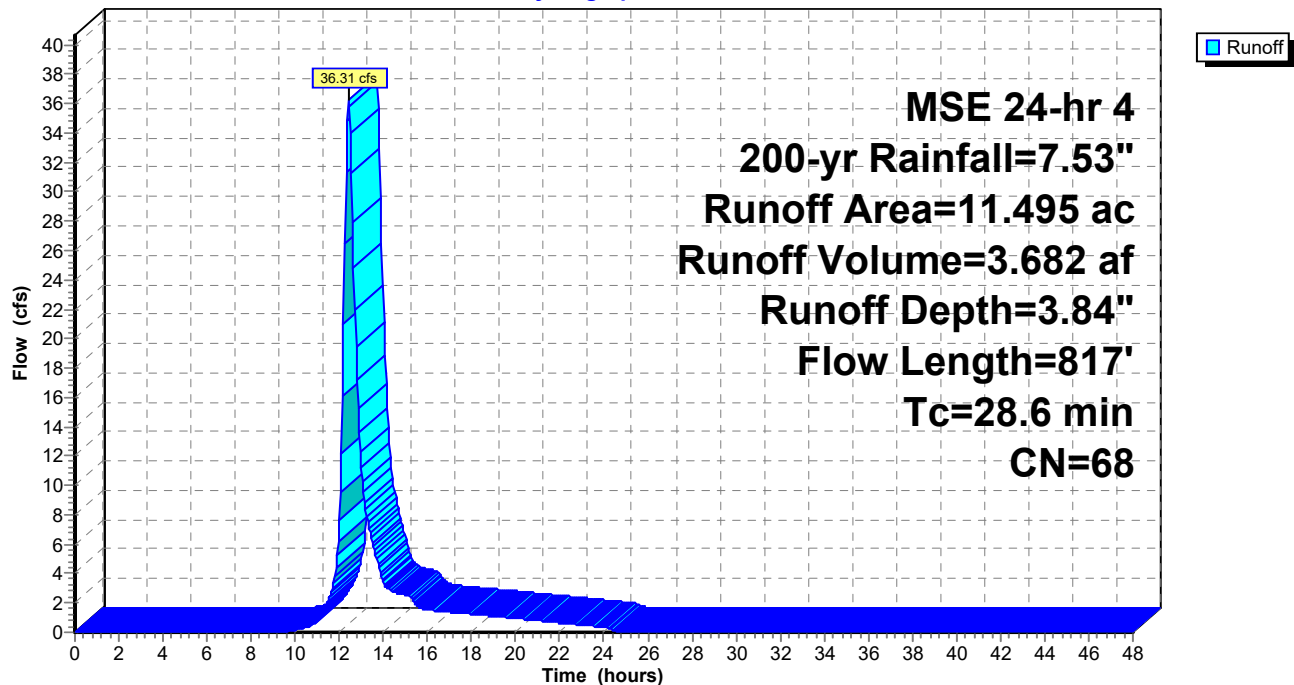
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment E-O1: EX NE OFFSITE

Hydrograph



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MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Subcatchment E1: EX SW to D-PT1

Runoff = 86.19 cfs @ 12.35 hrs, Volume= 7.922 af, Depth= 3.84"

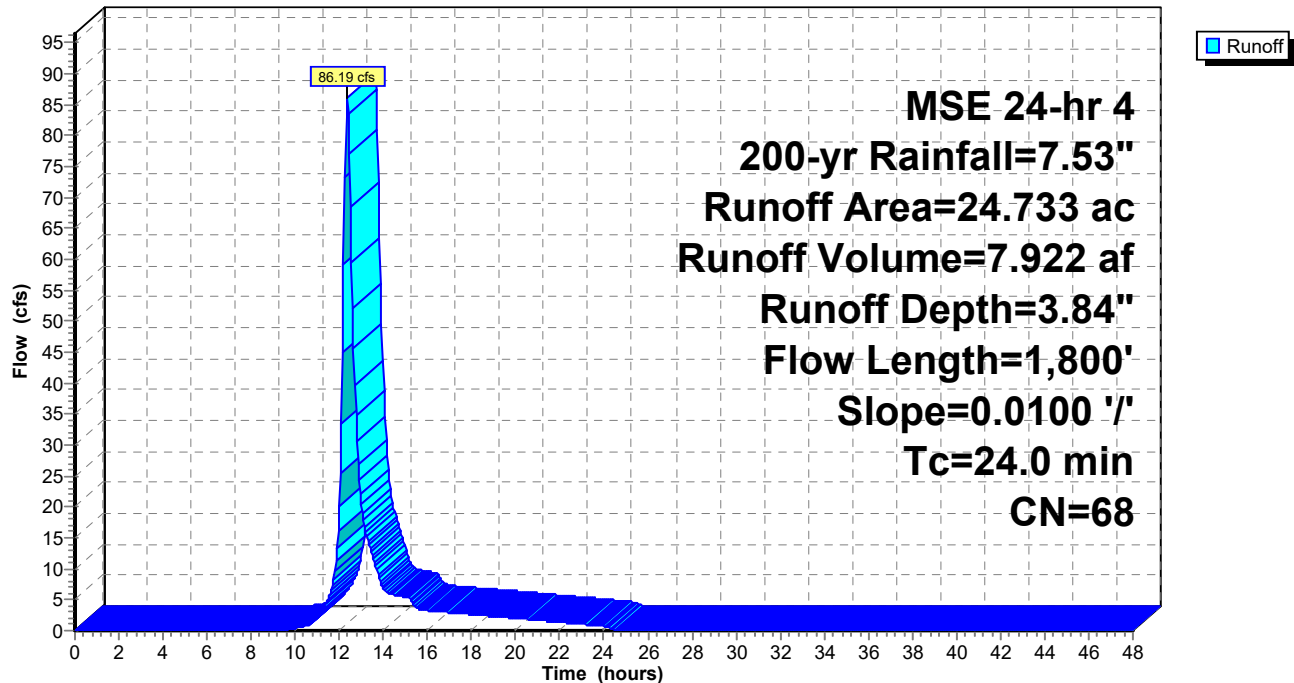
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

Area (ac)	CN	Description
* 24.733	68	CODE Max Pre-Dev B (Cropland)
24.733		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
10.2	550	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
4.3	1,100	0.0100	4.26	297.86	Channel Flow, Grass Area= 70.0 sf Perim= 140.0' r= 0.50' n= 0.022 Earth, clean & straight
24.0	1,800	Total			

Subcatchment E1: EX SW to D-PT1

Hydrograph



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MSE 24-hr 4 200-yr Rainfall=7.53"

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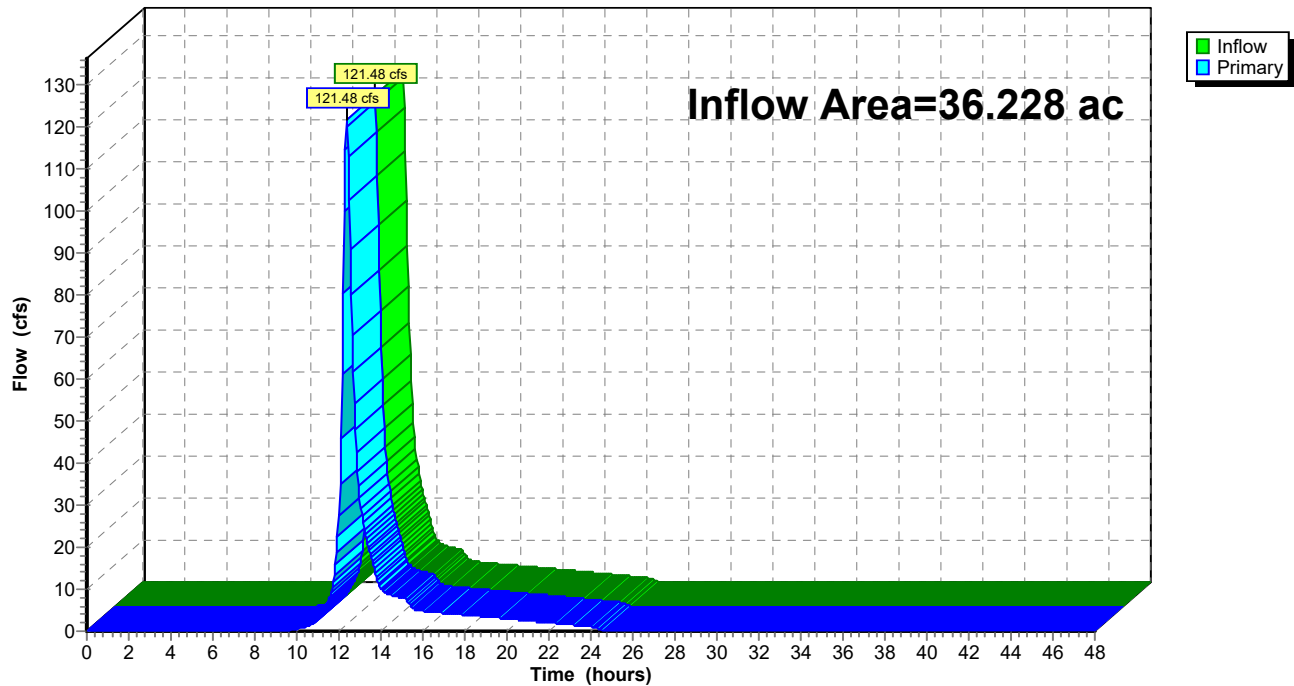
Summary for Link ED-PT1: EX SW

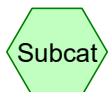
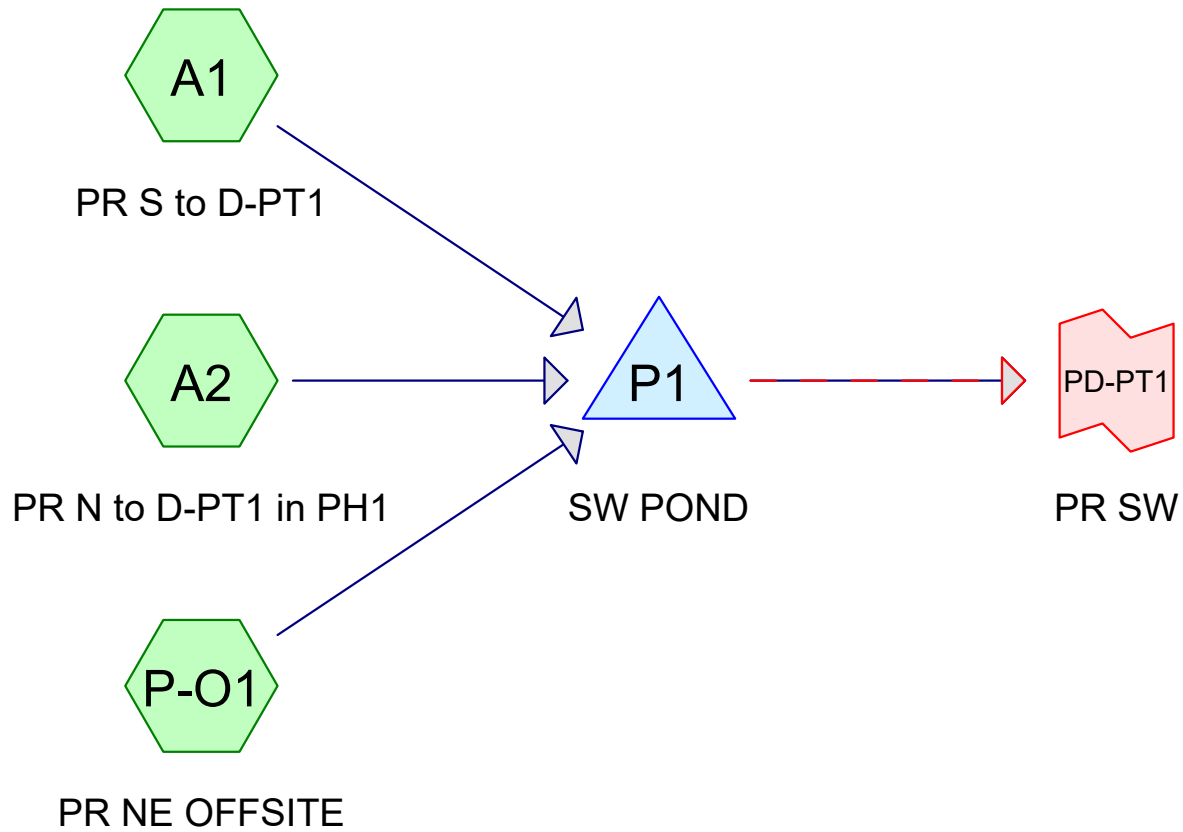
Inflow Area = 36.228 ac, 0.00% Impervious, Inflow Depth = 3.84" for 200-yr event
Inflow = 121.48 cfs @ 12.37 hrs, Volume= 11.604 af
Primary = 121.48 cfs @ 12.37 hrs, Volume= 11.604 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link ED-PT1: EX SW

Hydrograph

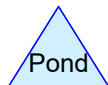




Subcat



Reach



Pond



Link

Routing Diagram for 2901.00 SWMP

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MSE 24-hr 4 1-yr Rainfall=2.49"

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Summary for Subcatchment A1: PR S to D-PT1

Runoff = 53.24 cfs @ 12.22 hrs, Volume= 3.823 af, Depth= 1.68"

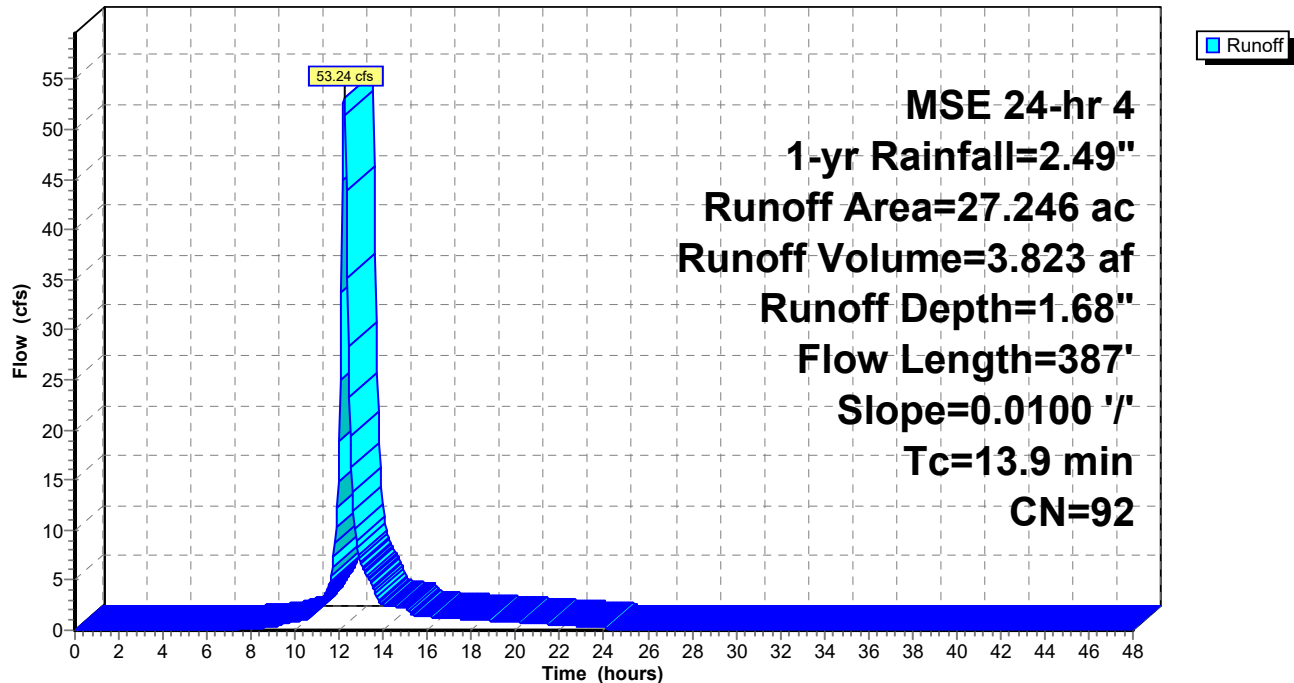
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

Area (ac)	CN	Description
* 27.246	92	CODE 80/20 PVMT(98)/GRASS(69)
27.246		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A1: PR S to D-PT1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 1-yr Rainfall=2.49"

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Summary for Subcatchment A2: PR N to D-PT1 in PH1

Runoff = 0.56 cfs @ 12.27 hrs, Volume= 0.054 af, Depth= 0.38"

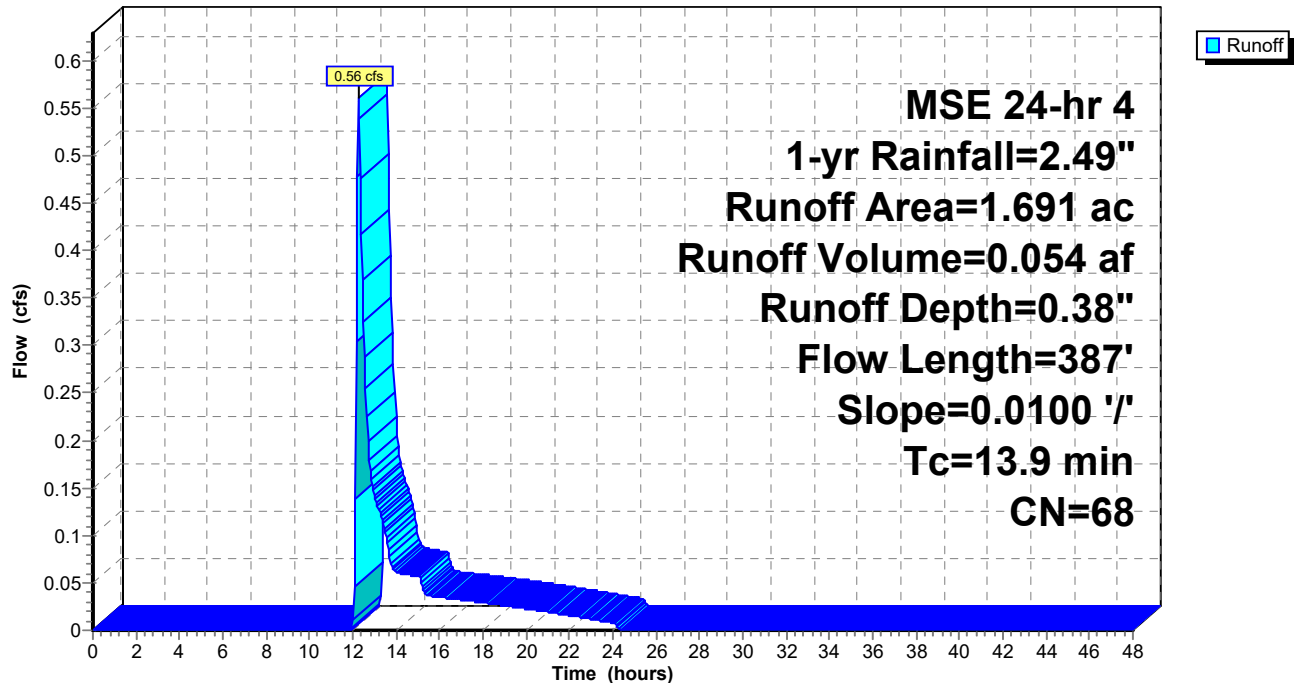
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

Area (ac)	CN	Description
* 1.691	68	CODE Max Pre-Dev B (Cropland)
1.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A2: PR N to D-PT1 in PH1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 1-yr Rainfall=2.49"

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Summary for Subcatchment P-O1: PR NE OFFSITE

Runoff = 2.64 cfs @ 12.50 hrs, Volume= 0.367 af, Depth= 0.38"

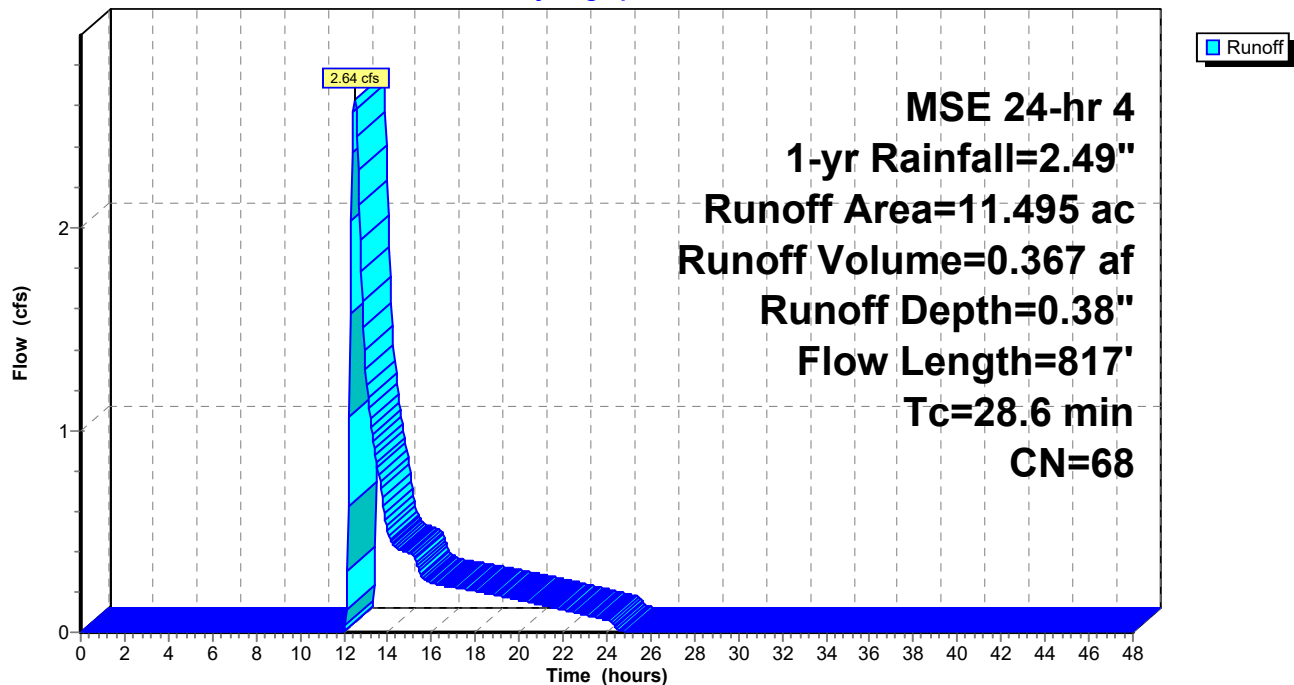
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-yr Rainfall=2.49"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment P-O1: PR NE OFFSITE

Hydrograph



2901.00 SWMP

MSE 24-hr 4 1-yr Rainfall=2.49"

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Summary for Pond P1: SW POND

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth = 1.26" for 1-yr event
 Inflow = 54.55 cfs @ 12.22 hrs, Volume= 4.245 af
 Outflow = 4.64 cfs @ 13.62 hrs, Volume= 3.219 af, Atten= 91%, Lag= 84.1 min
 Primary = 4.64 cfs @ 13.62 hrs, Volume= 3.219 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 869.04' @ 13.62 hrs Surf.Area= 63,490 sf Storage= 116,598 cf

Plug-Flow detention time= 563.5 min calculated for 3.219 af (76% of inflow)
 Center-of-Mass det. time= 485.3 min (1,299.5 - 814.3)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	455,297 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	50,617	0	0
869.00	63,206	113,823	113,823
871.00	76,186	139,392	253,215
873.00	89,559	165,745	418,960
873.40	92,128	36,337	455,297

Device	Routing	Invert	Outlet Devices
#1	Primary	867.00'	42.0" Round Culvert L= 99.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 9.62 sf
#2	Device 1	867.00'	4.0" Vert. Dewater - Orifice/Grate C= 0.600
#3	Device 1	868.25'	30.0" Vert. Intermediate - Orifice/Grate C= 0.600
#4	Device 1	871.25'	84.0" Horiz. Open Top - Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	872.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.64 cfs @ 13.62 hrs HW=869.04' (Free Discharge)

↑ **1=Culvert** (Passes 4.64 cfs of 22.75 cfs potential flow)
 ↑ **2=Dewater - Orifice/Grate** (Orifice Controls 0.58 cfs @ 6.60 fps)
 ↑ **3=Intermediate - Orifice/Grate** (Orifice Controls 4.06 cfs @ 3.03 fps)
 ↑ **4=Open Top - Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

2901.00 SWMP

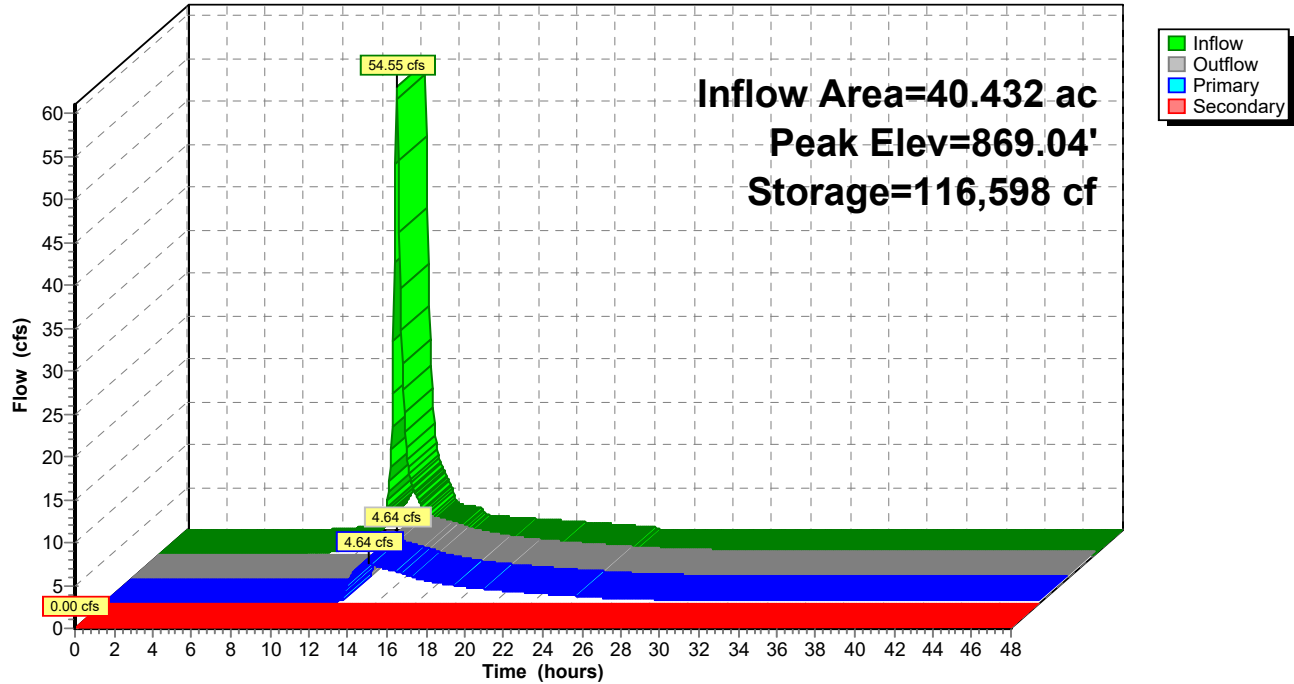
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MSE 24-hr 4 1-yr Rainfall=2.49"

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Pond P1: SW POND**Hydrograph**

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MSE 24-hr 4 1-yr Rainfall=2.49"

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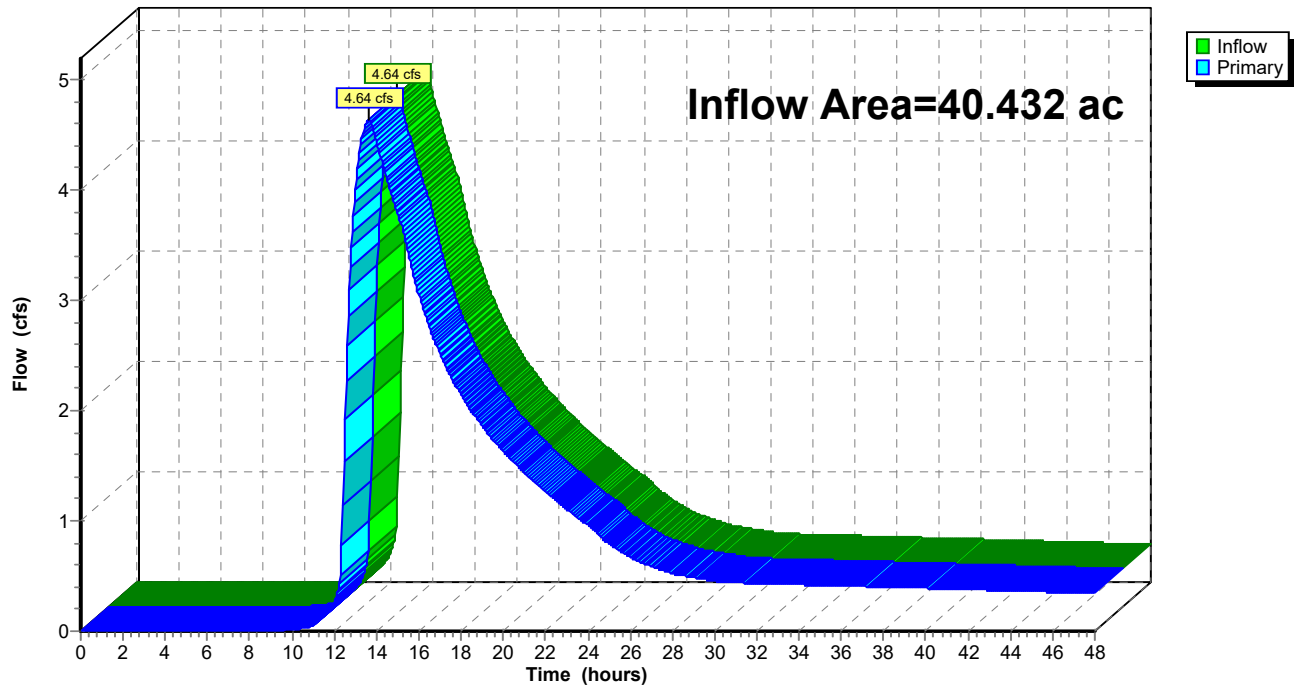
Summary for Link PD-PT1: PR SW

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth > 0.96" for 1-yr event
Inflow = 4.64 cfs @ 13.62 hrs, Volume= 3.219 af
Primary = 4.64 cfs @ 13.62 hrs, Volume= 3.219 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link PD-PT1: PR SW

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Subcatchment A1: PR S to D-PT1

Runoff = 63.12 cfs @ 12.22 hrs, Volume= 4.565 af, Depth= 2.01"

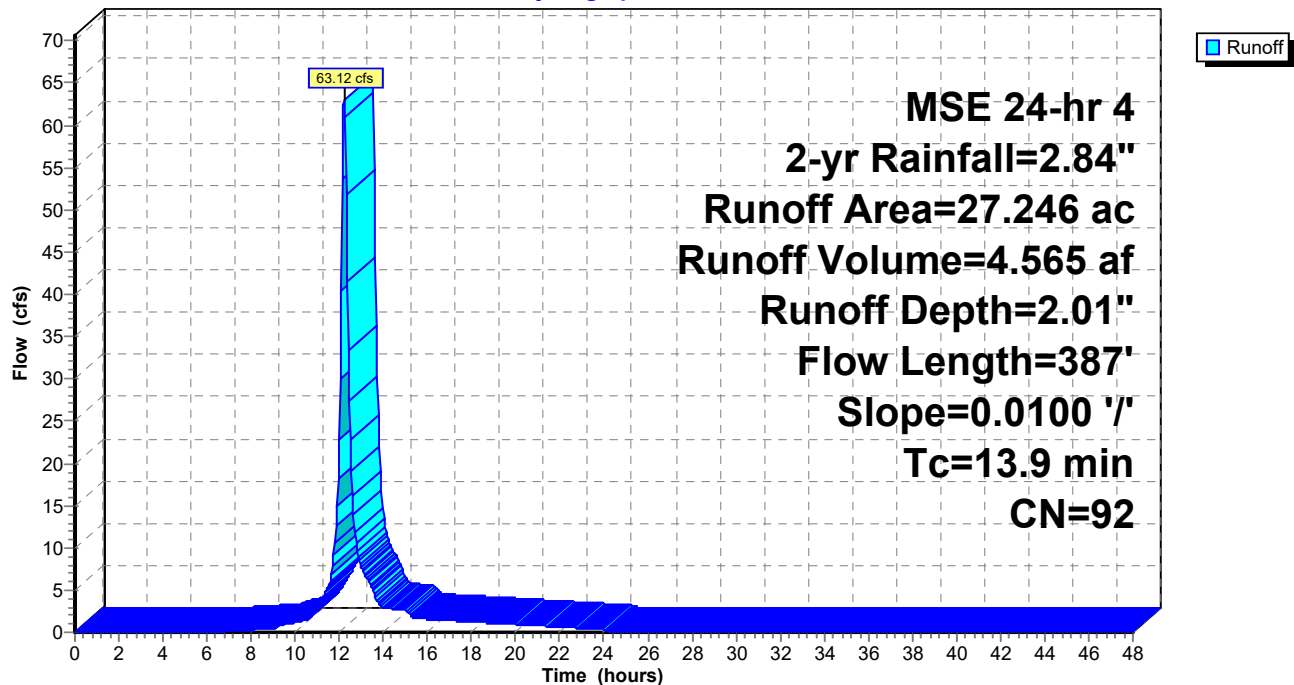
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

Area (ac)	CN	Description
* 27.246	92	CODE 80/20 PVMT(98)/GRASS(69)
27.246		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A1: PR S to D-PT1

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Subcatchment A2: PR N to D-PT1 in PH1

Runoff = 0.90 cfs @ 12.25 hrs, Volume= 0.077 af, Depth= 0.55"

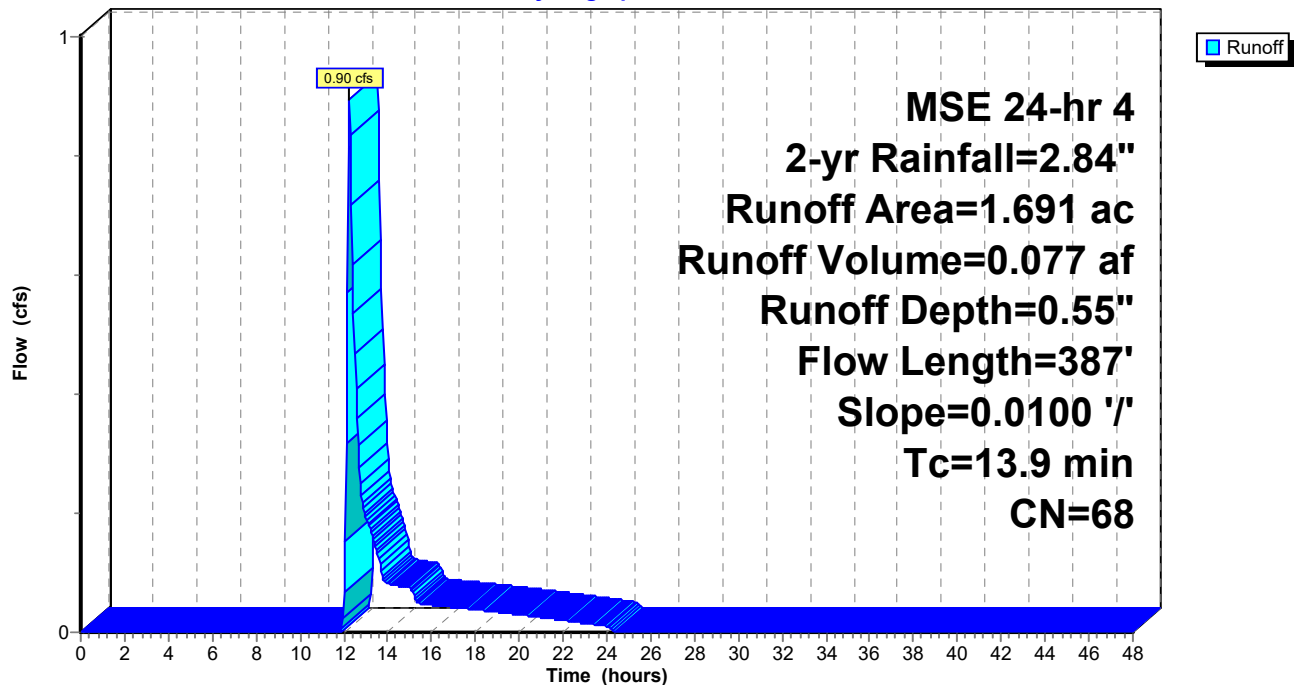
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

Area (ac)	CN	Description
* 1.691	68	CODE Max Pre-Dev B (Cropland)
1.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A2: PR N to D-PT1 in PH1

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Subcatchment P-O1: PR NE OFFSITE

Runoff = 4.17 cfs @ 12.48 hrs, Volume= 0.523 af, Depth= 0.55"

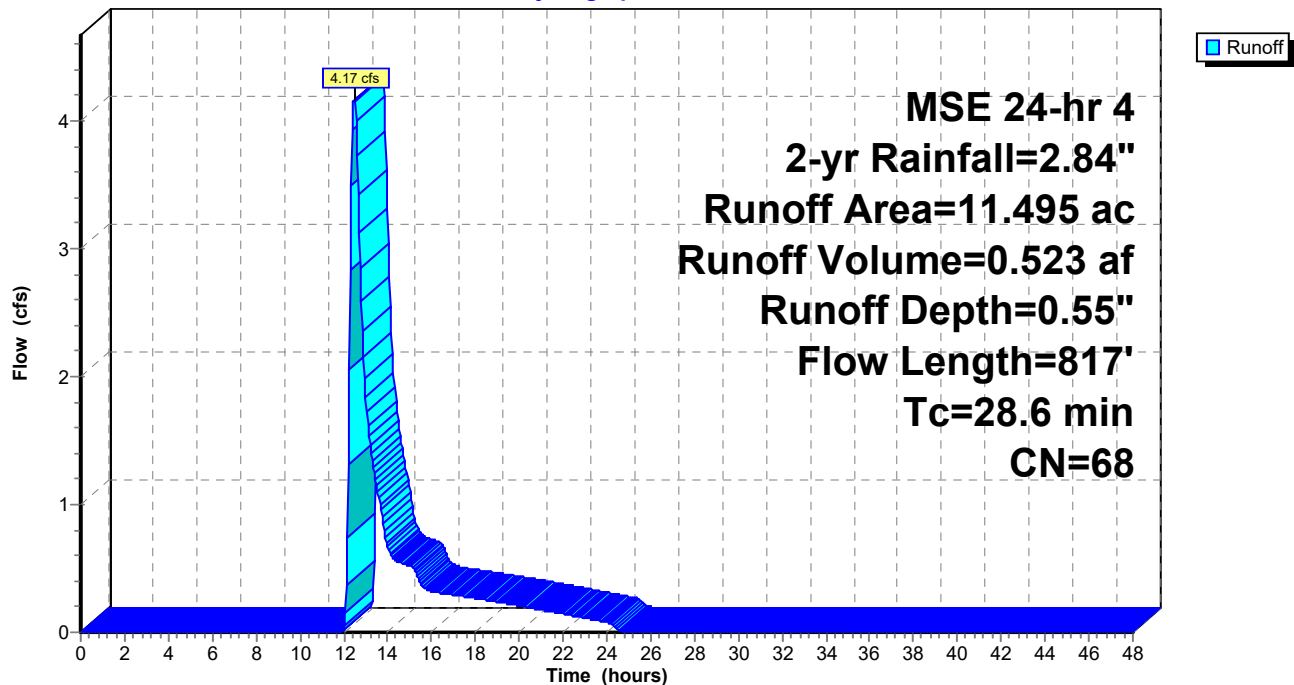
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-yr Rainfall=2.84"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment P-O1: PR NE OFFSITE

Hydrograph



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MSE 24-hr 4 2-yr Rainfall=2.84"

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Summary for Pond P1: SW POND

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth = 1.53" for 2-yr event
 Inflow = 65.57 cfs @ 12.22 hrs, Volume= 5.164 af
 Outflow = 7.54 cfs @ 13.32 hrs, Volume= 4.123 af, Atten= 89%, Lag= 66.1 min
 Primary = 7.54 cfs @ 13.32 hrs, Volume= 4.123 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 869.31' @ 13.32 hrs Surf.Area= 65,204 sf Storage= 133,593 cf

Plug-Flow detention time= 478.7 min calculated for 4.123 af (80% of inflow)
 Center-of-Mass det. time= 407.5 min (1,218.4 - 810.8)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	455,297 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	50,617	0	0
869.00	63,206	113,823	113,823
871.00	76,186	139,392	253,215
873.00	89,559	165,745	418,960
873.40	92,128	36,337	455,297

Device	Routing	Invert	Outlet Devices
#1	Primary	867.00'	42.0" Round Culvert L= 99.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 9.62 sf
#2	Device 1	867.00'	4.0" Vert. Dewater - Orifice/Grate C= 0.600
#3	Device 1	868.25'	30.0" Vert. Intermediate - Orifice/Grate C= 0.600
#4	Device 1	871.25'	84.0" Horiz. Open Top - Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	872.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.53 cfs @ 13.32 hrs HW=869.31' (Free Discharge)

1=Culvert (Passes 7.53 cfs of 27.89 cfs potential flow)
 2=Dewater - Orifice/Grate (Orifice Controls 0.61 cfs @ 7.05 fps)
 3=Intermediate - Orifice/Grate (Orifice Controls 6.92 cfs @ 3.50 fps)
 4=Open Top - Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

2901.00 SWMP

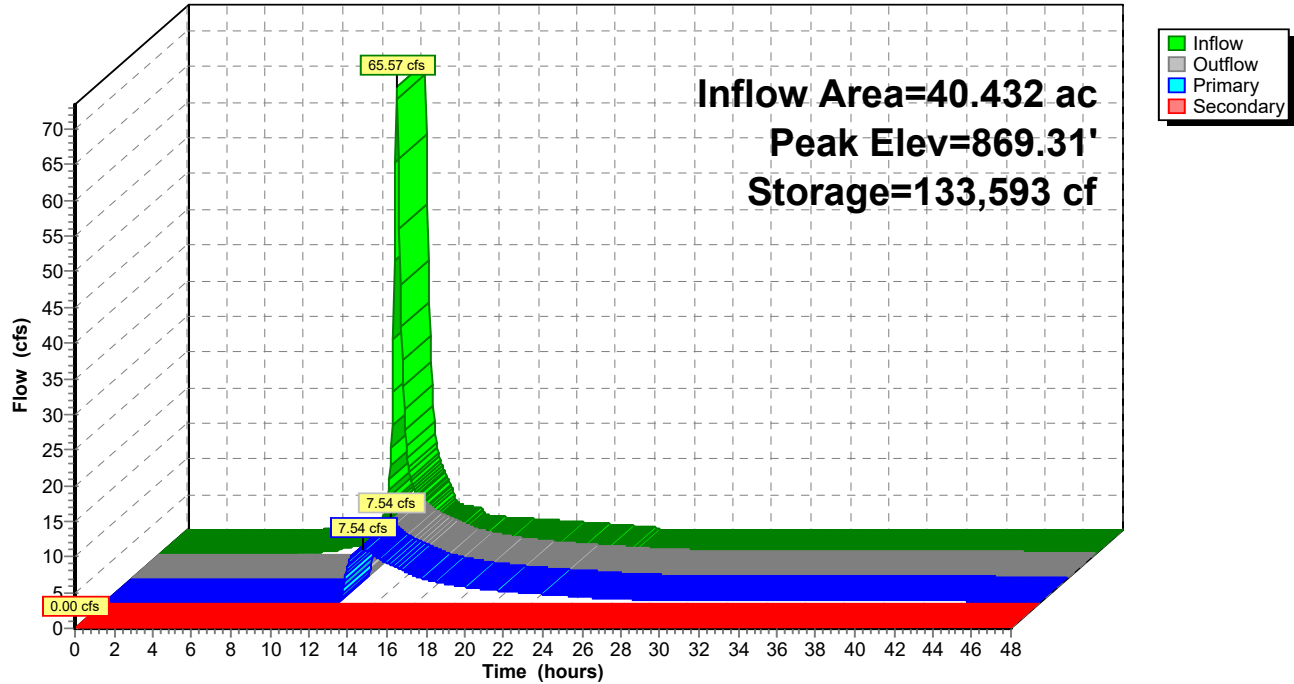
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MSE 24-hr 4 2-yr Rainfall=2.84"

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Pond P1: SW POND**Hydrograph**

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MSE 24-hr 4 2-yr Rainfall=2.84"

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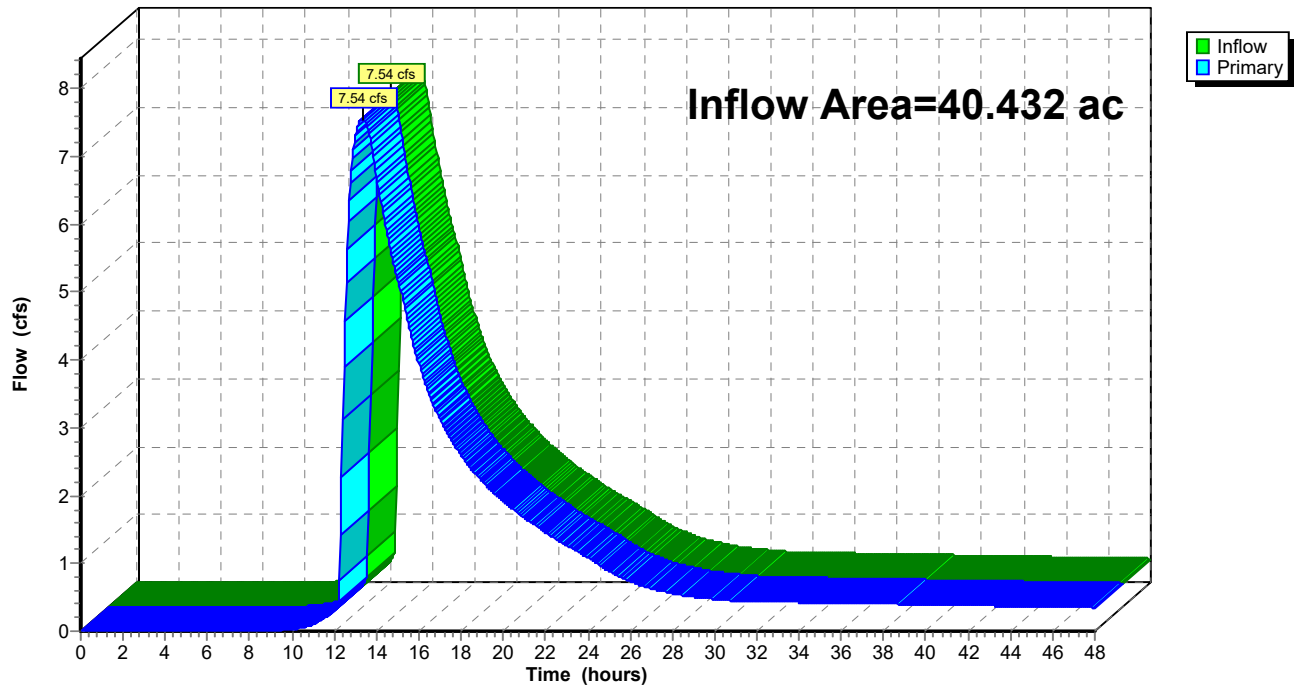
Summary for Link PD-PT1: PR SW

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth > 1.22" for 2-yr event
Inflow = 7.54 cfs @ 13.32 hrs, Volume= 4.123 af
Primary = 7.54 cfs @ 13.32 hrs, Volume= 4.123 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link PD-PT1: PR SW

Hydrograph



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MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Subcatchment A1: PR S to D-PT1

Runoff = 98.34 cfs @ 12.22 hrs, Volume= 7.276 af, Depth= 3.20"

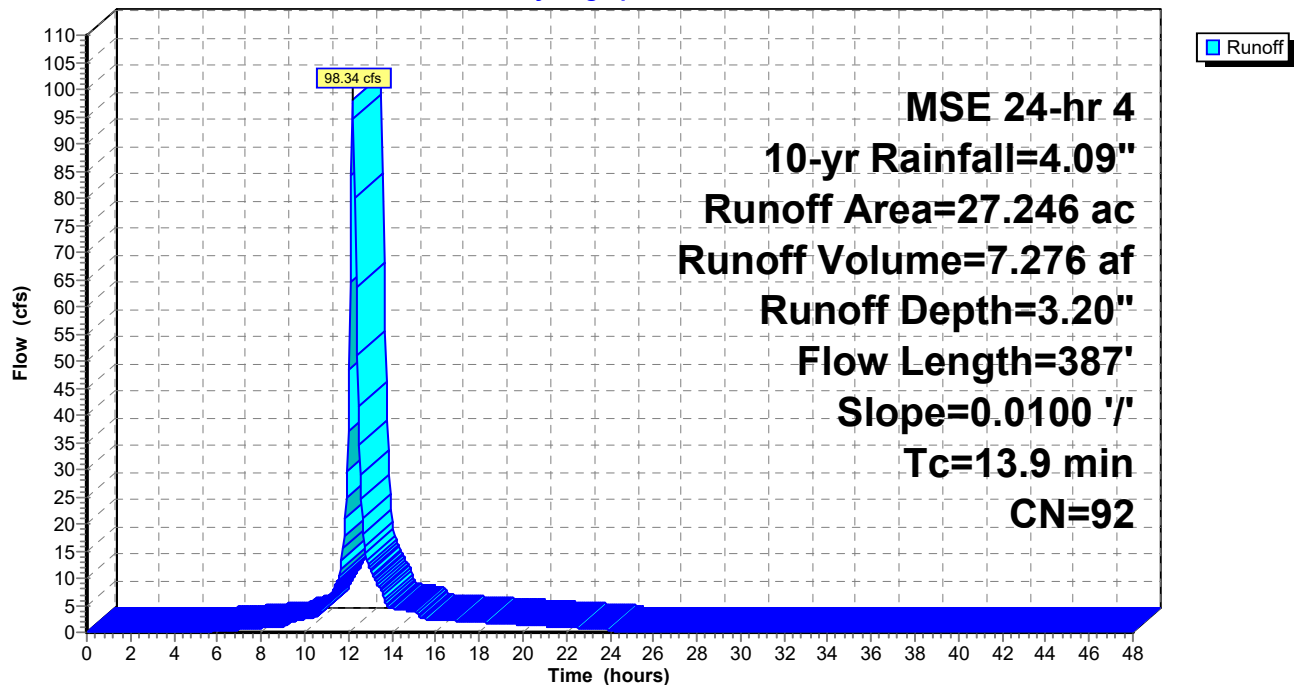
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

Area (ac)	CN	Description
* 27.246	92	CODE 80/20 PVMT(98)/GRASS(69)
27.246		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A1: PR S to D-PT1

Hydrograph



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MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Subcatchment A2: PR N to D-PT1 in PH1

Runoff = 2.38 cfs @ 12.24 hrs, Volume= 0.178 af, Depth= 1.26"

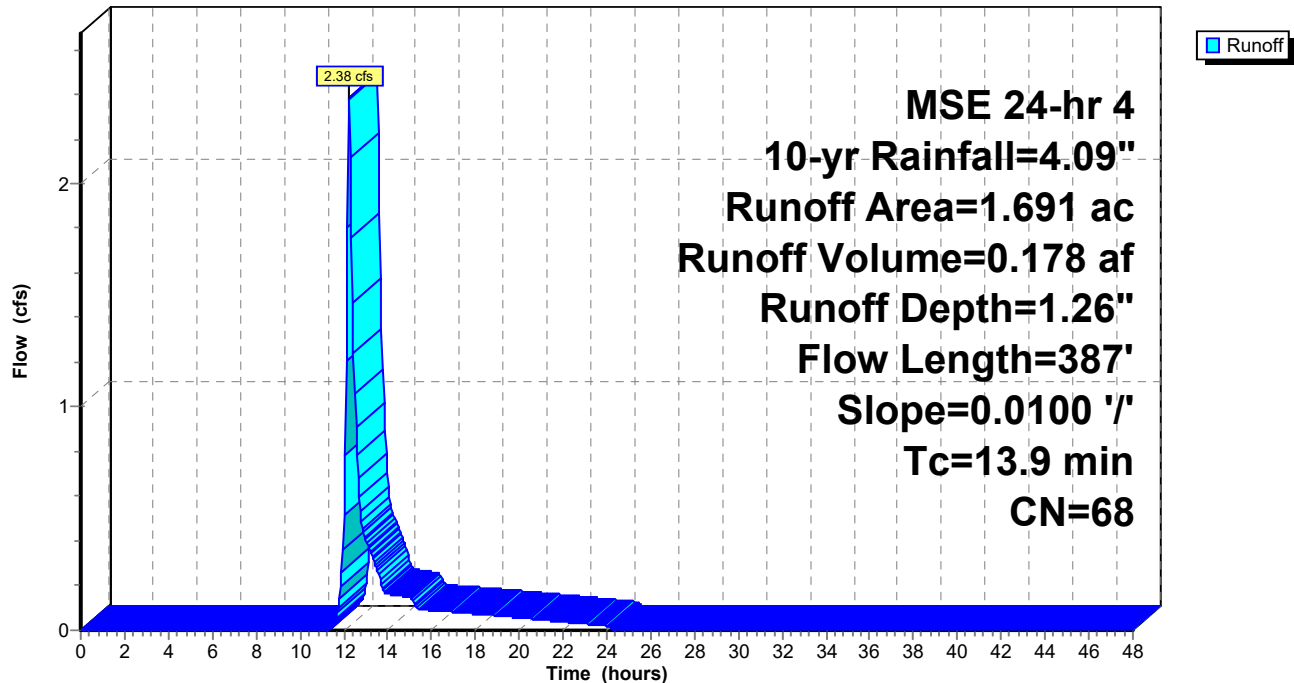
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

Area (ac)	CN	Description
* 1.691	68	CODE Max Pre-Dev B (Cropland)
1.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A2: PR N to D-PT1 in PH1

Hydrograph



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MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Subcatchment P-O1: PR NE OFFSITE

Runoff = 11.20 cfs @ 12.44 hrs, Volume= 1.209 af, Depth= 1.26"

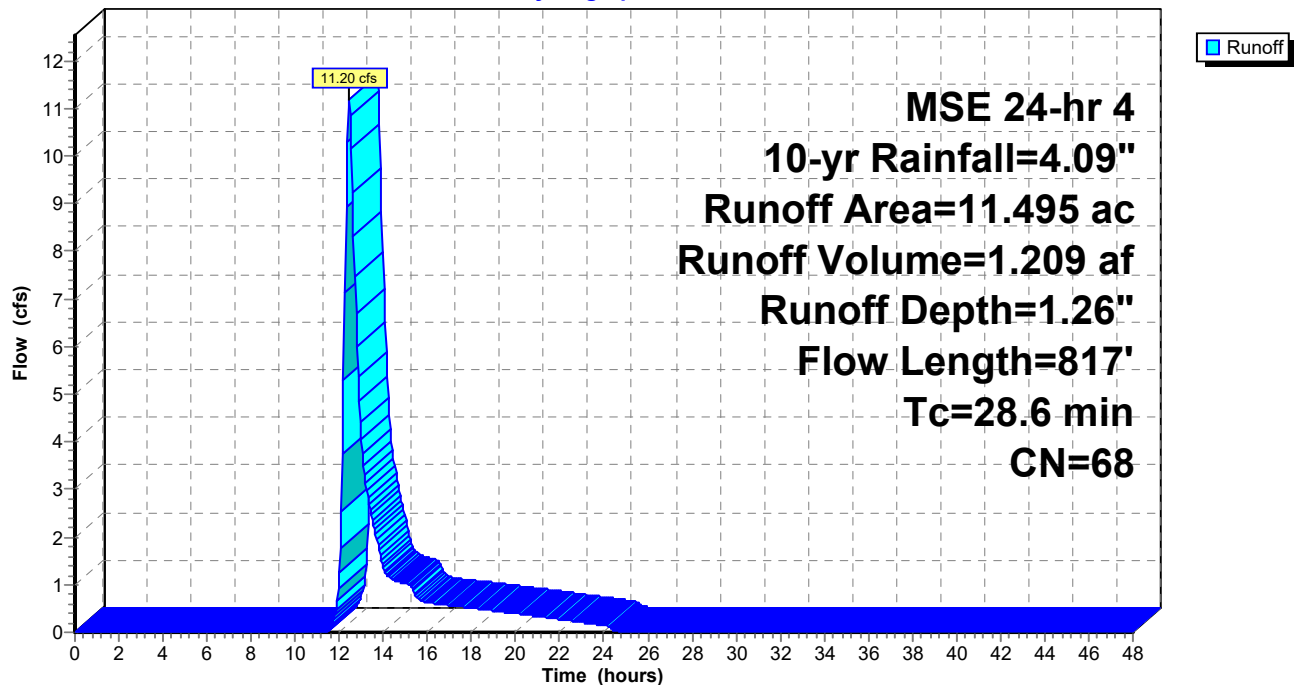
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-yr Rainfall=4.09"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment P-O1: PR NE OFFSITE

Hydrograph



2901.00 SWMP

MSE 24-hr 4 10-yr Rainfall=4.09"

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Summary for Pond P1: SW POND

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth = 2.57" for 10-yr event
 Inflow = 106.68 cfs @ 12.22 hrs, Volume= 8.663 af
 Outflow = 21.54 cfs @ 12.79 hrs, Volume= 7.588 af, Atten= 80%, Lag= 33.9 min
 Primary = 21.54 cfs @ 12.79 hrs, Volume= 7.588 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 870.29' @ 12.79 hrs Surf.Area= 71,553 sf Storage= 200,483 cf

Plug-Flow detention time= 324.9 min calculated for 7.588 af (88% of inflow)
 Center-of-Mass det. time= 272.0 min (1,073.6 - 801.6)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	455,297 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	50,617	0	0
869.00	63,206	113,823	113,823
871.00	76,186	139,392	253,215
873.00	89,559	165,745	418,960
873.40	92,128	36,337	455,297

Device	Routing	Invert	Outlet Devices
#1	Primary	867.00'	42.0" Round Culvert L= 99.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 9.62 sf
#2	Device 1	867.00'	4.0" Vert. Dewater - Orifice/Grate C= 0.600
#3	Device 1	868.25'	30.0" Vert. Intermediate - Orifice/Grate C= 0.600
#4	Device 1	871.25'	84.0" Horiz. Open Top - Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	872.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=21.53 cfs @ 12.79 hrs HW=870.29' (Free Discharge)

↑ **1=Culvert** (Passes 21.53 cfs of 48.45 cfs potential flow)
 ↑ **2=Dewater - Orifice/Grate** (Orifice Controls 0.74 cfs @ 8.50 fps)
 ↑ **3=Intermediate - Orifice/Grate** (Orifice Controls 20.79 cfs @ 4.86 fps)
 ↑ **4=Open Top - Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

2901.00 SWMP

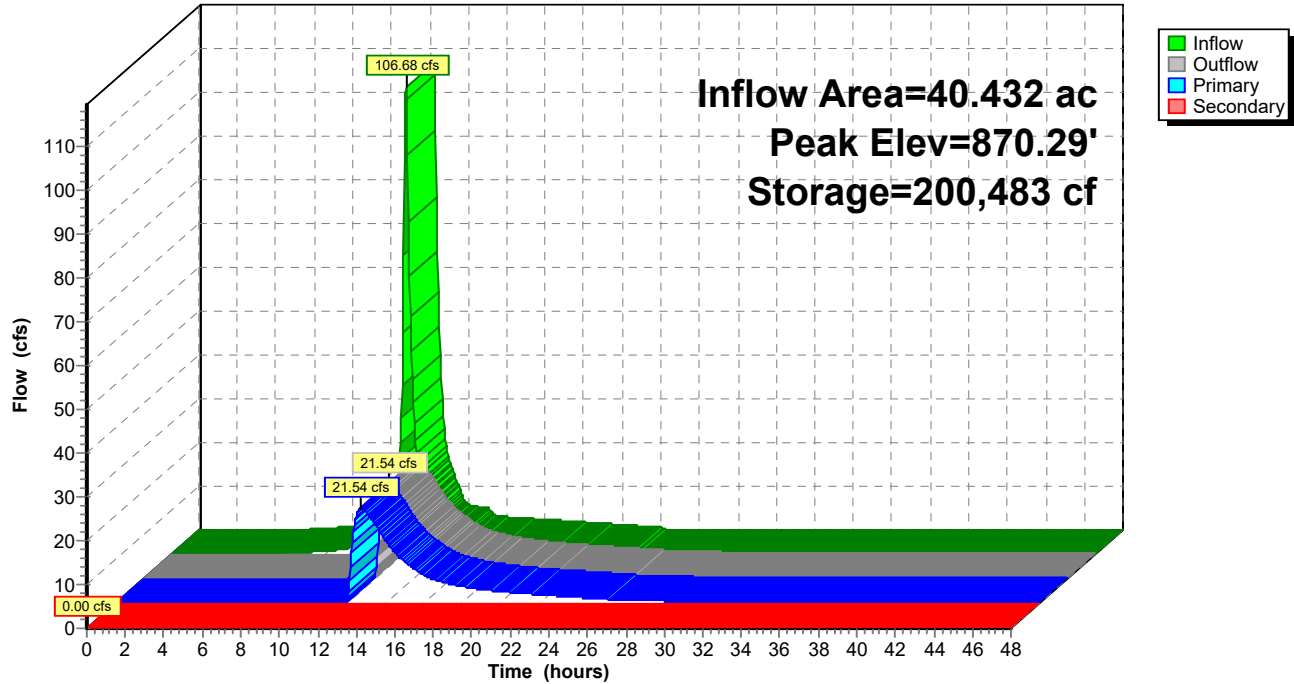
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MSE 24-hr 4 10-yr Rainfall=4.09"

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Pond P1: SW POND**Hydrograph**

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MSE 24-hr 4 10-yr Rainfall=4.09"

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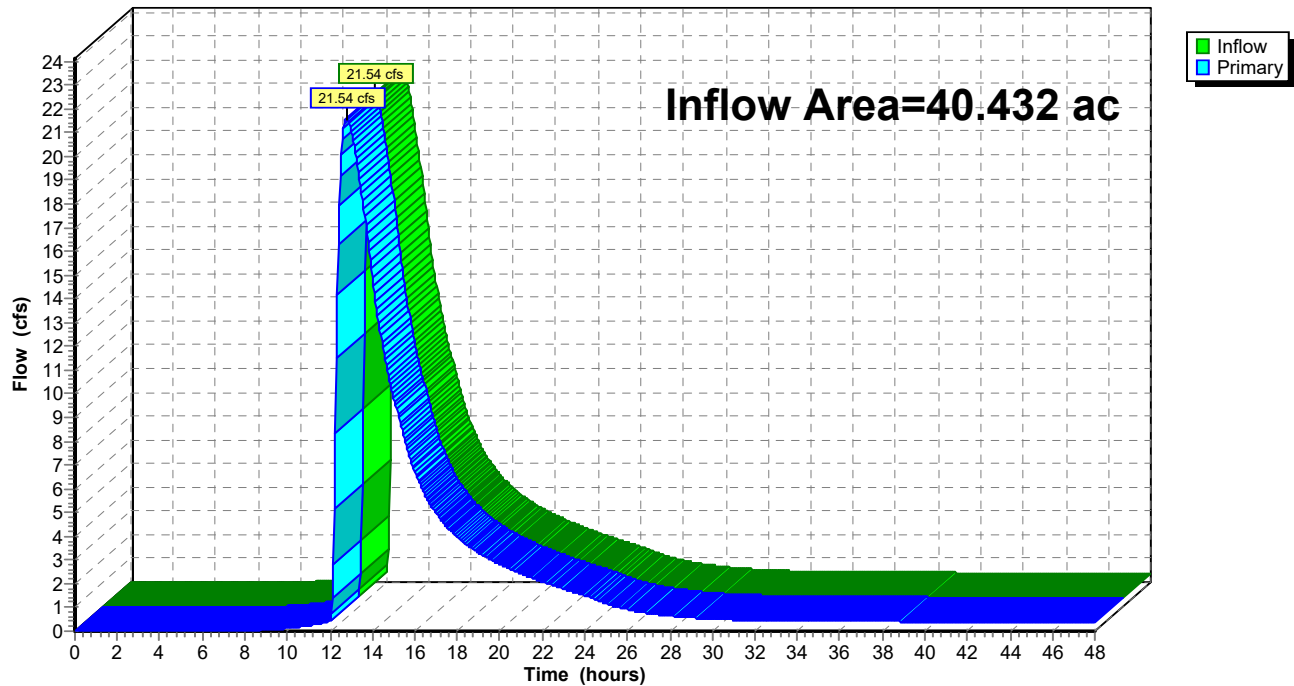
Summary for Link PD-PT1: PR SW

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth > 2.25" for 10-yr event
Inflow = 21.54 cfs @ 12.79 hrs, Volume= 7.588 af
Primary = 21.54 cfs @ 12.79 hrs, Volume= 7.588 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link PD-PT1: PR SW

Hydrograph



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MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Subcatchment A1: PR S to D-PT1

Runoff = 169.80 cfs @ 12.21 hrs, Volume= 12.986 af, Depth= 5.72"

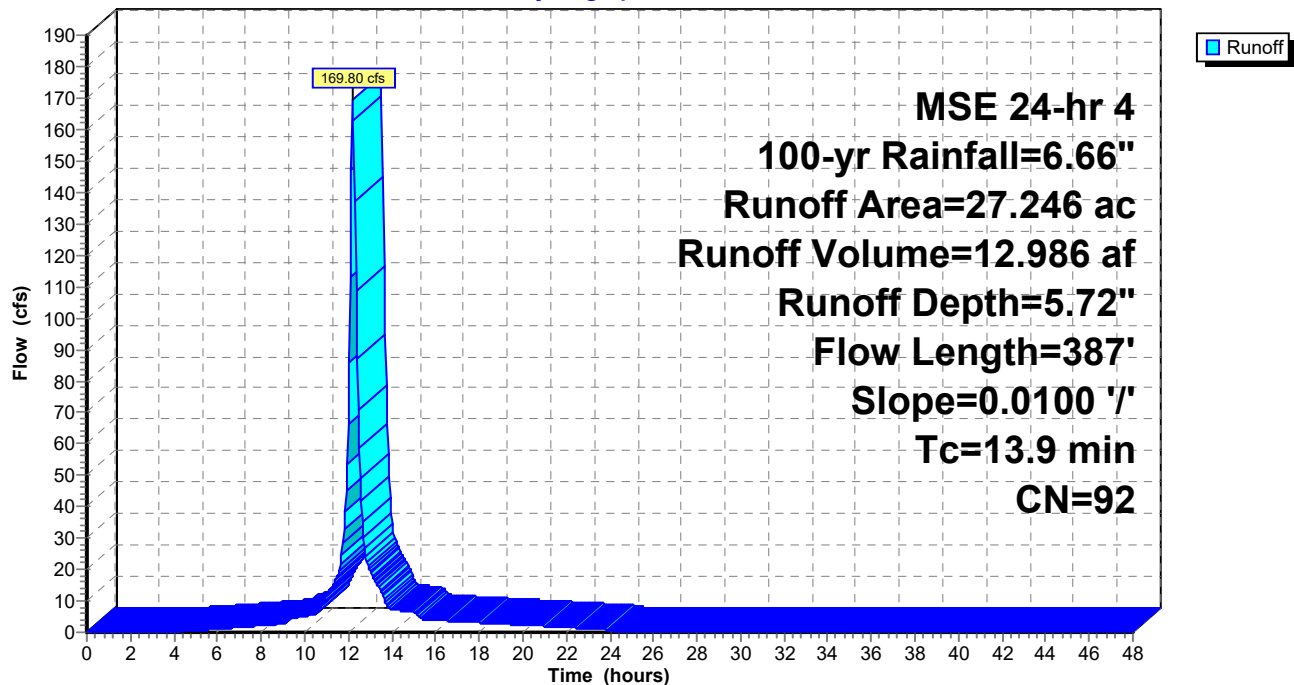
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

Area (ac)	CN	Description
* 27.246	92	CODE 80/20 PVMT(98)/GRASS(69)
27.246		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A1: PR S to D-PT1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Subcatchment A2: PR N to D-PT1 in PH1

Runoff = 6.20 cfs @ 12.23 hrs, Volume= 0.442 af, Depth= 3.14"

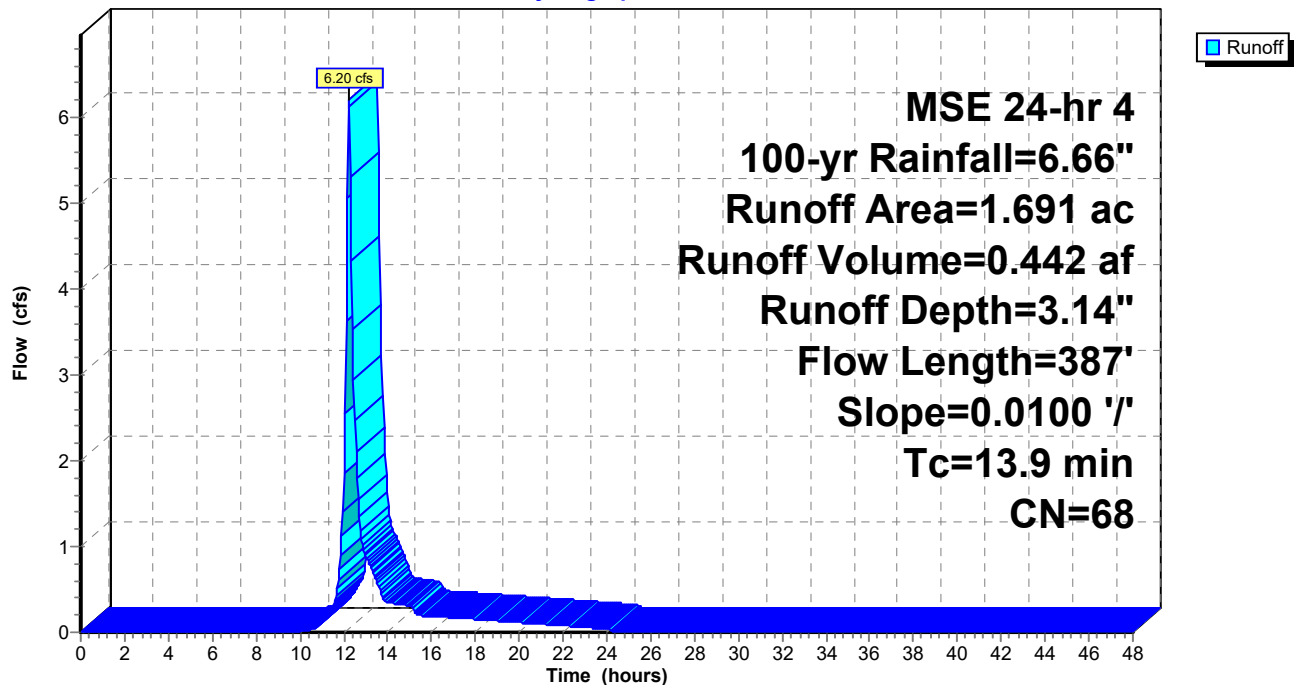
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

Area (ac)	CN	Description
* 1.691	68	CODE Max Pre-Dev B (Cropland)
1.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A2: PR N to D-PT1 in PH1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Subcatchment P-O1: PR NE OFFSITE

Runoff = 29.51 cfs @ 12.42 hrs, Volume= 3.005 af, Depth= 3.14"

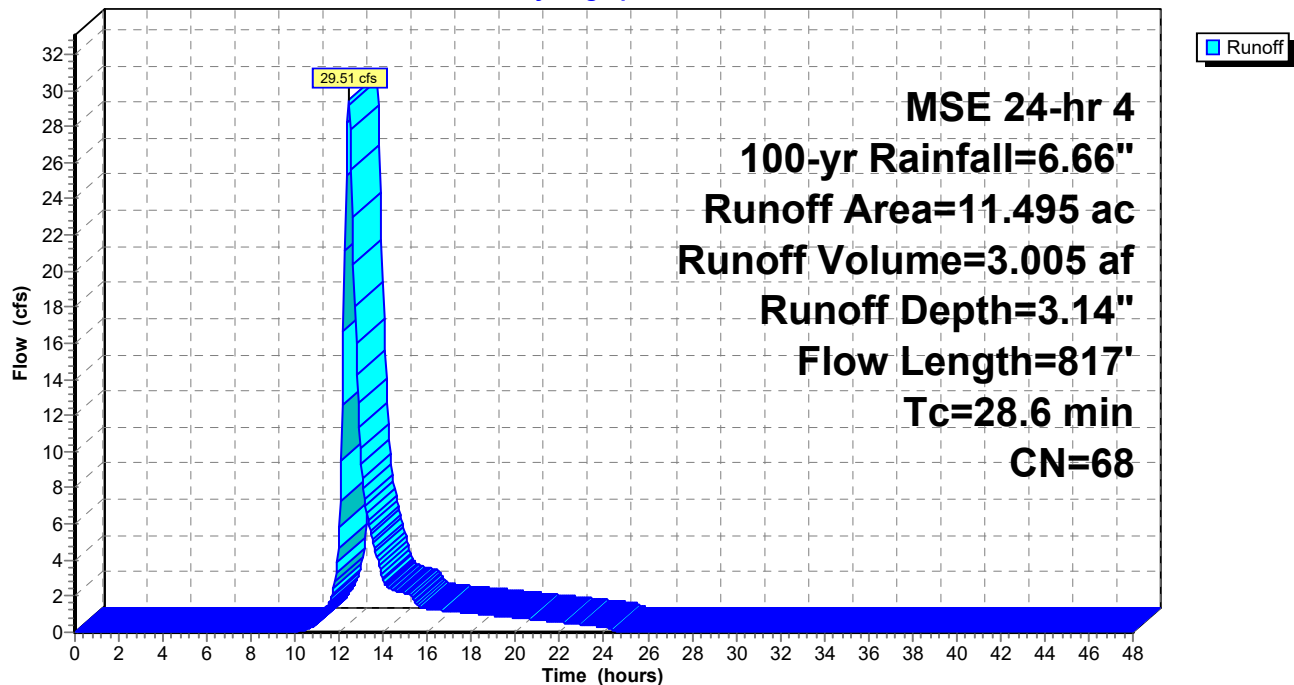
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-yr Rainfall=6.66"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment P-O1: PR NE OFFSITE

Hydrograph



2901.00 SWMP

MSE 24-hr 4 100-yr Rainfall=6.66"

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Summary for Pond P1: SW POND

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth = 4.88" for 100-yr event
 Inflow = 194.25 cfs @ 12.22 hrs, Volume= 16.433 af
 Outflow = 76.18 cfs @ 12.56 hrs, Volume= 15.321 af, Atten= 61%, Lag= 20.0 min
 Primary = 76.18 cfs @ 12.56 hrs, Volume= 15.321 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 871.95' @ 12.56 hrs Surf.Area= 82,532 sf Storage= 328,536 cf

Plug-Flow detention time= 216.4 min calculated for 15.321 af (93% of inflow)
 Center-of-Mass det. time= 182.6 min (972.9 - 790.3)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	455,297 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	50,617	0	0
869.00	63,206	113,823	113,823
871.00	76,186	139,392	253,215
873.00	89,559	165,745	418,960
873.40	92,128	36,337	455,297

Device	Routing	Invert	Outlet Devices
#1	Primary	867.00'	42.0" Round Culvert L= 99.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0050 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 9.62 sf
#2	Device 1	867.00'	4.0" Vert. Dewater - Orifice/Grate C= 0.600
#3	Device 1	868.25'	30.0" Vert. Intermediate - Orifice/Grate C= 0.600
#4	Device 1	871.25'	84.0" Horiz. Open Top - Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	872.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=76.16 cfs @ 12.56 hrs HW=871.95' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 76.16 cfs @ 7.92 fps)
 ↑ **2=Dewater - Orifice/Grate** (Passes < 0.92 cfs potential flow)
 ↑ **3=Intermediate - Orifice/Grate** (Passes < 36.98 cfs potential flow)
 ↑ **4=Open Top - Orifice/Grate** (Passes < 41.93 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=867.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

2901.00 SWMP

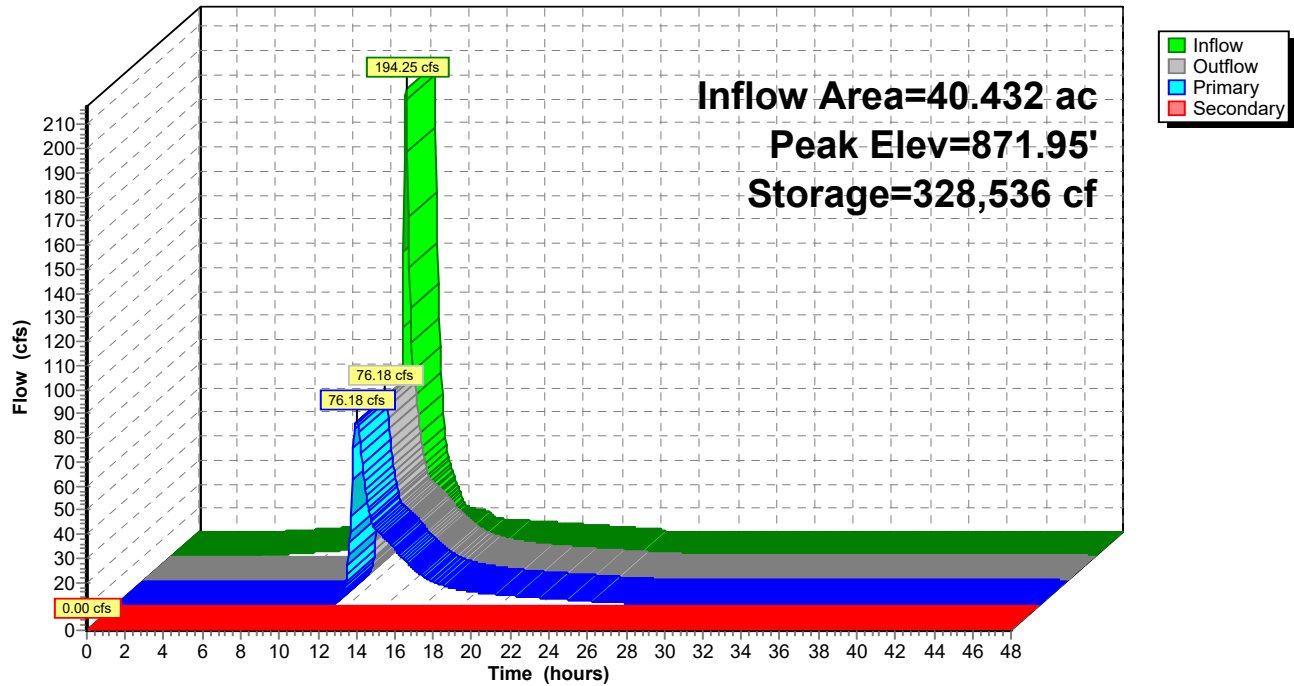
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MSE 24-hr 4 100-yr Rainfall=6.66"

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Pond P1: SW POND**Hydrograph**

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MSE 24-hr 4 100-yr Rainfall=6.66"

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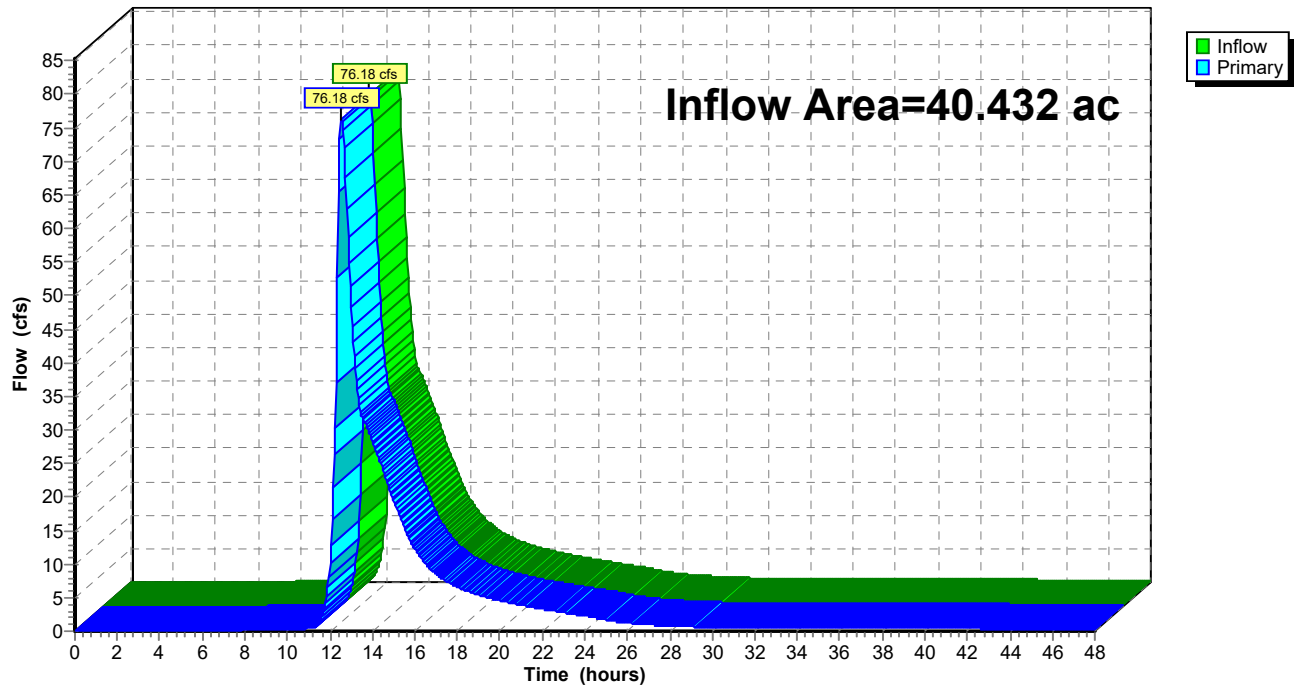
Summary for Link PD-PT1: PR SW

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth > 4.55" for 100-yr event
Inflow = 76.18 cfs @ 12.56 hrs, Volume= 15.321 af
Primary = 76.18 cfs @ 12.56 hrs, Volume= 15.321 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link PD-PT1: PR SW

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Subcatchment A1: PR S to D-PT1

Runoff = 193.75 cfs @ 12.21 hrs, Volume= 14.936 af, Depth= 6.58"

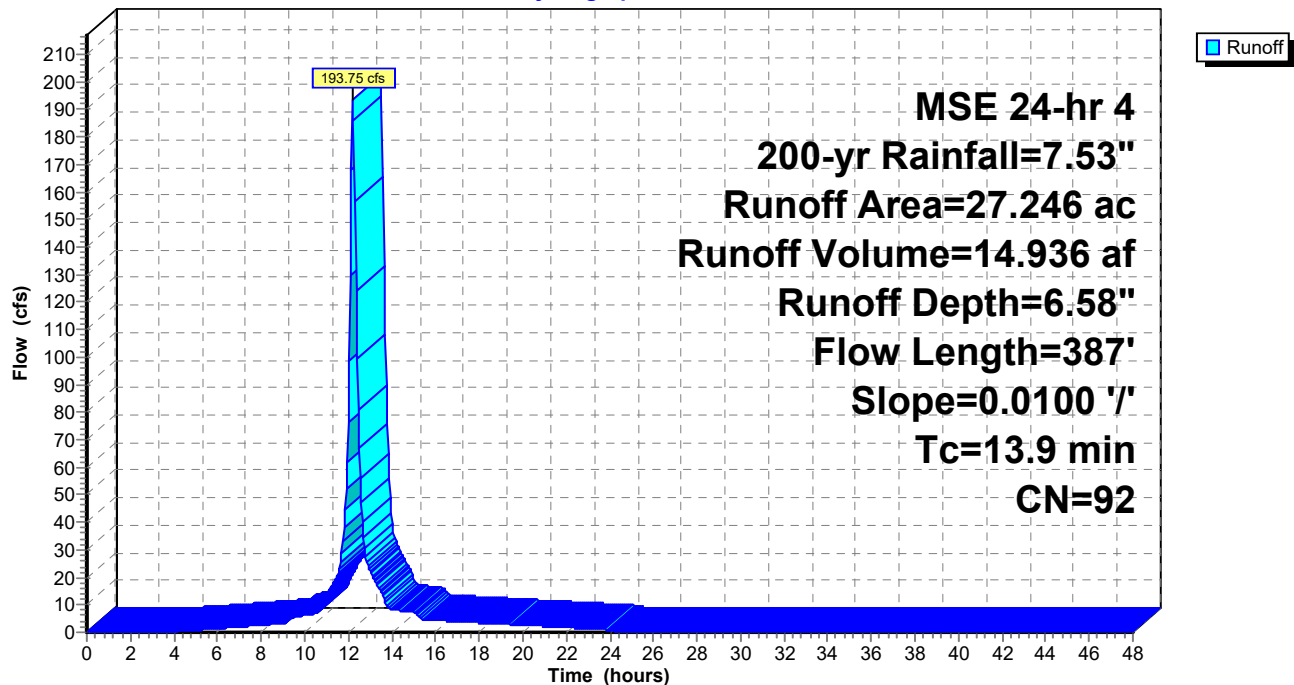
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

Area (ac)	CN	Description
* 27.246	92	CODE 80/20 PVMT(98)/GRASS(69)
27.246		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A1: PR S to D-PT1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Subcatchment A2: PR N to D-PT1 in PH1

Runoff = 7.65 cfs @ 12.22 hrs, Volume= 0.542 af, Depth= 3.84"

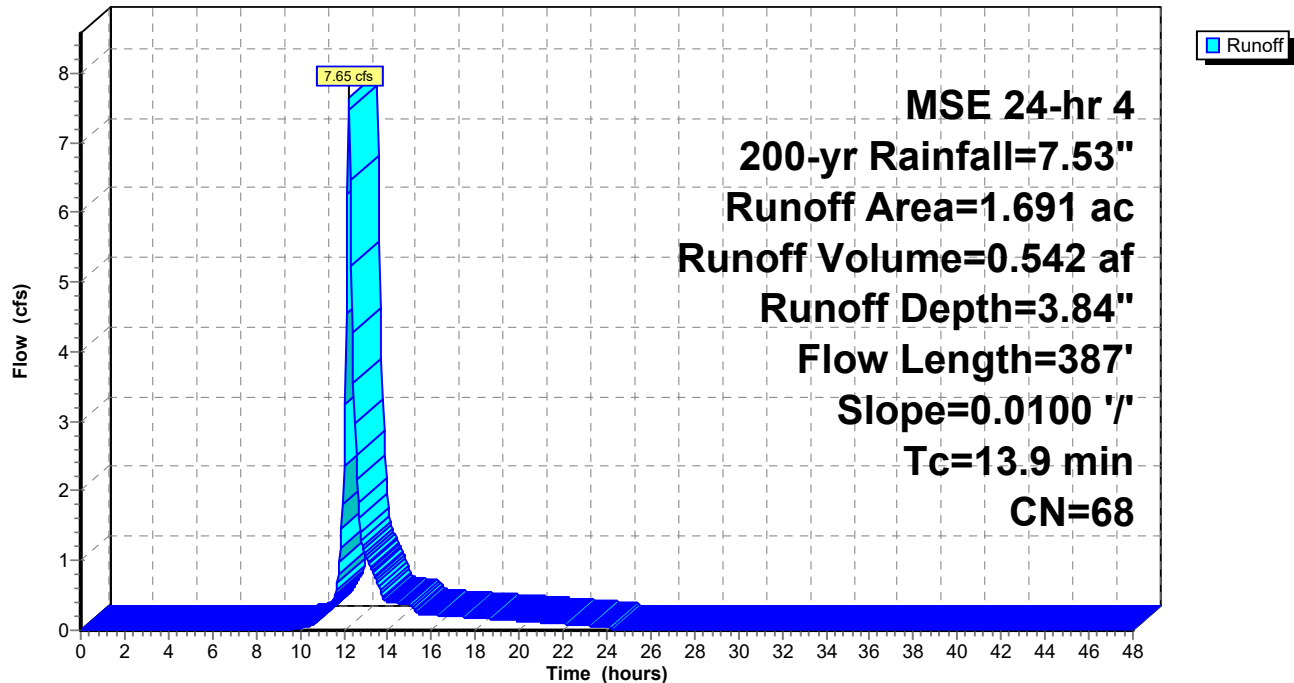
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

Area (ac)	CN	Description
* 1.691	68	CODE Max Pre-Dev B (Cropland)
1.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	150	0.0100	0.26		Sheet Flow, Cropland
					Cultivated: Residue<=20% n= 0.060 P2= 2.63"
4.4	237	0.0100	0.90		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
13.9	387	Total			

Subcatchment A2: PR N to D-PT1 in PH1

Hydrograph



2901.00 SWMP

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MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Subcatchment P-O1: PR NE OFFSITE

Runoff = 36.31 cfs @ 12.41 hrs, Volume= 3.682 af, Depth= 3.84"

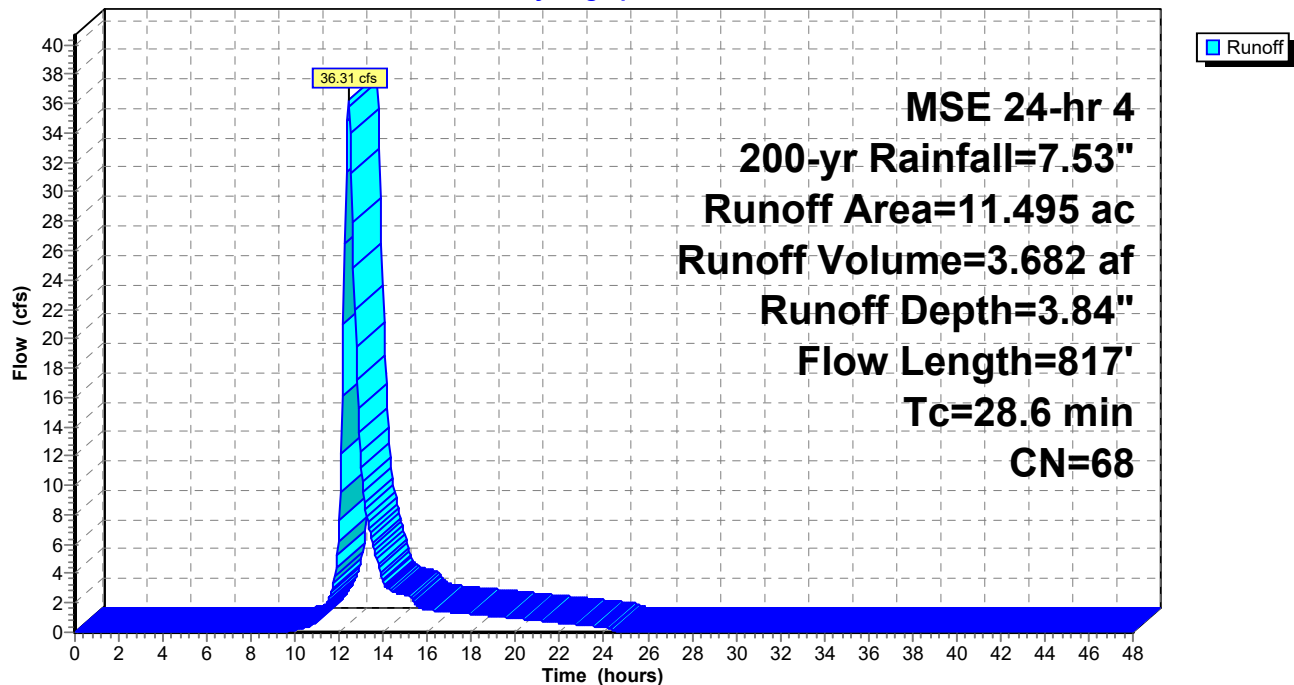
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-yr Rainfall=7.53"

Area (ac)	CN	Description
* 11.495	68	CODE Max Pre-Dev B (Cropland)
11.495		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	150	0.0300	0.20		Sheet Flow, Grassland
					Grass: Short n= 0.150 P2= 2.63"
15.9	667	0.0060	0.70		Shallow Concentrated Flow, Grass
					Cultivated Straight Rows Kv= 9.0 fps
28.6	817	Total			

Subcatchment P-O1: PR NE OFFSITE

Hydrograph



2901.00 SWMP

MSE 24-hr 4 200-yr Rainfall=7.53"

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Summary for Pond P1: SW POND

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth = 5.69" for 200-yr event
 Inflow = 224.30 cfs @ 12.22 hrs, Volume= 19.160 af
 Outflow = 95.20 cfs @ 12.53 hrs, Volume= 18.040 af, Atten= 58%, Lag= 18.6 min
 Primary = 83.92 cfs @ 12.53 hrs, Volume= 17.757 af
 Secondary = 11.28 cfs @ 12.53 hrs, Volume= 0.283 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 872.37' @ 12.53 hrs Surf.Area= 85,316 sf Storage= 363,474 cf

Plug-Flow detention time= 194.2 min calculated for 18.021 af (94% of inflow)
 Center-of-Mass det. time= 165.7 min (953.4 - 787.7)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	455,297 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	50,617	0	0
869.00	63,206	113,823	113,823
871.00	76,186	139,392	253,215
873.00	89,559	165,745	418,960
873.40	92,128	36,337	455,297

Device	Routing	Invert	Outlet Devices
#1	Primary	867.00'	42.0" Round Culvert L= 99.7' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0050 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 9.62 sf
#2	Device 1	867.00'	4.0" Vert. Dewater - Orifice/Grate C= 0.600
#3	Device 1	868.25'	30.0" Vert. Intermediate - Orifice/Grate C= 0.600
#4	Device 1	871.25'	84.0" Horiz. Open Top - Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	872.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=83.87 cfs @ 12.53 hrs HW=872.36' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 83.87 cfs @ 8.72 fps)
 ↑ **2=Dewater - Orifice/Grate** (Passes < 0.96 cfs potential flow)
 ↑ **3=Intermediate - Orifice/Grate** (Passes < 39.99 cfs potential flow)
 ↑ **4=Open Top - Orifice/Grate** (Passes < 84.36 cfs potential flow)

Secondary OutFlow Max=11.11 cfs @ 12.53 hrs HW=872.36' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Weir Controls 11.11 cfs @ 1.53 fps)

2901.00 SWMP

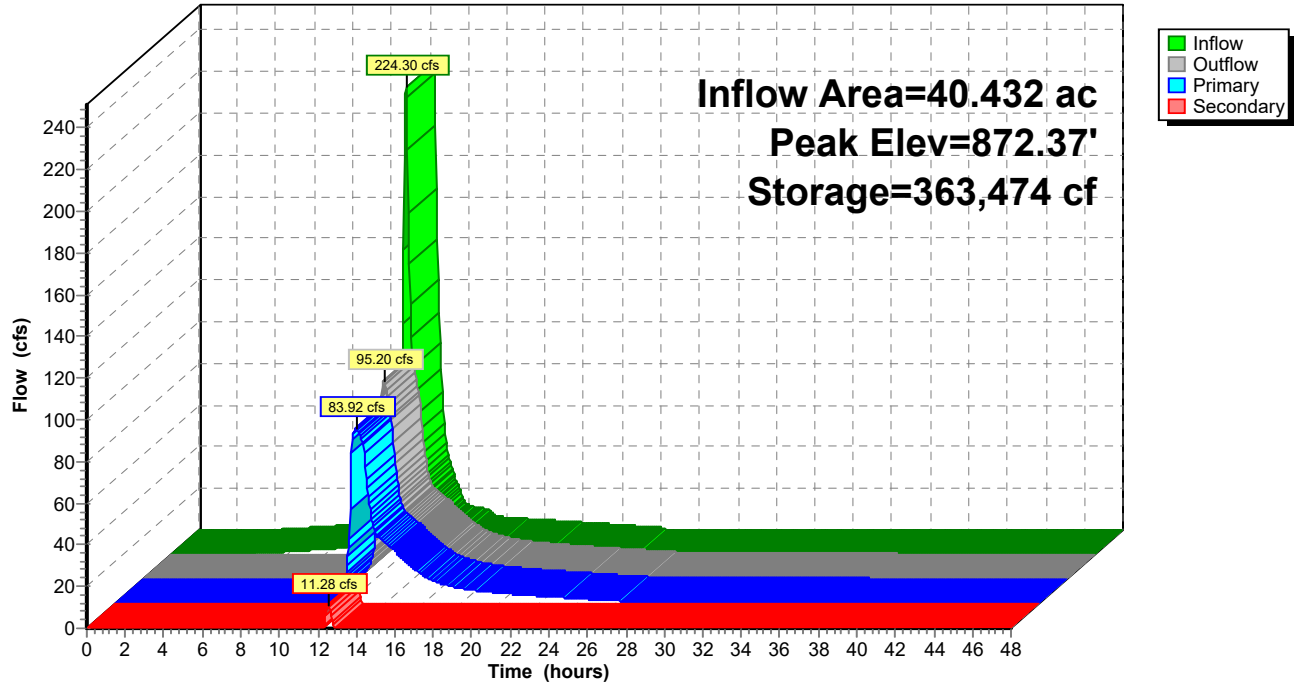
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MSE 24-hr 4 200-yr Rainfall=7.53"

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Pond P1: SW POND**Hydrograph**

2901.00 SWMP

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MSE 24-hr 4 200-yr Rainfall=7.53"

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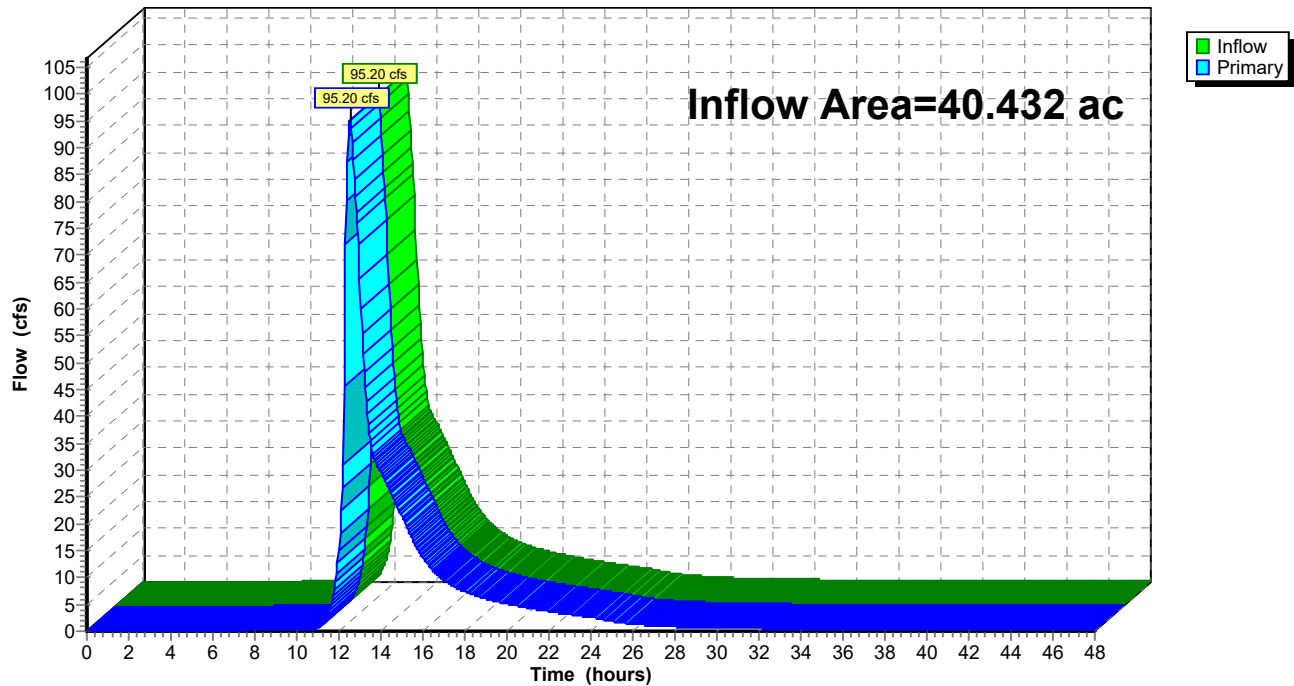
Summary for Link PD-PT1: PR SW

Inflow Area = 40.432 ac, 0.00% Impervious, Inflow Depth > 5.35" for 200-yr event
Inflow = 95.20 cfs @ 12.53 hrs, Volume= 18.040 af
Primary = 95.20 cfs @ 12.53 hrs, Volume= 18.040 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link PD-PT1: PR SW

Hydrograph



WETLAND DELINEATION REPORT



Daentl Road Development Wetland Delineation

November 9, 2021

PREPARED FOR:

Steven Buss
Likewise Partners
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St. Louis Park, Minnesota 55416

PREPARED BY:

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DAENTL ROAD DEVELOPMENT WETLAND DELINEATION REPORT

1.0 Introduction and Statement of Qualifications

On behalf of Likewise Partners, Ruekert & Mielke, Inc. (R/M) conducted a wetland delineation within a Project Area (92 acres) along Daentl Road, located in Section 5, Township 8N, Range 10E in the Town of Burke, Dane County, Wisconsin.

The purpose of the wetland delineation was to determine the extent of wetlands within the Project Area for a proposed commercial development. The wetland delineation field investigation was conducted by R/M ecologists Theran Stautz, PWS and Kaley DuCoeur on October 13, 2021. One wetland feature was delineated within the Project Area: a farmed wetland/wet meadow complex (3.1 acres) (Appendix A, Figure 2). Theran Stautz was the lead investigator for the wetland delineation and author of this report.

R/M staff have decades of experience providing client support for federal and state environmental permits, zoning and conditional use approvals, and background studies, surveys and data collection needed to achieve project objectives.

Theran Stautz is a Senior Ecologist with a B.S. degree in Natural Resources from the University of Wisconsin – Madison and has over 17 years of ecological experience conducting wetland delineations, monitoring, native habitat restoration, and forestry. He is a Professional Wetland Scientist (PWS) with the Society of Wetland Scientists, and a Wisconsin Department of Natural Resources (WDNR) Assured Wetland Delineator.

Kaley DuCoeur is a Senior Ecologist with a B.S. degree in Environmental Science from California University of Pennsylvania and has over 12 years of ecological field experience conducting native and invasive species surveys, native plant restorations, wetland restorations, storm water and erosion control device inspections, wetland delineations, and rare, threatened, and endangered species surveys. She also performs project management of and compiles complex permitting for both linear and non-linear projects throughout Wisconsin, West Virginia, and Pennsylvania.

2.0 Methods

The work conducted for this wetland and waterway delineation was conducted in accordance with the guidelines of the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0, 2012) and in general accordance with WDNR guidelines. National Wetland Indicator status and taxonomic nomenclature were prepared in accordance with The National Wetland Plant List (Version 3.4, 2018). National Wetland Indicator status was assigned in accordance with the Northcentral and Northeast Region. Indicators of hydric soil are based on the Field Indicators of Hydric Soils in the United States (Version 8.2, 2018). This report was prepared by R/M in general accordance with the guidelines set forth in the “Guidance for Submittal of Delineation Reports to the St. Paul District Corps of Engineers and the Wisconsin Department of Natural Resources” document, issued March 4, 2015.

2.1 Desktop Review

Prior to conducting fieldwork, several resources were reviewed including the Site Location Map (Appendix A, Figure 1), Dane County Contour Map (Appendix A, Figure 3), Wisconsin Wetland Inventory (WWI) and Waterways Map (Appendix A, Figure 4), Natural Resource Conservation Service (NRCS) Soil Survey and Wetland Indicator Soils Map (Appendix A, Figure 5) and Aerial Photo Maps (Appendix A, Figures 6A-D).

The Antecedent Precipitation Tool (APT) and recent daily precipitation data were used to determine if antecedent hydrologic conditions at the time of the site visit were normal, wetter, or drier than the normal range (Appendix B).

The NRCS Web Soil Survey was used to generate a list of soil map units and all associated components occurring within the Project Area (Appendix C). This list was analyzed for soil map units and components that are hydric.

2.1.1 Farmed Area Desktop Review

A farmed area desktop review was performed for portions of the Project Area that are presently farmed and are mapped by the WDNR as wetland indicator soils. This review included an aerial imagery assessment based on results from the imagery analysis and antecedent precipitation calculations (Appendix F).

An analysis of United States Department of Agriculture (USDA) Farmed Service Agency (FSA) and NRCS National Agricultural Imagery Program (NAIP) aerial images was completed. The aerial photos analyzed were from years 2003 through 2020. The images were assessed for the presence or absence of obvious wetland signatures, and wetness signatures for areas that the WWI or NRCS mapped as wetland indicator soils. Images that did not have a month of origin were assumed to be June, July, August, or September based on crop conditions.

Antecedent precipitation was used to determine normality of precipitation for the three months prior to each photograph month. Years determined to be “normal” were used to calculate the percent of *normal years with wetness signatures*. Areas that exhibited 50% or more *normal years with wetness signatures* were determined to have a high probability of being wetland. Percent of *all years with wetness signatures* was also calculated for comparison.

2.2 Field Investigation

Sample points were placed in areas exhibiting wetland and upland characteristics to document the presence and/or absence of wetlands and to provide support for the delineated wetland boundaries. At each sample point, data were collected to document the vegetation, soil profile and hydric soil indicators, and wetland hydrology indicators.

In accordance with the National Wetland Plant List (Version 3.4, 2018), plant species were identified at each sample point. Wetland indicator status for each was assigned, as applicable: obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), or upland (UPL). Soil pits were dug to the depth needed to document wetland hydrology and hydric soil indicators or confirm the absence of indicators. Soil color was determined using a Munsell soil color chart, and the soil pit was left open for at least a half hour to allow for the observation of wetland hydrology indicators.

Photos were taken of each sample point and representative upland and wetland areas (Appendix D). Sample point data was entered into the Wildnote wetland data collection application and data sheets for the Northcentral and Northeast Regional Supplement were generated (Appendix E).

Wetland features were not staked in the field as to not interfere with active agricultural operations. Upland-wetland boundaries were evaluated in accordance with differences in the abundance of hydrophytic and non-hydrophytic vegetation, presence or absence of hydric soil indicators, presence or absence of hydrological indicators, topography, and professional judgement. A Trimble R2 survey-grade GPS receiver with ESRI ArcGIS Field Maps was used to locate the wetland boundaries and sample points.

3.0 [Results](#)

3.1 Desktop Review

The Site Location Map indicates the Project Area is located southwest of I-39/90/94, between the WI-19 and US-51 interchanges. An intermittent waterway is mapped in the northern corner of the Project Area.

Dane County two-foot contours indicate elevations ranging from 866 to 918 feet above sea level within the Project Area. The upper portion of the delineated wetland is located between the 876 and 878-foot contours. The lower wetland is generally located below the 868-foot contour.

The WWI and Waterways Map indicates a farmed emergent/wet meadow wetland (E1Kf) within a portion of the delineated wetland. No waterways are mapped by the WWI within the Project Area.

The NRCS Soil Survey and Wetland Indicator Soils Map indicates nine soil map units within the Project Area: Dodge silt loam, 2-6% slopes (non-hydric); Dodge silt loam, 6-12% slopes, eroded (non-hydric); Kidder loam, 12-20% slopes, eroded (non-hydric); Kegonsa silt loam, 2-6% slopes (non-hydric); Orion silt loam, wet (hydric); Pecatonica silt loam, 2-6% slopes (non-hydric); Radford silt loam, 0-3% slopes (hydric inclusions); Troxel silt loam, 0-3% slopes (non-hydric); and Virgil silt loam, gravelly substratum, 0-3% slopes (hydric inclusions). Orion, Radford, and Virgil soils are mapped as wetland indicator soils within the Project Area. A USDA wetspot is mapped within the trucking facility in the southeast corner of the Project Area.

Aerial imagery was reviewed for the years 1937, 1968, 1987, 1995, 2000, 2003-2006, 2008, 2010, 2013-2015, 2017, 2018, and 2020. This review determined the following:

- From 1937 to some time prior to 1987, the Project Area was generally unchanged and predominantly agricultural. A small farmstead was located along the northside of Daentl Road. I-39/90/94 was constructed between 1937 and 1968. In the 1987 image the southeast corner of the site was developed as a trucking facility.
- Between 1987 and 1995, the pond across the Interstate from the site was expanded to capture regional stormwater. The year 1995 is the first year that the delineated wetland is visible, which suggests that it formed due to increased surface water released from the pond into the Project Area.
- The 2000 image shows an expansion of the trucking facility to the west.
- The 2003 image shows significant development surrounding the stormwater pond north of the Project Area. This development continues to expand through 2020.
- The trucking facility was again expanded to the north in 2004.
- The most recent expansion of the trucking facility is first visible in the 2015 image and included a large addition to the west and the construction of several stormwater features.
- No significant changes to the Project Area or surrounding land use are visible from 2015 through 2020.

The APT determined that antecedent precipitation was drier than normal. Precipitation for the 14 days prior to the October 13 site visit was 1.09 inches.

3.1.1 Farmed Area Desktop Review

The Farmed Area Desktop Review was completed for three areas within the Project Area. Eleven years were analyzed, of which, only two were during a period of normal precipitation. Therefore, all available growing season photos from 2003-2020 were used in the analysis. Altered pattern, crop stress, and general wetness signatures were the most common indicators of observed wetness. Area 1 exhibited wetness signatures in 100% of normal years and 100% of all years. Area 2 exhibited wetness signatures in 100% of normal years and 45% of all years. Area 3 exhibited wetness signatures in 100% of normal years and 73% of all years. Based on this information, portions of Area 1 were historically wetland, but it is less likely that Areas 2 and 3 were historically wetland.

3.2 Field Investigation

3.2.1 Site Description

Based on the desktop review, areas with potential wetland indicators in the Project Area were evaluated in the field by R/M ecologists on October 13, 2021. No prior wetland delineations or agency actions are on record for this Project Area.

A total of 0.54 inch of precipitation was recorded within 48 hours prior to the site visit.

The Project Area consists of active agricultural land, farmstead, wetland, and a trucking facility. The Project Area generally slopes southeast to northwest. The lowest point on-site is where the broad swale containing the delineated wetland exits the Project Area to the west.

Nine sample points were established to document upland and wetland communities within the Project Area. One wetland feature was identified within the Project Area: a farmed wetland/wet meadow complex (3.1 acres).

3.2.2 Uplands

Upland plant communities observed in the Project Area include historically farmed agricultural fields and meadow. Dominant vegetation includes corn (*Zea mays*), reed canary grass (*Phalaris arundinacea*), and Kentucky bluegrass (*Poa pratensis*). Corn within the upland was healthy, tall (approximately 8-10ft), and dense.

Sample points representative of upland habitats within the Project Area are: 1, 4, and 6-9. Normal circumstances were not present at Sample Points 1, 4, and 6-8 due to agricultural activities. Sample Points 7 and 8 were established in Areas 2 and 3 of the Farmed Area Desktop Review respectively. Hydrophytic vegetation was more prevalent at Sample Point 9. Wetland hydrology and hydric soil indicators were not observed at any upland sample points.

3.2.3 Wetlands

Farmed Wetland/Wet Meadow

The delineated wetland (3.1 acres) is generally located in a broad, flat swale within an active agricultural field. A small portion of the wetland is located up-slope from the main body of the wetland along the Interstate right-of-way. This offshoot is connected to the main wetland by a narrow swale along the right-of-way fence. Sample Points 2, 3, and 5 are representative of conditions within the wetland. Normal circumstances are not present at Sample Points 2 and 5 due to agricultural activities. The main body of the wetland is mapped as E1Kf by the WWI. The wetland is located within Farmed Area Desktop Review Area 1. Area 1 exhibited wetness signatures in 100% of normal years and 100% of all years.

Dominant vegetation within the wetland is fall panic grass (*Panicum dichotomiflorum*), reed canary grass, hybrid cattail (*Typha x glauca*), barnyard grass (*Echinochloa crus-galli*), and nut grass (*Cyperus esculentus*). The farmed portions of the wetland also included stunted corn, suggesting they were tilled and seeded in the early growing season.

Wetland hydrology appears to be supported predominantly by surface water. The water table was not observed at any sample point. Two primary (Saturation and Oxidized Rhizospheres) and three secondary wetland hydrology indicators (Stunted or Stressed Plants, Geomorphic Position, and FAC-Neutral Test) are present at the sample points. Saturation at Sample Point 5 was likely due to recent rainfall as it occurred between 0-13" below the surface.

The wetland is in mapped Pecatonica silt loam (non-hydric) and Virgil silt loam (hydric inclusions). Soil within the wetlands meet the Depleted Matrix and Redox Dark Surface hydric soil indicators.

The wetland boundaries of the wetland were determined using professional judgment and observed changes in vegetation, hydrology, soil, and topography. Specifically, the limits of stressed/stunted corn and volunteer hydrophytic vegetation were major determinants of wetland boundary location within the agricultural field.

3.2.4 Other Aquatic Features

A series of stormwater features are located adjacent to the trucking facility (1.8 acres). These features include dry and wet basins and a swale which were constructed between 2013 and 2015.

3.2.5 Wetland Susceptibility Per NR 151

Appendix F lists a professional opinion on wetland susceptibility, based on a request by the WDNR, to do so per revised NR 151 guidance (Guidance #3800-2015-02). The delineated wetland is considered *moderately susceptible*. Wetland susceptibility definitions can be found in Appendix F. Please note that the final determination of wetland susceptibility rests with the WDNR.

4.0 [Conclusions](#)

Based on the wetland delineation completed by R/M, one wetland feature was identified within the Project Area: a farmed wetland/wet meadow complex (3.1 acres).

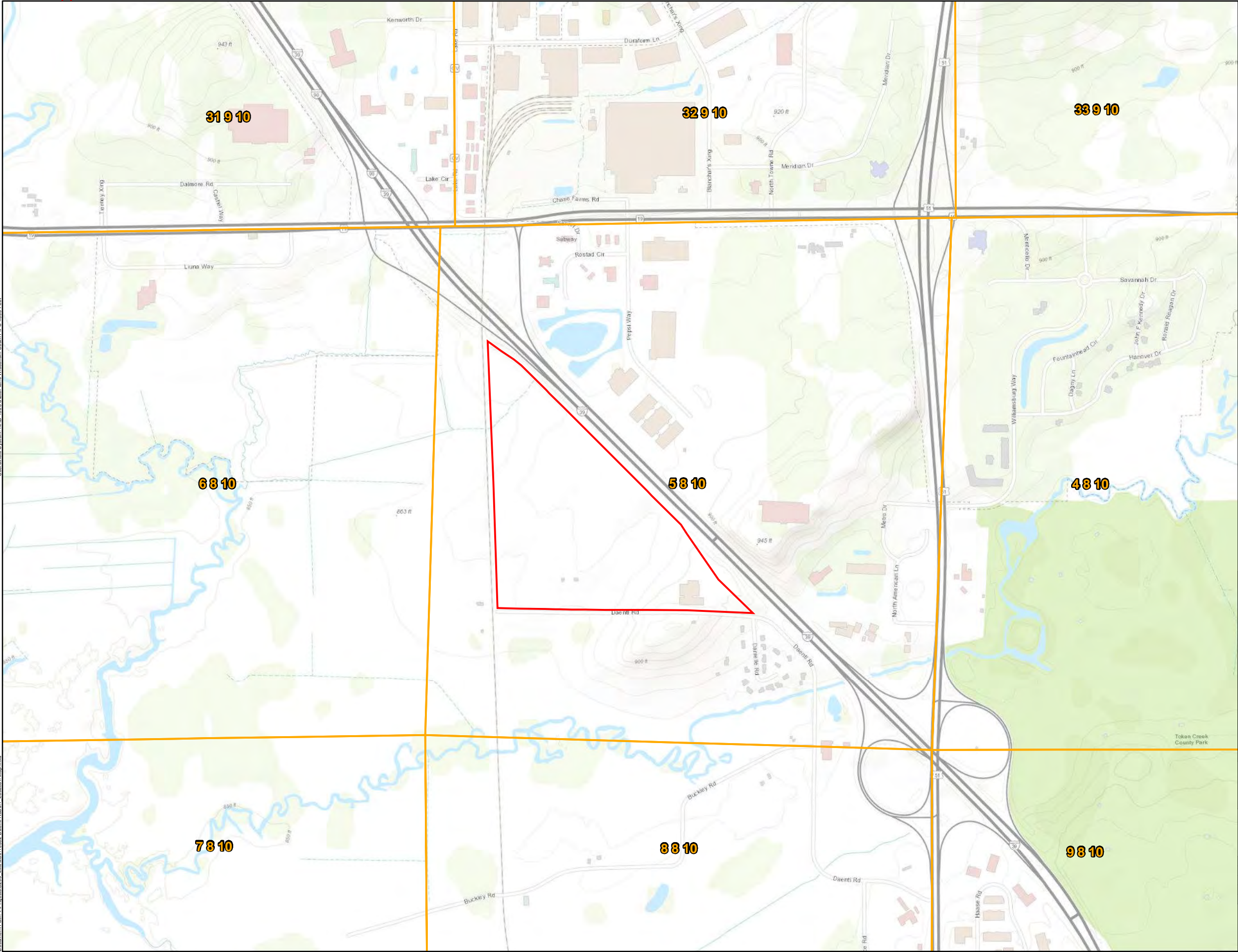
Wetlands and/or waterways are potentially subject to federal regulation under the jurisdiction of the USACE, state regulation under the jurisdiction of WDNR, and local regulation under the jurisdiction of a county, town, city, or village. Earth-disturbing activities in a delineated wetland or below the Ordinary High-Water Mark of other aquatic resources may require USACE and WDNR permits, as well as local government permits. Waterways, when present, may be subject to Wis. Admin. Code Ch. NR 151 regulation.

Theran Stautz, lead delineator and report author, is a WDNR Assured Wetland Delineator. His work is not subject to concurrence review by the WDNR. Per communication with USACE staff, requests for federal concurrence are not recommended unless the project will be associated with a wetland fill permit application.


5.0 References

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Appendix A: Figures




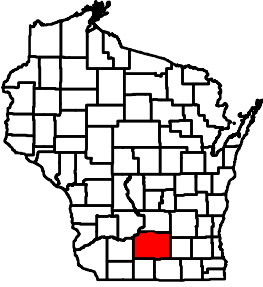
LEGEND

 Project Area (92 Acres)

NOTES

0 250 500 1,000
Feet






Dane County, Wisconsin

PROJECT **Daenti Road Development**
Likewise Partners
Town of Burke

TITLE **SITE LOCATION MAP**

DRAWN BY	TPS
APPROVED BY	TPS
PROJ. NO.	5295-10002
FILE NAME	1 Location Map
DATE	10/15/2021

FIGURE 1



Document Path: I:\Projects\5295_Likewise\10002 Daenti Road\1 Location Map.mxd

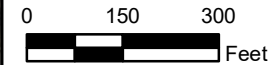


Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4903 Feet
Document Path: I:\Projects\5295_Likewise\10022 Daentl Road\2 Wetland Boundary Map.mxd

LEGEND

- Culvert
- Sample Point
- Off-site Wetland
- Constructed Stormwater Feature (1.8 Acres)
- Delineated Wetland (3.1 Acres)
- Project Area (92 Acres)

NOTES



Dane County,
Wisconsin

PROJECT
**Daentl Road Development
Likewise Partners
Town of Burke**

TITLE
WETLAND BOUNDARY MAP

DRAWN BY	TPS
APPROVED BY	TPS
PROJ. NO.	5295-10002
FILE NAME	2 Wetland Boundary Map
DATE	10/15/2021

FIGURE 2





Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4903 Feet

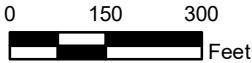
Document Path: I:\Projects\5295_Likewise\10022 Daentl Road\3 Contour Map.mxd

Service Layer Credits: Na
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

LEGEND

- Off-site Wetland
- Constructed Stormwater Feature (1.8 Acres)
- Delineated Wetland (3.1 Acres)
- Project Area (92 Acres)

NOTES



PROJECT
**Daentl Road Development
Likewise Partners
Town of Burke**

TITLE
CONTOUR MAP

DRAWN BY	TPS
APPROVED BY	TPS
PROJ. NO.	5295-10002
FILE NAME	3 Contour Map
DATE	10/15/2021

FIGURE 3





LEGEND

- Excavated pond
- Off-site Wetland
- Stream/River, Perennial
- Constructed Stormwater Feature (1.8 Acres)
- Delineated Wetland (3.1 Acres)
- Open Water
- Project Area (94 Acres)
- Wisconsin Wetland Inventory

NOTES

0 150 300 Feet

PROJECT

Daentl Road Development
Likewise Partners
Town of Burke

TITLE

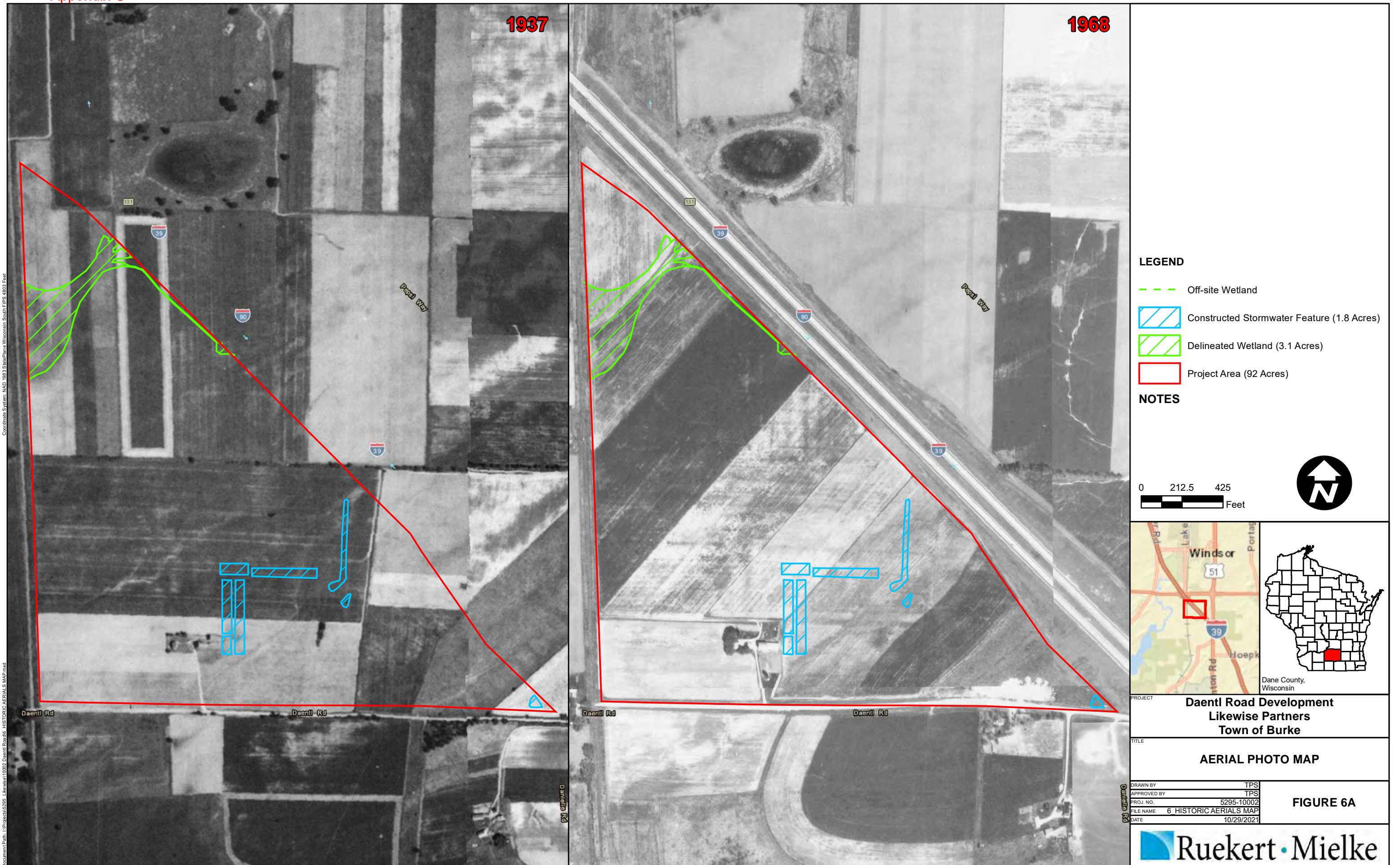
WISCONSIN WETLAND INVENTORY AND
WATERWAYS/WATERBODIES MAP

DRAWN BY	TPS
APPROVED BY	TPS
PROJ. NO.	5295-10002
FILE NAME	4_WWI_WATER MAP
DATE	10/15/2021

FIGURE 4

Ruekert • Mielke









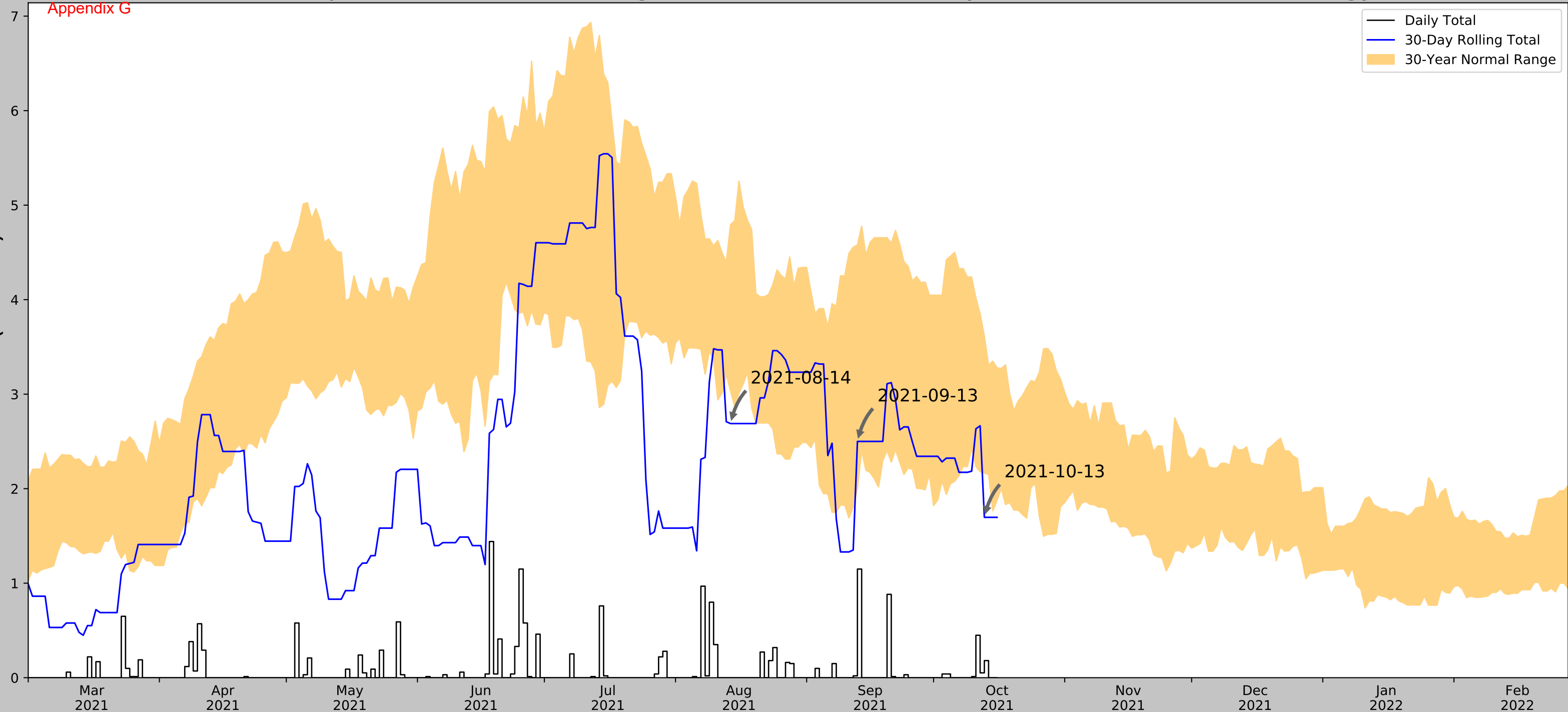
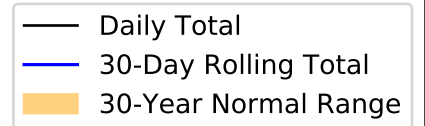


Appendix B:
Antecedent Precipitation Tool/Daily Precipitation Data

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

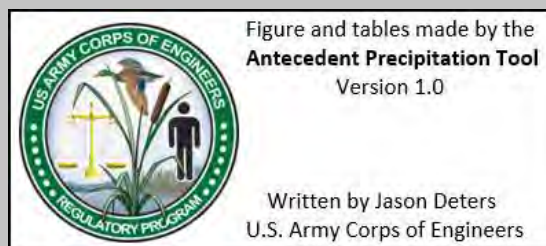
Rainfall (Inches)

Appendix G



Coordinates	43.186580, -89.339204
Observation Date	2021-10-13
Elevation (ft)	881.52
Drought Index (PDSI)	Moderate drought (2021-09)
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-10-13	2.164173	3.614567	1.69685	Dry	1	3	3
2021-09-13	2.002756	4.578347	2.5	Normal	2	2	4
2021-08-14	3.035039	4.794095	2.688976	Dry	1	1	1
Result							Drier than Normal - 8



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
MADISON DANE RGNL AP	43.1406, -89.3453	866.142	3.192	15.378	1.485	11353	90

Appendix G

Climatological Data for MADISON DANE COUNTY REGIONAL AP, WI - September 2021

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2021-09-01	77	54	65.5	26	16	0.00	0.0	0
2021-09-02	78	48	63.0	23	13	0.00	0.0	0
2021-09-03	70	59	64.5	25	15	0.10	0.0	0
2021-09-04	70	59	64.5	25	15	T	0.0	0
2021-09-05	80	55	67.5	28	18	0.00	0.0	0
2021-09-06	79	50	64.5	25	15	0.00	0.0	0
2021-09-07	79	59	69.0	29	19	0.15	0.0	0
2021-09-08	73	52	62.5	23	13	0.00	0.0	0
2021-09-09	75	49	62.0	22	12	0.00	0.0	0
2021-09-10	79	50	64.5	25	15	0.00	0.0	0
2021-09-11	85	56	70.5	31	21	0.00	0.0	0
2021-09-12	75	63	69.0	29	19	0.02	0.0	0
2021-09-13	69	60	64.5	25	15	1.15	0.0	0
2021-09-14	74	54	64.0	24	14	0.00	0.0	0
2021-09-15	76	50	63.0	23	13	0.00	0.0	0
2021-09-16	81	50	65.5	26	16	0.00	0.0	0
2021-09-17	82	52	67.0	27	17	0.00	0.0	0
2021-09-18	78	48	63.0	23	13	0.00	0.0	0
2021-09-19	88	52	70.0	30	20	0.00	0.0	0
2021-09-20	83	65	74.0	34	24	0.88	0.0	0
2021-09-21	69	52	60.5	21	11	0.01	0.0	0
2021-09-22	65	48	56.5	17	7	0.00	0.0	0
2021-09-23	69	44	56.5	17	7	0.00	0.0	0
2021-09-24	79	45	62.0	22	12	0.03	0.0	0
2021-09-25	66	48	57.0	17	7	0.00	0.0	0
2021-09-26	81	52	66.5	27	17	0.00	0.0	0
2021-09-27	83	51	67.0	27	17	0.00	0.0	0
2021-09-28	76	47	61.5	22	12	0.00	0.0	0
2021-09-29	81	45	63.0	23	13	0.00	0.0	0
2021-09-30	84	51	67.5	28	18	0.00	0.0	0
Average Sum	76.8	52.3	64.5	744	444	2.34	0.0	0.0

Appendix G

Climatological Data for MADISON DANE COUNTY REGIONAL AP, WI - October 2021

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2021-10-01	84	52	68.0	28	18	0.00	0.0	0
2021-10-02	79	66	72.5	33	23	0.04	0.0	0
2021-10-03	74	63	68.5	29	19	0.04	0.0	0
2021-10-04	71	61	66.0	26	16	T	0.0	0
2021-10-05	69	60	64.5	25	15	0.00	0.0	0
2021-10-06	77	59	68.0	28	18	0.00	0.0	0
2021-10-07	68	58	63.0	23	13	0.50	0.0	0
2021-10-08	72	60	66.0	26	16	0.00	0.0	0
2021-10-09	79	57	68.0	28	18	T	0.0	0
2021-10-10	73	63	68.0	28	18	0.01	0.0	0
2021-10-11	67	60	63.5	24	14	0.45	0.0	0
2021-10-12	64	58	61.0	21	11	0.05	0.0	0
2021-10-13	67	56	61.5	22	12	0.18	0.0	0
2021-10-14	67	45	56.0	16	6	T	0.0	0
2021-10-15	59	43	51.0	11	1	T	0.0	0
2021-10-16	59	40	49.5	10	0	0.00	0.0	0
2021-10-17	65	36	50.5	11	1	0.00	0.0	0
2021-10-18	72	37	54.5	15	5	0.00	0.0	0
2021-10-19	72	42	57.0	17	7	T	0.0	0
2021-10-20	72	48	60.0	20	10	0.02	0.0	0
2021-10-21	61	33	47.0	7	0	0.04	0.0	0
2021-10-22	49	31	40.0	0	0	0.00	0.0	0
2021-10-23	53	31	42.0	2	0	0.00	0.0	M
2021-10-24	50	30	40.0	0	0	0.22	0.0	0
2021-10-25	M	M	M	M	M	M	M	M
2021-10-26	M	M	M	M	M	M	M	M
2021-10-27	M	M	M	M	M	M	M	M
2021-10-28	M	M	M	M	M	M	M	M
2021-10-29	M	M	M	M	M	M	M	M
2021-10-30	M	M	M	M	M	M	M	M
2021-10-31	M	M	M	M	M	M	M	M
Average Sum	67.6	49.5	58.6	450	241	1.55	0.0	0.0

**Appendix C:
NRCS Soil Report**

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
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- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components--WI025-Dane County, Wisconsin					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
DnB: Dodge silt loam, 2 to 6 percent slopes	Dodge	80-95	Drumlins	No	—
	St. Charles	3-10	Drumlins	No	—
	Mayville	2-7	Drumlins	No	—
	Lamartine	0-3	Drumlins	No	—
DnC2: Dodge silt loam, 6 to 12 percent slopes, eroded	Dodge-Eroded	80-90	Drumlins	No	—
	St. Charles-Eroded	7-13	Till plains	No	—
	McHenry-Eroded	3-7	Moraines	No	—
KdD2: Kidder loam, 12 to 20 percent slopes, eroded	Kidder-Eroded	90-100	Moraines	No	—
	Casco-Eroded	0-5	Moraines	No	—
	McHenry	0-5	Moraines	No	—
KeB: Kegonsa silt loam, 2 to 6 percent slopes	Kegonsa	100	Outwash plains	No	—
Os: Orion silt loam, wet	Orion variant-Wet	85-95	Flood plains	Yes	2,3
	Otter	2-6	Flood plains	Yes	2,3
	Wacousta	2-5	Flood plains	Yes	2,3
	Sable	1-4	Flood plains	Yes	2,3
PeB: Pecatonica silt loam, 2 to 6 percent slopes	Pecatonica	100	Moraines	No	—
RaA: Radford silt loam, 0 to 3 percent slopes	Radford	80-95	Drainageways,flood plains	No	—
	Otter	2-8	Drainageways,flood plains	Yes	2,3
	Sable	2-5	Depressions	Yes	2,3
	Sebewa	1-4	Depressions	Yes	2,3
	Drummer	0-3	Depressions	Yes	2,3
TrB: Troxel silt loam, 0 to 3 percent slopes	Troxel-Wet substratum	80-90	Depressions,moraines	No	—
	Elburn	5-11	Drainageways	No	—
	Plano	5-9	Till plains	No	—
VwA: Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Virgil-Gravelly substratum	85-95	Drainageways on outwash plains	No	—
	Drummer-Drained	2-6	Depressions on outwash plains	Yes	2

Appendix G

Hydric Soil List - All Components---Dane County, Wisconsin

Hydric Soil List - All Components--WI025-Dane County, Wisconsin					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
	Sebewa	2-5	Depressions on outwash plains	Yes	2,3
	Sable	1-4	Depressions on outwash plains	Yes	2

Data Source Information

Soil Survey Area: Dane County, Wisconsin

Survey Area Data: Version 20, Sep 7, 2021



**Appendix D:
Site Photographs**



10/13/2021
Upland agricultural field, Sample Point 1, looking southwest.



10/13/2021
Farmed wetland, Sample Point 2, looking southwest.



10/13/2021
Wet meadow, Sample Point 3, looking southwest.



10/13/2021
Upland agricultural field, Sample Point 4, looking southwest.

Appendix G



10/13/2021
Wet meadow drainage swale, looking southwest from
culvert at 39/90/94.



10/13/2021
Culvert under 39/90/94, looking northeast.



10/13/2021
Farmed wetland, Sample Point 5, looking northwest.



10/13/2021
Upland agricultural field, Sample Point 6, looking
southeast.

Appendix G



10/13/2021
Narrow swale along western Project Area boundary, looking southeast.



10/13/2021
Southern wetland boundary, looking southwest.



10/13/2021
Northern wetland boundary, looking southwest.



10/13/2021
Upland agricultural field, Sample Point 7, looking east.

Appendix G



10/13/2021
Upland agricultural field, Sample Point 8, looking east



10/13/2021
Upland meadow, Sample Point 9, looking north.



10/13/2021
Southwestern stormwater cell, looking northeast.



10/13/2021
Northwestern stormwater cell, looking northeast.

Appendix G



10/13/2021
Northwestern (right) and eastern (left) stormwater cells, looking south.



10/13/2021
Western infiltration basin, looking east.



10/13/2021
Eastern infiltration basin, looking west.



10/13/2021
Stormwater swale, looking north.

Appendix G



10/13/2021
Small overgrown stormwater cell, looking south.



10/13/2021
Small overgrown stormwater cell and parking lot spillway, near main entrance, looking south.

**Appendix E:
Northcentral and Northeast Regional Supplement Wetland
Determination Data Forms**

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 01
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Plain, footslope Local relief (concave, convex, none): convex Slope (%): 0-1
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Virgil silt loam, gravelly substratum, 0-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland agricultural field. Normal circumstances not present due to agricultural activities. Farmed area desktop review- Area 1, wetness signatures in 100% of years analyzed. Elevation: 866.7	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Antecedent Precipitation Tool; 1937-2020 aerial photos

Remarks:
Wetland hydrology not present. APT indicates drier than normal hydrology.

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 01

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	0	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

 Total Number of Dominant Species Across All Strata: 0 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = 0.0

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ☒ X

Remarks: (Explain alternative procedures here or in a separate report.)
 Corn 7-8 feet tall, healthy, 80% cover.
 Wetland vegetation not present.

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 02
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Toeslope Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Virgil silt loam, gravelly substratum, 0-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>01</u>
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in a farmed wetland. Normal circumstances not present due to agricultural activities. Farmed area desktop review- Area 1, wetness signatures in 100% of years analyzed. Elevation: 866.4	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <u>Antecedent Precipitation Tool; 1937-2020 aerial photos</u>		
Remarks: <u>Wetland hydrology present. APT indicates drier than normal hydrology.</u>		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 02

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. <i>Panicum dichotomiflorum</i> / Smooth witchgrass	80	Yes		FACW
2. <i>Cyperus esculentus</i> / Nut grass	15	No		FACW
3. <i>Echinochloa crus-galli</i> / Barnyard grass	10	No		FAC
4. <i>Typha xglauca</i> / Hybrid cattail	1	No		OBL
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	106	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1. _____				
2. _____				
3. _____				
4. _____				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

 Total Number of Dominant Species Across All Strata: 1 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	1	x 1 =	1	
FACW species	95	x 2 =	190	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	106	(A)	221	(B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:
☒ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)
 Corn is sparse, stunted, 25% cover. Hydrophytic vegetation present.

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 03
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Swale Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: Long: Datum: WGS 84
 Soil Map Unit Name: Virgil silt loam, gravelly substrate, 0-3% slopes NWI classification: E1Kf

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u> Hydric Soil Present? Yes <u>X</u> No <u></u> Wetland Hydrology Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u> If yes, optional Wetland Site ID: <u>Wetland 1</u>
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in a wet meadow. Farmed area desktop review- Area 1, wetness signatures in 100% of years analyzed. Elevation: 866.6ft	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u></u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <u>Antecedent Precipitation Tool; 1937-2020 aerial photos</u>		
Remarks: <u>Wetland hydrology present. APT indicates drier than normal hydrology.</u>		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 03

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Tree Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center; border-top: 1px solid black;">0</td> <td colspan="2" style="text-align: right; border-top: 1px solid black;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Sapling/Shrub Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 15')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center; border-top: 1px solid black;">0</td> <td colspan="2" style="text-align: right; border-top: 1px solid black;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Herb Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 5')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr> <td>1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary grass</td> <td></td> <td style="text-align: center;">80</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>2. <i>Typha x glauca</i> / Hybrid cattail</td> <td></td> <td style="text-align: center;">25</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">OBL</td> </tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td>11.</td><td></td><td></td><td></td><td></td></tr> <tr><td>12.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center; border-top: 1px solid black;">105</td> <td colspan="2" style="text-align: right; border-top: 1px solid black;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Woody Vine Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center; border-top: 1px solid black;">0</td> <td colspan="2" style="text-align: right; border-top: 1px solid black;">= Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.					6.					7.							0	= Total Cover		Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.					6.					7.							0	= Total Cover		Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary grass		80	Yes	FACW	2. <i>Typha x glauca</i> / Hybrid cattail		25	Yes	OBL	3.					4.					5.					6.					7.					8.					9.					10.					11.					12.							105	= Total Cover		Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.							0	= Total Cover		<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</p> <p>Total Number of Dominant Species Across All Strata: 2 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Total % Cover of:</th> <th style="text-align: left; border-bottom: 1px solid black;">Multiply by:</th> </tr> <tr> <td>OBL species 25</td> <td>x 1 = 25</td> </tr> <tr> <td>FACW species 80</td> <td>x 2 = 160</td> </tr> <tr> <td>FAC species 0</td> <td>x 3 = 0</td> </tr> <tr> <td>FACU species 0</td> <td>x 4 = 0</td> </tr> <tr> <td>UPL species 0</td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals: 105</td> <td>(A) 185 (B)</td> </tr> </table> <p style="text-align: right;">Prevalence Index = B/A = 1.76</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input checked="" type="checkbox"/> 3 - Prevalence Index ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata</p> <p>Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines - All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species 25	x 1 = 25	FACW species 80	x 2 = 160	FAC species 0	x 3 = 0	FACU species 0	x 4 = 0	UPL species 0	x 5 = 0	Column Totals: 105	(A) 185 (B)
Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																																																																																																									
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<p>Remarks: (Explain alternative procedures here or in a separate report.)</p> <p style="padding-left: 40px;">Hydrophytic vegetation present.</p>																																																																																																																																																																																																													

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 04
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Plain, footslope Local relief (concave, convex, none): convex Slope (%): 0-1
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Virgil silt loam, gravelly substratum, 0-3% slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland agricultural field. Farmed area desktop review- Area 1, wetness signatures in 100% of years analyzed. Elevation: 869.5ft	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Antecedent Precipitation Tool; 1937-2020 aerial photos		
Remarks: Wetland hydrology not present. APT indicates drier than normal hydrology.		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 04

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Tree Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Sapling/Shrub Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 15')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Herb Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 5')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td>11.</td><td></td><td></td><td></td><td></td></tr> <tr><td>12.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Woody Vine Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	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Indicator Status	1.					2.					3.					4.							0	= Total Cover		<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)</p> <p>Total Number of Dominant Species Across All Strata: 0 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Total % Cover of:</th> <th style="text-align: left; border-bottom: 1px solid black;">Multiply by:</th> </tr> <tr> <td>OBL species 0</td> <td>x 1 = 0</td> </tr> <tr> <td>FACW species 0</td> <td>x 2 = 0</td> </tr> <tr> <td>FAC species 0</td> <td>x 3 = 0</td> </tr> <tr> <td>FACU species 0</td> <td>x 4 = 0</td> </tr> <tr> <td>UPL species 0</td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals: 0 (A)</td> <td>0 (B)</td> </tr> </table> <p style="text-align: center;">Prevalence Index = B/A = 0.0</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input checked="" type="checkbox"/> 3 - Prevalence Index ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata</p> <p>Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines - All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species 0	x 1 = 0	FACW species 0	x 2 = 0	FAC species 0	x 3 = 0	FACU species 0	x 4 = 0	UPL species 0	x 5 = 0	Column Totals: 0 (A)	0 (B)
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<p>Remarks: (Explain alternative procedures here or in a separate report.)</p> <p>Wetland vegetation not present.</p> <p>Corn, 7-8 feet tall, healthy, 80% cover.</p>																																																																																																																																																																																																													

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 05
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Swale hill slope Local relief (concave, convex, none): concave Slope (%): 1-3
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Pecatonica silt loam, 2-6% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____ Wetland 1
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in a wet meadow. Normal circumstances not present due to agricultural activities. Elevation: 880.3ft	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Antecedent Precipitation Tool; 1937-2020 aerial photos

Remarks:
Saturation only at surface from recent precipitation (0-13").
Wetland hydrology present. APT indicates drier than normal hydrology.

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 05

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary grass	50	Yes		FACW
2. <i>Echinochloa crus-galli</i> / Barnyard grass	30	Yes		FAC
3. <i>Cyperus esculentus</i> / Nut grass	25	Yes		FACW
4. <i>Typha xglauca</i> / Hybrid cattail	5	No		OBL
5. _____				
6. _____				
7. _____				
8. _____				
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10. _____				
11. _____				
12. _____				
	110	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1. _____				
2. _____				
3. _____				
4. _____				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

 Total Number of Dominant Species Across All Strata: 3 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	x 1 =	5	
FACW species	75	x 2 =	150	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	245	(B)

Prevalence Index = B/A = 2.23

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Explain alternative procedures here or in a separate report.)
 Hydrophytic vegetation present.
 Corn, sparse, stunted. 5% cover.

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 06
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Footslope Local relief (concave, convex, none): convex Slope (%): 0-1%
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: Long: Datum: WGS 84
 Soil Map Unit Name: Pecatonica silt loam, 2-6% NWI classification: None.

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u> If yes, optional Wetland Site ID: <u></u>
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland agricultural field. Normal circumstances not present due to agricultural activities. Elevation: 881.1ft	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Antecedent Precipitation Tool; 1937-2020 aerial photos		
Remarks: Wetland hydrology not present. APT indicates drier than normal hydrology.		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 06

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Tree Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Sapling/Shrub Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 15')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Herb Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 5')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td>11.</td><td></td><td></td><td></td><td></td></tr> <tr><td>12.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Woody Vine Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.					6.					7.							0	= Total Cover		Sapling/Shrub Stratum	(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.					6.					7.							0	= Total Cover		Herb Stratum	(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.					6.					7.					8.					9.					10.					11.					12.							0	= Total Cover		Woody Vine Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	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<p>Remarks: (Explain alternative procedures here or in a separate report.)</p> <p>Hydrophytic vegetation not present.</p> <p>Corn 7-8 feet tall, healthy, 80% cover.</p>																																																																																																																																																																																																													

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 07
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Plain Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: Long: Datum: WGS 84
 Soil Map Unit Name: Virgil silt loam, gravelly substratum, 0-3% slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u> If yes, optional Wetland Site ID: <u></u>
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland agricultural field. Normal circumstances not present due to agricultural activities. Farmed area desktop review - Area 2, wetness signatures in 45% of all years analyzed. Elevation 867.8	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <u>Antecedent Precipitation Tool; 1937-2020 aerial photos</u>		
Remarks: <u>Wetland hydrology not present. APT indicates drier than normal hydrology.</u>		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 07

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	0	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

 Total Number of Dominant Species Across All Strata: 0 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = 0.0

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ☒ X

Remarks: (Explain alternative procedures here or in a separate report.)
 Hydrophytic vegetation not present. Corn, 7-8' tall, healthy, 80% cover.

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix	Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-18	10YR 3/2						Silt Loam	
18-24	10YR 4/3		10YR 4/6	2	C	M	Silt Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

Histosol (A1)

Histic Epipedon (A2)

Black Histic (A3)

Hydrogen Sulfide (A4)

Stratified Layers (A5)

Depleted Below Dark Surface (A11)

Thick Dark Surface (A12)

Sandy Mucky Mineral (S1)

Sandy Gleyed Matrix (S4)

Sandy Redox (S5)

Stripped Matrix (S6)

Dark Surface (S7) (LRR R, MLRA 149B)

Polyvalue Below Surface (S8) (LRR R,MLRA 149B)

Thin Dark Surface (S9) (LRR R, MLRA 149B)

Loamy Mucky Mineral (F1) (LRR K, L)

Loamy Gleyed Matrix (F2)

Depleted Matrix (F3)

Redox Dark Surface (F6)

Depleted Dark Surface (F7)

Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

2 cm Muck (A10) (LRR K, L, MLRA 149B)

Coast Prairie Redox (A16) (LRR K, L, R)

5 cm Mucky Peat or Peat (S3) (LRR K, L, R)

Dark Surface (S7) (LRR K, L)

Polyvalue Below Surface (S8) (LRR K, L)

Thin Dark Surface (S9) (LRR K, L)

Iron-Manganese Masses (F12) (LRR K, L, R)

Piedmont Floodplain Soils (F19) (MLRA 149B)

Mesic Spodic (TA6) (MLRA 144A, 145, 149B)

Red Parent Material (F21)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes

No X

Remarks:

Hydric soil not present.

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/13/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 08
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Plain Local relief (concave, convex, none): none Slope (%): 0-1
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Orion silt loam, wet NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland agricultural field. Normal circumstances not present due to agricultural activities. Farmed area desktop review - Area 3, wetness signatures in 73% of all years analyzed. Elevation: 867ft	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes _____ No <u>X</u>		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Antecedent Precipitation Tool; 1937-2020 aerial photos

Remarks:
 Wetland hydrology not present. APT indicates drier than normal hydrology.

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 08

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Tree Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Sapling/Shrub Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 15')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Herb Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 5')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td>11.</td><td></td><td></td><td></td><td></td></tr> <tr><td>12.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Woody Vine Stratum</th> <th style="text-align: left; border-bottom: 1px solid black;">(Plot size: 30')</th> <th style="text-align: center; border-bottom: 1px solid black;">Absolute % Cover</th> <th style="text-align: center; border-bottom: 1px solid black;">Dominant Species?</th> <th style="text-align: center; border-bottom: 1px solid black;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	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(7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines - All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species 0	x 1 = 0	FACW species 0	x 2 = 0	FAC species 0	x 3 = 0	FACU species 0	x 4 = 0	UPL species 0	x 5 = 0	Column Totals: 0 (A)	0 (B)
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<p>Remarks: (Explain alternative procedures here or in a separate report.)</p> <p style="margin-left: 40px;">Hydrophytic vegetation not present. Corn, 7-8' tall, healthy, 80% cover.</p>																																																																																																																																																																																																													

SOIL

[illegible]

Appendix G

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 5295-10002 Daentl Road Development City/County: T of Burke/Dane Sampling Date: 10/15/2021
 Applicant/Owner: Likewise Partners State: Wisconsin Sampling Point: 09
 Investigator(s): TPS, KAD Section, Township, Range: S5, T8N, R10E
 Landform (hillslope, terrace, etc): Basin Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): K 95B Southern Wisconsin and North Lat: _____ Long: _____ Datum: WGS 84
 Soil Map Unit Name: Orion silt loam, wet NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Sample point is located in an upland meadow.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Antecedent Precipitation Tool; 1937-2020 aerial photos		
Remarks: Wetland hydrology not present. Located in a historic swale that was cutoff by the construction of the adjacent storm water features. APT indicates drier than normal hydrology.		

Appendix G

VEGETATION - Use scientific names of plants.

Sampling Point: 09

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary grass	60	Yes	FACW	
2. <i>Poa pratensis</i> / Kentucky blue grass	30	Yes	FACU	
3. <i>Symphotrichum pilosum</i> / White oldfield american-aster	5	No	FACU	
4. <i>Solidago canadensis</i> / Canada goldenrod	2	No	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	97	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 60	x 2 = 120
FAC species 0	x 3 = 0
FACU species 37	x 4 = 148
UPL species 0	x 5 = 0
Column Totals: 97 (A)	268 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)
Hydrophytic vegetation present.

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix	%	Redox Features				Texture	Remarks
	Color (moist)		Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 3/2						Silty Clay Loam	
15-24	10YR 4/2		10YR 4/6	5	C	M	Silt Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R,MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)			
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)			
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	
Type: _____	
Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>

Remarks:

Hydric soil not present.

**Appendix F:
Farmed Area Desktop Review**

Project: Daentl Road Development	Investigator: Theran Stautz
County: Dane/Wisconsin	Date: October 1, 2021

Month / Year	Image Source	Climate Condition (wet, dry, normal)	Image Interpretation (s)				
			Area 1	Area 2	Area 3		
8/2020	NAIP	Normal	AP, WS	WS (dark green)	CS, WS (dark green)		
10/2018	NAIP	Wet	AP, WS	NV	NV		
7/2017	NAIP	Wet	AP, WS	WS (dark green)	AP		
9/2015	NAIP	Wet	AP, WS	NV	NV		
6/2013	NAIP	Wet	AP, SS, WS	NSS	SS		
7/2010	NAIP	Wet	AP, WS	CS	CS		
8/2008	NAIP	Normal	AP, CS, DO	CS	CS		
8/2006	NAIP	Wet	AP, WS	NV	NV		
8/2005	NAIP	Dry	AP, SS	NSS	SS		
8/2004	NAIP	Wet	AP, CS, DO	DO	DO		
6/2003	FSA Slide	Dry	AP, SS, WS	NSS	SS		

Summary Table	Area 1	Area 2	Area 3		
# of Years of Imagery Reviewed	11	11	11		
# of Years with Normal Precip	2	2	2		
# of Normal Years with Wet Signatures	2	2	2		
% Normal Years with Wet Signatures	100%	100%	100%		
# of All Years with Wet Signatures	11	5	8		
% of All Years with Wet Signatures	100%	45%	73%		



Use key below to label photo interpretations. It is imperative that the reviewer read and understand the guidance associated with the use of these labels. If alternate labels are used indicate in the box below

WS - wetland signature	AP - altered pattern	Comments: Area 1 is adjacent to a waterway and has wetness signatures every year. Signatures present in Areas 2 and 3 vary annually and may be caused by compaction as they predominately occur near the edge of the field. Due to lack of normal years in the last 18 years, the entire set of photos was used to determine if wetlands were historically present. FSA photos from before 2003 were not indexed correctly and therefore were not used.
NC - not cropped	SW - standing water	
DO - drowned out	CS - crop stress	
SS - soil wetness signature	NV - normal healthy crop	
NSS - no soil wetness signature	VV - volunteer vegetation (not planted, naturally establishing, e.g. smartweeds, cattail, wild millet)	

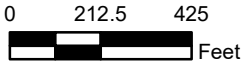


2003

LEGEND

-  FADR Area
-  Project Area (94 Acres)

NOTES



PROJECT
**Daentl Road Development
Likewise Partners
Town of Burke**

TITLE
FARMED AREA DESKTOP REVIEW

DRAWN BY	TPS
APPROVED BY	TPS
PROJ. NO.	5295-10002
FILE NAME	FADR
DATE	10/1/2021

MAP 6





LEGEND

- FADR Area
- Project Area (94 Acres)

NOTES

0 212.5 425 Feet

North Arrow

PROJECT: Daentl Road Development
Likewise Partners
Town of Burke

TITLE: FARMED AREA DESKTOP REVIEW


DRAWN BY: TPS
APPROVED BY: TPS
PROJ. NO.: 5295-10002
FILE NAME: FADR
DATE: 10/1/2021


MAP 5

Ruekert • Mielke

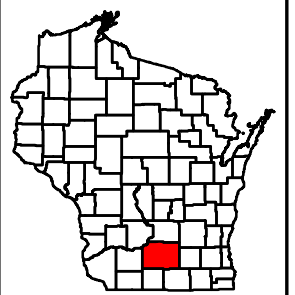
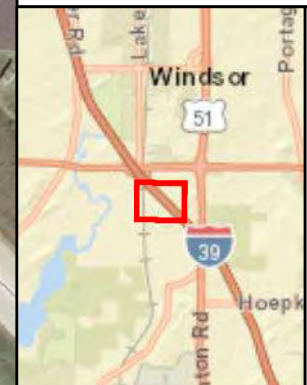
Document Path: I:\Projects\5295_Likewise\10002 Daentl Road\FADR.mxd

2008

 FADR Area

 Project Area (94 Acres)

0 212.5 425
Feet



**Daentl Road Development
Likewise Partners
Town of Burke**

FARMED AREA DESKTOP REVIEW

Danielle Rd	DRAWN BY	TPS
	APPROVED BY	TPS
	PROJ. NO.	5295-10002
	FILE NAME	FADR
	DATE	10/1/2021

MAP 4





LEGEND

- FADR Area
- Project Area (94 Acres)

NOTES

0 212.5 425 Feet

North Arrow

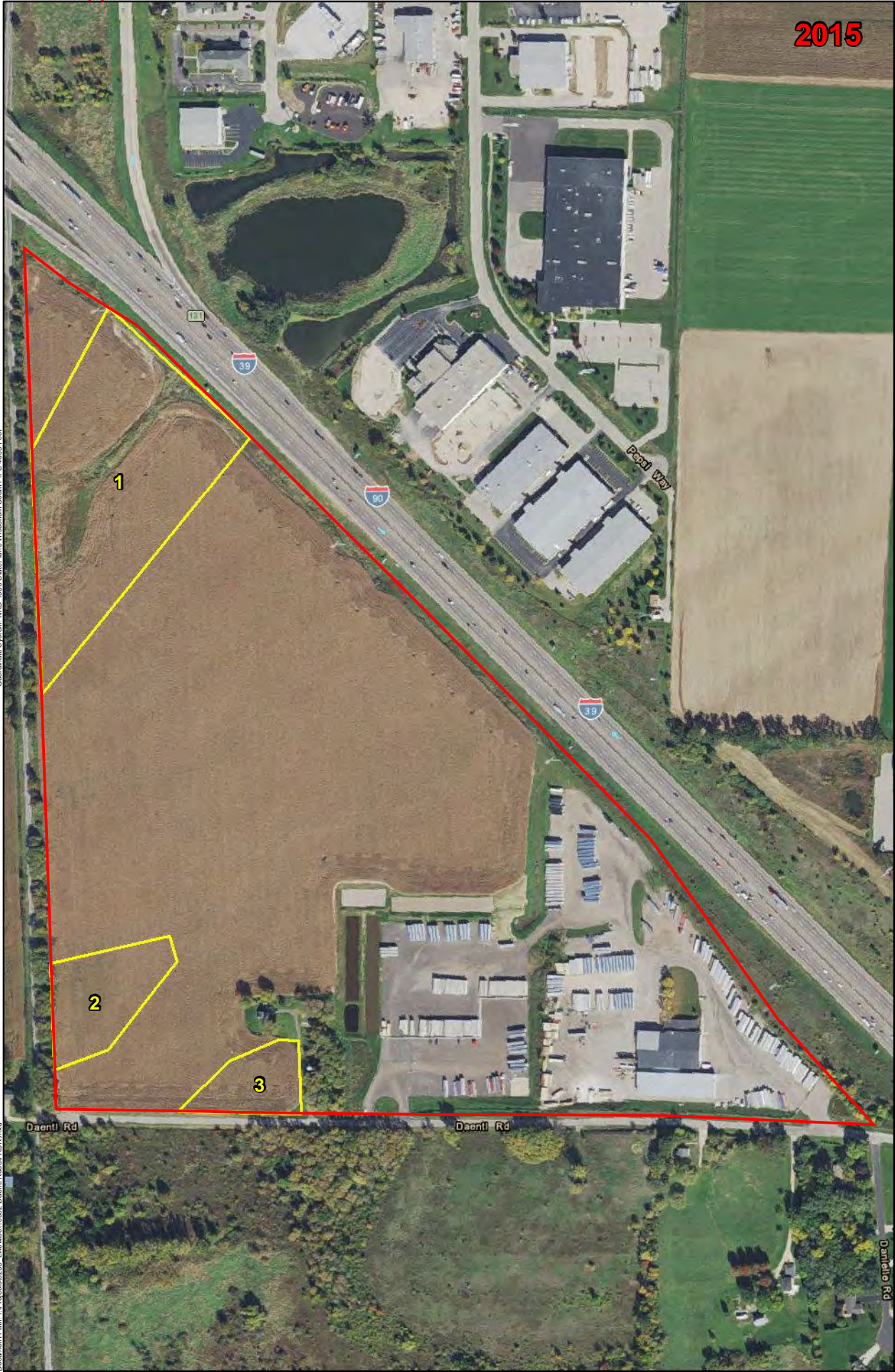
PROJECT: Daentl Road Development
Likewise Partners
Town of Burke

TITLE: FARMED AREA DESKTOP REVIEW

MAP 3

Ruekert • Mielke

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- FADR Area
- Project Area (94 Acres)

NOTES

0 212.5 425 Feet

North Arrow

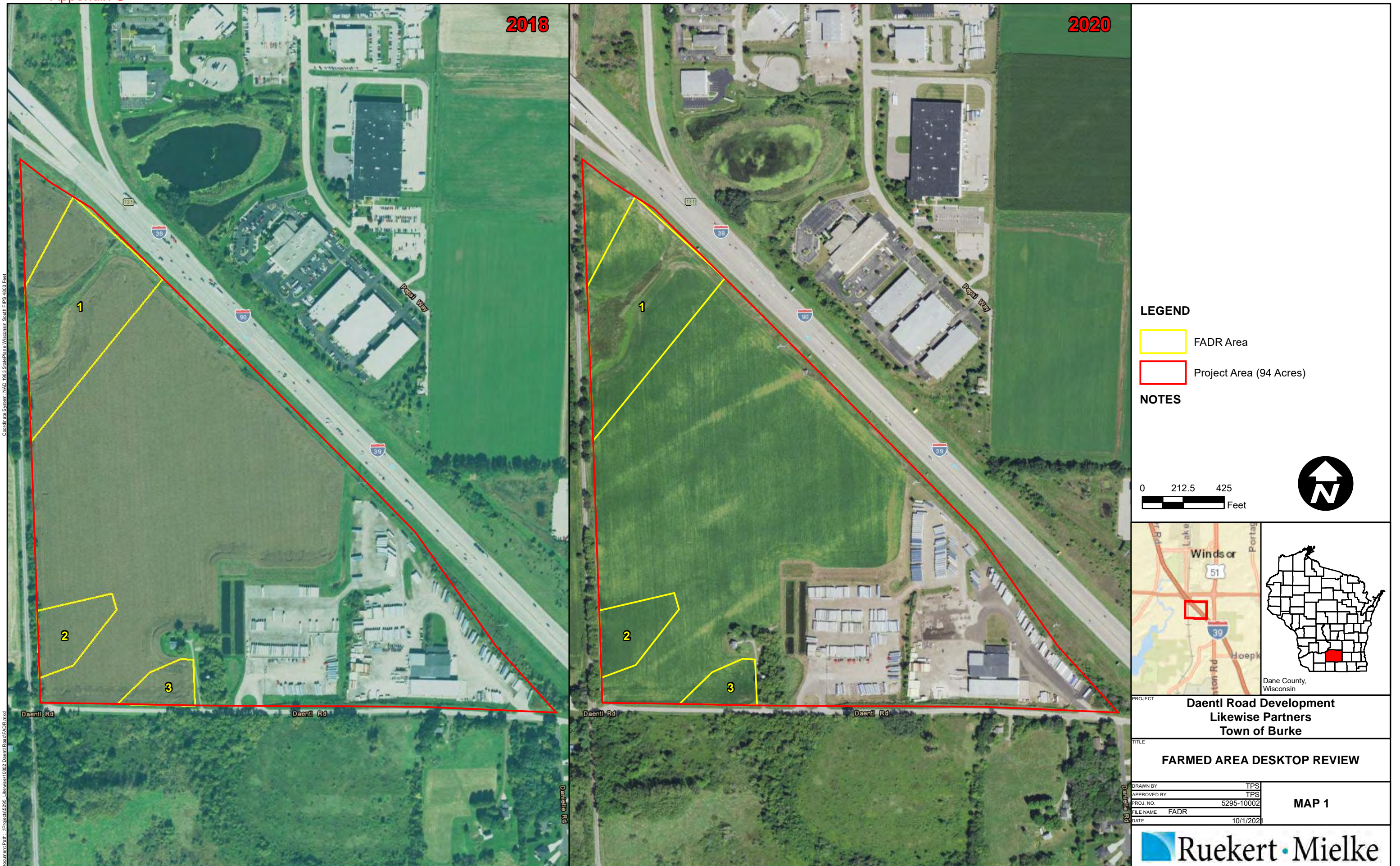
PROJECT: Daentl Road Development
Likewise Partners
Town of Burke

TITLE: FARMED AREA DESKTOP REVIEW

MAP 2

Ruekert • Mielke

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



**Appendix G:
Professional Opinion on Wetland Susceptibility**

Appendix G

Opinion of Susceptibility for NR 151 Setback Purposes

Note: Final authority on NR 151 protective areas rests with WDNR. The following is the opinion of Ruekert & Mielke, Inc., regarding the delineated wetland's NR 151 protective area category.

<u>Wetland #</u>	<u>Least Susceptible</u>	<u>Moderately Susceptible</u>	<u>Highly Susceptible</u>
W-1		X	

Definitions of Susceptibility Per WDNR Administrative Code:

Protective Areas

Protective areas are established to minimize impacts from runoff coming from developed areas before it reaches sensitive resources. The protective area begins at the delineated boundary of the wetland. The width of the protective area is measured horizontally from the nearest edge (delineated boundary) of the wetland to the nearest edge of an impervious surface. For wetlands, the width of the protective area is based upon the attributes of the wetland:

Highly Susceptible: 75 feet

A protective area width of 75 feet pursuant to ss. NR 151.125(1)(e) and 151.245(1)(e), Wis. Adm. Code, is established for “highly susceptible” wetlands. “Highly susceptible” wetlands include the following wetland plant community types: calcareous fens, sedge meadows, open and coniferous bogs, low prairies, coniferous swamps, lowland hardwood swamps, and ephemeral ponds. Outstanding and exceptional resource waters are also considered “highly susceptible”.

Neither Highly or Less Susceptible (“Moderately”): 50 feet

A protective area width of 50 feet pursuant to ss. NR 151.125(1)(d) and 151.245(1)(d), Wis. Adm. Code, is established for wetland plant communities that fall between “highly susceptible” and “less susceptible”. These wetlands include, but are not limited to: shrub wetlands, floodplain forests, fresh wet meadows, deep/shallow marshes, and forested wetlands (i.e., forested wetlands dominated by early successional species such as box elder, trembling aspen, or cottonwood) not fitting the wetland types described under “highly susceptible” or “less susceptible”. Perennial and intermittent streams and lakes also fit in this protective area designation. Perennial and intermittent streams are identified on a U.S. geological survey 7.5-minute series topographic map, or a county soil survey map, whichever is more current (NR 151.125(1)(b), Wis. Adm. Code.).

Less Susceptible: 10% of the Average Wetland Width – Ranging from 10 to 30 feet

“Less susceptible” wetlands require a protective area width of 10 percent of the average wetland width, but not less than 10 feet nor more than 30 feet pursuant to ss. NR 151.125(1)(f) and 151.245(1)(f), Wis. Adm. Code. “Less susceptible” wetlands are degraded wetlands dominated by invasive species. Common invasive species found in “less susceptible” wetlands include, but are not limited to: reed canary grass (*Phalaris arundinacea*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Frangula alnus*), purple loosestrife (*Lythrum salicaria*) and non-native strains of common reed grass (*Phragmites australis*). A wetland is considered to be dominated by invasive species if it contains over 90 percent invasive species as measured by percent absolute vegetative cover. Wetlands dominated by invasive species not listed above would also be considered “less susceptible”. (For more information on invasive species, see Attachment 1.) Wetlands in cultivated hydric soils, gravel pits, or dredged material or fill material disposal sites are also considered “less susceptible”. Where a “less susceptible” wetland is contiguous with a river, stream, or lake, the greatest protective area width shall always apply pursuant to s. NR 151.125(1)(j), provided that the greatest width does not fall within the wetland area. See Attachment 2, Figures 1-3, for examples of NR 151.125(1)(j), Wis. Adm. Code. For example, in Figure 1 the greatest width does not fall within the wetland area but encompasses it as well as the “less susceptible” wetland protective area; so the applicable protective area is the protective area from the outmost boundary of the exceptional resource water. However, in Figure 3 the greatest width does fall within the wetland area, so the applicable protective area of the “less susceptible” wetland’s outmost boundary applies.

Appendix H

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Rd.
Fitchburg, WI, 53711

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



February 14th, 2023

Steven Buss
1600 Utica Avenue South, 9th floor
St. Louis Park, MN 55416

EXE-SC-2023-13-00317

Dear Mr. Buss:

RE: Application EXE-SC-2023-13-00317 for an Artificial Wetland Exemption located at T8N R10E S5 in the Town of BURKE, Dane County.

We have reviewed your application of the proposed industrial development is in the Town of Burke, Dane County, WI and is generally bounded by the Wisconsin Veteran's Memorial Highway to the northeast, Daentl Road to the South and a railway to the West. Request is for a wetland swale that has received additional hydrology over the years. **Your application is hereby mostly denied.** A denial evaluation is attached which includes our findings of fact listing the specific reasons for denial.

Evaluation:

There was no mapped wetland boundaries within the application for the artificial exemption request. It was stated that 'portions are artificial at a minimum'.

Historical imagery shows consistent wetland signatures since 1937 within the requested delineated artificial exemption area.

The delineated wetland area is labelled as "poor land previously cropped" (CPP) on the Bordner Survey. This indicator symbol usually indicates too wet for agricultural crops to be grown.

Numerous historic topographic maps from the 1960's and 1970's era indicate the drainage pattern coming from the NE under the roadway prior to the Interstate improvement. These same topographic maps show the drainage as wide as the delineated request area. Other topographic maps show a mapped history of an intermittent stream prior to the Interstate's establishment. One of the criteria to the artificial wetland exemption is it can't have stream history. This wetland swale has stream history.

Soils mapped within this drainage area from the early 1900's also display its width as the current delineated wetland. They also give indications that a waterway corridor exists.

The only area that is **exempt** is found along the Interstate fence marked in yellow on the enclosed map. This area is out of the stream and hydric soil corridor. It also shows a reflection of a topographic change with current contour lines to allow for drainage along the Interstate. Please refer to the enclosed map for the exempt area.

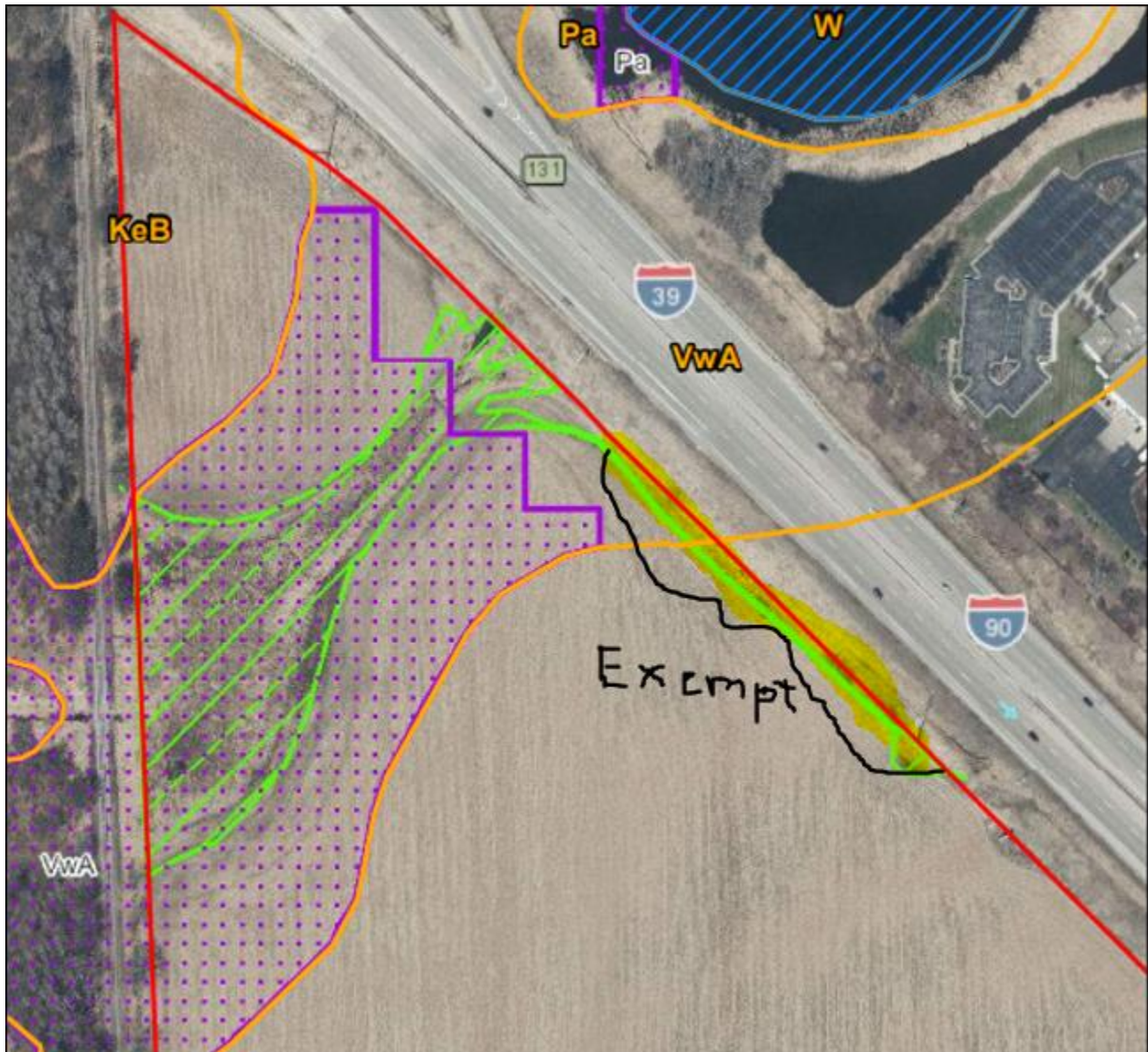
If you have any questions about this determination, please contact me.

Sincerely,

Allen Ramming
Water Management Specialist
Allen.Ramming@wisconsin.gov or (608) 228-4067

Appendix H

CC: U.S. Army Corps of Engineers
County Zoning Administrator
Consultant





Memorandum

To: Mark Roffers, AICP Village of Deforest Planning Consultant
From: Matt Haase, PE,
Re: North Central Utility – Urban Service Area Amendment Application
JSD Project #: 22-11619
Date: September 2, 2022
cc: Dave Batterman, North Central Utility

On behalf of North Central Utility, LLC, this memo provides the supporting information related to the Urban Service Area Amendment application to the Capital Area Regional Planning Commission. More specifically, the following information supports the approximate 12 acre proposed development of the North Central Utility property, as shown on the attached maps.

North Central Utility is proposing to develop the 12.44 acre northern portion of their property along Interstate Highway 90/94 and bordering their existing uses to the south. The developments proposed use will include parking and storage of freight trailers which is consistent with an existing use of North Central Utility's property adjacent to this development. The property is zoned as General Industrial (M-2) per Village of Deforest zoning. The proposed project would include construction of a parking area of approximately 6.5 acres and other grading, drainage and stormwater management best management practices (BMP's). The proposed lot coverage will be approximately 52%, leaving approximately 48% of green space and stormwater management BMP's which follows the lot coverage requirements of the M-2 zoning district.

The existing use of the property is cultivated row crop, along with the 50+ acres to the west / southwest. Within the 12.44 acre parcel, there are no mapped significant natural resources such as water bodies, drainageways, wetlands, floodplains, woodlands, hydric or limiting soils, or other sensitive environmental areas. A very small area of the far northwestern corner of the property falls within the Dane County's shoreland zone, as shown on the attached Natural Resources Map.

The proposed development will not require the construction of any additional public right of ways nor does it anticipate needs for sanitary sewer or water service based the proposed use. At this time, no estimates of average daily or peak demands for wastewater or water can be provided.

The proposed stormwater BMP's serving the development will include wet detention basins and an infiltration basin. These BMP's will be designed to meet the applicable requirements for Village of Deforest, Dane County and Wisconsin Department of Natural Resources and include; sediment control, oil and grease control, runoff rate control and stable outlets, and stormwater infiltration. The BMP's will be maintained and managed by the property owner, pursuant to a Stormwater Maintenance Agreement, as required to be recorded with Dane County Register of Deeds.

Please refer to appendices to this memo for additional maps, proposed development plans and other additional information. If you have any questions with the information provided, please contact our office.



Attachments:

- Aerial Property Map
- Existing Topography Map
- Natural Resources Map
- Preliminary Proposed Development Plans

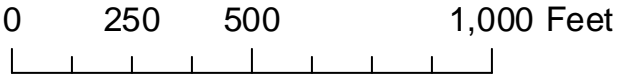
Dane County Map



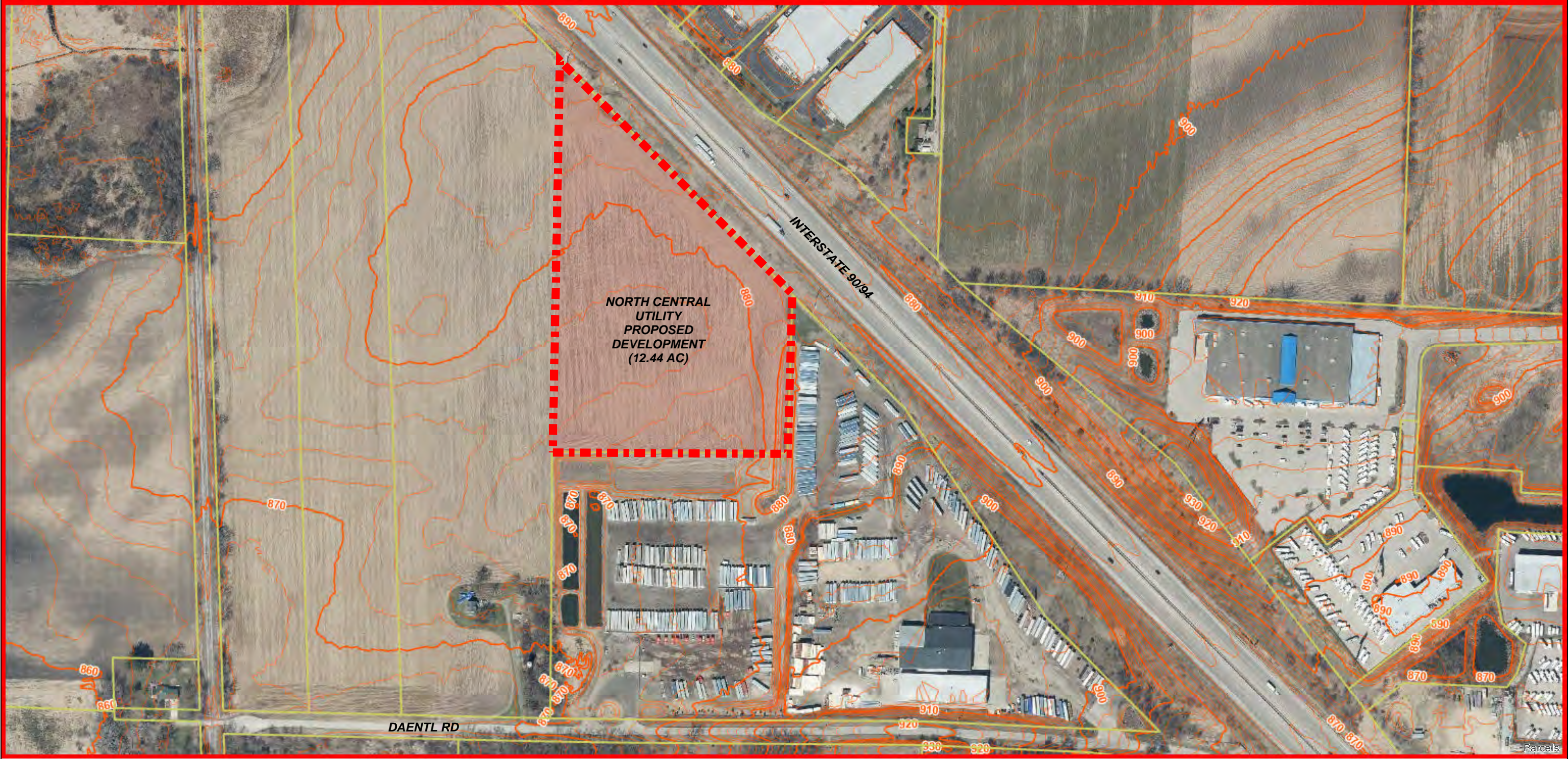
September 2, 2022

-  Dane County Mask
-  Parcels







AERIAL PROPERTY MAP



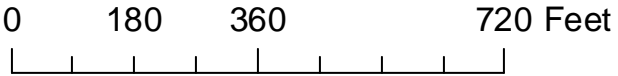
Dane County Map



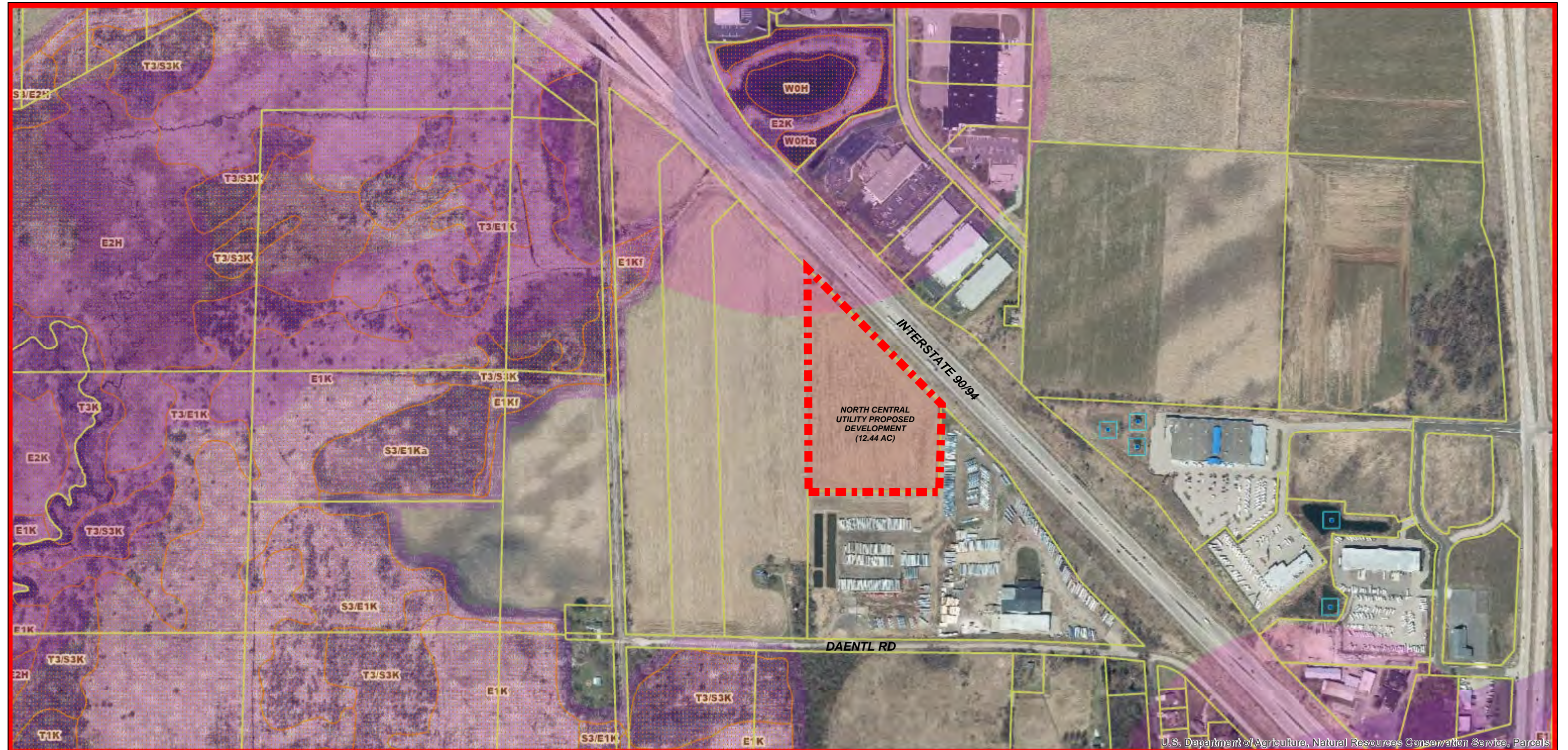
September 2, 2022

-  Dane County Mask
-  Intermediate Depression
-  Parcels
- 10 foot Intervals**
 -  Index
 -  Index Depression
- 2 foot Intervals**
 -  Intermediate















EXISTING TOPOGRAPHY MAP



Dane County Map



September 2, 2022

- | | | | | | |
|---|-------------------------------------|---|-----------------------|--|--------------------------------|
|  | Dane County Mask |  | Wetland Class Areas |  | Wetland too small to delineate |
|  | Parcels | Wetland Class Points | |  | Filled excavated pond |
|  | Thermally Sensitive Areas |  | Dammed pond | Filled Points | |
|  | Lake, Stream, or Pond 300 ft Buffer |  | Excavated pond |  | Yes |
|  | DNR Wetlands > 2ac - 75 ft Buffer |  | Filled/draind wetland |  | Wetland Class Areas |
|  | Lake or Pond 300-1000 ft Buffer | | | | |

Filled Areas

- 
- Y

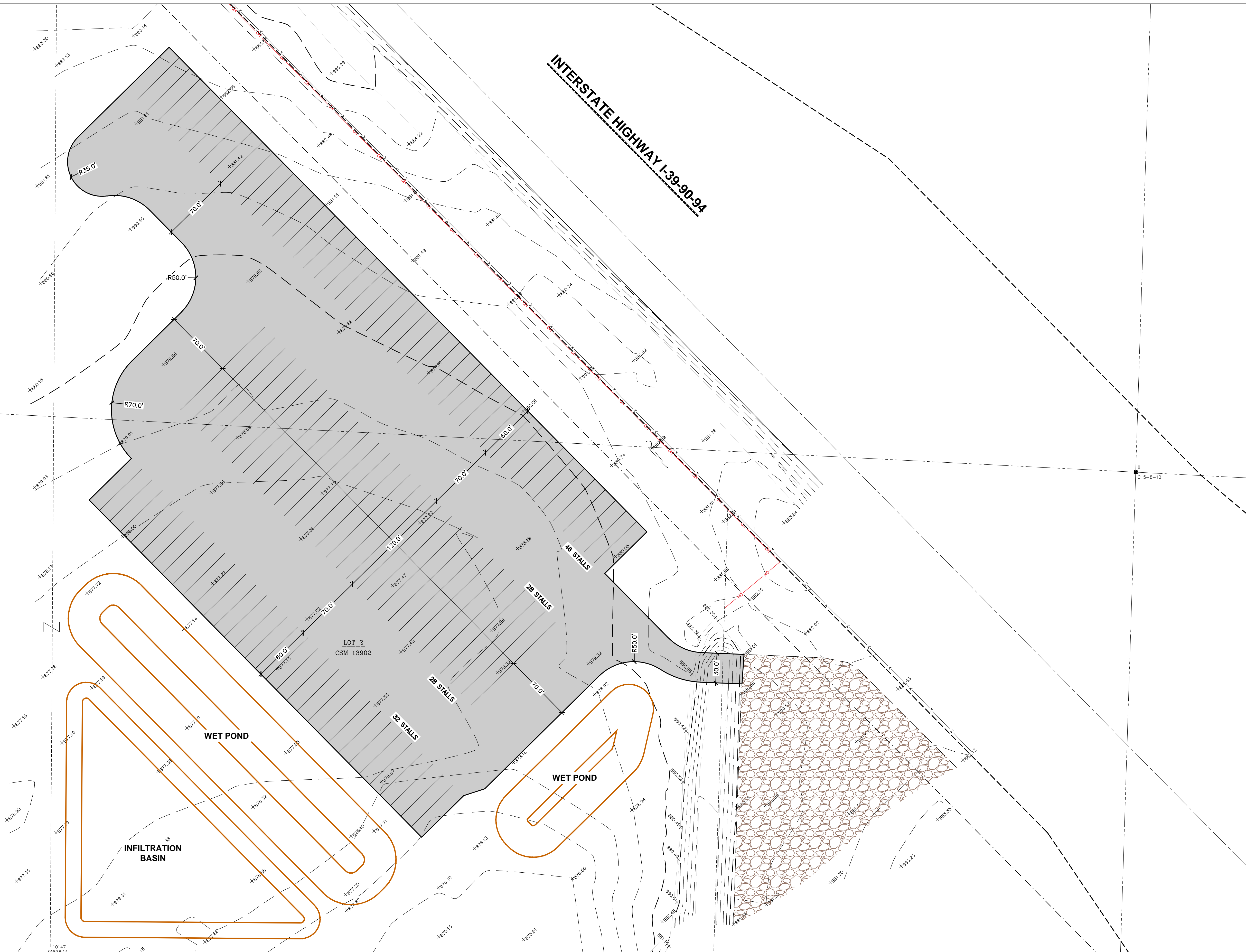
Filled Points

-  Yes
-  Wetland Class Areas

0 310 620 1,240 Feet

NATURAL RESOURCES MAP





DATE: 09.02.2022



File: I:\2022\2211619\DWG\2211619 Civil EJD.dwg Layout: Exhibit User: mhasea Plotted: Sep 02, 2022 4:38pm Xref's:

