REVISION TO THE "STORMWATER MANAGEMENT IN THE TOKEN CREEK WATERSHED" SECTION OF THE DRAFT PUMPKIN HOLLOW NEIGHBORHOOD DEVELOPMENT PLAN

(INSERT TO PAGE 11 OF THE FEBRUARY 22, 2008 RECOMMENDED REVISIONS LISTING)

- Substitute the following revised narrative for the "Stormwater Management in the Token Creek Watershed" section in the Stormwater Management section (Pages 58 and 59):

Stormwater Management in the Token Creek Watershed. Token Creek is an important and sensitive water resource, and relatively restrictive stormwater management regulations are required to protect the Creek's cold water and steady base flow. These regulations might be more restrictive by the time that development in the Pumpkin Hollow neighborhood reaches this watershed. In any case, an increasing understanding of the resource and more advanced stormwater management techniques should improve the ability to mitigate the impacts of future development on the Creek. Two potential stormwater management techniques applicable to the Token Creek watershed that have been discussed by the new Capital Area Regional Planning Commission are outlined below:

- To help maintain the amount of groundwater reaching Token Creek, some recent developments have been required to infiltrate the same amount of stormwater that was being infiltrated under pre-development conditions. In addition, some developments have been required to infiltrate an additional amount of stormwater equivalent to the amount of potable water that will be used by residents of the development that would presumably be pumped from within the watershed by municipal wells. These recharging requirements are intended to maintain the groundwater source that feeds seeps, springs, tributaries and ultimately the Creek's base flow. There are indications that these requirements are very difficult to meet.

- Thermal controls may also be required for stormwater runoff from developments in the watershed in order to maintain the cool water temperature of Token Creek and its tributaries, and new developments may be required to demonstrate that future stormwater runoff will not increase the temperature of these waterways. These techniques may be applied to Token Creek and the two primary tributaries located between the Creek and STH 19 that are classified as a Coldwater Community.

These potential stormwater management techniques would make stormwater infiltration the principal approach to groundwater recharge and mitigation of cumulative groundwater impacts. However, the proposed approaches would not be feasible or reasonable in an urban context, particularly in regard to the proposed pumpage offsets---which also ignore important issues related to potential groundwater contamination. A broader strategy is recommended that would take account of many other potential approaches to reducing and reversing groundwater drawdown, both locally and regionally, and to protecting the base flow supporting surface water resources of special quality. It is recommended that the City work with County, Regional Planning Commission, and Wisconsin Department of Natural Resources staff to develop a comprehensive multi-jurisdictional strategy to protect and preserve groundwater resources which includes realistic infiltration requirements that can effectively be implemented in new development areas.

The ability of a particular development to comply with any infiltration recommendations will be partly dependent on specific site characteristics, such as the types of soils and the ability to infiltrate stormwater; and soil conditions could require modifications to the development locations and development densities recommended in the Land Use and Street Plan for the Pumpkin Hollow neighborhood. The possible need for modifications to the neighborhood plan will be considered at the time of future specific development proposals when more-detailed information about soil conditions will be available.

***

Proposed Substitute Text for "Public Water Service" Section (Page 57)
Larry Nelson, City Engineer – Interim General Manager, Madison Water Utility
2-23-08

Public Water Service

Water Distribution System. The design of the water supply system to serve the Pumpkin Hollow Neighborhood should be anchored on the concept of sustainability. Sustainability would occur if the projected water use of the neighborhood should come from the neighborhood.

The Madison Water Utility will extend public water service to the Madison portion of the Pumpkin Hollow planning area as new development occurs. The planning area will be served by extension of existing water mains within Pressure Zone 123, which includes the developing lands east of Interstate Highway 39-90-94. There currently is a 12-inch main serving the Parkway Village subdivision, just southeast of the planning area, which will be extended west along Hoepker Road; and a water main will be located at the intersection of Eastpark Boulevard and Portage Road which will be extended north along Portage Road. Eventually, this system will be looped to connect the two legs and provide increased service reliability. As development occurs, additional water distribution mains will be extended into the neighborhood within street right-of-way. The mains along the local streets will be 8 inches in diameter.

Reservoirs and Wells. Pressure Zone 123 is pressurized by the Cross Hill water tower located near Nelson Road and USH 151. This tower has the ability to provide appropriate water pressure to elevations between about 900 feet to 1,040 feet U.S.G.S., which should be sufficient to serve future development in the planning area. No additional water towers are planned within the Pumpkin Hollow planning area.

Development in the Pumpkin Hollow planning area, and on the northeast side of the City of Madison generally, will increase the demand for water and eventually may require new municipal wells to ensure a reliable supply. The Madison Water Utility has already acquired a well site in the Center for Industry and Commerce west of Interstate Highway 39-90-94 (Unit Well 35), and the Water Utility Master Plan identifies other potential future well sites within and near the Pumpkin Hollow planning area. Unit Well 38 is proposed to be located on the ridge within the Pumpkin Hollow Neighborhood and Unit Well 39 is located east of American Parkway.

The Madison Water Utility's Hydraulic Model indicates a need for one or more of these wells by 2025. In addition, existing wells, which are presently being operated, are being monitored for contaminants, including VOCs. These wells include Unit Well 15, which serves the northeast side of the City.

There are potential negative effects of municipal well pumping near Token Creek on the creek and on other springs and seepages that provide critical base flow to Cherokee Marsh and the Madison lakes. The limited available data suggest that the groundwater supplying the Token Creek springs may primarily be coming from north of the creek.

The presence and characteristics of the Eau Claire Shale acquitard beneath the area shall be assessed. If the Eau Claire Shale is present in the area, any new well will need to be cased through the acquitard to minimize the movement of groundwater between the upper and lower aquifer.

Regardless, to permit the development of municipal wells at any location, there will be requirements to minimize the impact on existing surface water resources and the movement of pollutant plumes. Existing codes for well development are being reviewed by the Department of Natural Resources to address these situations.

The Madison Water Utility has just concluded its most recently commissioned pump tests of UW 29, which serves the east side of the City. That test recommended an average annual pumping rate of 50% of the maximum capacity of the well in order minimize the movement of groundwater between the upper and lower aquifer and the movement of pollutants. Similar tests shall be conducted on new neighborhood wells to assess aquifer characteristics with the results being used to develop proper pumping strategies for area aquifers.

Proposed Additional Revisions (see tracking notations) to the Proposed New Section on Starkweather Creek
Scott Taylor - Friends of Starkweather Creek 2/24/08

Starkweather Creek

Starkweather Creek is a unique resource, representing one of the few streams located almost entirely within the highly-developed Madison urban area. But since the time of first settlement, multiple factors associated with development have significantly altered the creek from its natural state. Over the years, degradation in both water quality and baseflow has occurred as the result activities such as stream rechannalization and dredging, draining and filling of supporting wetlands, contamination from industrial uses on adjoining lands, general urban and agricultural stormwater run-off, poor stream bank maintenance, and high-capacity well pumping.

There have always been concerned citizens interested in preserving and improving Starkweather Creek, but several major studies conducted in the 1980's and 1990's helped energize renewed efforts both to improve the water resource and enhance creekside amenities, such as bicycle paths, walking trails and adjacent parklands. The *1983 Starkweather Creek Water Quality Plan* provides an excellent summary of background information specific to the creek and its history, and includes goals and specific recommendations for stream improvement. Subsequent other studies and plans also provided additional information and analysis particularly relevant to Starkweather Creek and the Yahara-Monona watershed; and these were used during the preparation of an update to the Starkweather Creek plan in 2005.

The *Starkweather Creek Master Plan 2005 Update* was initiated by City of Madison alderpersons and citizen groups representing areas affected by the watershed. The purpose of this project was to revise the earlier plan's goals and proposed improvements to reflect current regulatory changes, and to add new goals and recommended improvements that would address environmental concerns and recreational opportunities within the watershed. The 2005 update was prepared by City Engineering and Parks Division staff, working with City and Dane County elected officials, the Wisconsin Department of Natural Resources, the Dane County Watershed Coordinator, Town government, the Friends of Starkweather Creek and other neighborhood and citizen groups. *Master Plan 2005* focuses on the area from the mouth of the creek at Lake Monona upsteam along both branches to their junction with Interstate 39-90-94. Reaches of the creek beyond the Interstate were to be addressed as part of the neighborhood planning process and through application of the mandatory stormwater management plans required by state law.

The Pumpkin Hollow neighborhood planning area comprises the northernmost portion of the watershed of the west branch of Starkweather Creek, and visible stream features are limited to a wetland area south of Hoepker Road and west of Portage Road, which extends west to the Interstate Highway, and two intermittent streams. One of the intermittent streams flows westward through a wooded gully from a hilly

area north of the American Center and under Portage Road to the Interstate. The other intermittent stream begins in the area north of Hoepker Road and east of Portage Road, and flows west under Portage and then south under Hoepker Road into the wetland area. This stream is considered navigable west of Portage Road, although it is dry most of the time. Two sets of culverts direct these streams under the Interstate Highway to a larger wetland, where Starkweather Creek surface water becomes a permanent feature.

These intermittent streams flow through steep, heavily wooded gullies, open ravines and natural swales in plowed agricultural fields. There is currently little trapping and removal of sediment and phosphorus washing off of farm fields in these drainage-ways. Nor is there any control of stormwater runoff which could scour and erode the creek channel downstream during heavy rains, adding even more sediment and phosphorus to the creek. Hence, in their current form these intermittent streams heavily influence the quality of water in downstream segments of Starkweather Creek and ultimately in Lake Monona---to which they are directly tied.

However, the recommended stream improvements, the wide buffers of natural vegetation, the stormwater management facilities built during neighborhood construction, and the enforcement of City and State erosion control and stormwater runoff regulations governing new development have potential to improve the quality of the water entering the creek over its current condition. Nonetheless, the intermittent streams will remain major conduits of pollutants to downstream waters. Pavement will replace cropland as the pollutant-loading land cover; heavy metals and hydrocarbons from automobiles could replace sediment and phosphorus from topsoil as major pollutants. Therefore the role of the intermittent streams in conveyance of pollutants to Starkweather Creek and Lake Monona must inform the thinking of all those engaged in planning and building the Pumpkin Hollow neighborhood.

Because Starkweather Creek is not a permanent surface water feature within the planning area, the recommendations in the Pumpkin Hollow Neighborhood Development Plan focus primarily on protection and improvement of the water quality of the creek~~water resources~~, rather than on development of creekside recreational amenities. However, a segment of the recommended pedestrian-bicycle path south of Hoepker Road is located adjacent to the wetland area, a short path is proposed across the navigable stream north of Hoepker Road, and other proposed paths are located within the planned open greenways designed as part of the stormwater management system.

Several approaches are recommended in the neighborhood plan to protect and improve Starkweather Creek water resources:

Stream Improvements. Both of the designated intermittent streams are currently heavily overgrown and shaded by large trees, and there is relatively little groundcover to help stabilize their banks and prevent erosion. It is recommended that the southern stream, and the navigable portion of the northern stream west of Portage Road, be

maintained in a relatively natural state; and that the banks of these streams be stabilized through selective tree pruning to increase sunlight, installation of appropriate native plants and grasses, and if indicated, limited use of natural boulders or similar materials. These improvements should occur at the time the adjacent land is developed or earlier.

Open Greenways. A major open stormwater greenway is recommended running north-south between Hoepker Road and Token Creek Park, generally following the current natural drainage course across agricultural fields. This greenway has a recommended minimum width of 150 feet, and will be wider where detention ponds are located. Another open greenway is recommended following the general alignment of the non-navigable segment of the northern intermittent stream located east of Portage Road and north of Hoepker Road. This greenway also may contain detention facilities, and is proposed to extend east to the proposed neighborhood park also illustrated on the Land Use and Street Plan (Map 6).

Detention Basins. Currently, dry detention basins are recommended to promote infiltration and collect sediment before stormwater is released to wet basins, wetlands, or streams. Preliminary locations for stormwater detention and retention basins are shown on the Land Use and Street Plan, but the ultimate locations may be different, as discussed in the Stormwater Management section of the plan.

Erosion Control during Construction Phase of Development. City and State regulations on erosion control have been greatly strengthened in recent years, and now include a system of best management practices and specific staff assigned to review, approve and inspect erosion control plans. It is recommended that special emphasis be placed on inspection of construction sites adjacent to the intermittent streams and wetlands that feed Starkweather Creek due to the more immediate impact that uncontrolled erosion would have from those locations.

As noted elsewhere in this plan, development in the Pumpkin Hollow neighborhood will also need to comply with all special regulations related to shoreland development adjacent to wetlands and waterways. These include development setback requirements and maximum building coverage restrictions.

~~Current stormwater drainage in the Starkweather Creek watershed takes place primarily via steep, heavily wooded gullies, open ravines and natural drainage courses across plowed agricultural fields, and there is little that prevent sediment and other contaminants from flowing toward the creek and its wetlands. The volume of stormwater runoff is also uncontrolled and contributes to erosion further downstream during heavy storm events. The recommended stream improvements, the stormwater management facilities that will be constructed as the Pumpkin Hollow neighborhood develops, and enforcement of City and State regulations that apply to new development, should improve the quality of the water entering the creek compared to its current condition.~~

Waidelich, Michael

From: Clausius, Joe
Sent: Monday, February 25, 2008 4:07 PM
To: Murphy, Brad
Cc: Waidelich, Michael
Subject: Pumpkin Hollow Neighborhood Development Plan Resolution
Follow Up Flag: Follow up
Flag Status: Purple

Brad, I will be unable to attend the Planning Commission Meeting this evening.

However as the alder for the area, I want to reiterate my support for Agenda Item 07613.

The base plan with 3 conceptual, alternate employment districts will provide some options for developers in the future. There is enough flexibility now in the proposed plan that residents, city staff and developers can work together on future plans for the area.

Please encourage the Planning Commission to adopt the revised development plan this evening.

Thank you for all the work that Mike and you and others have put in on this project.

Joe Clausius
District 17 Alder