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1.0 General Project Information

1.1 Project Description
This report is being prepared by OMNNI Associates, a Westwood Company, at the request of the Outagamie County Drainage Board (Drainage Board) for the Duck Creek Drainage District Annexation hereafter referred to as the Annexation. In this report we will analyze the mapping and benefits and put forth the assessment policy, consistent with existing Drainage Board policies, for the newly annexed lands.

1.2 Duck Creek Drainage District Annexation
The District encompasses parts of three municipalities in Outagamie County, the Town of Black Creek, the Town of Oneida and the Town of Osborn. The annexation contains 4,465 acres of land in total, including 171.27 acres of road right-of-way and 596.17 acres of wetland, neither of which will be assessed by the District, which is consistent with their current assessment policy for all their districts.

This leaves 3,697.56 acres of assessable lands including 3 parcels totaling 11.16 acres in the Town of Black Creek, 97.96 acres in the Town of Oneida and 3,697.56 acres in the Town of Osborn.

The drainage system to be maintained by the Drainage Board within the Annexation includes 76,700 linear feet or 14.53 miles of open channels within the proposed district corridor. The Drainage Board is not aware of any tilling within the drainage corridors annexed to the District and does not intend to operate nor maintain any tiles within the Annexation.

The Annexation was initiated for a few reasons. First, residents within Duck Creek requested to be annexed to the district, particularly in the Town of Osborn which makes up most of the Annexation. Second, prior to the Annexation, the property within it contributed to the flows in the preexisting Duck Creek Drainage District but they did not contribute funds for the operation and maintenance of the downstream drainage ways. Lastly, the Annexation was established as a method of generating revenue for the operation and maintenance of the 76,700 linear feet of open channels within it.

1.3 Assessment Parameters
The Drainage Board proposes to assign a proportionate assessment based on the amount of runoff produced by their property. One way to think about an assessment is that it should be based on the relative quantity of runoff produced as this will impact amount of discharge to a particular drain. This is like a water utility that collects money based on the amount of water you use or a stormwater utility, like a drainage district, that collects money based on the amount of runoff you produce.

The quantity of runoff is a function of topography, soil type, land use or ground cover, and drainage area. First, the topography within the Annexation is consistent, for the assessable parcels and will not play a factor in the amounts of the assessments.

Generally, the watershed is flat with no areas of excessive slope. Similarly, the soil types are consistent within the Annexation and will not be a factor. According to the
USDA Soil Survey about 80% of the soils on assessable properties within the Annexation are in the Type C hydrologic soil group. Most of these soils are Symco silt loam or Hortonville silt loam. There are also B and D soils scattered within the Annexation, but the overall average soil type is a Type C.

Land use for the assessable properties are consistent. All but two parcels are zoned General Agriculture according to the Outagamie County GIS. Parcel 180015401 is zoned local commercial and has about 20% impervious coverage and parcel 180018801 is zoned industrial with about 15% impervious coverage. Low density residential is permitted within the General Agricultural zoning classification and there are various residential properties within the Annexation, and these are generally lots over one acre in size.

One way to determine runoff is to use the NRCS curve number method. The curve number is widely used to estimate the amount of runoff for a particular rainfall event. Curve numbers for low density residential with Type C soils range from 77 to 81 within the watershed. Similarly, the agricultural properties within the Annexation range from pastures to farmsteads to row crops and the corresponding curve numbers range from 74 to 85. Lastly the commercial and industrial parcels will have curve numbers between 78 and 79 given their 15-20% imperviousness. The average curve number for each land use considered here is approximately 80. With this we can expect a similar runoff depth for each, and we recommend no change in assessment based on land use.

That leaves the final factor, area. Runoff is a function of the inches of runoff, determined by the curve number, times the drainage area. The areas of parcels vary widely from 0.1 acres to over 70 acres. As such, this is the only factor that changes enough to warrant a change in assessment from parcel to parcel.

### 2.0 Proposed Assessment Methodology

#### 2.1 Data Acquisition

OMNI used the parcel information from the Outagamie County GIS and the Annexation boundary, which was also developed in GIS, we extracted the following data from it:

- Parcel ID Number
- Municipality
- Owner Names
- Physical Address
- Mailing Addresses
- Deed Acres
- GIS Acres
- Legal Description

We should note that GIS acres are different from the deed acres. Over the years, we have found that GIS acres are more accurate since they are an actual recent map measurement of a parcel’s area, while a deed may not be tied to a lot’s actual
acreage. A deed acreage has a higher likelihood of being inaccurate particularly if it’s many decades old.

Outagamie County also has a wetland layer in their GIS that was acquired from the Wisconsin Department of Natural Resources (DNR) Wisconsin Wetland Inventory Layer. The Drainage Board’s practice is not to assess wetlands in this layer. So, we subtracted out the wetlands from each parcel to get the Basin Nonwetland Acres and this has data set has the assessable acreage for each parcel, totaling 3,697.56 acres in the annexation. This acreage is assessable because each acre within the Annexation will benefit from the drainage improvements within the watershed. The larger the acreage the larger the benefit received from the drainage district.

2.2 Existing District Assessment Policy
The Drainage Board has an established assessment policy that it uses for all its drainage districts rural lands. The assessment for this annexation must be consistent with this assessment policy for all rural areas in all the districts. In each district, the Drainage Board assess on a per acre basis with a minimum charge equal to 10 acres of land. For example, one district may assess $3 per acre with a $30 minimum and another may assess $5/acre with a $50 minimum. These rates are evaluated and established for each drainage district at their annual meetings based on the next year and future maintenance required.

2.3 Proposed Assessments
We propose to use the same methodology that the Drainage Board uses. Again, from our previous analysis the soils, topography and land use/cover produce a substantially similar runoff depth using the curve number method and the only variable that changes from parcel to parcel is the assessable acreage on each parcel.

For this specific assessment, the Drainage Board wishes to inspect and bring the ditches into compliance with the approve plan. Based on the Drainage Board’s experience they will need $5-10 per foot of legal drain. For the Annexation, we have 76,700 linear feet of drain. Using a parcel assessment of $5 per acre with a $50 minimum assessment, they can collect via assessment $25,917.66 per year. Currently, we recommend an assessment of $5 per acre per year with a $50 minimum assessment. This amount will be reviewed annually at the annual meeting.