Minnehaha Creek Watershed District *REQUEST FOR BOARD ACTION*

MEETING DATE: February 26, 2015

TITLE: **Authorization to execute a cost-share grant agreement with Presbyterian Homes for the low impact development Promenade of Wayzata.**

RESOLUTION NUMBER: **15-015**

PREPARED BY: James Wisker, Director of Planning and Projects

E-MAIL: Jwisker@minnehahacreek.org **TELEPHONE:** 952-641-4509

REVIEWED BY: ☐Administrator ☒ Counsel ☐ Program Mgr. (Name):_____
☐ Board Committee ☒ Engineer ☐ Other

ACTION:

☐ Advance to Board mtg. Consent Agenda. ☐ Advance to Board meeting for discussion prior to action.

☐ Refer to a future workshop (date):_____ ☐ Refer to taskforce or committee (date):_____

☐ Return to staff for additional work. ☐ No further action requested.

☒ Other (specify): **FINAL ACTION ON FEBRUARY 26, 2015 CONSENT AGENDA**

PURPOSE or ACTION REQUESTED:
Authorization to execute a cost-share grant agreement with Presbyterian Homes for the low impact development Promenade of Wayzata**.**

PROJECT/PROGRAM LOCATION:
See Attachment A

PROJECT/PROGRAM COST:
Fund name and number: Cost-Share, Fund #3130
Current Budget: $832,000
Expenditures approved to date: $94,000
Requested amount of funding: $322,290
Is a budget amendment requested? No
Is additional staff requested? No

ATTACHMENTS:
- Storms on the Promenade (stormwater management plan)
- April 12, 2012 MCWD Board Meeting minutes
- November 20, 2014 MCWD Board Meeting minutes
- DRAFT February 12, 2015 MCWD Board Meeting minutes (included separately in Board packet)
- Letter of support from the City of Wayzata

SUMMARY:
Presbyterian Homes, the City of Wayzata and the Minnehaha Creek Watershed District have been involved in discussion on the redevelopment of the Wayzata Bay Center, located in the northeast quadrant of Lake Street and Superior Boulevard, since 2007.

In 2008, the request of Presbyterian Homes, the District, the City of Wayzata and several consulting firms participated in a value engineering study to explore innovative and cost-beneficial means to managing stormwater within this complex redevelopment.

A detailed plan of this 14 acre redevelopment and the stormwater management plan is provided in Attachment A. The stormwater management plan, implemented over three phases, includes:

- Underground infiltration systems designed to infiltrate 2.4 inches of runoff from 5 acres
- Underground filtration systems designed to filter 4.0 inches of runoff from 5 acres
- Replace and expand a stormwater basins below ground to treat and manage discharge rates from 2 acres of onsite and 20 acres of offsite runoff
- The reduction and replacement of 1.1 acres of impervious surface with extensive (4-8") and intensive (3') green roofs
- 80 miles of hydronic snowmelt tubing in 5 acres of streets and walks, reducing salt application from 32 tons/year to 0 tons/year

In 2012 the MCWD Board of Managers considered a staff recommendation for $585,490.50 in cost-share funding for the first phase of stormwater infrastructure within the development. At that time the MCWD Board of Managers resolved to provide 50 percent cost-share funding for the full project's stormwater infrastructure, seek CAC comment, and prepare a resolution for financing the project.

Following discussion between Presbyterian Homes and District staff between 2012 and 2014, the Board of Managers reconsidered the proposed cost-share project in November 2014. At that time the MCWD Board of Managers resolved to direct staff to prepare a recommendation and resolution for funding the project, consistent with Board discussion, for consideration at a future meeting.

The project has been analyzed against the City of Wayzata's stormwater management requirements (BMPs and no increase in rate or volume), which exercised sole regulatory authority over stormwater management at the time the plan was approved, and against MCWD's current stormwater regulations (1 inch of volume control and equivalent phosphorus reduction). This analysis is summarized below:

Table 1. Flow Rate Comparison – Wayzata Standards

FLOW RATES	1-yr Storm (cfs)	10-yr Storm (cfs)	100-yr Storm (cfs)
Existing Conditions	27.58	47.99	65.61
Proposed Conditions	10.99	28.72	45.32
Difference	60% Decrease	40% Decrease	31% Decrease

Table 2. Total Phosphorus – Wayzata Standards

	Total Phosphorus (lbs/yr)
Existing Conditions	23.1
Proposed Conditions	8.6
Difference	63% Decrease

Table 3. Volume Abstraction - Wayzata Standards

	Volume Abstraction/Filtration (ac-ft/yr)
Existing Conditions	0.0
Proposed Conditions	1.58
Difference	1.58 ac-ft increase

Table 4. Phosphorus Loading Analysis – District Standards

Site (P Source)	P Loading (lbs/year)	*P* Removed on WBC Site (lbs/year)	Excess *P* Removed (lbs/year)
Existing WBC Site	25.6	7.7	N/A
Existing Off-site	8.6	3.4	N/A
Existing WBC Site Total	**34.2**	**11.1**	**N/A**
Proposed WBC Site	24.4	20.1	0.6
Proposed Off-site	8.6	4.3	0.9
Proposed WBC Site Total	**33.0**	**24.4**	**1.5**

Table 5. Volume Abstraction – District Standards

	Volume Abstraction/Filtration (ac-ft/yr)
Required	1.22
Proposed Conditions	1.58
Difference	30% Increase

At the February 12, 2015 MCWD Board of Managers meeting, a duly noticed public hearing was held for consideration of $307,290 of cost-share funding for the stormwater infrastructure. As summarized during the public hearing, this value considered the infrastructure costs across past projects to achieve similar benefits. It also considered the reduction of salt application across the site to zero and a suite of education and outreach benefits proposed, including:

- Space use for workshops, meetings and events
- Public service announcement before film showings
- Advertising in display cases, lobby tvs, electronic kiosks and signage

Following the conclusion of the public hearing, this resolution is being recommended for Board approval to authorize the execution of a cost-share grant agreement with Presbyterian Homes for the low impact development Promenade of Wayzata for an amount of $307,290. Further, authorization is being requested to expend a not to exceed amount of $15,000 for the District's design and manufacturing of content and physical signs for integration into the development.

RESOLUTION

RESOLUTION NUMBER: 15-015

TITLE: Authorization to execute a cost-share grant agreement with Presbyterian Homes for the low impact development Promenade of Wayzata.

WHEREAS The Minnehaha Creek Watershed District's (MCWD) Comprehensive Water Resources Management Plan includes cost-share programs to facilitate actions to improve stormwater management, enhance natural resources and green infrastructure, expand the knowledge base of water resources management and provide educational opportunities through capital projects that offer demonstration value; and

WHEREAS the MCWD's cost-share programs provide for cost-share funding for implementation of stormwater management plans that exceed regulatory requirements; and

WHEREAS In 2007 Presbyterian Homes approached the MCWD seeking cost-share funding for a conceptual stormwater management plan to capture and treat the 100 year design storm in the redevelopment of a 14 acre largely impervious site known as the Wayzata Bay Center, in the City of Wayzata; and

WHEREAS Prior to development the site was a 14 acre wetland encompassing Gleason Creek which discharged into Wayzata Bay of Lake Minnetonka; and

WHEREAS The MCWD, City of Wayzata and a team of engineering consultants participated in a value engineering process to evaluate the feasibility and cost-benefit of managing a 100 year design storm within the proposed redevelopment; and

WHEREAS The value engineering panel recommended against designing to capture and treat an entire 100 year design storm given the exponential increase in costs measured against nominal increases in pollutant load reduction; and

WHEREAS Presbyterian Homes subsequently presented a modified stormwater management plan, approved by the City of Wayzata, that mimicked pre-development hydrology, for cost-share consideration to MCWD, and the plan included underground infiltration systems, underground filtration systems, replacement and expansion of stormwater detention basins, green roofs and snowmelt systems; and

WHEREAS In a September 9, 2011 letter, the District's Permitting Program Manager communicated to Presbyterian Homes that the project appeared to be eligible for low impact development (LID) cost-share funding through MCWD's programs; and

WHEREAS At the April 12, 2012 MCWD Board of Managers Meeting, Manager Casale moved, seconded by Manager Shekleton to approve cost share funding for 50 percent of the cost of stormwater management for the two phases of the project over two years and directed staff to submit the proposal to the Citizens Advisory Committee (CAC) for review and comment, then bring a resolution approving funding for the Wayzata Bay Center cost share proposal to the Board of Managers at the April 26 meeting; and

WHEREAS On April 19, 2012, the CAC considered the proposal to fund approximately $1,170,000 for stormwater management improvements proposed to be incorporated into the redevelopment of the Wayzata Bay Center, and the CAC expressed a desire for the MCWD to explore how it might finance the project over time; and

WHEREAS In a September 25, 2013 letter the District Administrator notified Presbyterian Homes that the Wayzata Bay Center was not eligible for cost-share funding; and

WHEREAS Presbyterian Homes maintained communication with the District Administrator between April 2012 and April 2014, while initiating construction of the first two phases of the project; and

WHEREAS Presbyterian Homes incorporated design elements into the project to facilitate and support education and outreach opportunities, though MCWD cost-share funding had not yet been secured;

WHEREAS Since June 2014 the District has worked with Presbyterian Homes and the City of Wayzata to reexamine the proposed cost-share project; and

WHEREAS The District confirmed that the project exceeded the City of Wayzata's regulatory requirements, and applicable elements of the District's regulatory requirements, with the stormwater management plan including:

- Underground infiltration systems designed to infiltrate 2.4 inches of runoff from 5 acres
- Underground filtration systems designed to filter 4.0 inches of runoff from 5 acres
- Replace and expand a stormwater basins below ground to treat and manage discharge rates from 2 acres of onsite and 20 acres of offsite runoff
- The reduction and replacement of 1.1 acres of impervious surface with extensive (4-8") and intensive (3') green roofs
- 80 miles of hydronic snowmelt tubing in 5 acres of streets and walks, reducing salt application from 32 tons/year to 0 tons/year

WHEREAS At the November 20, 2014, MCWD Board Meeting staff presented the history of the project and a summary of the stormwater management plan; and

WHEREAS At the November 20, 2014, MCWD Board Meeting, Manager Miller Moved, seconded by Manager Shekleton and carried 6-0, to direct staff to prepare a recommendation and resolution for funding the project consistent with the Board discussion for consideration at a future meeting

WHEREAS In accordance with Minnesota Statutes section 103B.251, subdivision 3, and MCWD Board resolution 13-023, a duly noticed public hearing on funding for the project was held on February 12, 2015, following a presentation by District staff outlining the rationale for a recommended cost-share with Presbyterian Homes in an amount of $307,290.00 and a possible additional dedication by the MCWD of $15,000 toward enhancing signage and other education and outreach opportunities presented by the project, and all interested parties had the opportunity to speak for and against the project; and

WHEREAS In a January 8, 2015 letter, the City of Wayzata, which regulates for stormwater management, stated that the proposed project "easily exceeded the City's requirements" of best management practices and maintenance of existing runoff rates and volumes when it was approved in 2008; and

WHEREAS Manager White moved, Manager Calkins seconded and carried 6-0, to extend the public hearing until 4:30 p.m. on Thursday February 19, 2015; and

WHEREAS The comment received during the February 12 public hearing has been duly considered, and no comments were received outside the public hearing held on February 12, 2015; and

WHEREAS, the Board of Managers finds that the project will be conducive to public health and promote the general welfare, and is in compliance with Minnesota Statutes sections 103B.205 to 103B.255 and the MCWD's plan adopted pursuant to section 103B.231;

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers that pursuant to Minnesota Statutes section 103B.251 and the WMP, the MCWD Board of Managers orders the Project, with a total estimated cost-share contribution from the MCWD of $322,290, and;

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the MCWD Board of Managers authorizes the administrator to execute, on advice and consent of counsel, a cost share funding and maintenance agreement with the Presbyterian Homes, providing reimbursement of not to exceed $307,290 of documented costs for construction of stormwater-management elements of the Wayzata Bay Center

NOW, THEREFORE, BE IT FINALLY RESOLVED, that the MCWD Board of Managers authorizes the administrator to enter contracts, on advice and consent of counsel, as he deems necessary and otherwise take actions to expend not to exceed $15,000 on signage and other education and outreach enhancements to the project, contingent on inclusion of suitable terms in the agreement for cost-share funding with Presbyterian Homes.

Resolution Number 15-015 was moved by Manager _____, seconded by Manager _____. Motion to adopt the resolution ___ ayes, ___ nays, ___abstentions. Date: _____.

_____ Date:_____
Secretary

STORMS ON THE PROMENADE

Overcoming a stormy sea of challenges to transform a declining mall into a dense mixed-use development mimicking native wetland conditions

The new Promenade of Wayzata 14-acre mixed use redevelopment on the east edge of downtown Wayzata, Minnesota in mid Phase 2 construction (Phase 1 complete). Lake Minnetonka visible at top of photo. Photo courtesy of Brenda Chamberland, Aerial Solutions.

Storms on the Promenade

Wayzata – City of Rich Lake History

Settled in 1852, the City of Wayzata resides on the north shore of beautiful Lake Minnetonka about twelve miles west of downtown Minneapolis. The over 14,000-acre irregularly-shaped lake with numerous bays, peninsulas, and islands is wildly popular in the region, and has always been celebrated in Wayzata. As far back as 1882, boating, fishing, and picnicking brought upwards of twenty thousand vacationers who would stay at seventeen hotels scattered along the lakeshore.[1] One of the largest hotels boasted 800 rooms built by famous Canadian-American railroad executive James J. Hill.[1] In fact, his railroad extended to Wayzata, making it the transportation hub of the area as vacationers would be transported from Wayzata's railroad landing to the hotels by "large paddlewheel boats, some able to accommodate as many as 3,300 passengers![1]"

Through the decades, hotels were replaced by summer cottages on the lake and up the hill. In the 1920's motor boating was the rage, and made the city home to two nationally famous speedboat makers on the shoreline.[1] Thousands of spectators came to the lake to watch boat races. After World War Two, many farms around the city became single family housing sites and the city annexed more surrounding land. Downtown shops continued to focus on fashion and service businesses.[1] In the 1970's many were replaced by condominiums and office buildings after a major highway to Minneapolis was widened decreasing business to Wayzata stores. Through it all, boating, fishing, and strolls along the lakeshore continued their timeless popularity.

Known today as a highly desirable executive office and retail center due to the lake, the city features dozens of high-quality specialty shops and many other fine businesses located along the lakefront. A beach, parks, and regional walking/biking trails are interspersed with mansions that spread from the lakeshore estates to the blocks going up the hill from downtown. Wayzata is one of the most picturesque and alluring towns of any in the Midwest.

Wayzata townscape from Lake Minnetonka.

Leaky Vessel on the Edge

Originally a 14-acre wetland by Lake Street at the edge of the city's downtown district, in 1964 it was filled to make way for a mall development called the Wayzata Bay Shopping Center consisting of roughly 12 acres of impervious roofs and parking lot, leaving just 2-acres of remaining wetlands. Gleason Creek which ran through the former wetland was contained within two large pipes so streets and a parking lot could be constructed over it.

Predeveloped condition – native wetland (1947).
Aerial photos from Historical Information Gatherers.

Existing condition through 2011 – shopping center (2003).

The new mall began showing signs of trouble from the beginning. Though the buildings were supported by driven timber and steel piles to maintain their grade and integrity, the parking lot and exterior utilities relied on soils for support. However, the site is subject to constant settlement due to the deep underlying wetland soils which range up to 35 feet thick below 25 feet of urban fill.

Utility breaks and repaving were regular occurrences at the mall due to the constant settlement. Parking lot settlement was exacerbated in a vicious cycle of repaving which added weight, thereby, setting off subsequent short-term settlement. In addition, the site continually experienced long-term settlement irrespective of new loads.

Remarkable as it may sound, roof drainage for most of the 90,000 square feet of flat roofs drained directly into extensive void space below the mall where significant settlement eventually allowed a person to walk upright. Periodic flooding in this unintentional "crawl space" reportedly required a small boat to navigate it for inspections and repairs. Two pipes on the north and west sides of the mall were open to the space, likely to overflow roof water to the city sewer, however, left evidence that they back flowed into the space instead. A roof pipe collection system was finally installed to route roof flows to new exterior storm sewer at the south side of the space. The roof drain was connected to the sewer with a flexible connection. However, because the site and sewer continued to settle, the connection periodically ruptured unnoticed, thereby allowing the space to flood again during the next storm. Sanitary sewer breaks periodically leaked into the space unnoticed for long periods of time, as well. Settlement eventually dropped the grade in the space to below the water table. A primitive lighting system, a makeshift sump pump, and a large automatic

air transfer system were installed in the void space so corrections could be safely accomplished to address the constant crashing waves of maladies.

To add to the troubles, another repellent liquid – petroleum contamination – was present in various areas of the site. These and other conditions pushed the obsolete declining retail complex to near blight. This ship was truly a "leaky vessel."

Inspector in "crawl space" below existing mall. Grade level Is estimated to have settled about 5-feet since original mall construction in 1964. AET, Inc.

Roof pipe (white) connected to exterior storm sewer (black) – a flexible coupling between the two pipes is under stress from exterior settlement at the existing mall.

Excavation to fix exterior watermain break at existing mall. At least eight distinct repaving layers apparent extending about 6-feet below grade.

Makeshift sump pump to manage constant water in "crawl space" below existing mall.

New Ship with Promenade Deck

Over the years, numerous developers proposed various plans for redeveloping the site, however, none advanced very far. Seeing this redevelopment opportunity as providential, Presbyterian Homes & Services (PHS) began investigating the property in early 2007. In February 2007, the design team met first with the Minnehaha Creek Watershed District (MCWD) to begin project collaboration, and the City and other regulatory bodies shortly thereafter. In June of 2008, the city approved a General Plan put forward by now project sponsor PHS for a mixed use development, and the detailed planning began in earnest. Called "The Promenade of Wayzata," the project is a 3-phase mixed-use redevelopment on 14-acres which replaces the old mall with 6 distinctive blocks focused on the pedestrian.

Plan for The Promenade of Wayzata (fka, Wayzata Bay Center Redevelopment).

Phase 1 construction was substantially complete in July 2014 and consists of a building block dedicated to the senior living community with independent living, assisted living, memory care, and skilled nursing called the Folkestone Terrace North (fka, North Block) with a second building block for independent living called Folkestone Terrace West (fka, Superior Block). Phase 2 began in late 2013 and consists of a building block

for independent living called Folkestone Terrace South (fka, West Block), another building block for market rate condominiums and apartments called Regatta Wayzata Bay Residence (fka, Plaza Block), and, a last block for a park called The Great Lawn (fka, Plaza Park). Phase 2 is anticipated for completion in mid-2015. A future phase will complete the park and add a sixth and final building block (East Block) anticipated for a hotel and office. All buildings are programmed for retail components at street level, and have underground parking.

Thunderstorm of Goals & Constraints

The project is essentially a "land bridge" since all buildings, boulevards, and utilities require unconventional foundation systems (e.g., heavy concrete grade beams supported by driven steel pipe piling). When all phases are complete, the project will have driven upwards of 3400 steel pipe piles averaging 115 feet deep – that's over 70 miles of piling, over 6000 tons of steel, and over 3000 cubic yards of concrete/grout to fill the pipe piles. Thus, the basic premise to build a project on this site was foreboding. To add to this, and to help secure project approval from city officials, the plan laid additional ambitious goals to energize this forlorn part of the downtown and make it a vibrant place by providing a plethora of exceptional benefits to the community and environment. Goals included such things as realignment of problematic downtown street intersections, extensive walk and street snow melt systems, and geothermal heating and cooling from thousands of driven piles supporting the redevelopment, to name just a few.

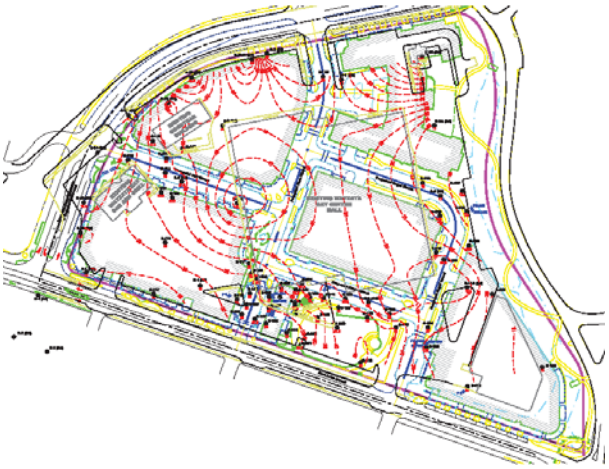
While many of the goals were daunting, a signature goal of the project regarded stormwater. A dizzying array of investigations, preliminary designs, and collaborative meetings with regulatory authorities finally resulted in the goal for the project to mimic historic predevelopment stormwater conditions when the site was a wetland, thereby, far exceeding regulations which required matching existing conditions. This would demand a significant infiltration component to reduce volume and be formidable for most sites; however, for this site it was ominous, considering several facts:

1. **Voluminous volumes –** the proposed site is essentially not reducing impervious surface and therefore requires large expansive volumes of airspace integral to stormwater systems for attenuating storms.
2. **Impermeable mush** – site soils have literally no integrity for support of storm systems and are subject to significant long-term consolidation. Soils are also subject to significant short-term consolidation, even for minor raises in grade, and, soils could bounce if cut. Except for deep native sands, soils have virtually no infiltration potential.
3. **Cramped quarters** – from a vertical perspective, stormwater systems have to be located below streets in the narrow space between the bottom of substantive street structural systems (e.g., post-tension slabs, deep precast double tees) and above a shallow water table. In addition, any pipe discharges have to be elevated since adjacent city storm sewers were perpetually full of water from the adjacent lake level which was only 5 feet below grade. This level bounced higher during storms due to flows from extensive off-site regional areas of upland neighborhoods.
4. **Laterally limited labyrinth** – from a lateral perspective, stormwater systems must fit between dense arrays of driven piles, and far enough from buildings to limit seepage risks.

In short, big spaces with good soils are needed, and small spaces with bad soils are provided. Let's set sail!

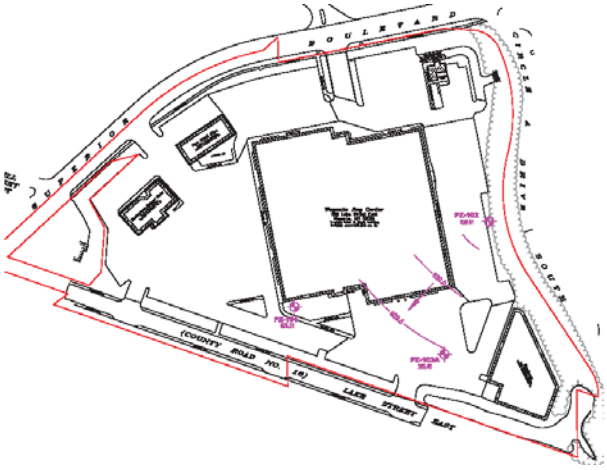
Turbulent Sea of Hydrogeology

The geology underlying the Promenade of Wayzata is like a turbulent sea. A designer for the project stated, "I've never seen anything like it in over two decades working in the Midwest – one boring is clean sand 14 feet below grade and another boring 50 feet away is 17 feet deeper for the same sand stratum." In fact, sketches and graphs of site hydrogeology resemble a roiling ocean all tossed about.

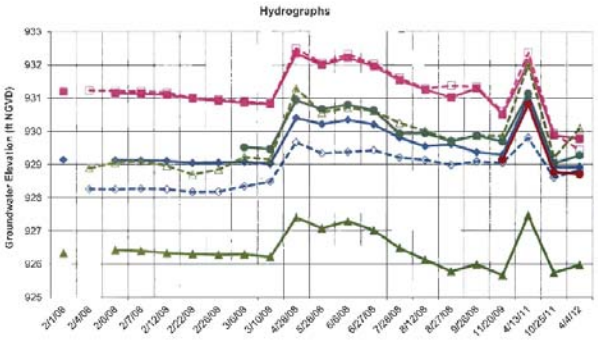


"Turbulent sea of hydrogeology" – wildly varying depth to sand contours (5' intervals). AET, Inc.

Borings were utilized exclusively instead of test pits to gather geotechnical information due to the deep depth of the sand stratum, shallow water table, and need to maintain uninterrupted traffic in the existing mall parking lot. Borings in promising areas for locating the infiltration system were continuously sampled well into the sand stratum to help identify veins of impermeable soils, if present. Piezometers were also installed across the site to gather groundwater information, including depths, flow directions, and hydraulic conductivity testing.



"Turbulent sea of hydrogeology" – steep groundwater flow contours 1/2' intervals) indicating flow in the deep sand stratum towards Lake Minnetonka. AET, inc.

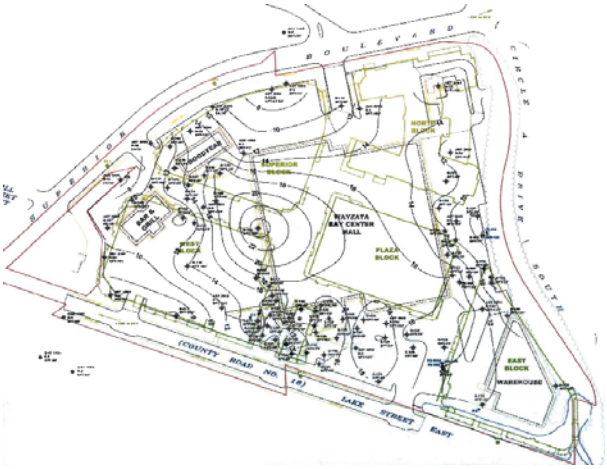


"Turbulent sea of hydrogeology" – piezometer water level measurements varying over 2-feet (2008 – 2012). AET, Inc.

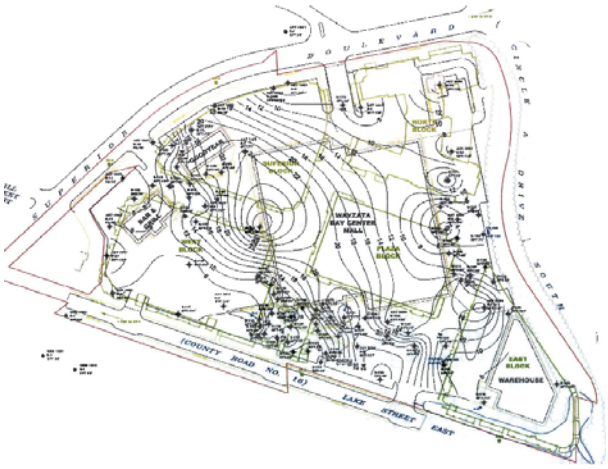
The site consists of an unconfined surficial groundwater table averaging about 5 feet below grade within 8 to 24 feet of urban fill over 8 to 30 feet of clayey swamp deposits ("mush"). All this is in the way of reaching an underlying thick sand stratum critical for meeting stormwater infiltration goals. To complicate

things further, piezometric data indicated semi-confined groundwater in the sand stratum having a separate water table slightly elevated above the unconfined water table, both bouncing over 2 feet between the lowest and highest readings as recorded within a period of several years.

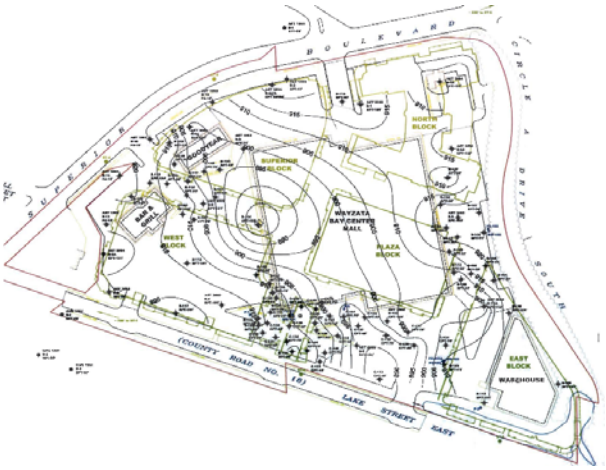
Historic borings were reviewed and new borings advanced. Initial investigations mostly rained on the design team's hopes, however, typically left some encouraging geologic data upon which to base the next targeted investigation. The wildly varying geology matched the emotions of the designers – up one day, down the next. A typhoon of other interdependent project design components and investigations (e.g., building, geothermal, piling, hydronic system, environmental, wetlands, etc…) proceeded concurrently and in constant flux as the design team searched the site for feasible areas to infiltrate stormwater and increase their understanding of site soils.



URBAN FILL THICKNESS (2' CONTOURS)



SWAMP DEPOSIT "MUSH" THICKNESS (2' CONTOURS)



SWAMP DEPOSIT "MUSH" BOTTOM (5' CONTOURS)

TOP OF GLACIAL TILL (5' CONTOURS)

"Turbulent sea of hydrogeology" – widely variable geology underlying The Promenade of Wayzata (fka, Wayzata Bay Center Redevelopment). AET, Inc.

Though borings indicated a deep sand stratum across much of the site, the stratum pinched out at some locations, especially away from the historic creek. This raised a concern amongst designers that the deep sand stratum could be laterally bound by impermeable soils thereby limiting its ability to receive site runoff – like a bathtub full to the brim with water overtops when the faucet is turned on.

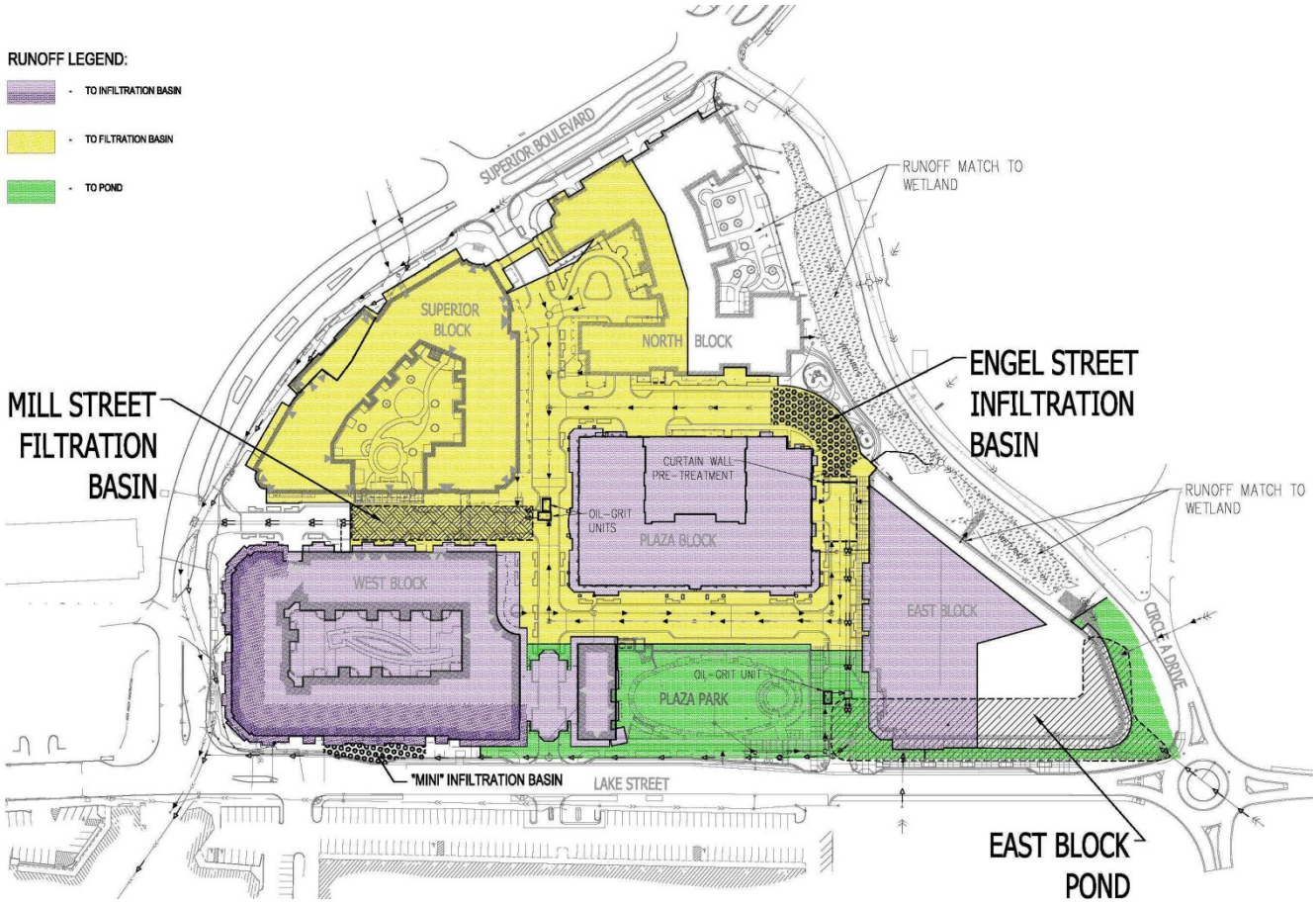
During the investigations, investigators executed a direct test on the deep sand stratum using a 30-inch steel casing advanced about 20-feet into the clean sands. The initial test indicated virtually no infiltration – more bad news that threatened to kill the stormwater goals. The geotechnical agency suggested that significant sediment may have settled to the bottom of the water column during casing installation. Therefore, the next day, the casing was vacuumed and the test rerun indicating 24 inches per hour of infiltration for just under 5-feet of pressure head above the water table. This news kept the stormwater goals alive and was a great moment for the design team.

These and other hydrogeological analyses helped alleviate "bathtub" concerns and establish the competency of the deep native sand stratum for positive dissipation of runoff to groundwater.

Soil sampling at the old mall on a frigid day in the dead of winter.

Taming the Storms

Continuing the analogy of the project to a ship, three primary systems help it overcome the stormy sea of goals and constraints, each roughly the size of a football field: an infiltration basin, a filtration basin, and a pond, as indicated below.



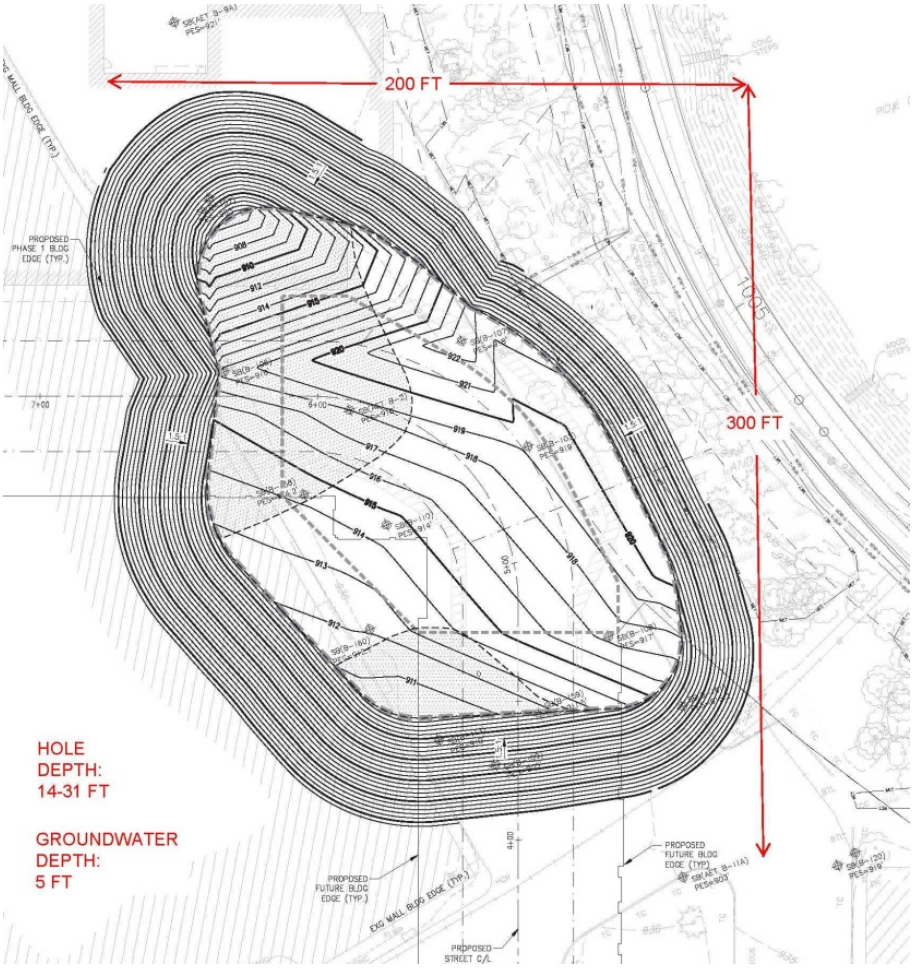
Primary stormwater systems at The Promenade of Wayzata: Engel Street Infiltration Basin, Mill Street Filtration Basin, East Block Pond. Runoff areas to each system are indicated in color according to the legend.

Though these stormwater systems sound simple enough and are not out of the ordinary for traditional engineering, for this project they could not be considered ordinary. These and other significant design components combined in unique ways to create a robust vessel, as described in the following sections.

Taming the Storms – Engel Street Infiltration Basin ("The Big Hole")

After numerous boring investigations, a nauseating array of preliminary designs, and an equally nauseating collection of rejected locations (including locating the basin inside several building footprints), the team finally concluded on an infiltration basin below the street where it turns 90 degrees between three buildings. Here the excavation to the sand stratum is relatively shallow in order to limit dewatering costs and risks, and the location is just adequate for feasible pipe routing below thick post-tension street sections on their route to the basin.

Termed the "Engel Street Infiltration Basin," the system is the most significant of the three primary stormwater systems and consists of a large infiltration area and attached detention vault. Excavated through the urban fill and swamp deposits to native clean sands, the infiltration area measures roughly 200 feet wide by 300 feet long with a depth ranging between 14 to 31 feet deep – a big hole. While this depth is at, and arguably beyond, the limits of feasibility due to the shallow water table, it is relatively shallow compared to other areas of the site.



"The big hole" – soil correction plan for Engel Street infiltration basin (1' contours). Shaded areas at bottom of excavation indicate areas for infrastructure support only due to difficulty in establishing a clean bottom for infiltration. Unshaded areas at bottom indicate relatively shallower and cleaner soil correction area for infrastructure support and infiltration where dry conditions from dewatering wells resulted in good inspection of subgrade.

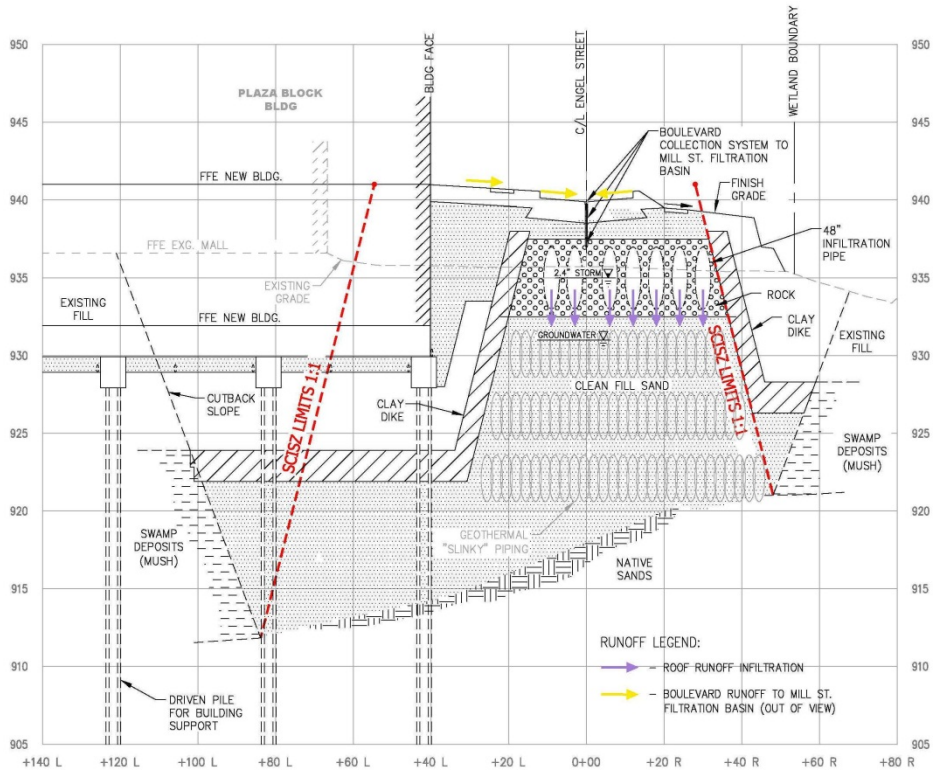
Dewatering wells dropped the shallow water table several feet below much of the excavation bottom for a good visual inspection of the subgrade. Excavation several feet below murky water allowed deeper fringe areas at the bottom of the basin to serve soil correction purposes only.

The majority of the excavation bottom being intended for soil correction and infiltration purposes, required a good examination of the subgrade since the team learned a valuable lesson from the infiltration test well – even a small amount of sediment on the sand can compromise the ability of the system to infiltrate. As expected based on careful review of the numerous borings, the majority of the native sand was clean having less than 5% fines (percent passing a USCS number 200 sieve).

Clean native gravelly sand below swamp deposits at Engel Street infiltration basin (foreground). Leading edge of imported fill sands (background).

Imported clean sand fill in excavation for Engel Street infiltration basin (foreground). Steel pipe pile driving for Phase 1 building (background).

Specifications required imported fill sand to connect the infiltration pipes to the native sands to have less than 3% fines. A pleasant surprise came when the earthwork contractor found a fill source consisting of less than 1% fines, resulting in greater overall system performance.



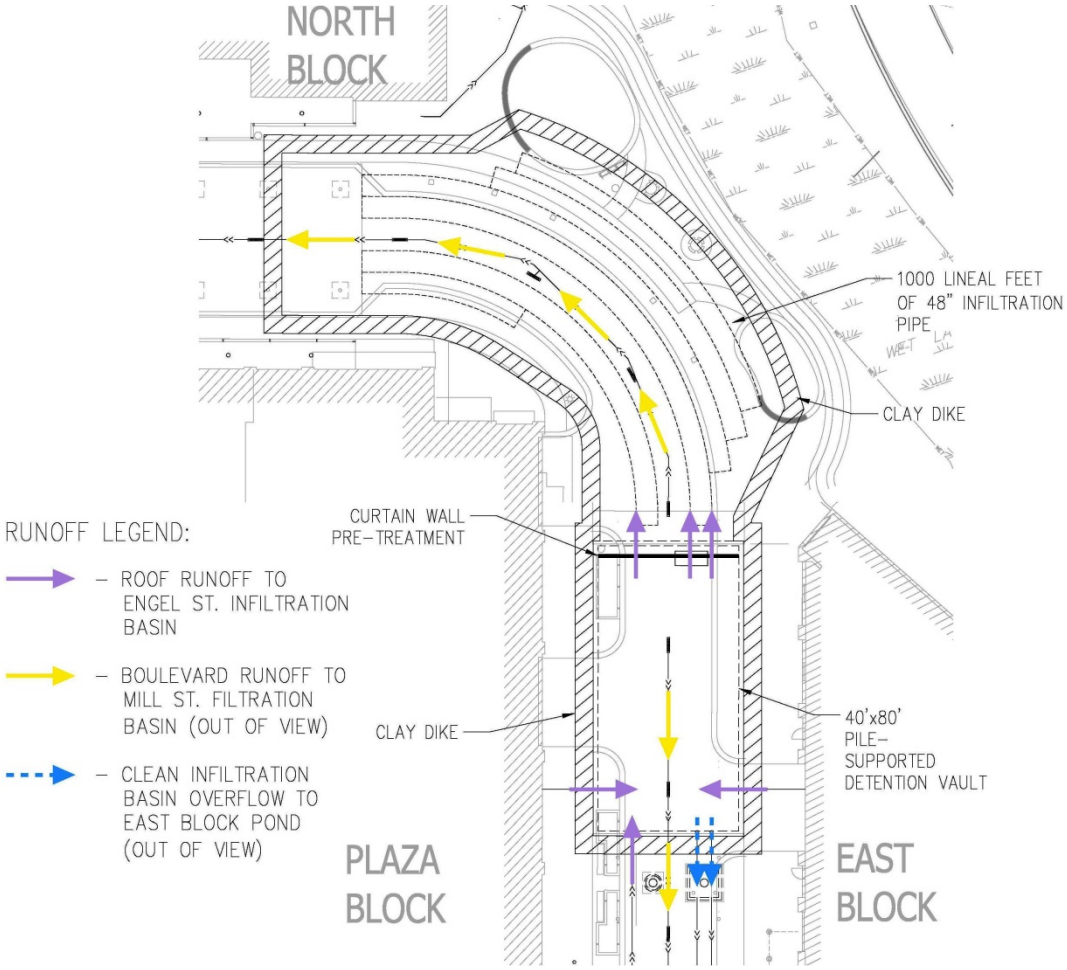
Section view indicating major components and flow routes for Engel Street infiltration basin. Soil correction infrastructure support zone (SCISZ) in red color. Infrastructure within the SCISZ Is constructed using conventional methods (e.g., no pile support).

Designers referred to the zone of infrastructure support as the "SCISZ" – an acronym coined by the team which stands for "soil correction infrastructure support zone." The SCISZ is the three-dimensional zone of the new sand fill from competent approved subgrade at its base then extending up and laterally inward at a 1:1 slope to street level. Streets, walks, and utilities within the SCISZ did not require alternative foundation support (e.g., driven piles).

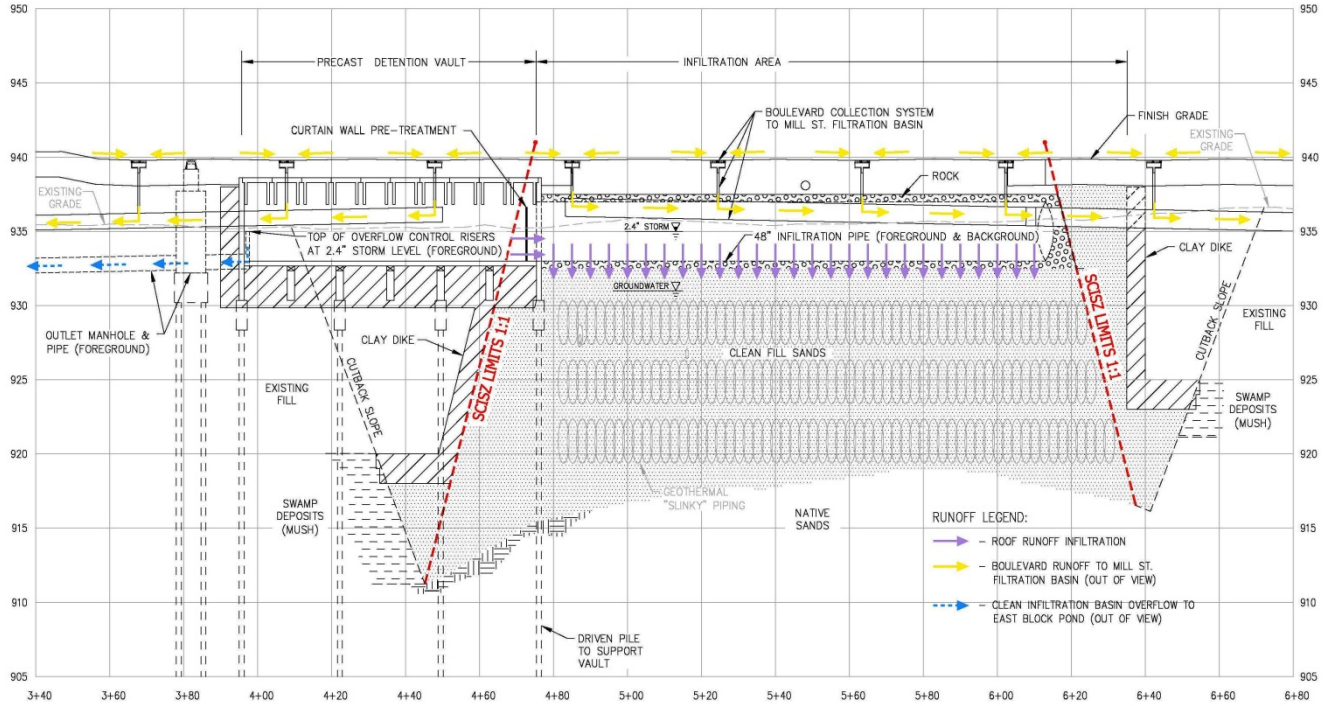
Perforated 48"corrugated metal pipe infiltration pipe installation at Engel Street infiltration basin. No alternative support for pipes is required since the soils on which the pipes bear are corrected inside the SCISZ. {SEE DRONE FLY-OVER OF THIS SYSTEM IN MID CONSTRUCTION @ www.youtube.com/watch?v=_1iz_thP_1c&feature=youtu.be) Photo courtesy of Contech.

To help address heating and cooling needs for the adjacent building, three layers of geothermal "slinky" piping are placed at different elevations in the excavation in order to take advantage of the shallow water

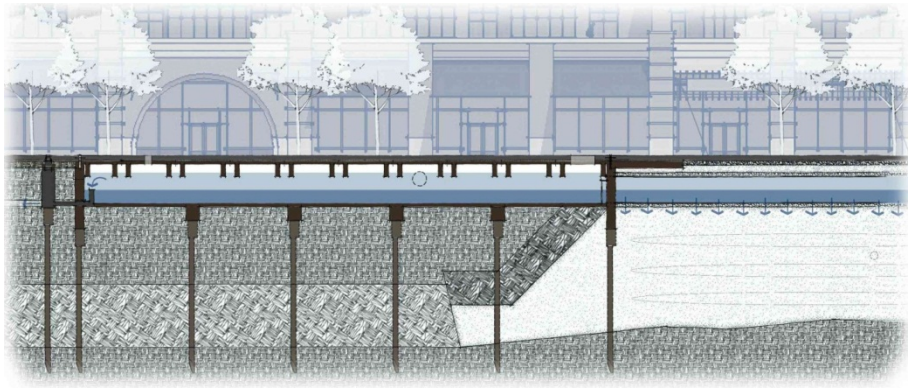
table and periodic circulation of runoff through the new fill soils of the basin. This piping combines with that installed in piles to total over 80 miles of geothermal piping for the first two phases of the project.



Plan view indicating major components and runoff flow routes for Engel Street infiltration basin (clay dike extending around infiltration area and vault). {SEE DRONE FLY-OVER OF THIS SYSTEM IN MID CONSTRUCTION @ www.youtube.com/watch?v=_1iz_thP_1c&feature=youtu.be).

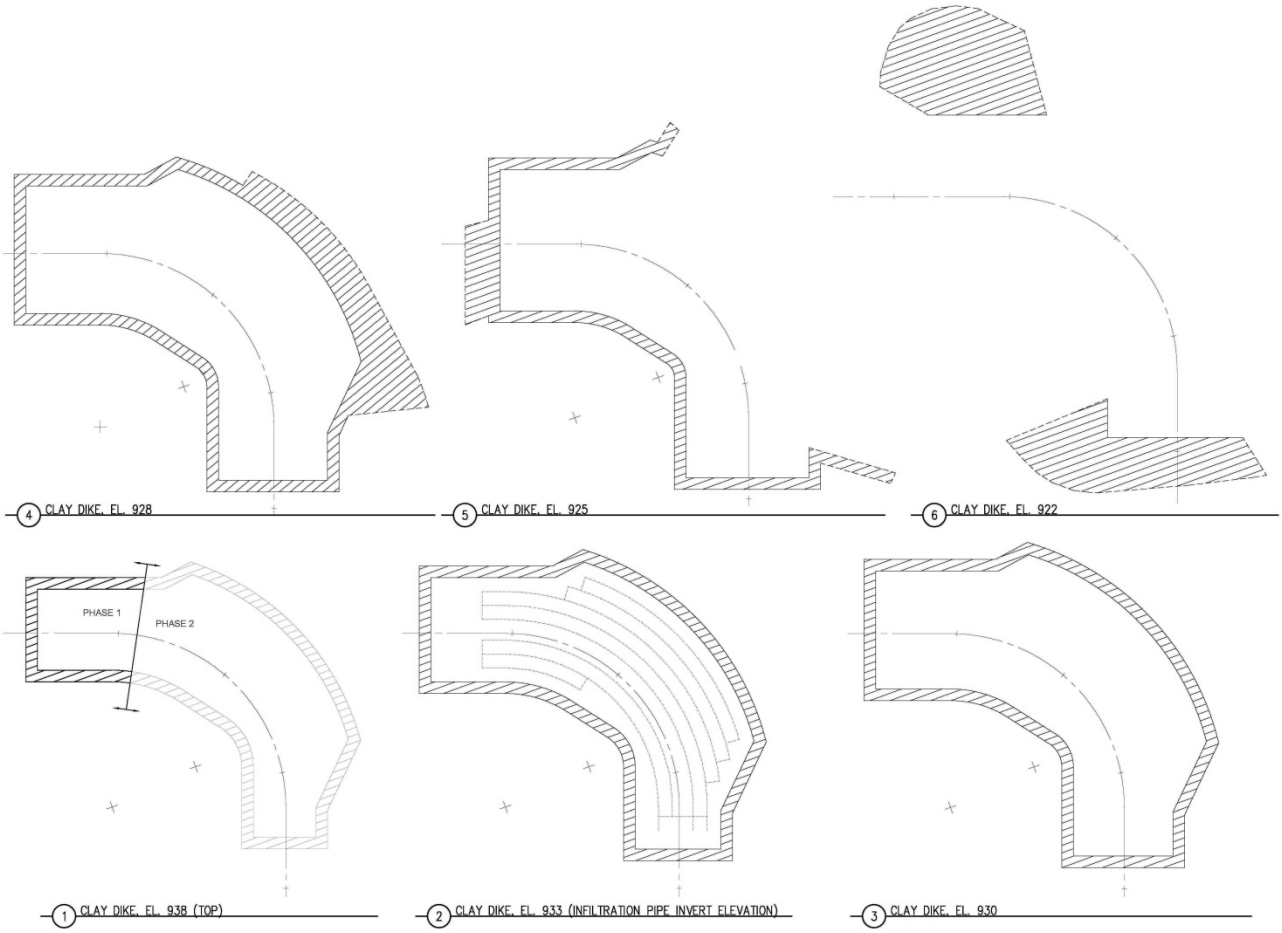


Centerline profile indicating major components and runoff flow routes of Engel Street infiltration basin (clay dike extending around infiltration area and detention vault).



Early illustrated profile image indicating function of Engel Street infiltration basin.

Around the clean sand fill, a 5-foot wide clay dike limits seepage from the basin towards adjacent building envelopes. The clay dike is keyed into native clayey swamp deposits to contain the infiltration system and essentially eliminate seepage towards adjacent buildings when the basin bounces during storms.

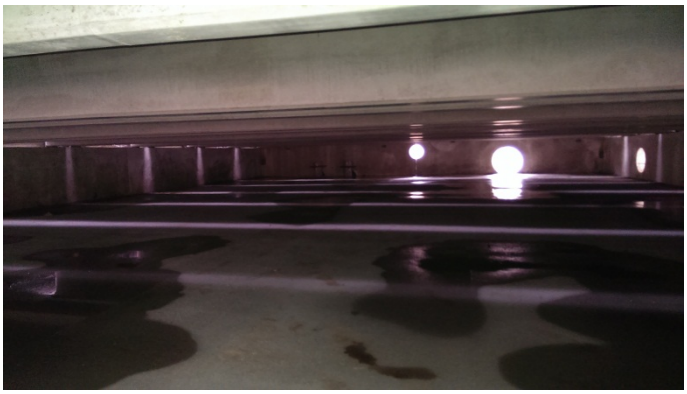


Horizontal "slices" through the clay dike at various elevations for the Engel Street infiltration basin (dike around detention vault not indicated).

The maximum feasible infiltration area came up short for storage capacity to reach project goals. Therefore, a 40-foot by 80-foot precast vault is connected to the infiltration pipe network to provide additional storage capacity. Since the vault bears mostly outside of the SCISZ, it is supported by driven piling under grade beams (tie beams) with precast double tee top members. Little long-term settlement is expected below the vault since the grade is a cut of over several feet, therefore, the floor is a concrete slab on grade.

Looking south at Engel Street detention vault during construction. Three large openings are for connecting 48-inch perforated pipe network of adjacent infiltration basin.

Looking north inside Engel Street detention vault during construction. Large sun-filled openings are for eventual connection with 48-inch perforated pipe network of adjacent infiltration basin.



Looking south inside Engel Street detention vault during construction. Two large sun-filled round openings on right are for pending inlet pipes from project roof collection networks. Smaller higher opening on left is opening for eventual overlying street runoff collection pipe to route this dirtier runoff to the Mill Street filtration system.

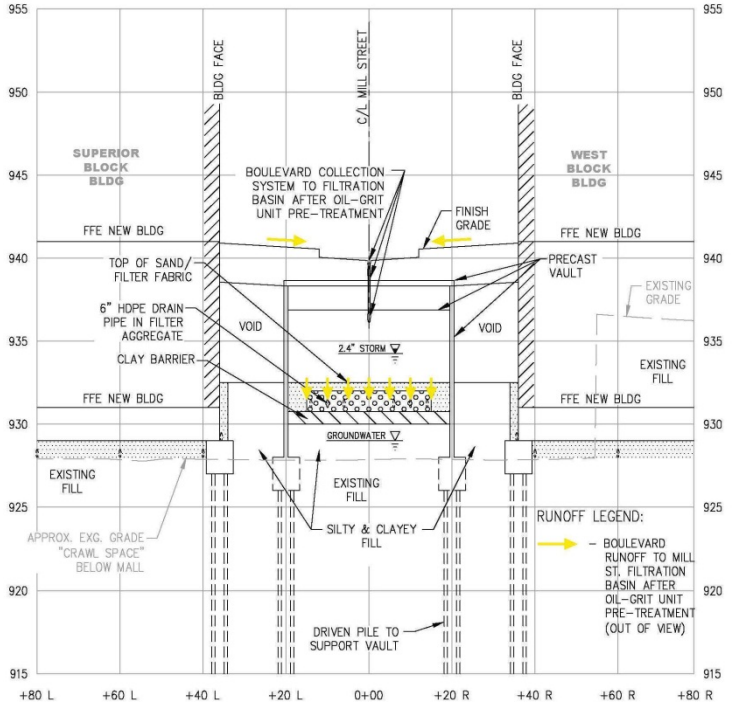
Two riser pipes for overflow of surficial portion of very infrequent storms rigidly connected to detention vault wall at south end of precast stormwater detention vault of Engel Street infiltration system (foreground). Riser rims set at 2.4-inch storm level, resulting in infiltration for 99% of annual rainfall for 5-acres of mostly impervious surfaces.

Runoff from about 5 acres of exclusively building roofs is directed to the detention vault before it passes through a filter fabric pretreatment curtain wall (see “Pretreatment” section) to one thousand lineal feet of perforated 48-inch diameter corrugated metal pipe gallery which distribute the runoff to the clean sands of the infiltration basin, thereby recharging the groundwater. A full 2.4-inch runoff event is fully infiltrated by the system which translates to no runoff to Lake Minnetonka for 99% of all annual rainfall for 5 acres of mostly impervious surfaces. The bulk of larger very infrequent storms are also infiltrated while the surficial portion of these storms (cleanest portion) overflows to risers in the vault. The risers drain to discharge lines routed to the East Block underbuilding pond (see “East Block Pond” section) where this clean portion is further cleaned and managed before discharging to Lake Minnetonka.

Taming the Storms – Mill Street Filtration Basin

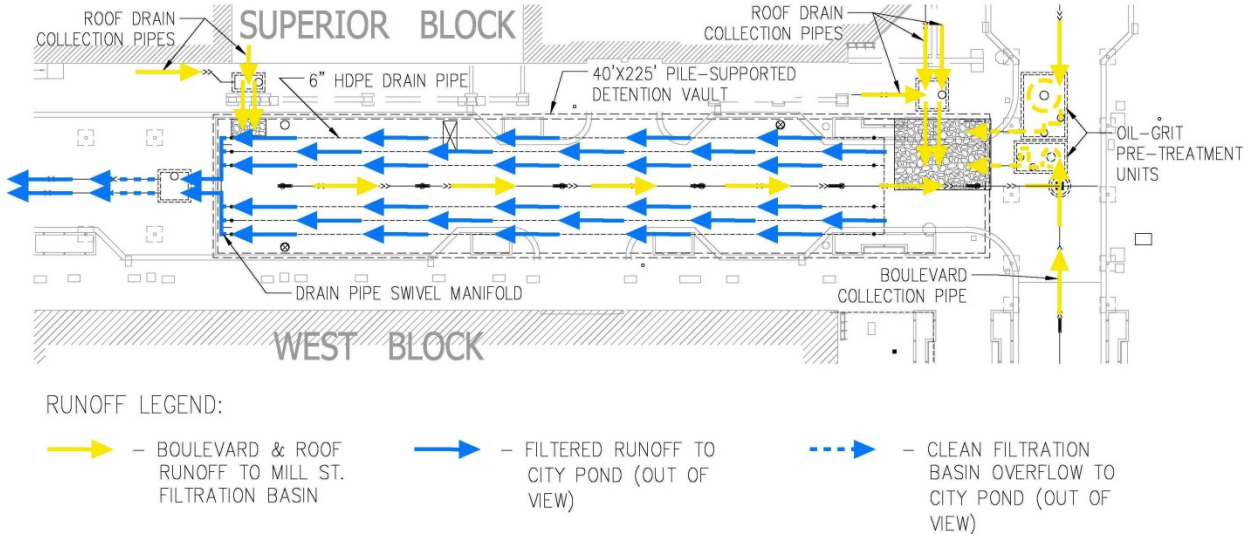
The second of the primary stormwater systems is an understreet filtration system which detains and filters runoff from about 5 acres of building roofs and boulevards (streets and walks). Termed the "Mill Street Filtration Basin," the far western portion was considered as one of many potential infiltration basin locations, however, finally rejected in favor of a filtration basin due to the excessive depth to the sand stratum, dewatering, and other complications. Its location is based on demand for large space, continuous linear orientation compatibility with street structural systems, outfall proximity, and collection pipe system feasibility.

The basin measures 40-feet x 220-feet of similar construction as the smaller detention vault connected to the Engel Street infiltration basin, however, the floor consists of fabric and engineered fill to do the filtering. The surface of the floor is a geotextile filter fabric that can be replaced. Below this sacrificial fabric is clean sand above butt-fusion welded high density polyethylene drain tile wrapped in another filter fabric and filter aggregate, on top of a clay barrier layer.

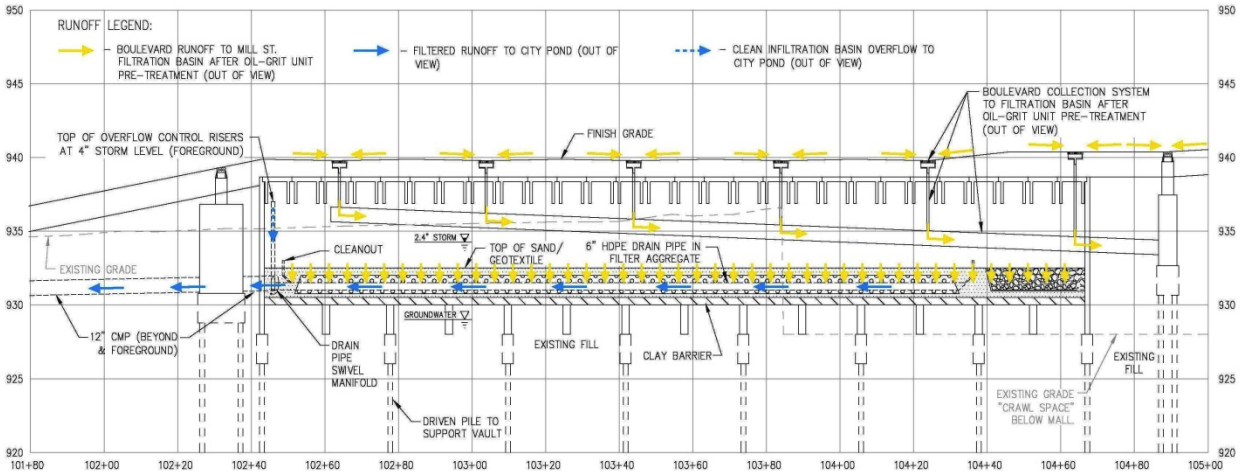


Section indicating major components and runoff flow routes of Mill Street filtration basin.

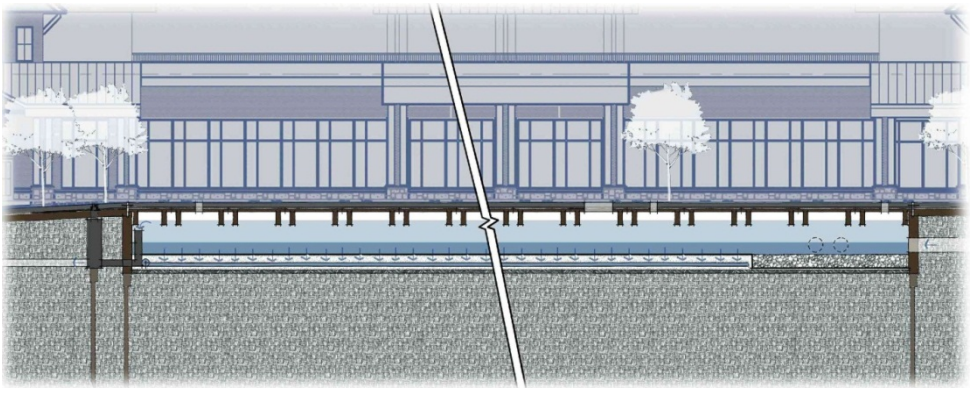
The eastern third of the basin occurs over some of the worst soils on the site and results in a raise of grade of about 5-feet since this area is the old mall "crawl space." Therefore, the soils were surcharged to remove the primary consolidation associated with the grade increase. The western two-thirds of the basin resulted in a cut of about 3-feet and relatively smaller long-term settlement. On the west side of the basin, drain pipes connect to a pipe manifold rigidly connected to the pile supported precast wall using a swiveling slip joint that allows the connection to maintain its integrity as the drain pipes settle with the settling soils over many years.



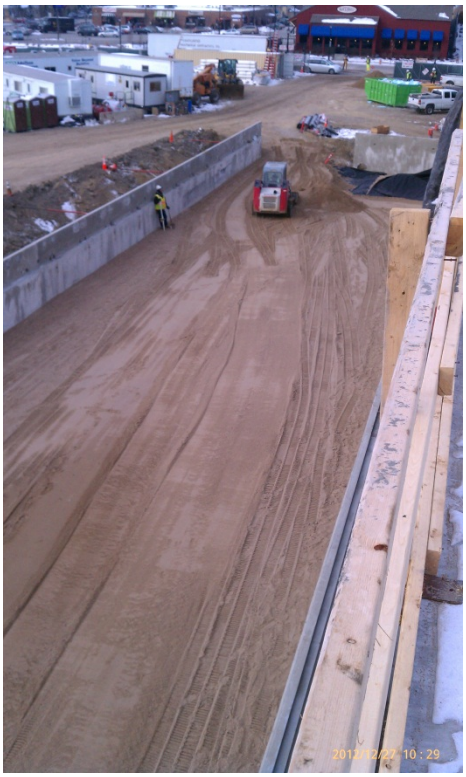
Plan view indicating major components and runoff flow routes of Mill Street filtration basin.



Centerline profile indicating major components and runoff flow routes of Mill Street filtration basin.



Early illustrated profile image indicating function of Mill Street filtration basin.



Recently placed clean sand in the Mill Street filtration basin prior to covering with sacrificial filter fabric and capping the basin with precast double tee structural members (left – looking easterly, right – looking westerly).

6-inch butt-fusion welded perforated drain tile in filter aggregate prior to slip-joint swivel connection to pending manifold pipe in Mill Street filtration basin.

Runoff discharges into this basin onto rip rap energy dissipation after being pre-treated by large oil-grit units (see "Pretreatment" section) and prior to being filtered through the filter fabrics and engineered soil media into the drain tile system. Almost a full 4-inch runoff event is fully filtered by the system – that's clean runoff to Lake Minnetonka for over 99% of all rain events including large very infrequent storms from 5 acres of mostly impervious surfaces. The bulk of rare extreme storms are also filtered while the surface portion of these storms (cleanest portion) overflows to risers in the vault. The risers drain to discharge

lines routed to the city sewer where this clean portion is further cleaned and managed by the city's Lakeside Pond before discharging to Lake Minnetonka.

Taming the Storms – East Block Pond ("The Blue Grotto")

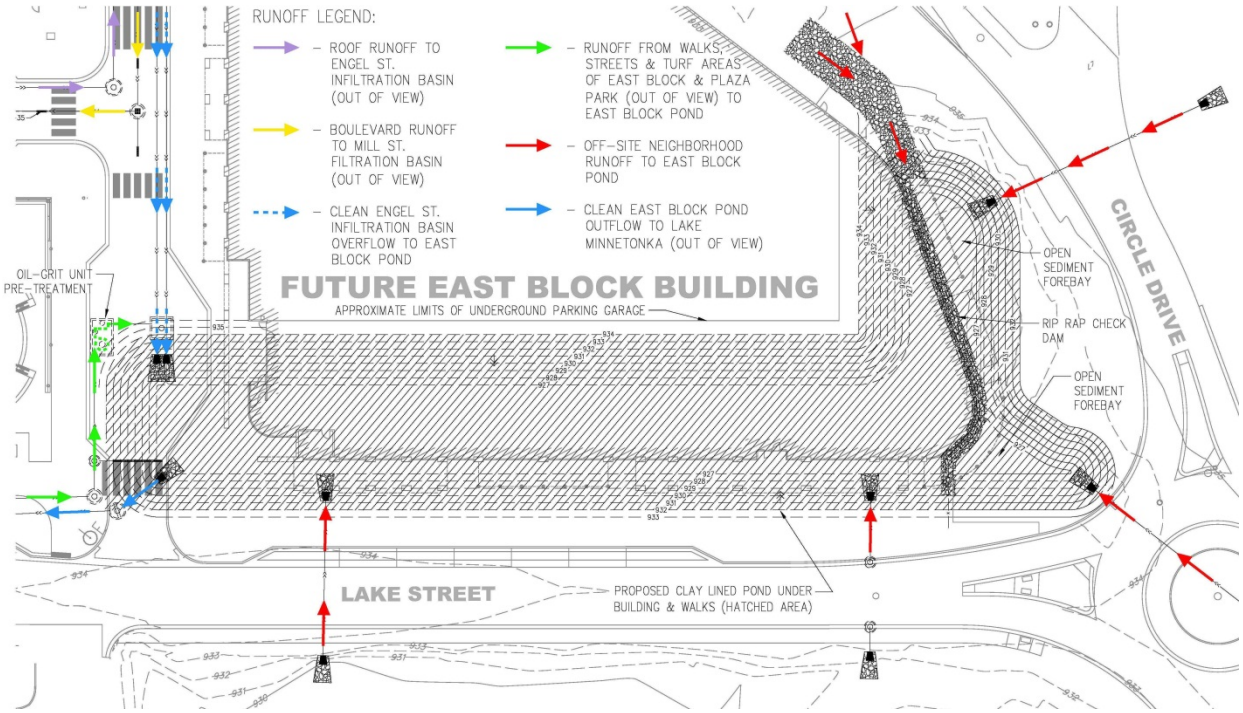
Occasionally referred to as "the blue grotto" by designers due to its likeness to the Grotta Azzurra sea cave in Italy, a new pond will be constructed completely below a building with low access into it from its far end where natural light shines in. Officially termed "The East Block Pond," the new pond is the third primary stormwater system constructed with the last and future phase of the project (Phase 3). The new pond manages and treats project stormwater runoff from 2-acres of walks, streets and vegetated areas of the East Block and The Great Lawn (fka, Plaza Park) after oil-grit unit pretreatment. It also manages and treats the overflow portion of larger very infrequent storms from the Engel Street infiltration basin. Finally, the pond manages and treats residential neighborhood runoff from about 10-acres which flow directly to the pond, and another 10-acres that flow to the pond after passing through separate upslope ponds.

In its existing condition, the pond is an irregularly-shaped shallow muddy wetland pond overgrown with a quagmire of invasive species that has long been used by the city to manage regional stormwater.

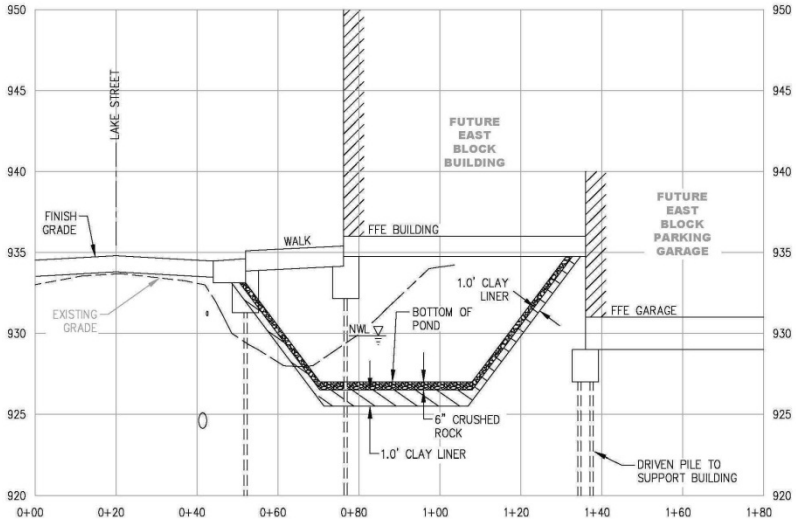
Looking north at nearly dry existing city pond during summer.

Looking north at dry existing city pond during summer.

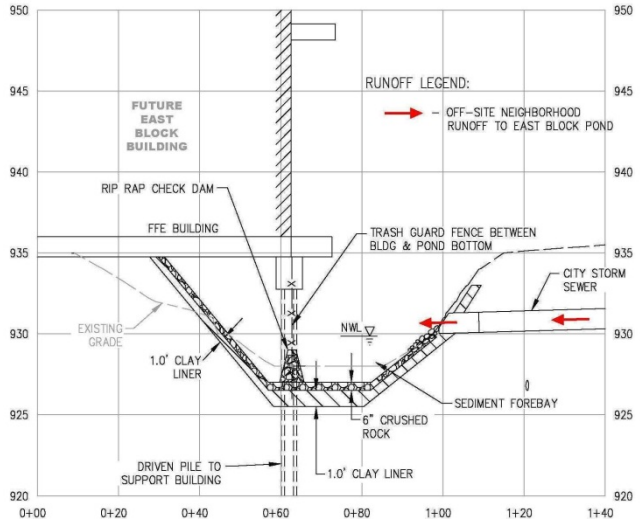
The reconstructed pond will be in generally the same location as the existing pond over some of the worst soils of the site adjacent to the underground parking garage of the East Block building with garage finish floor elevation just over a foot above the normal water level of the pond. Therefore, part of the criteria on which the pond shape is based includes virtually no filling of existing pond embankments so that consolidation is limited in the underlying soils. This helps maintain pond liner integrity thereby limiting risks of leakage towards the immediately adjacent below grade parking garage, especially during storms when the pond bounces several feet. Thus, the existing pond shape being irregular is now slightly expanded to follow a uniform and constructible footprint resulting in essentially no filling in the proposed condition. This slight expansion serves a secondary objective of providing necessary freeboard between the high water level bounce and the adjacent city street.



Plan view indicating major components and runoff flow routes of East Block pond.



East Block pond section at building indicating major components of East Block pond.



East Block pond section at open forebay indicating major components and runoff flow routes.

Compare critical pond performance criteria for the existing pond and the proposed pond:

Criteria	**Existing Condition**	**Proposed Condition**
Permanent pool	0.82 ac-ft required 0.49 ac-ft exists	0.61 ac-ft required 0.82 ac-ft provided
Permanent pool	3’ minimum depth required 2’ maximum depth exists	3’ minimum depth required 3’ minimum depth provided
Discharge	1.9 cfs /pond ac	0.16 cfs / pond ac
Prevent short-circuiting	No – narrow basin with virtually no bottom width; nearest inlet to outlet distance of 100’.	Yes – 40’ bottom width; nearest inlet to outlet distance of 390’.
Pretreatment	No	Yes – two sediment forebays & oil-grit unit pre-treatment

The new pond will reduce contaminants discharging to the lake by over 10 pounds of phosphorus and over 1000 pounds of total suspended solids annually.

Though the new pond will present a challenge for future construction constitutes a truly unique condition below the new building, this “Blue Grotto” also has a unique beauty in significantly improving water quality discharge to Lake Minnetonka.

Taming the Storms – "Mini" Course Correction

In the summer of 2013 during Phase 2 final design, an unforeseen condition caused a course correction – the Plaza Block needed to replace virtually all programmed green roof draining to the Engel Street infiltration basin with conventional roof (about 13,000 sf). This excess runoff volume exceeded the capacity of the maxed out basin. As providence would have it, another unforeseen condition surfaced shortly thereafter – the West Block could not pipe about 28,000 sf of conventional roof to the Engel Street infiltration basin and also needed to reduce their green roof by about 7,800 sf (the building would still have about 14,000 sf of green roof). The West Block problem vaporized the Plaza Block problem since the Engel Street infiltration basin suddenly had excess capacity, even with the increased runoff from the Plaza Block roofs. However, the situation created need for additional runoff management for the orphaned West Block runoff, in order to maintain project stormwater goals.

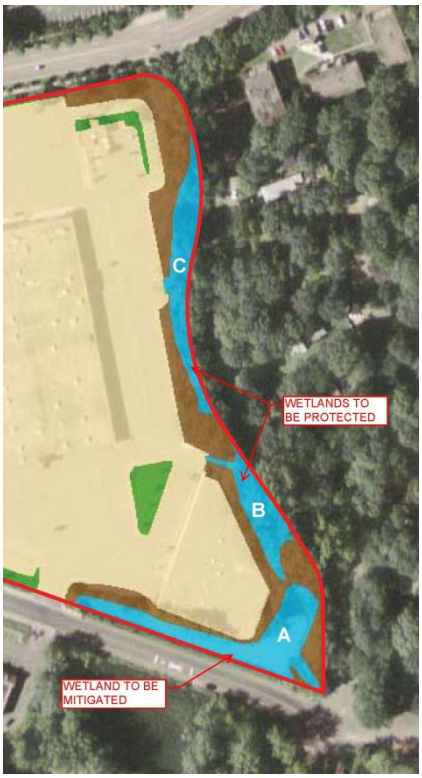
A few early borings identified the possibility for locating an infiltration basin under the sidewalk on the south side of the West Block where the deep sand stratum is relatively shallow. However, the idea was not pursued due in part to capacity and routing limitations. Presently, based on PHS direction to maintain stormwater goals and several confirmatory borings, installation of a new miniature infiltration basin ensued. About 20-feet wide by 150-feet long by 13-feet deep the "mini" infiltration basin is located immediately below the walks between Lake Street and the West Block building. The basin consists of 300-feet of 36-inch perforated pipe that drain through clean fil sands to the deep native sand stratum with a clay barrier dike separating it from the soils below the building. The system operates the same as the larger Engel Street infiltration basin by fully infiltrating a 2.4" storm equating to no runoff to Lake Minnetonka for 99% of all annual rainfall. The bulk of larger very infrequent storms are also infiltrated while the surficial portion of these storms (cleanest portion) overflows to Lake Minnetonka.

Back on course!

Taming the Storms – Wetland Care

Three wetlands of just under an acre of combined area exist on the far eastern edge of the site in a long slender natural area called the “east buffer” for its attribute of shrouding the project from adjacent off-site residences. The wetlands flow into Lake Minnetonka. One is an existing city management pond to be replaced with the above described underbuilding detention pond of the future East Block (Phase 3). In addition to being replaced in the same location with a bigger and better storm pond (see “East Block Pond” section), this wetland has been mitigated in another area of the city at 2.25 times its original size to stay ahead of future East Block construction.

The two remaining upland wetlands are preserved with new protective buffer established all around their perimeter. About 2 acres of the proposed project is dedicated to flowing into the wetlands to match hydraulic conditions to these wetlands for the 1-, 10-, and 100-year storms. The project mimicked the native quality of water discharging to them and in turn to Lake Minnetonka by exchanging parking lot runoff from the existing condition, with conventional and green roof runoff in the proposed condition – a substantial improvement in runoff quality to these wetlands and Lake Minnetonka to which they flow.



Existing wetlands in natural area on east side of site (“east buffer”). Wetland A is a city stormwater management pond to be replaced with a new pond located under the East Block building after local wetland mitigation.

The project identified and protected valuable species based on a comprehensive tree survey for the entire east buffer in and around these wetlands, requiring relocation of various proposed infrastructure during design of the buildings. Finally, prolific invasive species (e.g., buckthorn) are eliminated to further improve the long-term health and beauty of the wetlands and immediate upland areas towards native conditions.

Taming the Storms – Green Roofs

To help manage runoff and add charm for the residents of the buildings to enjoy, green roofs are an integral part of the project. Mostly "extensive" having a thin section of growing media 4- to 8-inches thick) for sedums, turf, and ground cover, the green roofs are located immediately above parking garages on most buildings. Smatterings of intensive planters with thick growing media up to 3-feet thick for trees extend across the roofs, also. At project completion, the total green roof area is estimated to be about 50,000 square feet (1.1 acres).

Under the charm – construction of waterproofing and drainage systems prior to adding soil media and plants on the green roof of the Folkestone Terrace West (fka, Superior Block). Photo courtesy of Adolfson & Peterson Construction.

Recently completed green roof of the Folkestone Terrace West (fka, Superior Block). Photo courtesy of Adolfson & Peterson Construction.

Recently completed green roof with putting green on the Folkestone Terrace West (fka, Superior Block). Photo courtesy of Adolfson & Peterson Construction.

Looking out over the Terrace green roof from the Parlour inside the Folkestone Terrace North (fka, North Block).

The Terrace green roof of the Folkestone Terrace North (fka, North Block).

The Terrace green roof of the Folkestone Terrace North (fka, North Block).

Lawn and planted area on The Terrace green roof of the Folkestone Terrace North (fka, North Block).

Taming the Storms – Pretreatment

The path for runoff to enter the Engel Street infiltration pipes is through the large detention vault where they connect via three of the 48-inch pipes. The runoff directed here is roof water which is relatively clean. Even so, regulators suggested adding a fabric filtration system to further reduce the long-term risk of prematurely clogging the infiltration system from fine particles. Therefore, designers added a filter fabric curtain wall system to the north end of the vault extending the full 40-foot width of the vault and from the concrete floor to above the projected level of the 100-year storm. The curtain wall is designed for removal and replacement of the fabric without removing the backer screen. In addition, the screen is removable for inspection and access of the expansive 48-inch infiltration pipes beyond.

Structural framing and steel backer screen construction for curtain wall pre-treatment system. When complete, a sacrificial filter fabric will be mounted against the backer screen to filter fine particles from entering the three 48-inchopenings to the infiltration system. A large vault opening indicated in upper right (background) of photo allows maintenance access for periodic removal and replacement of fabric.

Runoff from streets, walks, and vegetated areas is pretreated by large oil-grit swirl chambers prior to being discharged into the Mill Street filtration basin and East Block underbuilding pond. Similar to other manholes on the project, swirl chambers rest on pile caps of driven steel piling. The cost to extend and support large storm by-pass lines and appurtenant manholes around the chambers is equivalent to upsizing the chambers. Therefore, the chambers were upsized to allow large storms to pass through them, thereby, greatly improving their treatment performance and keeping even more sediment in the chambers where maintenance is relatively easy, versus the larger less accessible filtration basin and pond.

Large oil-grit swirl chambers over-pretreat boulevard runoff before discharging into the Mill Street filtration basin.

Taming the Storms – Slippery Pipes

The soils of the site are anticipated to settle up to several feet over many years thereby risking significant damage to the storm sewer. Conversely, possible upward pushing perched water conditions (buoyant forces) could also compromise storm sewer integrity. This quandry represented another "sea squall" for the project.

To solve the problem, designers intermittently anchored pipe to overlying post tension street slabs with hangers and put lightweight insulation board "backfill" above the pipes with poly sheeting and pea rock on the sides and bottom. Virtually no weight bears down on pipes and settling soils slip past.

To address buoyant uplift forces and facilitate constructability, hangers are rigid round reinforced concrete matching the pipe diameter and poured monolithically with the post tension slab over the top of the pipe.

Unconventional storm pipe installation at The Promenade of Wayzata.

Trench drain risers and hanger connectors for storm sewer at The Promenade of Wayzata.

Hanger connector for storm sewer at The Promenade of Wayzata.

Storm sewer extending from Mill Street filtration basin. Lightweight insulation "backfilled" over pipes with poly sheeting "slip sheets" on sidewalls. Sonotubes centered over hanger connectors to be filled with reinforced concrete during subsequent post-tension slab pour at The Promenade of Wayzata.

Storm sewer at The Promenade of Wayzata uses lightweight insulation "backfilled over pipes with poly sheeting "slip sheets" on sidewalls. Sonotubes centered over hanger connectors to be filled with reinforced concrete during subsequent post-tension slab pour.

Taming the Storms – Hydronic Snowmelt Systems

Only 2.5 percent of all of earth's water is freshwater[2]. Of this, less than 1 percent is available to us [2]. Our cold region lakes are becoming more saline due to salt use for winter maintenance which eventually causes chemical stratification and loss of lake turn over [2]. A Minnesota Pollution Control Agency (MPCA) study of 74 metro-area lakes in its third year found that 28 of the lakes have excessive levels of chloride, most of it from road salt [3]. Lake Minnetonka discharges to the Minnehaha Creek which is listed on the proposed 2014 Impaired Waters List for chloride [4].

Average salt use for winter pavement maintenance in the Twin Cities Metropolitan area is 350,000 tons per year [3]. In Minnesota, the average chloride concentration in surface waters is rapidly increasing from about 32 mg/L in 1960 to about 85 mg/L in 2005, closely correlating to an increase in rock salt usage from about 85,000 tons to 850,000 tons over the same period [2]. The only process that removes salt is reverse osmosis which is typically prohibitively expensive [2]. Therefore, source reduction is the only effective management tool for chloride at this time [5].

The old Wayzata Bay Shopping Center had about 8 acres of pedestrian and vehicular pavements when fully developed in about 1975. Based on 10 events requiring salt application, the old site applied about 32 tons of rock salt each winter season. Since 1975, this equates to roughly 1216 tons of salt discharged from the site to Lake Minnetonka and potentially to Minnehaha Creek.

When fully developed, The Promenade of Wayzata will have upwards of 80 miles of hydronic snowmelt tubing in all of the roughly 5 acres of streets and walks, thereby, equating to virtually no rock salt or similar use each winter season.

Hydronic snow-melt tubing placed in street during Phase 1 of the project.

Concrete pour over hydronic snow-melt tubing around stormwater inlet grate at street intersection of The Promenade of Wayzata.

Photos courtesy of Adolfson & Peterson Construction.

Hydronic snow-melt piping in walk by loading dock exit along Superior Boulevard at The Promenade of Wayzata.

Most developed sites in cold weather regions do not have continuous snow-melt systems, therefore, other contaminants inherent with streets and walks accumulate in snow piles and ice packs in and adjacent to these pavements all winter. Thus, during typical spring thaws, highly concentrated contaminants from these source areas are transported to stormwater systems at relatively high flow rates, especially during concurrent rain. These large spikes in contaminant transfer result in poor stormwater treatment system performance since typical systems aren't designed for such spikes.

The reverse is true at The Promenade of Wayzata where virtually all walks and streets have snowmelt systems. Contaminants are essentially only those which drop off tires from off-site vehicles coming onto The Promenade of Wayzata. Snowmelt systems deliver such contaminants at very slow low flows to underground stormwater systems since they melt snow and ice continually all winter. This results in much higher stormwater system efficiencies than the already high warm-weather efficiencies for which they are designed. This results in better fine and soluble contaminant removals and eliminates overflow to high flow by-passes, thereby, discharging extremely clean runoff to Lake Minnetonka from winter precipitation.

The hydronic snowmelt systems of the project are a significant environmental benefit to Lake Minnetonka and Minnehaha Creek in perpetuity.

Sailing Beyond Stormwater Regulations

Relatively speaking, most developers operate in "duck ponds," meeting bare bones regulatory stormwater requirements. To be fair, typical regulations require aggressive controls and go a long way in helping protect our precious natural water bodies. Consequently, costs to address typical regulations, especially in urban areas, can be substantial. While the extra capital for some building project components can have a return on investment (e.g., solar panels, wind turbines, energy efficient windows, etc…), stormwater systems typically have none. On the Promenade of Wayzata, conditions do not remotely lend themselves to conventional methods to implement stormwater systems, thereby raising the costs much higher.

Keeping these facts in mind, it is remarkable that the project sailed beyond the minimum requirements into "the deep," resulting in extraordinarily beneficial discharge to Lake Minnetonka and the Minnehaha Creek by mimicking historic predevelopment stormwater conditions when the site was a wetland, thereby, far exceeding regulations which required matching existing conditions. Consider the following:

- The regulations required that existing flow rates for the 1, 10, and 100 year storm events not be exceeded. The project decreased them by 60%, 40%, and 31%, respectively.

- The regulations had no volume reduction requirements for the 1, 10, and 100 year storm events. The project reduced the volumes discharging from the site by 32%, 20%, and 15%, respectively.

- The regulations had no infiltration requirements. The project infiltrated nearly 99% of all runoff for about 5 acres of the site. That's essentially all of the 30 inches of annual rain for any typical year, or nearly 4 million gallons annually.

- The regulations required that there be no net increase in total suspended solids (TSS) or total phosphorus (TP) discharged from the site and that new systems be 85% and 60% efficient, respectively. The project reduced these contaminants by 5500 pounds and 19 pounds annually and new systems are 89% and 72% efficient, respectively.

- The regulations required matching hydraulic conditions to existing wetlands. In addition to meeting this requirement, the project mimicked the native quality of water discharging to them and in turn to Lake Minnetonka by exchanging parking lot runoff from the existing condition, with conventional and green roof runoff in the proposed condition.

- The regulations had no salt (chlorides) reduction requirements. The project virtually eliminated chlorides by providing hydronic snow-melt systems in virtually all streets and walks.

Though the project suffered a delay during the economic downturn which started in 2008, PHS continued to direct the design team to stay on course to meet the stormwater goal of mimicking native wetland conditions. Now, in the second phase, this goal remains steady despite a torrent of stormy seas.

Looking out over a serene Lake Minnetonka on a beautiful day from atop a tower crane at The Promenade of Wayzata. Photo courtesy of Adolfson & Peterson Construction.

About the author

James W. Tiggelaar, PE, CCS, LEED AP is a professional engineer at LHB, Inc. with 23 years' experience in land development, especially focused on building and campus projects. He has a Bachelor of Science in Engineering from Calvin College in Grand Rapids, Michigan and lives just outside the Minneapolis metropolitan area. He is husband to a delightful woman and father to two vivacious girls. He enjoys working "outside the box" in close collaboration with owners, regulators, architects, other designers, and contractors to help ensure successful project outcomes. James has written numerous land development articles and spoken at a variety of land development forums.

Sources:

1 – Wayzata Historical Society website; http://www.wayzatahistoricalsociety.org/AboutWayzata.htm .
2 – Winter Parking Lot and Sidewalk Maintenance Manual, Minnesota Pollution Control Agency (MPCA) et al, 2008.
3 – "A Call for Less Salt in Our Roadways' Diet," Star Tribune, February 7, 2013.
4 – MPCA, 2014 Proposed Impaired Waters List.
5 – Minnesota Stormwater Manual, MPCA et al, "road salt" section.

MINUTES OF THE REGULAR MEETING OF
THE MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

April 12, 2012

CALL TO ORDER

The regular meeting of the Minnehaha Creek Watershed District Board of Managers was called to order by Manager Richard Miller at 6:45 p.m. at the District offices, 18202 Minnetonka Boulevard, Deephaven, Minnesota.

MANAGERS PRESENT

James Calkins, Brian Shekleton, Richard Miller, Pamela Blixt, Jeffrey Casale, William Olson and Sherry Davis White.

MANAGER ABSENT

None.

OTHERS PRESENT

David Mandt, District Operations Manager; Eric Evenson, District Administrator; Craig Dawson, Aquatic Invasive Species Program Director; Erik Cedarleaf Dahl, Planning Assistant / GIS Specialist; James Wisker Director of Planning; Trevor Born, Communications Assistant; Michael Panzer, District Consulting Engineer; Mike Welch, Assistant District Counsel.

MATTERS FROM THE FLOOR

None.

INTRODUCTION OF STAFF

Mr. Dawson introduced Zach Granata, an intern in the District's Aquatic Invasive Species (AIS) program and Eric Fieldseth, the AIS specialist. The managers welcomed both men.

APPROVAL OF AGENDA

Mr. Mandt said that the agenda includes the public hearing on the District's National Pollutant Discharge Elimination System (NPDES) permit and report to the state Board of Water and Soil Resources (BWSR). He asked the managers to continue the hearing from tonight's meeting to allow for proper posting of the draft report on the District's website. ***Manager Shekleton moved, seconded by Manager Olson, to approve the agenda as amended. Upon vote, the motion carried.***

Approval of Minutes

Manager Casale noted that he distributed proposed amendments to the April 5, 2012, meeting minutes. ***Manager Casale moved, seconded by Manager Calkins, to approve the April 5, 2012 minutes as amended. Upon vote, the motion carried.***

BOARD, COMMITTEE AND TASK FORCE REPORTS

Mr. Evenson reported on the most recent meeting of the Joint Facility Task Force. Mr. Evenson said the task force reviewed site plan options and picked a favored option. The task force will meet again soon to finalize a recommendation to the Minnetonka City Council and the Board of Managers. He said the proposal will include analysis of both costs and allocation of space in the new building, as well as programming and design plans. In response to a question from Manager Miller, Mr. Evenson confirmed that costs for the project will be included in the District's 2013 budget.

Manager Calkins said the Hydrodata Committee reviewed the gap analysis that is included in the packet for the meeting. He encouraged the managers to review the analysis, which underpins the 2013 budget proposal for the program. Manager Calkins also stated that the Hydrodata Committee wishes to keep former manager Lee Keeley engaged in the committee to benefit from her expertise on AIS. The managers directed counsel to prepare a resolution naming Ms. Keeley as a non-voting, citizen liaison to the Hydrodata Committee and ensuring that she receives information on and background for upcoming meetings of the committee.

Manager Shekleton stated that the Legislative Committee reviewed the watershed-related bills in the legislature this session and has no recommendations for the Board of Managers. In response to a question from Manager Miller, Manager Calkins stated that a letter correcting the record from a presentation that was given to a legislative committee several weeks ago has been sent to the mayor of Plymouth.

Manager Calkins also stated that he, Mr. Evenson and Renae Clark from the District staff met with Larry Blackstad, the administrator of the Three Rivers Park District, to discuss better cooperation between the two entities. Mr. Evenson is organizing a joint boat tour for the two organizations' boards, which will be followed by discussions of opportunities for collaboration. Mr. Evenson added that the tour is presently contemplated for the third Thursday in July.

Manager Shekleton noted that the Minneapolis Parks and Recreation Board requested the District's help with developing an inspection protocol for boats.

Manager Olson stated that he will be the liaison for the Citizens Advisory Committee meeting on April 19.

Mr. Evenson stated that the May 12 tour agenda has not yet been set. He suggested that the Six Mile Creek area and Halverson property could be included.

Manager Casale noted that the managers are planning a tour of the National Park Service's Coldwater property and that a response from managers as to their availability for the event is requested by Monday.

Manager Casale said the standing meeting of the Information Technical Committee is April 24. Manager Calkins said the Hydrodata Committee will have a special meeting April 30 at 3 p.m.

Mr. Welch said negotiations of an AIS inspections agreement with the Department of Natural Resources have been successfully completed.

Manager Miller directed staff to schedule a detailed presentation on the District's subwatershed education program at a future meeting.

Public Hearing – NPDES permit and BWSR Report

Manager Miller opened the public hearing on the District's NPDES and BWSR annual report. Mr. Evenson explained that the District is required to file an annual report for its NPDES permit and to comply with state watershed law. He said that the Minnesota Pollution Control Agency and BWSR have agreed to allow the District to file a single report that meets both requirements. Mr. Evenson said the District's consultant is still pulling the report together and that it will be posted on the District's website as soon as possible, with notice provided to watershed communities. There were no members of the public present who wished to comment on the report. Manager Miller adjourned the public hearing and continued it to the meeting of April 26, 2012.

Resolution 12-032 Partial Waiver of Liability Limits

Mr. Evenson presented the matter, stating that the board has traditionally waived liability limits in recognition of its desire to allow individuals who are injured to recover to the full statutory and insurance policy limit of $1.5 million. He said that the additional coverage required costs the District roughly $350 a year. ***Manager Shekleton moved, seconded by Manager Blixt, to advance resolution 12-032 to the April 12, 2012, consent agenda. Upon vote, the motion carried.***

Resolution 12-033 Electronic Delivery of Agenda Packets and iPad Purchase

Mr. Mandt appeared before the board along with Trevor Born and Erik Dahl of the District staff. Mr. Mandt explained that staff is recommending that the board take action on this matter this evening. Mr. Mandt explained that the Information Technology Committee has analyzed the cost of preparation and distribution of packets for District meetings and determined that purchase of iPads for the managers and electronic distribution of the packets will provide the District with short- and long-term cost savings. Mr. Mandt stated that electronic delivery of the packets is proposed to begin in May and that training of the managers to use the iPads on a one-on-one

basis will need to precede the change. In response to a question from Manager Olson, Mr. Mandt explained that the three iPads the District bought to test the delivery system will be given to staff and the new iPads, which are the updated iPad 3 model, will be purchased for the managers.

Mr. Born and Mr. Dahl demonstrated the use of the iPads and explained the various applications managers will use to conduct District business. Manager Miller noted that the electronic distribution and use of electronic systems by the managers will raise new and different issues with regard to the Data Practices Act and the Open Meeting Law. Mr. Welch confirmed Manager Miller's observation. Manager Miller stated that the managers will need instruction on how to appropriately manage data on the iPads. The managers discussed the need to ensure that the electronic delivery capacity does not mean managers are inundated with new information at the last minute before meetings. Manager Calkins stated that managers need information for meetings at least a day ahead of time. The managers also discussed the capacity of the iPads to store agenda information, with Mr. Mandt stating that the iPads can retain three months' worth of packets. ***Manager Calkins moved, seconded by Manager Shekleton, to adopt resolution 12-033.***

In response to a question from Manager Olson, Mr. Mandt stated that the packets and agendas will still be available at the District meetings in paper form, and will be available electronically on the District website. Manager Casale stated that the packets will be provided in electronic form to the District's vendors as well. Mr. Mandt pointed out that the cost analysis in the resolution before the managers does not account for the warranty that the District will purchase on the iPads to provide replacement in the event of damage. He said the warranty will add to the cost but not substantially. In response to a question from Manager Calkins, Mr. Mandt confirmed that when the managers respond to an email that is forwarded to their personal email account the response will come from the manager's watershed email. ***Upon vote, the motion carried.***

<u>Resolutions 12-034 and 12-035 for Purchase of 1312 Lake Street, Hopkins</u>

Mr. Wisker appeared before the managers and presented the two resolutions. Mr. Wisker explained that the first resolution authorizes execution by the administrator of a purchase agreement for the property at 1312 Lake Street in Hopkins at a cost of $179,900. The second resolution provides for financing for the purchase through Hennepin County's bonding authority and includes transaction and demolition costs of $38,000 beyond the purchase price. ***Manager Casale moved, seconded by Manager Shekleton, to adopt resolutions 12-034 and 12-035.*** In response to a question from Manager Calkins, Mr. Wisker stated that District staff confirmed with Hennepin County staff that inclusion of the additional transaction and demolition costs is authorized under the agreement the District has with the county for financing. The managers discussed the need to develop a policy regarding the extent to which the District will finance additional costs under the its lone agreement with the county. ***Upon vote, the motion carried.***

Permit 12-050-Hennepin County CSAH 19 Bridge Reconstruction

Mr. Christopher appeared before the board and explained that the replacement of the bridge over the channel connecting the West Arm of Lake Minnetonka and Forest Lake proposed by Hennepin County meets all applicable District regulatory requirements. ***Manager White moved, seconded by Manager Calkins, to advance approval of permit 12-050 to the April 26, 2012, consent agenda. Upon vote, the motion carried.***

Low Impact Development Cost-Share Project: Wayzata Bay Center

Mr. Christopher presented the proposed cost share with the developer of the Wayzata Bay Center in Wayzata. He said the redevelopment is being led by Presbyterian Homes and Services, which has been working with District staff for five years to develop the stormwater management approach for the project. Mr. Christopher explained that the proposal is for a mixed-use redevelopment that exceeds applicable stormwater requirements. Mr. Christopher explained that the historic wetland in the area has been dramatically altered over the years but the proposal would restore the function of the wetland to clean stormwater runoff from the property. Mr. Christopher explained further that the City of Wayzata exercises sole permitting authority in this area and is also the local government unit administering the Wetland Conservation Act. Mr. Christopher explained that the project reduces phosphorus in runoff by 75 percent from existing conditions. He reviewed a stormwater-routing map and explained the function of the various stormwater facilities to be provided in the redevelopment, adding that one of the proposed buildings will be cantilevered over a stormwater treatment pond. He explained that the project is divided into two phases for purposes of the board review and consideration of the cost-share proposal, and that staff is recommending that the District provide $585,490.50 in cost-share funding for the first phase.

Mr. Wisker introduced Michael Schroeder from LHB Architects and Pam Belz from Presbyterian Homes and Services to help answer questions on the redevelopment project. In response to a question from Manager Casale, Mr. Christopher explained that stormwater-management capacity will be added over time as the property is redeveloped, and the project is completed. Mr. Schroeder stated that the first phase of construction will include the buildings on the North and Superior blocks of the redevelopment area and will include senior housing and a number of other redevelopment components including recreational facilities and other amenities. He provided details on the development. In response to a further question from Manager Casale, Mr. Christopher added that functionality for stormwater management will be added as the project is completed. Mr. Schroeder stated that the first phase will include construction of the North and Superior blocks and provided detail on the nature of the facilities and amenities to be provided in the initial redevelopment. Ms. Belz added that her organization presently owns the entire project but is looking to sell some portions of the project to other developers with specific expertise or entering partnerships. She said demolition on the property will begin Monday and added, in response to a question from Manager Casale, that all impervious surfaces on the property will be removed during phase one of construction. In response to a question from Manager Olson, Ms. Belz stated that the underground garages are in fact slightly elevated from street level. Mr.

Evenson said Mike Kelly from the City of Wayzata has indicated that all city approvals have been obtained.

In response to a question from Manager Blixt, Mr. Christopher clarified that the city regulations require removal of 85 percent of total suspended solids (TSS) and 65 percent phosphorus from stormwater. He said that the cost-share proposed is for stormwater management that will reduce TSS and phosphorus loading beyond those requirements. He said the project also provides a unique demonstration opportunity. Manager Blixt confirmed with Mr. Christopher that the 8.11 pounds of phosphorus that will be reduced from runoff from the property is in excess of the amount that will be reduced through application of the city ordinances. Mr. Christopher said the stormwater design provides an additional 10 percent phosphorus removal and 2 percent TSS removal. Manager Miller stated that he has an adequate understanding of the cost and benefits of the project and will be voting in favor of the cost share based on its uniqueness and its capacity to serve as a model and set a high standard for redevelopment around Lake Minnetonka. ***Manager Casale moved, seconded by Manager Shekleton, to advance the staff recommendation to approve a cost share of $585,490.50 to the April 26, 2012, consent agenda.***

Responding to questions from the managers, Mr. Panzer stated that his recollection is that the redevelopment the District supported in downtown Mound removed roughly 17 pounds of phosphorus per year for a contribution of roughly $1 million from the District. In response to a question from Manager Shekleton, Mr. Schroeder stated that the project does not propose any particularly innovative stormwater management methods but rather layers these methods together to aggregate results. In response to a question from Manager White, Ms. Belz confirmed that education will be part of the redevelopment with signage and other information about the stormwater benefits achieved. Mr. Schroeder confirmed that tours will be provided, however he added that after construction the benefits will be difficult to display or view as they will be under the floor and the structure is built over and around them.

In response to a question from Manager Blixt with regard to the amount of funding left in the District's low-impact development (LID) cost-share budget for the year, Mr. Christopher stated that the annual budget is somewhat flexible and that if there is an exceedance in a particular year the District will levy for additional funds to cover that amount in a future year. Manager Blixt stated that if the District provides funding for phase one there will be an expectation that the District will provide cost share for the second phase as well. She asked whether the two phases are essentially integrated and that the design requires both parts to work together. Manager Miller stated that the District made a commitment some time ago to work with the developer and now needs to live up to that commitment. Mr. Christopher explained that the staff divided request for cost share funding into two phases in part to help the District stay close to its annual budget for the cost-share program and not add to the levy. In response to a question from Manager Calkins, Mr. Christopher said that staff is recommending that the full amount of cost share funding be provided over the two phases of the redevelopment. Mr. Evenson pointed out that the action before the District tonight is not to approve the cost share but rather to send it for review and comment by the Citizens Advisory Committee, then board action April 26.

In response to a question from Manager Olson, Mr. Christopher explained that the shoreline and residential stormwater best-management practice cost-share program is funded separately from the LID program. Manager Calkins said that if the District votes to provide the request cost-share funds for this project, it will tie the managers' hands somewhat when considering future expenditures. In response to a question from Manager Calkins about the 4 million gallons of runoff expected to be infiltrated through the facilities provided in the redevelopment, Mr. Schroeder stated that pretreatment will be provided to protect the infiltration base in the form of a separator and sand filter through which runoff will be routed. He added that maintenance will be achieved through accessing the filter through hatches in the streets. He said that the redevelopment also will include heated streets and sidewalks so that no sand or salt will be needed, thereby preserving the functionality of the sand filter. In response to questions from Manager Casale, Mr. Schroeder explained the realignment of streets in the area. In response to a question from Manager Calkins, Mr. Schroeder explained that there is an elongated wetland along the east edge of the property and that the project would result in cleaner water entering the wetland than what is contributed now. In response to a question from Manager Casale, Ms. Belz explained that at the completion of the first phase, the remaining area of the project will be left in a pervious state with vegetation and sod per city requirements. In response to a further question from Manager Casale, Ms. Belz explained that the redevelopment plan includes an association that will enter into an agreement with the city for maintenance of the stormwater facilities. In the event that the association dissolves, the city will step in and complete the maintenance and assess the property for the cost. Mr. Welch added that a maintenance obligation is also built into the District's cost-share funding agreement template.

Manager Casale stated he believes that the commitment the District is making tonight is for the full $1 million that would be required to cost share on all of the stormwater facilities proposed for the property. ***Manager Casale moved to amend the motion to commit to cost share funding for 50 percent of the cost of stormwater management for the two phases over two years.*** In response to a question from Manager Miller, Mr. Evenson reported that there is a $307,000 carryover from last year's LID cost-share budget. Mr. Evenson added that the costs incurred by the LID program could be covered through inter-fund loans. Manager Calkins said such a restructuring of the District's budget should not be made in a quick decision, but rather requires additional study. Manager Blixt asked staff to return to the Board meeting on April 26 with a review of other cost share opportunities on the horizon. Mr. Christopher stated that the only project he can think of at this time is Hennepin County reconstruction of Bushaway Road. Mr. Evenson said he will bring several options for funding the project and the LID program to the meeting of April 26. The managers discussed the current development trends and the likelihood that additional new opportunities of this magnitude will come along in the near future. Mr. Evenson said that he has had inquires about conceptual redevelopment ideas from various cities in the District, indicating that opportunities will be rare but will come along. Manager Olson said that the present proposal is a significant project in the heart of the District's interest area and has a substantial capacity to showcase stormwater management excellence and contribute to improvement of the most important water resource in the watershed, Lake Minnetonka. ***Manager Shekleton seconded Manager Casale's motion amending the recommendation from staff.***

In response to a question from Manager Calkins, Mr. Christopher stated that reimbursement of stormwater management costs will be contingent on completion of the facilities providing the benefits. In response to a question from Manager Casale, Mr. Christopher stated that the agreement with the developer will include a site plan and a significant change to that agreement would need to come back to the board for review and approval.

Manager Calkins said he thinks that the location of this project is not ideal if the goal is to improve Lake Minnetonka. He also notes that the District need not necessarily put in 50 percent of the cost of stormwater facilities but rather should weigh its contribution per the benefit that is achieved. He said it is important that the board have that discussion with regard to the future operation of the LID program. ***Upon vote, the motion to amend staff's recommendation to provide funding for the full project carried. Upon vote, the managers directed that staff submit the proposal to the CAC for review and comment, then bring a resolution approving funding for the Wayzata Bay Center cost-share proposal to the Board of Managers at the April 26 meeting. Upon vote, the motion carried.***

Spring Park/Three Rivers Park District LID Cost-Share Proposal

Mr. Christopher presented the proposed LID cost-share project, noting that the Three Rivers Park District redevelopment of the Dakota Rail Trail in Spring Park will provide a reduction of 440 pounds per year of TSS and one pound per year of phosphorus. He stated that the project is not subject to the District rules. He said that the trail here is very heavily used and the project will have very good visibility. Mr. Christopher added that to date the District has approved $109,000 this year for three cost share projects.

In response to a question from Manager Casale, Mr. Christopher confirmed that the pervious bituminous proposed for this project has been used elsewhere in the metro area but not in the District. Manager Blixt confirmed that signage will be provided at the trail site to ensure that the education opportunity is realized. The managers discussed further education opportunities and means of delivering educational information about innovative stormwater projects supported by the District. ***Manager Calkins moved, seconded by Manager Casale, to approve sending the proposed cost share not-to-exceed $24,223.75 for the Dakota Rail Trail project to the CAC and the April 26, 2012, consent agenda. Upon vote, the motion carried.***

Rules Revisions

Mr. Christopher explained that staff has continued to work on revision of the District rules to integrate some housekeeping updates. At the same time the District has prepared a draft appropriations rule, as required by state law, and an illicit discharge and detection rule to comply with the District's municipal separate storm sewer system permit. In reviewing these rules, he reported, the Rules Committee discussed the need to add the concept of non-degradation to the operation of the stormwater rule, rather than just the policy, and to review how the rule deals with abstraction capacity that is lost when trees are removed from a property. Mr. Christopher

stated that the item before the board is a proposal to commence the 45-day rulemaking process on April 26 after inclusion of language into the stormwater rule to address the issues described. ***Manager Blixt moved, seconded by Manager Calkins, to advance the issuance of the housekeeping updates and illicit discharge and appropriations rules for public comment to the April 26, 2012, consent agenda with the appropriate additions of language to the stormwater rule. Upon vote, the motion carried.*** Mr. Christopher reported that staff will work to add language for non-degradation to the stormwater rule and work with the Rules Committee to further clarify the benefit of keeping trees on site before bringing the rules back to the Board to authorize commencement of the 45-day rulemaking process. He noted that it may take longer than the two weeks prior to the April 26 meeting to complete this process.

ADJOURNMENT

There being no further business, the regular meeting of the Minnehaha Creek Watershed District Board of Managers was adjourned at 10:01 p.m.

Respectfully submitted,

Sherry Davis White, Secretary

MINUTES OF THE REGULAR MEETING OF
THE MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

November 20, 2014

CALL TO ORDER

The regular meeting of the Minnehaha Creek Watershed District Board of Managers was called to order by President Sherry White at 6:45 p.m. in the District offices, 15320 Minnetonka Boulevard, Minnetonka, Minnesota 55345.

MANAGERS PRESENT

Sherry White, Brian Shekleton, Richard Miller, Jeffrey Casale, Pam Blixt, James Calkins.

MANAGER ABSENT

William Olson.

OTHERS PRESENT

Jeff Spartz, Interim District Administrator; Becky Christopher, District Lead Planner – Project Manager; Brett Eidem, District Cost Share Grant Administrator; Laura Domyancich, District Project and Land Technician; James Wisker, District Planning and Projects Director; Chris Meehan, District Consulting Engineer; Michael Welch, Assistant District Counsel.

MATTERS FROM THE FLOOR

None.

APPROVAL OF THE AGENDA

Manager White noted that item 11.1 – Arden Park Neighborhood Partnership Proposal is not an action item and should be moved to the discussion agenda. ***Manager Miller moved, seconded by Manager Shekleton, to approve the agenda as amended. Upon vote, the motion carried 6-0.***

INFORMATION ITEMS AND CORRESPONDENCE

Manager White noted the receipt by the District of a letter from the City of Edina on its development of a programmatic maintenance agreement with the District, and a resolution from the Citizens Advisory Committee proposing mediation to improve the relationship between the board and the CAC.

CONSENT AGENDA

Manager White listed the items on the consent agenda. Michael Welch stated that the District Governance Manual is on the consent agenda for approval shows changes made pursuant to board direction. The policies also include changes that respond specifically to new legislation or other updated information. He said the resolution rescinds any policies not included in the manual, including the Communications Policy, the principal components of which have been integrated into the Governance Policies. ***Manager Miller moved, seconded by Manager Calkins, to approve the consent agenda, consisting of approval of the November 13, 2014, minutes of the meeting of the Board of Managers; approval of the check register for the surety account and the general checking account, the latter including checks 35041 through 35134 for a total of $548,203.63, payroll direct deposits totaling $211,349.89 and electronic fund withdrawals totaling $842,830.02 for a total expense amount for the period October 24 through November 2, 2014 of $1,602,383.54; acceptance of the 325 Blake Road checking account report; and adoption of the following:***

Resolution 14-094, Authorization to Demolish Identified Structures at 8251 State Highway No. 7, Minnetrista

> ***NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers hereby awards the demolition contract to Dale's Contracting in the amount of $12,500 and authorizes the Interim Administrator to execute a construction contract for the demolition and site restoration; and***
>
> ***BE IT FUTHER RESOLVED, that the Minnehaha Creek Watershed District Board of Managers authorize the Interim Administrator, on advice from District Counsel to take all actions required to accomplish demolition and removal of identified structures at 8251 State Hwy No. 7, Minnetrista, including, but not limited to, entering into agreement(s) and expenditure of funds with a total not-to-exceed amount of $13,750.***

Resolution 14-096, Authorization to contract with Wenck Associates, Inc. for Consulting Services for the Ecosystem Evaluation Program for January 1, 2015 – June 30, 2016

> ***NOW, THEREFORE, BE IT RESOLVED, that the MCWD Board of Managers authorize the District Administrator to execute a contract with Wenck Associates, Inc. for the development of the Ecosystem Evaluation Program for January 1, 2015-June 30, 2016 not to exceed $230,000.***

Resolution 14-090, Authorization to Renew the Contract with Freshwater Society for the Watershed Association Initiative

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator to enter into a contract not to exceed $31,500 with Freshwater Society to continue the Watershed Association Initiative;

BE IT FURTHER RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator to reimburse funds, not to exceed a total of $5,000 to citizen groups according to the parameters set in the Watershed Association Initiative Mini Grant Program;

BE IT FINALLY RESOLVED that the District Administrator is authorized to sign necessary documents to carry out the Watershed Association Initiative, pending approval of form and execution by the District counsel.

Resolution 14-097, Board of Managers Action on Video Taping of Board Meetings

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers approve the recommendation to begin videotaping Board Meetings in December of 2014 by using the You Tube option for a cost not to exceed $5,500 and then evaluate the process as part of the 2015 workplan and budget process.

Resolution 14-098, Building Project Close out and Remaining Issue Delegation

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers approve the closeout of the Building Project and that the remaining work to be delegated to the Acting District Administrator, upon recommendation from the Owners Representative, to complete the remaining building issues including the authorization of the expenditures from the contingency fund.

Resolution 14-099, Adoption of Update Amendments to District Governance Policies and Comprehensive Governance Manual

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers adopts the attached policies, as amended, and Governance Manual, and consolidates any and all District governance materials therein and rescinds adoption of any board governance documents not included therein; directs the District administrator to ensure the manual is maintained, updated in accordance with its terms and applicable state law and readily available to District managers, staff and consultants;

THEREFORE BE IT FURTHER RESOLVED that the Board of Managers directs the administrator, on advice of counsel, to make such administrative changes as necessary to finalize the manual and to take such further steps necessary and required to comply with state law governing the filing, review and approval of District governance documents and schedules.

Resolution 14-091, Authorization to Terminate Contract with Barr Engineering for Professional Services to Develop Interpretive Signage for the Reach 20 Education Area

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator to terminate a contract with Barr Engineering for professional services to develop interpretive signage for the Reach 20 education area.

Resolution 14-092, Authorization to Execute Contract with DogTooth Design for Professional Services to Develop Interpretive Signage for the Reach 20 Education Area

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator to execute a contract for professional design services with DogTooth Design for an amount not-to-exceed $12,400 to develop interpretive signage for the Reach 20 education area.

Upon vote, the motion carried 6-0.

REGULAR AGENDA

Board, Committee and Task Force Reports

Manager White reported that the 2015 meeting schedule included in the packet is for the managers' review and consideration; the schedule will be finalized and approved in December. Manager White noted that there are three months in which there is a fifth Thursday in 2015 and these could be used for board retreats. Manager Blixt stated that it is important to have the Legislative Committee meet in time for the Minnesota Association of Watershed Districts' legislative meeting in the early spring.

Manager White reviewed the upcoming meeting and event schedule, noting no changes to the schedule included in the agenda.

Public Hearings and Presentations

Public Comment Period on Purpose Budget and Levy

Jeff Spartz stated that the managers have a couple of options with regard to the budget and levy. If there are no comments this evening from the public, the managers could go ahead with the budget and levy as finalized in September. If there are comments, the managers could adopt a revised resolution lowering the levy at a meeting in December. In response to questions from the managers, Mr. Spartz noted that the public comment opportunity has been on the District agenda since early November. In response to a question from Manager Blixt, Mr. Welch explained that the public comment period has been added to the District's annual schedule to respond to a change to the Truth in Taxation Law. The District finalized its budget and levy in September in accordance with watershed law, and if no further action is taken to lower the levy, that is the levy that will be implemented by the counties. Manager Blixt wondered whether the public has an expectation of an opportunity to comment on the budget and levy. Mr. Welch stated that since this is a new requirement and a new aspect of state law, it may be that the public has not yet developed an expectation that it would apply to watershed districts.

There were no public comments on the District's budget and levy.

Action Items

Reach 14 Construction Contract

Laura Domyancich explained to the Board of Managers that because of the very high water along the creek in the summer of 2014, many of the plants the District planted as part of the Reach 14 stabilization project did not survive. She stated that the project contingency budget was sufficient to provide for emergency reseeding in October, but additional funds are needed to grow replacement plants over the winter for planting in the spring. She said there also will be additional mobilization costs because Minnesota Native Landscapes, which is under contract to the District for the work on Reach 14, will need to get back out to the site in the spring. She said the item is on for action tonight because Minnesota Native Landscapes would like to start growing plants to maturity for better survival rates in the spring. ***Manager Shekleton moved, seconded by Manager Miller, to adopt Resolution 14-093, authorizing the administration to execute an amendment to the construction contract with Minnesota Native Landscapes for the Reach 14 Streambank Stabilization project for a total not to exceed $58,576, and to establish an additional construction budget in the amount of $64,434. Upon vote, the motion carried, 6-0.***

DISCUSSION ITEMS

Arden Park Neighborhood Partnership Proposal

Becky Christopher presented a discussion of a funding opportunity in the Arden Park neighborhood in Edina. Ms. Christopher explained that the city adopted a policy in 2013 of balancing the needs of motorists, bicyclists, pedestrians and transit riders to provide general improvements to safety and community. She stated that as part of the reconstruction of the streets in the area, the city has an opportunity to install some significant stormwater management features. The work could result in a total of 14 acre feet of retained stormwater, reduction of 11.6 pounds of phosphorous in runoff and reduction of 6,538 pounds of total suspended solids. She stated that the project, because it reduces street widths throughout the area, is not subject to the District's stormwater rule. She explained the three elements of the project: a subsurface infiltration trench under Halifax Avenue, a new and innovative pervious payer system in Jay Place, and the placement of sump manholes at three different locations within the neighborhood. She said this would all be in addition to the improved stormwater management resulting from the city's reduction of the road widths.

Ms. Christopher said that if the managers favor the concept, staff will return with further details, including a proposed not-to-exceed amount of cost-share funding. That amount, she said, would be reduced if the Clean Water Legacy grant funding that the city and District applied for comes through. She explained that the city will hold a hearing on the overall project prior to review by the District's Citizens Advisory Committee on December 10. She anticipated that the project could come back to the managers for a public hearing, consistent with District policy and state law and approval of funding in January. She added that the District will know whether or not state grant funding has been received at the end of January, and the work should be implemented in summer 2015.

Manager Miller stated that he is impressed with the way staff has been able to engage citizens in the project and notes that this area flows directly to the creek, therefore he supports the request. In response to a question from Manager Miller, Ms. Christopher stated that District staff is anticipating a request for funding of 50 percent of the project costs, roughly $88,000. If the Clean Water Legacy grant is received, that request would be diminished. In response to questions from Manager Blixt about long-term maintenance of the features, Ms. Christopher and Mr. Welch explained that with any agreement to provide cost-share funding, the District incorporates maintenance requirements in the funding agreement. In response to a question from Manager Calkins, Ms. Christopher stated that not all of the infrastructure in the area will need to be reconstructed, and she will have to follow up with city staff to determine exactly how much of the area will be included. In response to a further question from Manager Calkins, Ms. Christopher stated that the District and city looked at options for using public space adjacent to the creek for additional stormwater treatment, but high

groundwater in the area is a limiting factor. Manager Calkins stated that he believes the project presents an opportunity to maximize stormwater management in this area. ***Manager Miller moved, seconded by Manager Casale, to direct staff to prepare and present a request for funding for the Arden Park neighborhood project.*** In response to a question from Manager Blixt about sidewalks in the redevelopment, Mr. Welch noted that sidewalks bordered downgradient by pervious surfaces are exempt from the District's stormwater rule. ***Upon vote, the motion carried 6-0.***

Presbyterian Homes – Wayzata Bay Center

James Wisker and Chris Meehan appeared before the Board of Managers with John Mehrkens of Presbyterian Homes to review the history and present future plans for the redevelopment of the Wayzata Bay Center area for purposes of possible District cost-share funding. Mr. Wisker reviewed the history of the redevelopment plans and implementation of those plans at the property on Superior Boulevard in Wayzata. He stated that Gleason Creek, which runs through the area, has long been encased in an underground pipe. The Presbyterian Homes organization and its designer, LHB architects, approached the District in 2007 with a concept for managing the entirety of the 100-year storm event on site through implementation of variety of best management practices. The Wayzata City Council approved the plan implementing this concept under planned unit development approval at the time.

The site proved to be more challenging than anticipated, with subsidence issues, high groundwater and historic wetland deposits. Presbyterian Homes engaged a number of entities, including District staff, in a peer review of plans and all parties involved agreed that management of the 100-year storm was not feasible, and the one-year storm was probably more realistic. Three basins were proposed to handle the bulk of the stormwater management. As the project progress, the stormwater pond in the southeast corner of the area was reintegrated into the plans, consistent with city approval.

The District sent a letter to Presbyterian Homes and LHB indicating that the project was consistent with the District's low-impact development cost share-funding program in September 2011, and the board reviewed the project at a meeting in April 2012. The board directed that cost-share funding be allocated for the project, contingent on review by the Citizens Advisory Committee and finalization by the Board of Managers in light of that review. The project and funding proposal, however, have not come back to the board until tonight.

An agreement for funding was never entered and the developers went ahead with phases I and II of the redevelopment. Phase III, Mr. Wisker explained, has not yet commenced. He added that the portions of the redevelopment that have been completed to date include a number of practices consistent with the District's interest in innovative approaches to stormwater management, including the integration of a geothermal system for melting snow along with infiltration galleries and a pretreatment vault. Mr. Wisker showed

pictures of a number of the stormwater features on the property during construction. In response to questions from the managers, Mr. Wisker stated that the filtration system implemented along Mill Street in the redevelopment is approximately 40 by 200 feet and receives runoff from a 5-acre catchment. The facility is constructed over engineered fill. Mr. Wisker pointed out that the east block pond included in the project plans will be underground and will take 10 acres of stormwater runoff. The project also includes green roofs and the geothermal system for melting snow reduces contribution of chloride to Wayzata Bay and subsequently Minnehaha Creek. Mr. Wisker stated that the project exemplifies the District's holistic approach to water quality improvement.

Mr. Wisker stated that at the April 2012 meeting, the managers approved $585,000 in funding for phase I, then amended the motion to include funding up to $1 million over two years for the first two phases contingent on CAC review. The CAC raised questions with regard to the financing of the project. Mr. Wisker stated that for reasons that he is not entirely clear on, the project was never brought back to the board for review again after April 2012.

Mr. Mehrkens stated that he agreed with Mr. Wisker's description of the events. He stated that at the meeting in April 2012 pursuant to the board direction, the CAC was disappointed that the 100-year storm event would not be treated and expressed some lack of confidence that the second and third phases of the project would happen. Presbyterian Homes decided to go ahead with the first phase to show its dedication to the project.

In response to a question from Manager Miller, Mr. Wisker confirmed that the project has not been reviewed by the board since 2012 and that the applicant only raised the idea of funding again after it had started the second phase. At that time, Presbyterian Homes discussed options for funding with Steve Christopher and Eric Evenson-Marden, both of whom are no longer with the District. In response to the meeting with District staff, the Presbyterian Homes folks dedicated some space in the redevelopment project to education and demonstration of the stormwater facilities, and made space available for meetings and other educational forums about stormwater management. In September 2013, Mr. Mehrkens reported, he received a letter stating that the project was no longer eligible for funding from the District. After several months staff responded to inquires about why the project was not eligible for funding any more with an indication that staff was re-reviewing the project for possible funding. Mr. Mehrkens stated that Presbyterian Homes meanwhile went ahead and started the second phase of the project.

Mr. Wisker stated that when the matter was brought to him, he met with the District engineer, Chris Meehan, to analyze the performance of the stormwater-management system against requirements in the Stormwater Management Rule that the District updated in June 2011. Mr. Wisker said that the stormwater management performance was not a factor in the city's approval of the PUD for the redevelopment. He said that the city exercises sole regulatory authority for stormwater, but that under the city council's approval of the project, stormwater management specifics in keeping with city code were

left to staff. He said that the requirement was 60 to 65 percent phosphorus removal from all new hard cover. In other words, the city ordinances did not require anything beyond the District's rule.

Mr. Wisker stated that tonight staff would like direction from the managers on where to go with a proposal for District funding of the project. He said the District's low impact development program is structured to reimburse partners for prospective work once that work is completed. He said that the phase III work Presbyterian Homes is to undertake will provide 0.6 pounds of phosphorus removal beyond what would be required under the District rule, along with 0.9 pounds per year of phosphorus reduction from runoff from off-site. The project would also reduce chloride in runoff and provide volume management. Mr. Wisker stated that staff reviewed prior LID funding projects and found that generally the District has paid around $50,000 a pound for phosphorus removal. Mr. Wisker added that if the District funded the future work at the Wayzata Bay Center redevelopment, it would achieve this $50,000 per pound phosphorus removal rate, at a funding level of $125,000 to $135,000. Mr. Wisker emphasized that he is looking primarily for direction from the managers as to whether they wish to fund only future work and also whether they want to look at analysis beyond dollars per pounds of phosphorus removal in considering funding of the work. He added that whatever the board's direction, staff's next step will be to refine the recommendation and analysis and present a draft resolution for funding work on the project. In keeping with District policy and state law on cost-share funding, the District will need to notice and conduct a public hearing because the proposed funding exceeds $50,000, so the earliest the matter could be undertaken again would be at the December 18 meeting.

Mr. Meehan stated that in the interest of full disclosure he wished to notify the managers that Norm Wenck from Wenck Associates is likely to be appointed to the Presbyterian Homes board in January.

Manager Miller stated that he is more excited than ever about the project and believes that the work completed already has accomplished more than the managers even anticipated or expected. He said that while District dedication of funding to phases I and II would appear to be retroactive, he noted that the Board of Managers actually approved funding several years ago. In response to a question from Manager Casale, Mr. Wisker stated that the District stormwater rule was revised and updated in June 2011. He does not know, however, when the city last updated its relevant ordinances.

In response to a question from Manager Blixt about the basis for past District dedications of funding under the LID program, Mr. Wisker explained that the basis for awards has been something of a moving target. Manager Blixt noted that consideration should be given to the precedent that would be set by the funding the District provides to the already constructed portions of this particular project, if any. Manager Shekleton stated that his view is the board's intent with regard to this project in 2012 was clear and he does not wish to ignore the April 2012 motion. He said he is willing to fund up to 50

percent of the phase II work done. Manager Miller stated that there were technical issues that created problems in the history of this project and the reality is that there was no agreement to provide funding. He said the project is complicated and includes many elements, none of which were brought to the board after the April 2012 meeting. He does not wish to be reckless with funding, but believes the District has obligations that should be honored. In response to a question from Manager Calkins, Mr. Meehan said that the project will provide 1.55-acre feet of retention on site, above the 1.2 acre feet that would be required under the District rule. He said that the filtration system counts toward volume reduction at a 50 percent rate, per the District rule. Manager Calkins notes that the chloride reduction achieved is terrific, but it is not a benefit to the creek because the runoff enters the lake too far away from the creek. But, he said, it does serve well as a demonstration. He also said that he wants staff to look into pursuing movie theater trailers as an option for education on the project. He expressed interest in seeing some data on how the District has valued phosphorus reduction, and wants the analysis coming back to the board to recognize that the education and demonstration values of a project go away over time. Finally, he noted that while green roofs are valuable to developers, they really don't provide substantial water quality improvement.

Manager Casale said that he noted the 2012 approval was based on the board's understanding that the 100-year stormwater event would be retained on the property, but nonetheless he supports staff working with the applicant to put together a proposal that acknowledges all of the work completed on the Wayzata Bay Center redevelopment. Manager Blixt agreed. She wants to see a very strong statement supporting the District's commitment of funding, including the identification and analysis of what elements of the project go above and beyond District regulatory requirements. Manager Miller said staff also should account for offsite drainage treated on the site. Mr. Wisker noted that the offsite drainage management on this property was required by the city. Manager Shekleton noted the importance of the minutes of the April 2012 meeting at which the project was discussed and directed staff to ensure that that discussion and those minutes are included in the record supporting the forthcoming proposal. Manager Calkins encouraged staff to work with Presbyterian Homes to look at the treatment of stormwater from the neighborhood to the north and opportunities in Superior Street for additional stormwater management.

In response to a request from Mr. Wisker, Manager Miller said he'd be willing to approve up to $585,000 for the project. Mr. Mehrkens stated that Presbyterian Homes could structure the reimbursement over two years, if that helps. ***Manager Miller moved, seconded by Managers Shekleton, to direct staff to prepare a recommendation and resolution consistent with the board discussion for consideration at a future meeting. Upon vote, the motion carried 6-0.***

Minnesota Association of Watershed Districts Resolutions

Manager White said that four resolutions have been advanced with recommendations from the MAWD Resolutions/Policy Committee for consideration at the MAWD conference the first week of December. She wanted the managers to weigh in on the resolutions.

The first, sponsored by the Prior Lake-Spring Lake Watershed District, seeks support for PLSLWD's efforts to seek funding to cover costs to repair flood damage to the Prior Lake channel and outlet that are not covered by federal dollars. Manager Calkins said that he served on the MAWD resolutions committee, and noted that PLSLWD also would contribute funding for the repairs. The managers expressed support for the resolution.

Another resolution from PLSLWD would require the Department of Natural Resources to issue a license and assign more than one commercial fisherman per lake to remove carp. The managers expressed interest in the proposed action, but wanted its delegates to the conference to hear from DNR on the underlying policy.

Manager White said the third resolution directs MAWD to work more closely with districts in developing and implementing a legislative agenda, with accompanying social media strategy. The managers concurred that the approach is logical.

Finally, the Sauk River Watershed District is seeking support for a resolution to allow a reduction in property valuation for the purposes of taxation for conservation restriction and water-quality easements. The managers noted some confusion in the wording of the summary of the resolution, but supported the intent as they understand it.

Manager Calkins said two other resolutions came late to the committee – one regarding appointments to the Board of Water and Soil Resources and another on leasing of lands purchased with bond obligation dollars – and will be discussed at the conference.

Manager Blixt, White, Miller and Calkins indicated that they would be attending the conference. ***Manager White moved, seconded by Manager Shekleton, to authorize Managers White and Blixt as delegates from the District to the conference, with Managers Olson and Miller as alternates. Upon vote, the motion carried 6-0.***

STAFF UPDATES

Administrator's Report

Mr. Spartz stated that in cooperation with the Department of Natural Resources, the District is seeking a permit from the Environmental Protection Agency to use potassium chloride in Christmas Lake to control zebra mussels. In its possible that the potassium

chloride will need to be applied through the ice, but staff and DNR are confident it will work.

Mr. Spartz introduced a memo, responding to a recent email sent to staff by Manager Blixt, before providing the memo to the managers. He reviewed the memo, concluding with his strong recommendation that the managers take affirmative steps to resolve the rifts among board members related to the dismissal of the former administrator. ***Manager Shekleton moved, seconded by Manager Miller, to hire the Office of Collaboration and Dispute Resolution to develop a list of recommended mediators for the District.*** The managers discussed the cost that would be allocated for the work, agreeing that between $5,000 and $10,000 has been previously identified. In response to a question from Manager Blixt about whether mediation with the Citizens Advisory Committee also would be included, the makers of the motion indicated that they did not intend to include that in the motion. The managers agreed that the scope is to identify the issues that need to be resolved among the managers and identify mediator candidates. Mr. Spartz recommended that if the board wishes to work with the CAC, it undertake that separately from their work with the mediator on board issues. ***Upon vote, the motion carried 5-1, Manager Calkins voting against.***

ADJOURNMENT

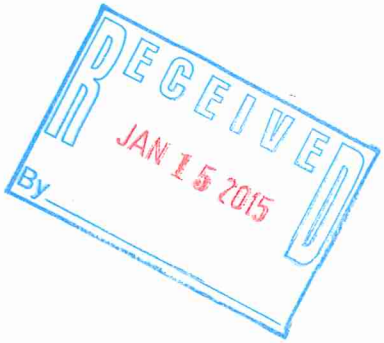
There being no further business, the regular meeting of the Minnehaha Creek Watershed District Board of Managers adjourned at 9:09 p.m.

Respectfully submitted,

Jeff Casale
Secretary

City of Wayzata
600 Rice Street
Wayzata, MN 55391-1734

January 8, 2015



James Wisker
Director of Planning and Projects
Minnehaha Creek Watershed District
15320 Minnetonka Blvd.
Minnetonka, MN 55345

RE: LID funding for Presbyterian Homes

Dear James,

The City of Wayzata is pleased with its history of working with the Minnehaha Creek Watershed District (MCWD) to accomplish mutual goals, and appreciates opportunities offered through various MCWD grant programs. Wayzata has successfully partnered with the MCWD in recent years on several storm water improvement projects, through Low Impact Development (LID) grant funding.

Wayzata understands that the District is currently considering the Presbyterian Homes project, on the former Wayzata Bay Center site, for Low Impact Development grant funding. Wayzata has had a close working relationship with Presbyterian Homes, and believes the development is a good candidate for this type of grant.

LID funding is intended to incentivize development that exceeds stormwater regulation and provides demonstration value of innovative practices. The Presbyterian Homes project, in Wayzata, meets these criteria.

The stormwater management for the project easily exceeded the City's requirements, when it was approved in 2008. At that time, the provision of Best Management Practices (BMP's) and maintenance of existing runoff rates and volumes would satisfy the requirements. The reduction of hardcover through the addition of a one-acre park would have satisfied this criterion. The project, in addition to the reduced hardcover, contains several innovative stormwater treatment methods; infiltration, filtration, swirl concentrators, green roofs, hydronic snowmelt, and underground storage. The project also reduced runoff rates and volumes from the site to below original site conditions (wetland), rather than the previous conditions (mall). Comparing the project's design to today's standards also shows that the project exceeds City and MCWD design requirements.

City staff has toured the site with Presbyterian Homes and their consultants and feel that each of their stormwater techniques can be accessed and viewed relatively easily for educational purposes and monitoring, providing many demonstration opportunities.

City of Wayzata
600 Rice Street
Wayzata, MN 55391-1734

This project will continue to benefit the City of Wayzata and the Lake Minnetonka area in many ways for years to come, including stormwater management. The City appreciates the MCWD consideration of this grant request and feels that Presbyterian Homes' project is a great candidate for LID funding from the MCWD.

If you have additional questions, concerns or need for additional information, please contact our City Engineer, Mike Kelly, at 952-404-5316 or mike@wayzata.org. Thank you.

Sincerely,

Heidi Nelson
City Manager