



MAYOR & COUNCIL COMMUNICATION

DATE: June 21, 2016
REGULAR
ITEM #25
MOTION

AGENDA ITEM: 2015 Comprehensive Annual Financial Report & Management Letters Presentation

SUBMITTED BY: Cathy Bendel, Finance Director

THROUGH: Jason Miller, Smith Schafer & Associates

REVIEWED BY: Kristina Handt, City Administrator
Jason Miller, Smith Schafer & Associates
Finance Committee Chair

SUGGESTED ORDER OF BUSINESS:

- Introduction of Item City Administrator
- Report/Presentation.....City Staff, Smith Schafer & Assoc.
- Questions from Council to Staff Mayor Facilitates
- Call for Motion Mayor & City Council
- Discussion..... Mayor & City Council
- Action on Motion..... Mayor Facilitates

FISCAL IMPACT: NA

SUMMARY AND ACTION REQUESTED: The City has retained the services of Smith, Schafer & Associates to audit the financial statements for 2015. The 2015 Comprehensive Annual Financial Report and Management Letters will be presented to the Council. The City Council is asked to review and accept the 2015 reports.

BACKGROUND INFORMATION: Annually the City engages the services of an independent outside audit firm to audit and assist with the preparation of the financial statements. The auditors are asked to assure that the financial statements are free from material misstatement in accordance with U.S. Generally Accepted Accounting Principles to the extent possible. They also perform testing and make inquiries to help ensure that proper internal controls are in place. This is the third year that the City of Lake Elmo has presented the report in the Comprehensive Annual Financial Report (CAFR) layout.

An overview summary of the 2015 report and results were presented to the Finance Committee on June 14, 2016. Draft copies of the report were provided to the Finance Committee and it was unanimously agreed to recommend that the report be presented to the City Council.

STAFF REPORT: Jason Miller from Smith, Schafer & Associates will a PowerPoint presentation summarizing the report and respond to inquiries.

RECOMMENDATION: It is recommended that the City Council accept the 2015 Year End Comprehensive Annual Financial Report and Management Letters.

“Move to accept the 2015 Comprehensive Annual Financial Report and Management Letters”

TO BE DISTRIBUTED AT THE MEETING:

- 2015 Comprehensive Annual Financial Report
- 2015 Management Letters
 - Governance Letter
 - Internal Control Matters Letter



MAYOR AND COUNCIL COMMUNICATION

DATE: June 21, 2016

CONSENT

ITEM #: 26

MOTION

AGENDA ITEM: Parliamentarian Contract

SUBMITTED BY: Kristina Handt, City Administrator

BACKGROUND:

Council began having a parliamentarian attend and assist with Council meetings in late 2015. In January 2016, a three month contract with Kevin Wendt was approved which expired April 30, 2016. The Council approved another 3 month contract with Mr. Wendt on May 3, 2016 which expires July 31, 2016.

Both the previous and current contracts include being the chair for meetings as part of the compensation.

On May 24, 2016, it was brought to the Council's attention that state statute says "The mayor or, in the mayor's absence, the acting mayor, shall preside." Lake Elmo is a statutory city and therefore only possesses the authority granted to it by the Legislature. The City Council is not able to repeal statutory rights through a vote of the Council. Furthermore, a 1957 opinion from the Attorney General, states that a "council cannot, by ordinance or otherwise, deprive one of its members of his [or her] statutory rights."

This information was shared with Mr. Wendt and he was subsequently asked for an opinion on the issue of the mayor as the presiding officer. He provided the following informal opinion and is seeking his own opinion from the Attorney General:

My informal response is that this is entirely a legal question. If the law was silent on the issue, then the chair can be removed from the chair by the assembly, but only by a 2/3 vote and only for a single session at a time (using Suspend the Rules procedures).

I do not know if statutory requirements (such as the Mayor [or Acting Mayor] presiding, as cited by the City Attorney) can be suspended or not. General procedure, even when placed in the bylaws, can be suspended by common parliamentary practice. But, this relates to procedure stated by law. The legal understanding is primarily applicable here.

ISSUE BEFORE COUNCIL:

Should the Parliamentarian's contract be amended or terminated?

PROPOSAL DETAILS/ANALYSIS:

Currently the contract with Mr. Wendt includes a compensation section as follows:

3.1 Basis for Compensation: Compensation to CONSULTANT shall be as follows

Being the chair for meetings as a parliamentarian(up to 5 hours)	\$200.00/hr
Being the chair for meetings as a parliamentarian(over 5 hours)	\$250.00/hr
Document Review	\$125.00/hr
Discount for 3 month commitment/contract	20% off

One of the other options offered by Mr. Wendt from the rate schedule was:

SCHEDULE 2

Sit with staff and rule on points of order \$165/hr.

Document Review \$100/hr

Council could amend the contract to include Schedule 2 as replacement language for section 3.1 and Mr. Wendt would agree to lowering the hourly rate for sitting with staff to \$160/hr as that is what the City is charged now after taking into account the discount.

Alternatively, the contract could be terminated immediately and Mr. Wendt is agreeable to that given that Article 3 includes a violation of state law.

FISCAL IMPACT:

So far in 2016, the parliamentarian services have cost the City about \$10,000.

No change in the fiscal impact if the contract is amended as Mr. Wendt has agreed to the same rates.

If the contract is terminated, the City would not continue to incur these costs.

There was no funding provided in the 2016 budget for parliamentarian services.

OPTIONS:

- 1) Amend contract to replace Section 3.1 with Schedule 2 language and amend the hourly rate from \$165 to \$160
- 2) Terminate the contract
- 3) Make no changes to the current contract

RECOMMENDATION:

Motion to amend contract with Kevin Wendt to replace Section 3.1 with Schedule 2 language and amend the hourly rate from \$165 to \$160.

OR

Motion to terminate contract with Kevin Wendt



MAYOR AND COUNCIL COMMUNICATION

DATE: 06/21/2016
REGULAR
ITEM #: 27
MOTION

AGENDA ITEM: Tablyn Park Improvements Approval
SUBMITTED BY: Emily Becker, City Planner
REVIEWED BY: Kristina Handt, City Administrator
THROUGH: Kristina Handt, City Administrator

BACKGROUND:

At its meeting on May 16, 2016, the Parks Commission reviewed estimated pricing of desired improvements for Tablyn Park. The approximate total of the cost for these items was \$129,350. The list of estimated pricing and site plan of desired improvements is attached.

ISSUE BEFORE COUNCIL:

Should the City Council authorize Staff to obtain quotes for desired improvements?

PROPOSAL DETAILS/ANALYSIS:

As of May 31, 2016, the Park Dedication Fund's balance was \$888,411.04. The Parks Commission is requesting these improvements be completed this year.

The requested improvements to Tablyn Park were discussed at length at the Parks Commission February, March, April, and May meetings. The Commission evaluated the estimated pricing of these improvements and chose the most viable options; their recommendation is to not accept quotes that total more than \$130,000. Materials will be purchased separately; Staff will obtain separate quotes for the following improvements: site work, lighting, playground equipment and installation, and warming house/restrooms. It is expected that no individual quote will exceed \$100,000, so the formal bidding process would not be necessary in this case.

It should be noted that the plan to extend the parking lot area would result in the removal of the basketball court. A proposal to remove this basketball court was previously brought to a City Council meeting on September 1, 2015, during which Council expressed concern, requesting more information and did not approve the removal. The proposed improvements do not include replacement of the basketball court or hoop.

FISCAL IMPACT:

Not to exceed \$130,000 in parkland dedication funds.

OPTIONS:

The Council may or may not approve Staff to obtain quotes for the improvements requested by the Parks Commission to Tablyn Park that are expected to not exceed \$130,000.

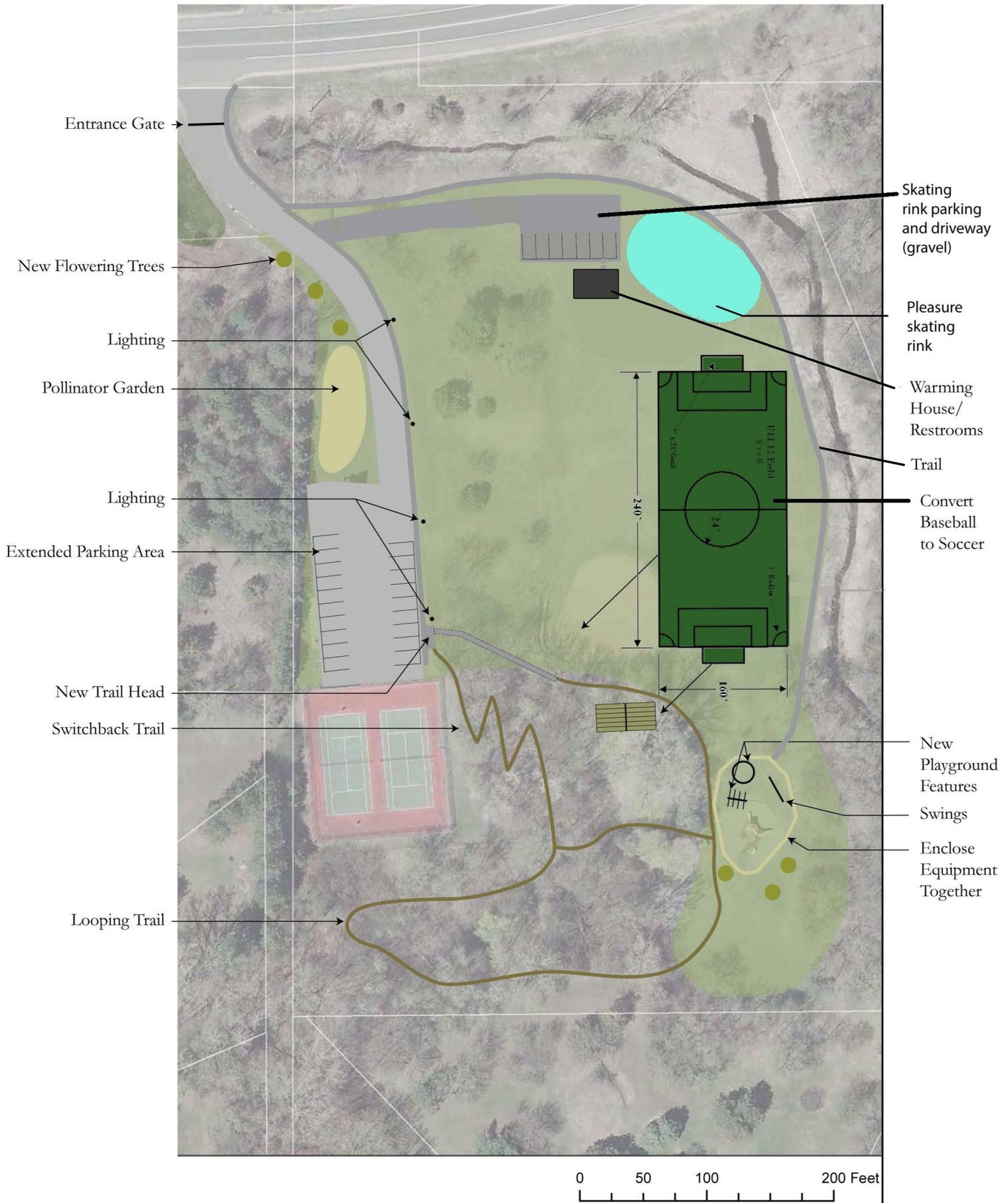
RECOMMENDATION:

Staff recommends that the Council approve the requested improvements to Tablyn Park so staff may obtain quotes:

“Move to approve the requested improvements to Tablyn Park so that Staff may obtain quotes.”

Tablyn Park Plan

4/13/16



Tablyn Park Pricing

Feature	Estimated Cost	Notes
Skating Rink Parking and Gravel Driveway	\$26,200 (\$2/sf based on 13,100 sf as measured from scaled drawing)	(Pricing Source: https://www2.monroecounty.gov/files/parks/EPAMPU%20(DRAFT)%20All%20Appendices.pdf)
Skating Rink - Boards	\$16,900 (\$65 per linear foot based on a circumference of 260 ft as measured from the scale drawing)	(Pricing Source: A Skating Rink Feasibility Study http://web.williams.edu/wp-etc/ces/wmstn-skating-rink.pdf)
Warming House/Restrooms	\$1200/season	The Commission would like to rent a unit that is portable to determine its use and possibly construct a permanent structure in the future; they estimated this cost.
Convert Baseball to Soccer	\$555 plus labor	(Pricing Source: http://buckeyeturf.osu.edu/index.php?option=com_content&id=760:field-renovation-on-a-shoe-string-budget&Itemid=170)
Rebuilding stairs from parking lot (concrete)	\$15,000	(Pricing Source: http://www.ucitymo.org/DocumentCenter/View/7667)
Bringing switchback trail in to ADA compliance	\$21,000 for concrete trail (\$70/ft based on approx. 300 ft as calculated from measurements of drawing of switchback trail)	Includes clearing and grubbing, grading, granular subbase, concrete, seed/mulch (Pricing Source: http://www.nirpc.org/media/3539/appendix_b__trailcosts.pdf)
Natural Surface Trail	\$1995.00 (\$1.75/mi based on approx. 1140 ft as calculated from measurements of drawing of entire trail)	(Pricing Source: http://www.nirpc.org/media/3539/appendix_b__trailcosts.pdf)
Lighting	\$26,000	Pricing based on previous research performed 08/2015
Extended Parking Lot Area	\$7,000 (\$3.50/sf based on 2000 sf for parking lot extension area)	(Pricing Source: https://www2.monroecounty.gov/files/parks/EPAMPU%20(DRAFT)%20All%20Appendices.pdf)
New Playground Features	\$12,500	Pricing based on previous research performed 08/2015
Pollinator Garden	\$1000	Pricing estimated by Parks Commission
Total	\$129,350	



MAYOR AND COUNCIL COMMUNICATION

DATE: 6/21/16

REGULAR

ITEM #: 28

MOTION

AGENDA ITEM: 5th Street and General Development Irrigation Standards
Commercial Construction Irrigation Standards

SUBMITTED BY: Stephen Wensman, Planning Director

REVIEWED BY: Kristina Handt, City Administrator
Stephen Mastey, Consulting Landscape Architect
Jack Griffin, Focus Engineering

BACKGROUND:

In March of 2015, the City had prepared design standards for the 5th Street Corridor based on the theming study prepared by Damon Farber Associates. The development community approached the City and requested a redesign to simplify the project. In the following months, the standard for 5th Street were revised and were formally adopted on August 11, 2015 at a City Council workshop. The irrigation standards had not been completed at that time and were not included in the approval. The irrigation standards were created in October 2015 and were submitted to developers, but not formally approved by the City Council. Similarly, a city-wide commercial irrigation standard was created, but not formally approved by the City Council.

ISSUE BEFORE COUNCIL:

Discussion on approval of the 5th Street Irrigation Design Standards and commercial irrigation standards.

PROPOSAL DETAILS/ANALYSIS:

The 5th Street Irrigation Design Standards were prepared by Stephen Mastey, the Consulting Landscape Architect and subconsultant, Water In Motion, an irrigation consultant to develop the standards, to address the need for irrigation of the 5th Street corridor. The concept for 5th Street has vacillated from a broad green corridor to a more natural corridor that would not have required irrigation, but revisions re-introduced turfgrass and other landscape improvements that more or less necessitate irrigation for the successful establishment and long term needs of the landscaping. The 5th Street Corridor is being installed by developers with the development of Savona, Boulder Ponds, Hunters Crossing and Inwood subdivisions. Future segments of 5th Street will be built by future developers, but portions of it may need to be completed by the City. The 5th Street landscape design includes 4" caliper trees, pollinator patch prairie, turf grass, and medians with prairie grasses, perennial flowers and bulbs. The Irrigation Design Standards represent best practices in the landscape industry. Best practices are important considering the growing scarcity of clean water, costs of inefficient water use, and best use of water for the health and

longevity of the City's investment in landscaping. The key elements are (See attached Water In Motion memo):

- Installer must be a Certified Irrigation Contractor (CIC).
- 100% coverage, even distribution of water.
- Allows for use of non-potable water – water reuse.
- No overspray of sidewalks, trails and streets.
- No overspray onto evergreens (avoiding damage or death).
- Flexible pipe in sleeves.
- Rainwater sensors.
- SMART irrigation controls.

FISCAL IMPACT:

The Irrigation Design Specifications for 5th Street mandate an expensive irrigation system to install for developers and for the City if it develops future segments of the 5th Street corridor. Maintenance of the system will be expensive, however the flexible pipe in sleeves and other features will lessen the damage from trail plowing and being run over as compared to a cheaper system. The system represents “best practices” and uses less water than a cheaper system which is a cost savings.

Similarly, the General Development Irrigation Standards, though a bit less detailed, is expensive for developers who do not like being told what to install on private property.

As the City considers the irrigation standards for 5th Street, it should also consider what it desires for the Village Creek Parkway, a very similar roadway being built in Easton Village by a developer and to be constructed in the future by others.

OPTIONS:

5th Street Irrigation Design Standards.

- a) Approve the Irrigation Design Standards for 5th Street, as presented, which represent “best-practices” in the irrigation industry.
- b) Reject the Standards and provide staff direction as to what the Council would like for the corridor (no irrigation to a very basic system).

General Development Irrigation Design Standards.

- a) Approve the Irrigation Design Standards for General Development, as presented, which are a bit simpler than the 5th Street Standards, but still represent “best practices” in the irrigation industry.
- b) Reject the Standards and direct staff to develop a more performance based standards that more simply protects the health, safety concerns such as overspray onto roads, sidewalks, and trails. Protects adjacent property from damage from overspray, etc.
- c) Have no specific standards for private irrigation systems.

RECOMMENDATIONS:

Staff recommends the City Council provide Staff direction based on the options and then Staff will prepare a Resolution in support of the motion at the next meeting for the consent agenda:

- For City projects and for 5th Street, the city adopt the 5th Street Irrigation Design Standards which represent “best practices” for irrigation.
- For General Development, because of the additional financial burden on developers, direct Staff to develop a more performance based standard to protect basic health, safety considerations.

ATTACHMENTS:

- 5th Street Irrigation Design Standards
- 5th Street Irrigation Design Standard Details
- General Development Irrigation Standards
- Water In Motion memo

SECTION 32 84 00

PLANTING IRRIGATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section is ten total written pages plus associated sample details.
- B. This section specifies elemental materials and procedures based upon published and widely accepted industry best practices to design and construct landscape irrigation system(s) in a design-build approach including the road right-of-way of Fifth Street, Lake Elmo, MN. The most recent landscape irrigation industry best practices can be found at: http://www.irrigation.org/uploadedFiles/Resources/BMP_Revised_12-2010.pdf.
- C. Landscape irrigation designs shall be crafted in workmanlike fashion preferably using CAD-based software. Designs and supporting documents shall be furnished in reproducible electronic and hardcopy fashion, to the City of Lake Elmo for approval prior to commencing work. No landscape irrigation installation work shall commence without written consent of the City of Lake Elmo, MN.
- D. Landscape irrigation design(s) and supporting documents shall depict and describe all components of the proposed landscape irrigation system including but, not limited to:
 - a. Water supply and detail including proposed enclosures and slabs
 - b. Pipeline sizing throughout
 - c. Sprinkler emitter proposed brand, model and nozzle sizing
 - d. Drip grids with associated required components
 - e. Controls including proposed pedestal enclosures and weather-based appurtenances
 - f. Projected seasonal water use month-by-month

1.2 DEFINITIONS

- A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves.
- B. Drain Piping: Downstream from circuit-piping drain valves.
- C. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves.
- D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 volts or for remote-control, signaling power-limited circuits.

1.3 ABBREVIATIONS

- A. FPT: Female pipe thread
- B. MPT: Male pipe thread
- C. NPT: National pipe thread
- D. HDPE: high-density polyethylene
- E. PVC: Polyvinyl chloride plastic

- F. SDR: Standard Dimension Ratio
- G. SCH: Schedule Pipe
- H. AWG: American Wire Gauge

1.4 ELEMENTAL PERFORMANCE REQUIREMENTS

- A. Irrigation water supply(ies) drawing from municipal or groundwater shall be properly permitted by authorities having jurisdiction and shall be constructed to conform to meet or exceed minimum requirements of the City of Lake Elmo, MN. See sample detail(s). All water supply(ies) and associated system mainline and circuit piping regardless of water source, shall be:
 - 1. sized not to exceed dynamic velocity greater than 5 feet per second;
 - 2. sized to enable simultaneous operation of not less than two stations of irrigation;
 - 3. sized to complete an irrigation cycle within 10 hours during the hottest month of the irrigation season.
 - 4. sized to enable operation of sprinklers at manufacturer recommended dynamic pressure(s).
- B. Irrigation stations shall not mix rotor or multi-stream, multi-trajectory sprinklers with misting spray-type sprinklers.
- C. Broadcast sprinklers shall be placed to enable 100 percent coverage, sprinkler-to-sprinkler.
- D. Broadcast sprinkler emission devices shall include matched precipitation/application rates.
- E. Broadcast sprinklers located at the bottom of slopes shall have check-valve or similar features to prevent or reduce low-head drainage.
- F. Broadcast sprinklers shall not throw over public walks or roadways.
- G. Broadcast sprinklers shall be placed and adjusted to minimize overspray onto hard surfaces.
- H. Broadcast sprinklers in the vicinity of conifers shall be placed to minimize broadcast onto conifers.
- I. Sprinklers and piping installed upon slopes shall be installed perpendicular to the slope wherever feasible.
- J. System zoning priority shall be given to soil type, plant type, topography and microclimate.
- K. Single row broadcast sprinklers shall be allowed in boulevard areas or strips of eight feet width or less.
- L. Single row broadcast sprinklers shall be placed to throw away from walks and toward streets.
- M. Use schedule 40 PVC pipe or greater for sleeves under hard surfaces.
- N. Sleeve(s) dimension shall be a minimum of two times the outside dimension of the pipe passing through.
- O. Use NSF-rated HD100 polyethylene pipe, where applicable.
- P. Use up to 2" polyethylene pipe in sleeves.
- Q. Thrust block pressure pipe 3" or larger. Follow published industry best practices.
- R. Top of mainline pipe 3" and smaller shall not be less than 18" from final grade.
- S. Top of circuit piping shall be not less than 12" from final grade.
- T. Plan for and install controller and field grounding equipment per manufacturer recommendations.

1.5 QUALITY ASSURANCE:

- A. Products Criteria:

1. When two or more units of the same type or class of materials or equipment are required, these units shall be products of one manufacturer.
 2. A nameplate bearing manufacturer's name or trademark, including model number, shall be securely affixed in a conspicuous place on equipment. In addition, the model number shall be either, cast integrally with equipment, stamped, or otherwise permanently marked on each item of equipment.
- B. Installer Minimum Qualifications:
- The selected installing contractor shall be an employer of workers that include not less than one Certified Irrigation Contractor in good standing as accredited by The Irrigation Association, Fairfax, VA (www.irrigation.org) and who shall be currently employed by the selected installing contractor and who shall personally conduct or oversee the conduct of all work upon this project. The selected installing contractor shall be registered in the State of Minnesota as a Technology Systems Contractor in good standing employing not less than one Minnesota licensed Power Limited Technician in good standing who shall be currently employed by the selected installing contractor and who shall personally conduct or oversee the conduct of all low voltage irrigation electrical work. The selected installing contractor shall be prepared to furnish proof of not less than 5 successful installations of projects of similar scope and complexity within the past 3 calendar years including but, not limited to successful installation, programming and operation of digital two-wire decoder irrigation control systems.
- C. System Requirements:
- 100 percent irrigation coverage of irrigated areas is required. The actual and spirit of intent of this project outcome is clearly indicated upon the drawing sheets and within the specification documents. The selected installing contractor shall, at no additional cost be prepared to make minor adjustments necessary to avoid obstructions such as hard surfaces signs, utilities and light standards and achieve full and complete coverage of irrigated areas without overspray on roadways, sidewalks, window wells or buildings and shall protect trees from close high-spray velocity.

PART 2 - PRODUCTS

2.1 PIPES, TUBES AND FITTINGS

- A. PE pipe with controlled ID shall be ASTM F771, PE 3408 compound;
- B. Insert fittings for PE pipe: ASTM D2609, nylon or propylene plastic with barbed ends. Include stainless steel bands or other fasteners.
- C. PE pressure pipe: AWWA C906, with DR of 7.3, 9, or 9.3 and PE compound number required to give pressure rating not less than 160 psi (1100 kPa)
- D. PE butt, heat-fusion fittings shall be ASTM D3261.
- E. PE socket-type fittings shall be ASTM D2683.
- F. PVC sleeve pipe: ASTM D1785, PVC 1120 compound, Schedule 40.
- G. PVC socket fittings shall be ASTM D2466, Schedule 40 PVC threaded fittings: ASTM D2464, Schedule 80.

- H. Swing joints: Threaded fittings with elastomeric seals that allow 360 degree rotation, and designed for minimum 200 psi (1375 kPa) working pressure, may be used in lieu of standard threaded fittings.
- I. PVC socket unions: Both headpiece and tailpiece shall be PVC with socket ends.
- J. PVC Pipe: ASTM D2241, PVC 1120 compound, SDR 26.
- K. PVC socket fittings: ASTM D2467, Schedule 80.
- L. PVC socket unions: Both headpiece and tailpiece shall be PVC with socket or threaded ends.

2.2 PIPE JOINING MATERIALS

- A. Solvent cements for joining PVC piping: ASTM D2564. Include primer according to ASTM F656.
- B. Plastic, Pipe-Flange Gaskets, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

2.3 VALVES

A. Underground Shut-Off Valves:

- 1. Butterfly valves 2 inches (50 mm) and larger: AWWA C504, iron body, bronze mounted, double disc with parallel or inclined seats, non-rising stem turning clockwise to close, 150 psi (1025 kPa) minimum working pressure.
- 2. Ball valves, isolation valves, 1-1/2 inch (38 mm) and smaller: Full-port ball valves with bronze body, PTFE seats, and 90 degree on/off handle. Ball valves shall have NPT female end connections.

B. Operations:

- 1. Underground applications shall use valves with 2 inch (50 mm) nut for T-Handle socket wrench operation.
- 2. Aboveground and valve pit applications shall use valves, with handwheels.
- 3. Valve ends shall accommodate the type of main pipe adjacent to valve.

C. Remote Control Valves:

- 1. All remote control valves shall be of the manufacturer and models indicated on the drawing sheets furnished. No deviation from manufacturer or model call-outs once approved, shall be allowed.
 - a. Sizes and locations as indicated on the drawing sheets. Molded-plastic body, furnished as straight or angle pattern type, normally closed diaphragm type with manual shut off and flow control adjustment. Refer to sample details or furnished and approved details submitted at the time of approval application.
 - b. Single valve digital two-wire decoder installed concurrently with each remote control valve and within the same remote control valve box, one valve per decoder, one decoder per control valve, one valve box per valve and decoder combination. No deviation from manufacturer or model call-outs once approved, shall be allowed. Refer to sample details or furnished and approved details submitted at the time of approval application. Label decoders with stencils

designating controller and circuit number with permanent white epoxy paint or with permanent paint pen.

1. Valves shall have a minimum of 150 psi (1025 kPa) working pressure.
2. Each sprinkler station shall be automatically operated by a remote control valve installed underground and operated by a single-station in-line digital decoder-governed solenoid.
3. Valve boxes shall be locking type-capable.
4. Valves shall be completely serviceable from the top without removing valve body from the system. Valves shall operate at no more than 7 psi (50 kPa) pressure loss at manufacturers maximum recommended flow rate.
5. Valves shall be diaphragm type designed to operate in water containing sand and debris and shall have a self-cleaning type contamination filter to filter all water leading to the solenoid actuator and the diaphragm chamber.

2.4 VALVE BOX

- A. Isolation valve boxes shall be precast concrete boxes with a compressive concrete strength in excess of 4000 psi (30 Mpa). Box dimension shall be adapted to depth of cover required over pipe at valve location. Mark box cover to say "Irrigation" and set flush with finished grade. Provide 2 (two) "T" handle socket wrenches of 5/8 inch (15 mm) round stock with sufficient length to extend 2 feet (600 mm) above top of deepest valve box cover.
- B. Irrigation control valve, decoder boxes and quick coupler boxes shall be HDPE green in color or black body with green cover. Boxes shall be lockable-ready. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.5 BACKFLOW PREVENTER

- A. Use reduced pressure zone backflow prevention assembly sized according to minimum system performance specifications contained herein and as approved by the authority having jurisdiction. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.6 WATER METER

- A. Use water meter brand and model specified by the authority having jurisdiction. Size meter according to minimum system performance specifications contained herein. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.7 AUTOMATIC CONTROL EQUIPMENT - INDEPENDENT ELECTRIC CONTROLLER WITH NO FLOW SENSING (FOR SMALL INSTALLATIONS)

- A. GENERAL STATEMENT: Irrigation control shall be digital, two-wire-based automatic operation including:
 1. rain sensing technology, placed per manufacturer recommendations and/or referenced industry best practices to interrupt irrigation during periods of sufficient moisture and fully engaged;
 2. weather-based adjustment, placed per manufacturer recommendations and/or referenced industry best practices and fully engaged;

3. controller shall be mounted in a pedestal manufactured by the selected controller manufacturer and shall be securely placed upon a concrete base per manufacturer recommendations and/or referenced industry best practices; See associated sample detail(s).
 4. field control valves shall be connected to digital control wire using one-station field decoders, placed in the associated control valve box and shall include waterproof wire fittings such as 3MDBR or equivalent on the signal input wires and the signal output wires. Follow manufacturer recommendations and/or referenced industry best practices. Field control valves shall be placed in plastic/composite surface boxes, one valve per box, minimum 10" round sized and in a fashion to prevent damage from surface activities and to enable basic field maintenance without requiring of the box. See associated sample detail(s).
- B. The independent electric automatic control system shall consist of one digital two-wire decoder-based controller located in a pedestal manufactured by the controller manufacturer, which operates individual remote control decoder-based valves and weather-based schedule adjustment (SMART) operation in accordance with timing schedules programmed into the independent unit. Refer to sample details or furnished and approved details submitted at the time of approval application.
- C. Connect, test electrically and program all irrigation stations to the digital two-wire decoder-based controller per manufacturer recommendations and Best Practices and incorporate all stations into the control system. Memorialize all programming data onto reproducible documents in a workmanlike fashion.

2.8 SPRINKLER HEADS

- A. Rotary pop-up sprinklers:
1. ¾" inlet, closed-case, gear-driven, 4" minimum pop-up height or
 2. ½" inlet spray-body mounted, six-inch minimum pop-up height, multi-stream, multi-trajectory rotating nozzle.
 3. Matched precipitation/application shall be depicted on plan submittals and practiced at the time of installation. Placement appropriate to the area characteristics being watered.
 4. Refer to sample details or furnished and approved details submitted at the time of approval application.
- B. Spray-type sprinklers (fixed):
1. ½" inlet, 4" minimum pop-up height with nozzles and placement appropriate to the area characteristics being watered.
 2. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.9 QUICK COUPLERS

- A. Quick couplers shall have all parts contained in a two-piece unit and shall consist of a coupler water seal valve assembly and a removable upper body to allow the spring and key track to be serviced without shut down of the main.
- B. Metal parts shall be brass.

- C. Lids shall be lockable vinyl covered and have springs for positive closure on key removal.
- D. Each quick coupler shall be contained in valve boxes. Refer to sample details or furnished and approved details submitted at the time of approval application.
- E. Furnish 1 (one) hose swivel and operating key.

2.10 LOW VOLTAGE CONTROL VALVE WIRE

- A. Wire shall be solid copper wire, Underwriters Laboratories Inc. approved for direct burial in ground. Wire shall be digital decoder-based control wire of the same outer jacket color as that installed upon the existing landscape irrigation system. Size of wire shall be consistent with manufacturer recommendations, never less than 14 AWG.

2.11 WIRE SPLICING MATERIALS: LOW VOLTAGE RATED UV RESISTANT MOISTURE-RESISTANT GREASE-FILLED POLYPROPYLENE TUBE

- A. 3M DBR/Y-6 Direct Bury Splice Kit UL486D-approved for direct burial in ground or equal. Use upon wire splices, decoder inlet wiring and decoder outlet wiring.

2.12 SLEEVE MATERIAL

- A. ASTM D2241, PVC Schedule 40.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine proposed irrigation areas for compliance with requirements and conditions affecting installation and performance.
- B. Verify limits of irrigation and compare against approved plans.

3.2 PIPE INSTALLATION - GENERAL

- A. Layout work as closely as possible to drawing sheets. **CALL BEFORE YOU DIG (811)**.
- B. Install sprinkler lines to avoid electric, storm and sanitary sewer lines and existing water and gas mains, all of which have the right of way.
- C. Existing sidewalks and curbs shall not be cut during trenching and installation of pipe. Install pipe under sidewalks and curbs by jacking, auger boring, or by tunneling. Repair or replace any cracked concrete, due to settling during the warranty period.
- D. Do not lay pipe on unstable material, in wet trenches weather conditions are unsuitable for work.
- E. Allow a minimum of 3 inches (80 mm) between parallel pipes in the same trench.
- F. Clean the interior portion of pipe and fittings of foreign matter before installation. Securely close open ends of pipe and fittings with caps or plugs to protect fixtures and equipment against dirt, water and chemical or mechanical injury. At completion of all work thoroughly clean fixtures, exposed materials and equipment.
- G. The full length of each section of (PVC) pipe shall rest upon the pipe bed with recesses excavated to accommodate bells or joints. Do not lay pipe on wood blocking.
- H. Hold pipe securely in place while joint(s) is/are being made.

- I. Do not work over, or walk on, pipe in trenches until covered by layers of earth, well tamped, in place to a depth of 12 inches (300 mm) over pipe.
- J. Irrigation lines and control wire shall run through designated lanes where possible. Refer to sample details or furnished and approved details submitted at the time of approval application.
- K. Concrete thrust blocks shall be installed upon piping 3-inch and larger where the irrigation main changes direction at "L" and "T" locations and where the irrigation main terminates. Do not pressurize pipe for a period of 36 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal water pressure. Thrust block material shall not be poured over and around pipe and /or control wire.
- L. Minimum cover over lines under constant pressure shall be 18 inches (750 mm) for pipe sizes of 3 inch and less. Cover laterals to minimum depth of 12 inches (600 mm).

3.3 SLEEVE INSTALLATION

- A. Furnish and install where pipe and control wires pass under walks, paving, walls, and other similar areas.
- B. Sleeves to be twice line size or greater to accommodate retrieval for repair of wiring or piping and shall extend 12 inches (300 mm) beyond edges of paving or construction.
- C. Bed sleeves with a minimum of 4 inches (100 mm) of sand backfill above top of pipe in areas where pipe is placed prior to hardscape is installed.

3.4 VALVE INSTALLATION

- A. Locations of remote control valves is/are diagrammatic. Group remote control valves wherever possible and aligned at a set dimension back of curb along roads. Do not install more than one valve per valve box unless using jumbo-sized valve box and per minimums depicted herein and upon sample details included with this written specification.
- B. No valves shall be set under roads, pavement or walks.
- C. Clean interior of valves of foreign matter before installation.
- D. Set valve box cover flush with finished grade.
- E. Control valves shall never be less than 3 inches (80 mm) below finished grade. Refer to minimums depicted herein and see sample details.

3.5 SPRINKLER AND QUICK COUPLER INSTALLATION

- A. Place part circle rotary sprinklers no greater than 6 inches (150 mm) from edge of and flush with top of adjacent walks, curbs, and mowing aprons, or paved areas at time of installation.
- B. Install all sprinklers using swing joints or flexible hose-and-fitting joints (a.k.a. swing pipe). Refer to sample details included with this written specification.
- C. Install all quick couplers on swing joints. Stake for support. Refer to sample details included with this written specification.

- D. Set shrub sprinklers 4 inches (100 mm) above grade or even with bedding mulch depth and 4 inches (100 mm) from edge of curb or pavement. Place 4 inches (100 mm) from walls. Stake sprinklers prior to backfilling trenches. Support stakes shall be parallel to riser.

3.6 AUTOMATIC IRRIGATION - CONTROL SYSTEM INSTALLATION

- A. Attach new stations of irrigation to the digital two-wire decoder system and program and test each control valve for proper operation from the existing irrigation controller.
- B. Adjust master controller programming to incorporate new stations of irrigation within programs for similar plant-types or hydrozones and in accordance with necessary programming for weather-based (SMART) operation.

3.7 CONTROL WIRE INSTALLATION

- A. Wiring shall be located in trench with pressure main pipe. Splicing shall be held to a minimum. In the event a wire splice is required outside of a remote control valve location, the splice shall be contained in a valve box not smaller than 10" round with not less than 24 inches of leader or expansion looping on each end of the splice. Use 3M DBR waterproof wire splices or equivalent.
- B. Provide 12 inch (300 mm) expansion loops in wiring at each wire connection or change in wire direction. Provide not less than 24 inch (600 mm) loop at remote control valves.

3.8 FIELD TEST AND QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Pressure test pressure main line(s) before joint areas are backfilled. Backfill a minimum of 12 inches (300 mm) over the pipe to maintain pipe stability during test period.
 - 2. Inspect each joint and repair leaks.
 - 3. Flush lines before installing sprinkler heads and quick couplers.
 - 4. After installation, charge system and test visually for leaks. Repair leaks and retest until no leaks exist.
 - 5. After electrical circuitry has been activated and final adjustment of sprinklers to permanent level at ground surface is complete, test each broadcast turf sprinkler section to indicate a uniform distribution within any one sprinkler area and over the entire area.
 - 6. Operate controller and automatic control valves to demonstrate the complete and successful installation and operation of all equipment.
 - 7. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 8. Prepare test and inspection reports, programming information (including SMART operation), decoder information and details for record drawings. Furnish records in a professional and workmanlike fashion.

3.11 ADJUSTMENTS

- A. Adjust settings of controller as needed during the establishment period. Should plant establishment requirements preclude engagement of weather-based (SMART) operation, assure weather-based operation is engaged prior to final walkthrough/turnover.
- B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.

C. Adjust sprinklers and devices to proper grade, radius and arc.

3.12 DEMONSTRATION AND DOCUMENTATION

A. Program controller for weather-based (SMART) operation.

C. Follow manufacturer's instructions and industry best practices.

D. Maintain and provide a complete set of as built drawings in a professional and workmanlike presentation form which shall be corrected to show changes in locations of all pipe, valves, pumps, decoders and related irrigation equipment.

E. Controller Drawings and Zone Chart(s):

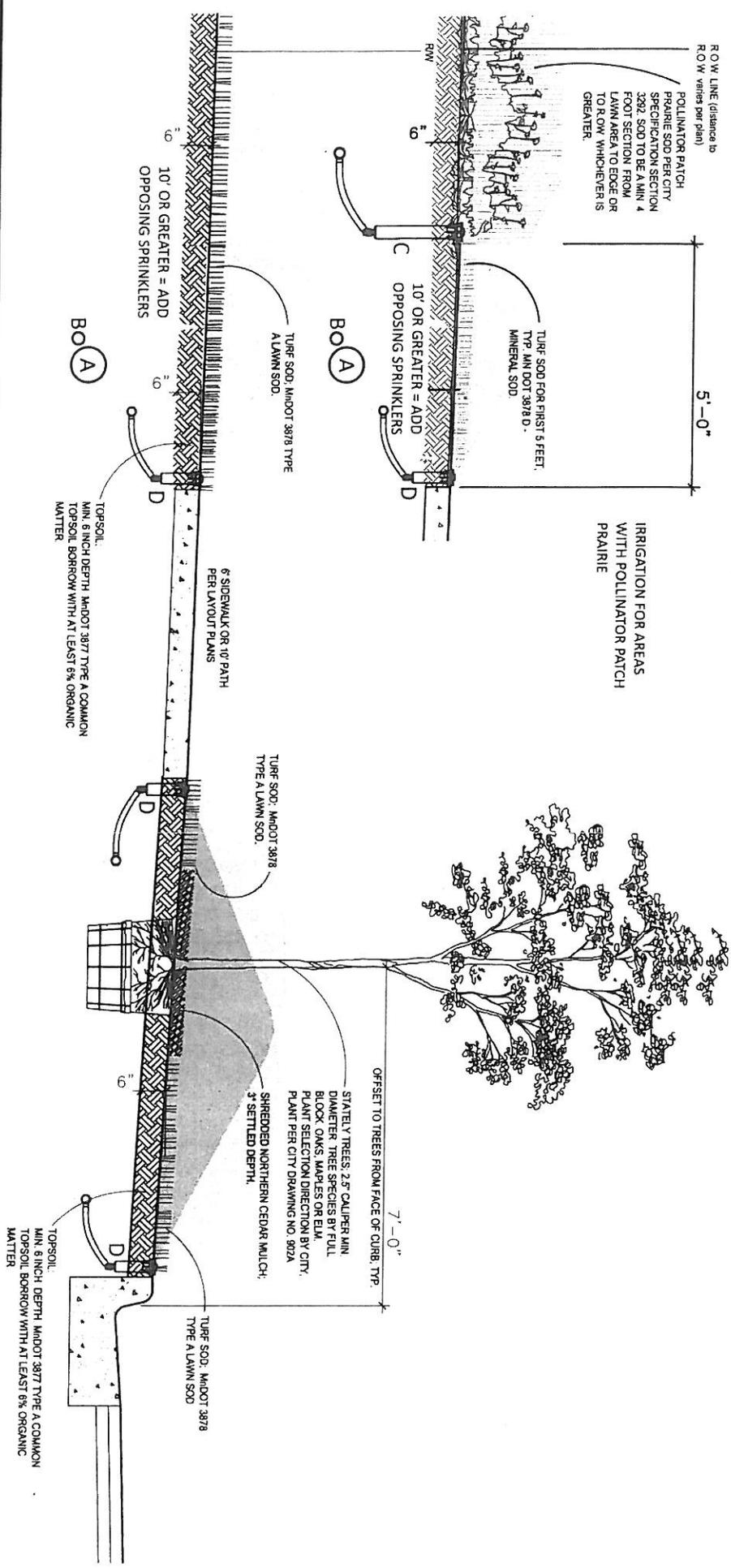
1. Prepare in electronic format a drawing mapping the location of all valves, decoders, lateral lines, and route of the control wires. Identify all valves as to size, station, number and type of irrigation. Digital formatted "as built" drawings may require approval before controller zone charts are prepared.
2. Provide one controller zone chart for each automatic controller showing the area covered by the controller. The chart shall be a reduced drawing of the actual "as built" system and fit the maximum size controller door or pedestal will allow. If controller sequence is not legible when the drawing is reduced to door size, the drawing shall be enlarged to a size that is readable and placed protected from elements (such as laminated) inside the controller door.
3. The final irrigation "as built" drawings shall be submitted in digital format with a different coding to show area of coverage for each station. All drawings and zone charts must be completed and approved prior to final inspection of the irrigation system. Upon completion, a full set of reproducible, electronic as-built drawings, decoder information and base weather-based (SMART) programming shall be furnished to the City of Lake Elmo.
4. The most recent landscape irrigation industry best practices can be found at:
http://www.irrigation.org/uploadedFiles/Resources/BMP_Revised_12-2010.pdf.

---END---

- ADDITIONAL PLANTING NOTES:**
1. ALL TREE LOCATIONS TO BE FLAGGED PRIOR TO INSTALLATION.
 2. CONTRACTOR TO COORDINATE FIELD REVIEW WITH THE CITY PRIOR TO INSTALLATION.
 3. THE BOULEVARD AREA (FROM THE BACK OF CURB TO THE R/W) TO BE IRRIGATED. IRRIGATION PLAN AND SPECIFICATION MUST BE SUBMITTED FOR CITY REVIEW AND APPROVAL.
 4. POLLINATOR PATCH PRAIRIE SOD MAY BE INTEGRATED IN AREAS WHERE 5TH STREET RW ABUTS NATIVE PLANTING AREAS (MUST BE A MINIMUM OF 4 FEET IN WIDTH).

IRRIGATION NOTES:

- A SDR 21 PVC MAINLINE (2" OR GREATER) 24" FROM BACK OF PAVEMENT EDGE, 24" MIN. DEPTH TO TOP OF PIPE
- B CONTROL WIRE PATH
- C 12" POP-UP SPRINKLER W/ MSMT NOZZLE
- D 4" POP-UP SPRINKLER W/ SPRAY NOZZLE



- ADDITIONAL PLANTING NOTES:**
1. ALL TREE LOCATIONS TO BE FLAGGED PRIOR TO INSTALLATION.
 2. CONTRACTOR TO COORDINATE FIELD REVIEW WITH THE CITY PRIOR TO INSTALLATION.
 3. THE BOULEVARD AREA (FROM THE BACK OF CURB TO THE RW) TO BE IRRIGATED. IRRIGATION PLAN AND SPECIFICATION MUST BE SUBMITTED FOR CITY REVIEW AND APPROVAL.
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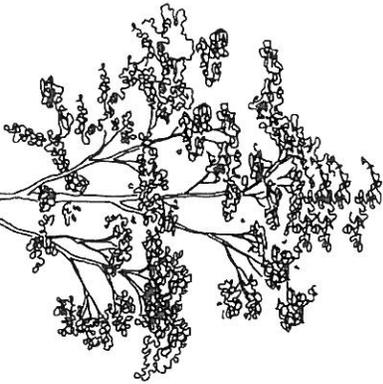
ROW LINE (distance to R.O.W. varies per plan)

POLLINATOR PATCH PRAIRIE SOD PER CITY SPECIFICATION SECTION 3202. SOD TO BE A MIN. 4 FOOT SECTION FROM EDGE OF LAWN AREA TO EDGE OF GREENER.

TURF SOD FOR FIRST 5 FEET. TYP. MANDOT 3878 D. MINERAL SOD

IRRIGATION FOR AREAS WITH POLLINATOR PATCH PRAIRIE

5'-0"



OFFSET TO TREES FROM FACE OF CURB, TYP 7'-0"

STATELY TREES: 2.5" CALIPER MIN. DIAMETER. TREE SPECIES BY FULL BLOCK: OAKS, MAPLES OR ELM. PLANT SELECTION DIRECTION BY CITY. PLANT PER CITY DRAWING NO. 302A. 3" SETTLED DEPTH.

TURF SOD: MANDOT 3878 TYPE A LAWN SOD.

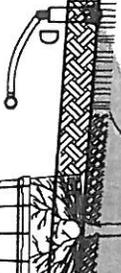
TURF SOD: MANDOT 3878 TYPE A LAWN SOD

10' OR GREATER = ADD OPPOSING SPRINKLERS

BO (A)

TOPSOIL: MIN. 6 INCH DEPTH MANDOT 3877 TYPE A COMMON TOPSOIL BORROW WITH AT LEAST 8% ORGANIC MATTER

6' SIDEWALK OR 10' PATH PER LAYOUT PLANS



4" POP-UP SPRINKLER W/ SPRAY NOZZLE

TOPSOIL: MIN. 6 INCH DEPTH MANDOT 3877 TYPE A COMMON TOPSOIL BORROW WITH AT LEAST 8% ORGANIC MATTER

TURF SOD: MANDOT 3878 TYPE A LAWN SOD

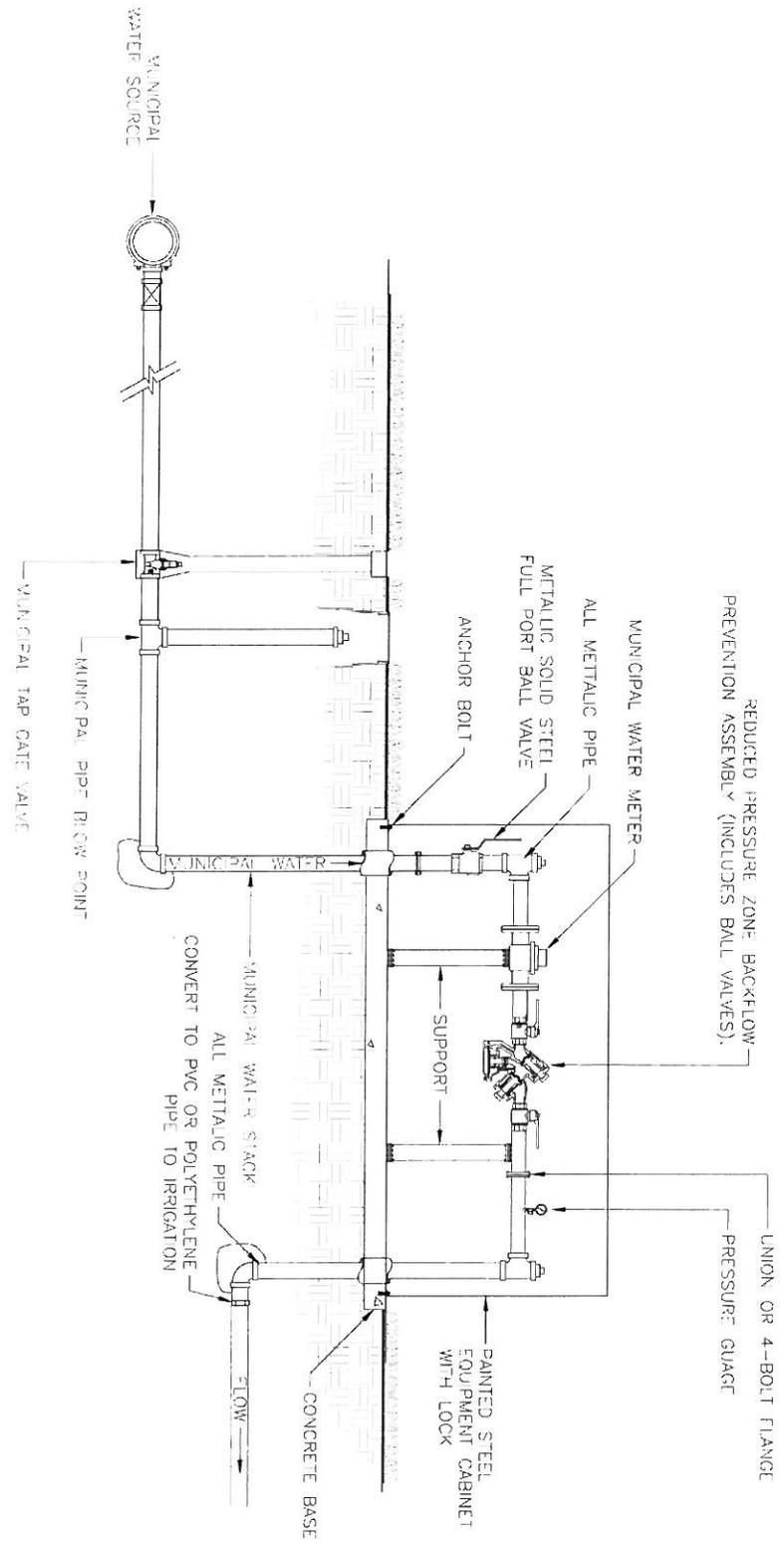
10' OR GREATER = ADD OPPOSING SPRINKLERS

BO (A)

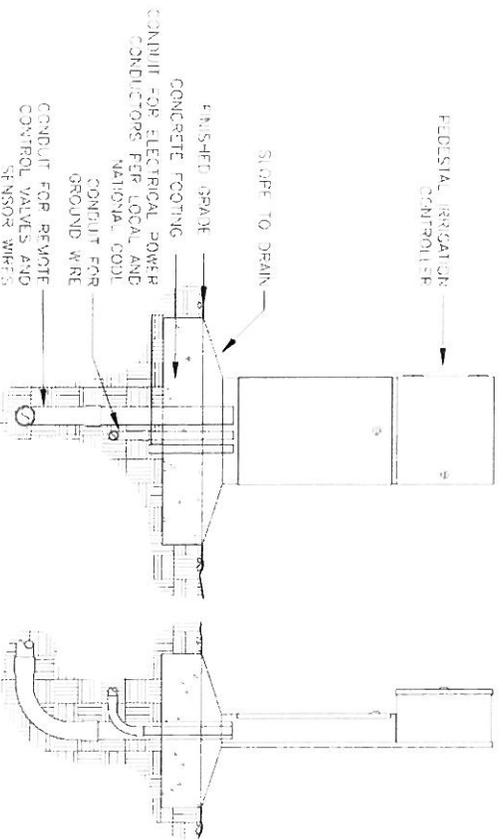
TOPSOIL: MIN. 6 INCH DEPTH MANDOT 3877 TYPE A COMMON TOPSOIL BORROW WITH AT LEAST 8% ORGANIC MATTER

TOPSOIL: MIN. 6 INCH DEPTH MANDOT 3877 TYPE A COMMON TOPSOIL BORROW WITH AT LEAST 8% ORGANIC MATTER

1 WATER SUPPLY (MUNICIPAL) SAMPLE

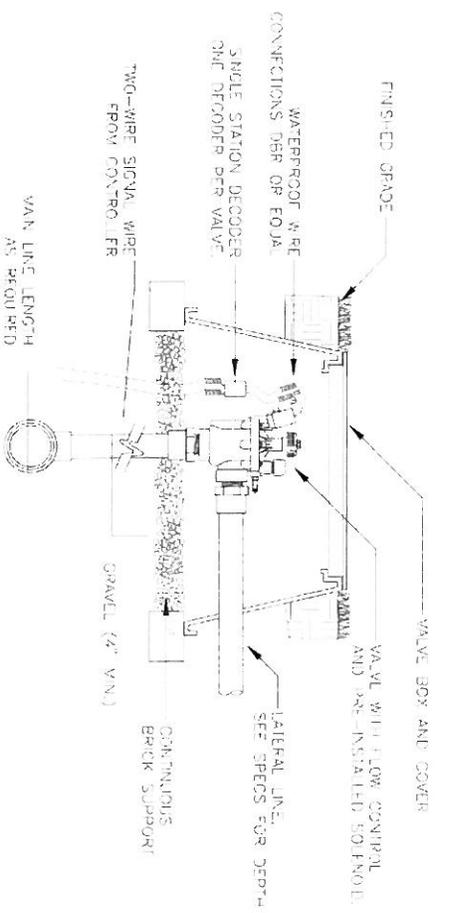


1 WATER SUPPLY (MUNICIPAL) SAMPLE



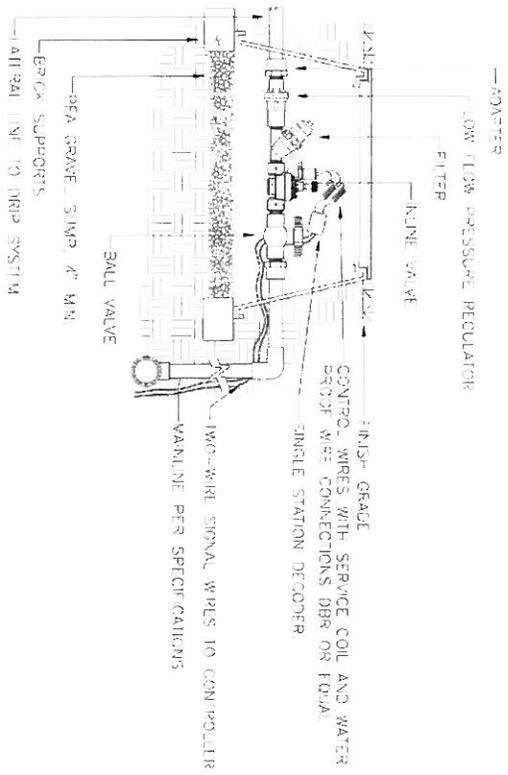
- NOTE
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. HIGH AND LOW VOLTAGE ELECTRICAL WORK IS TO BE PERFORMED BY A LICENSED ELECTRICIAN.
 3. GROUND CONTROLLER IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION.

2 2-WIRE PEDESTAL CONTROLLER SAMPLE
 1" = 1'-0"



- NOTE
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. SET VALVE BOXES AT FINISHED GRADE OR HIGHER AS LANDSCAPE INDICATES SO THAT THEY ARE VISIBLE BUT NOT A HAZARD.
 3. VALVE BOX BOTTOMS ARE TO BE SUPPORTED ON BRICKS OR SUITABLE HARD MATERIAL TO PREVENT BOXES FROM BEING PUSHED BELOW GRADE.
 4. INSTALL CONCRETE VALVE IN PROPER IRRIGATION BOXES, AS PER INDUSTRY STANDARDS FOR LAST OF STRIKI AND MANUAL OR RATION. SEE IRRIGATION SPECIFICATION.
 5. UTILIZE EXTENSION WITS AS REQUIRED.
 6. ADD FOUR-INCHES OF 3/4-INCH CRUSHED GRAVEL SUMP PER BOX.
 7. ALLOW FOR NOT LESS THAN 24" WIRE SLACK COILED NEARBY IN CONTROL BOX.

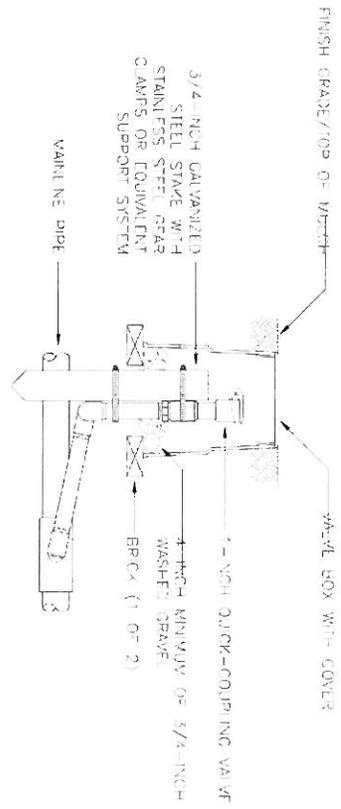
3 VALVE W/ SOLENOID AND DECODER SAMPLE
 1 1/2" = 1'-0"



- NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. SET VALVE BOXES AT FINAL GRADE OR HIGHER AS LANDSCAPE INDICATES SO THAT THEY ARE VISIBLE BUT NOT A HAZARD.
 3. VALVE BOTTOMS ARE TO BE SUPPORTED ON BRICKS OR SUITABLE HARD MATERIAL TO PREVENT BOXES FROM BEING PUSHED BELOW GRADE.
 4. INSTALL CONTROL VALVE IN PROPOSED IRRIGATION BOX, AS PER INDUSTRY STANDARDS FOR FAST OF SERVICE AND MANUAL OPERATION. SEE IRRIGATION SPECIFICATION.
 5. UTILIZE EXTENSION KITS AS REQUIRED.
 6. ADD FOUR-INCHES OF 1/4-INCH CRUSHED GRAVEL SUMP PER BOX.
 7. ALLOW FOR NOT LESS THAN 2\"/>

4 DRIP ZONE CONTROL SAMPLE

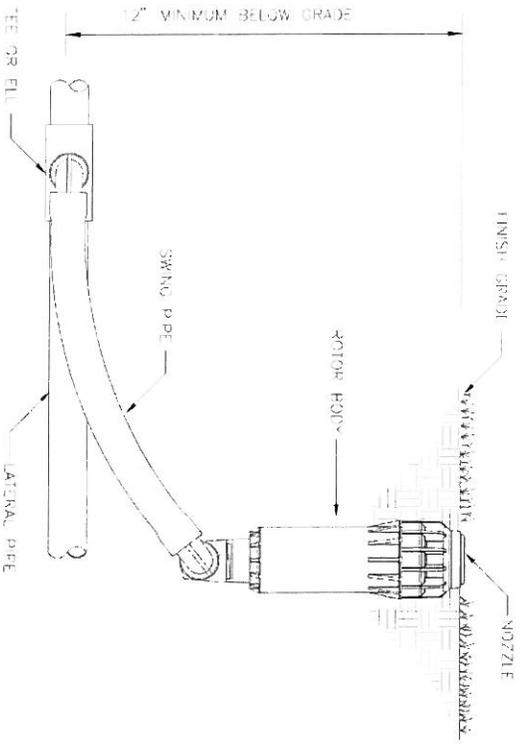
1/2" = 1'-0"



- NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. SET VALVE BOXES AT FINAL GRADE OR HIGHER AS LANDSCAPE INDICATES SO THAT THEY ARE VISIBLE BUT NOT A HAZARD.
 3. VALVE BOX BOTTOMS ARE TO BE SUPPORTED ON BRICKS OR SUITABLE HARD MATERIAL TO PREVENT BOXES FROM BEING PUSHED BELOW GRADE.
 4. INSTALL VALVE IN PROPOSED IRRIGATION BOX, AS PER INDUSTRY STANDARDS FOR FAST OF SERVICE AND MANUAL OPERATION. SEE IRRIGATION SPECIFICATION.
 5. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.
 6. ADD FOUR-INCHES OF 3/4-INCH CRUSHED GRAVEL SUMP PER BOX.

5 QUICK COUPLING VALVE SAMPLE

1/2" = 1'-0"

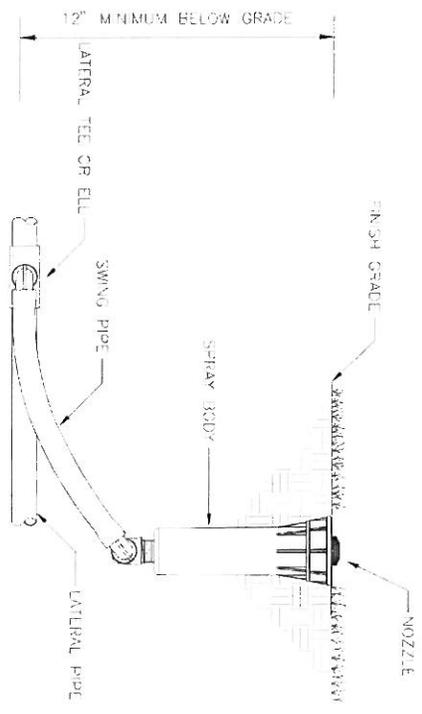


- NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. SPRINKLER SHALL OPERATE CLOSE TO DESIGNER SPECIFIED PRESSURE RATING.
 3. DO NOT MOUNT SPRINKLER DIRECTLY NEXT TO HARDSCAPES OR FENCES. PLACE 2" - 4" AWAY TO ALLOW FOR MAINTENANCE.
 4. SPRINKLER SHALL BE PLACED PERPENDICULAR TO FINISHED GRADE FOR OPTIMUM PERFORMANCE.

6 ROTOR W/ SWING JOINT SAMPLE

3" = 1'-0"

DETAIL FILE



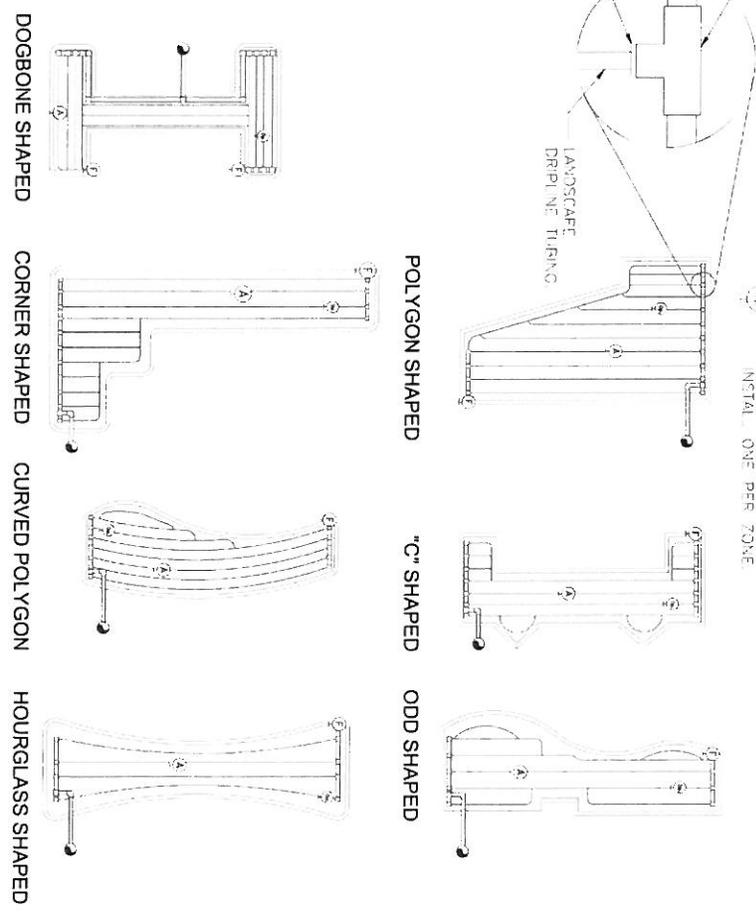
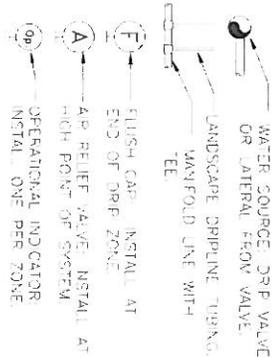
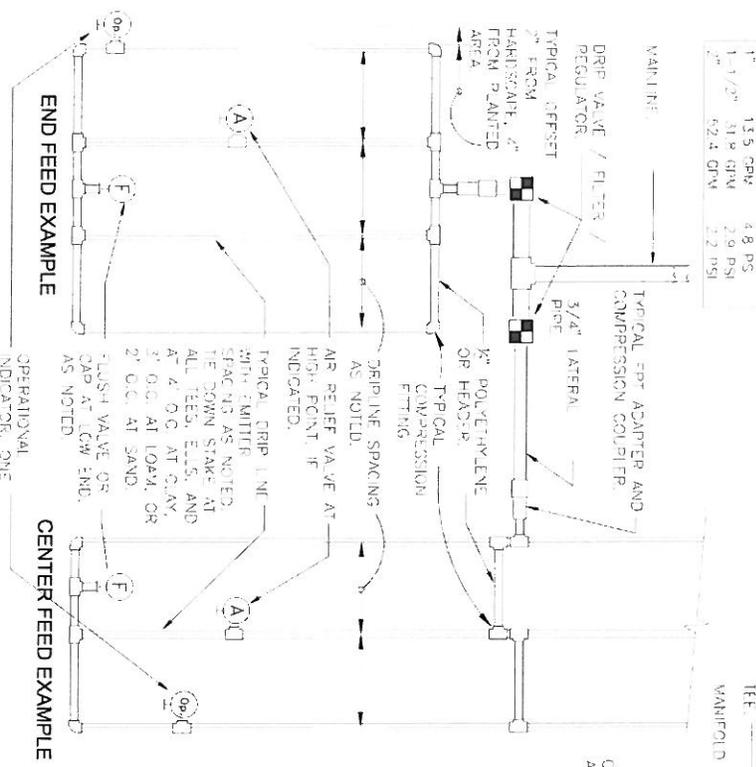
- NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. SPRINKLER SHALL OPERATE AS CLOSE TO MANUFACTURER OPTIMUM PRESSURE RATING AS POSSIBLE.
 3. DO NOT MOUNT SPRINKLER DIRECTLY NEXT TO HARDSCAPES OR FENCES. PLACE 2" - 4" AWAY TO ALLOW FOR MAINTENANCE.
 4. SPRINKLER SHALL BE PLACED PERPENDICULAR TO FINISHED GRADE FOR OPTIMUM PERFORMANCE.

7 SPRAY W/ SWING JOINT SAMPLE

3" = 1'-0"

MAXIMUM FLOW PER ZONE		
SCHEDULE	MAX GPM	PSI LOSS
1	40 AVG HEAD	7.7 PSI
2	47 GPM	9.6 PSI
3	54 GPM	11.5 PSI
4	61 GPM	13.4 PSI
5	68 GPM	15.3 PSI
6	75 GPM	17.2 PSI
7	82 GPM	19.1 PSI
8	89 GPM	21.0 PSI
9	96 GPM	22.9 PSI
10	103 GPM	24.8 PSI
11	110 GPM	26.7 PSI
12	117 GPM	28.6 PSI

SLOPED CONDITION NOTE:
 1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE. INITIAL AIR RELIEF VALVE AT HIGHEST POINT.
 2. REMOVE SPACING WITHIN THE TOP 1/2 OF SLOPE.
 3. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM 1/2 OF THE SLOPE.
 4. ZONE THE BOTTOM 1/2 ON A SEPARATE VALVE.



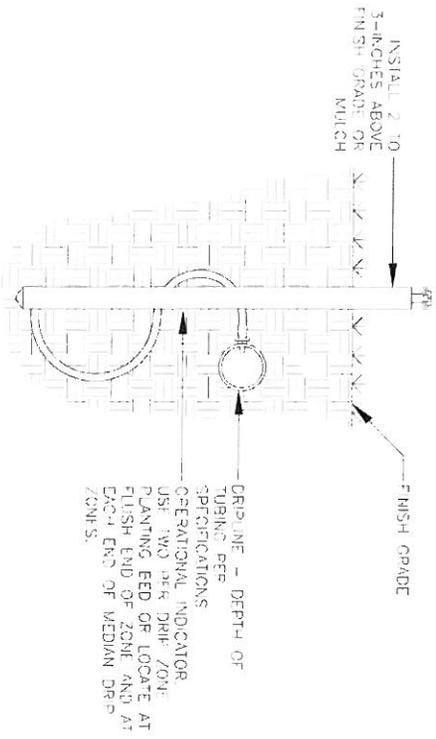
NOTE:
 1. DO NOT EXCEED 2900 SF PER DRIPLINE ZONE

8 TYPICAL DRIPLINE SAMPLE
 NOT TO SCALE



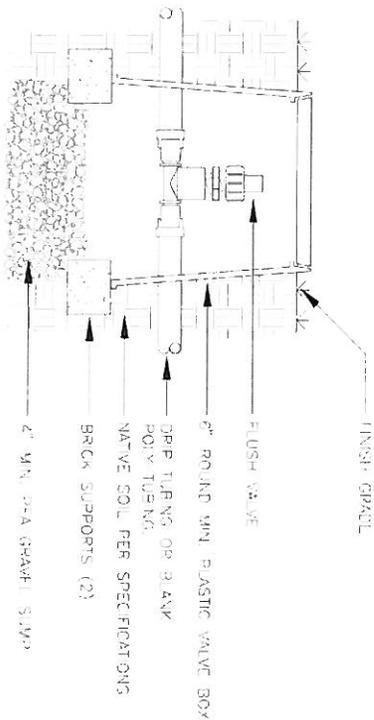
STANDARD DETAILS
 OCTOBER 2015

IRRIGATION DETAILS



- NOTE
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. INSTALL ONE POP UP OPERATION INDICATOR IN EACH DRIP BED IN A LOCATION THAT WILL BE VISIBLE AT A DISTANCE, BUT NOT A TRIPPING HAZARD.
 3. POP UP OPERATION INDICATOR WILL SIGNAL WHEN STATION IS RUNNING. INDICATOR WILL ALSO SIGNAL POTENTIAL DAMAGE TO DRIPLINE IF NOT ELEVATED DURING OPERATION.

9 DRIP GRID POP-UP OPERATION INDICATOR SAMPLE
 $3' = 1''-0''$



- NOTE
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BEST PRACTICES.
 2. USE ONE FLUSH VALVE FOR EVERY 7 GPM PER ZONE.
 3. LOCATE FLUSH VALVE ASSEMBLY AT LOW POINTS.
 4. FLUSH RATE IS 0.8 GPM.
 5. FLUSH PRESSURE IS 2 PSI.
 6. THE SYSTEM MUST BE FLUSHED THOROUGHLY AFTER REPAIRS OR ALTERATIONS ARE MADE TO THE IRRIGATION COMPONENTS. FLUSH CAPS DO NOT ALLOW ENOUGH WATER TO PASS THROUGH EXTENSIVE DEBRIS AND THEREFORE MUST BE REMOVED IN ORDER TO EFFECT A MANUAL FLUSH.

10 DRIP GRID FLUSH VALVE SAMPLE
 $3' = 1''-0''$

SECTION 32 84 00

PLANTING IRRIGATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section is ten total written pages plus associated sample details.
- B. This section specifies elemental materials and procedures based upon published and widely accepted industry best practices to design and construct landscape irrigation system(s) in a design-build approach including the developments, and road right-of-ways. The most recent landscape irrigation industry best practices can be found at: http://www.irrigation.org/uploadedFiles/Resources/BMP_Revised_12-2010.pdf.

1.2 SUBMITTAL

- A. All right-of-way and city owned/maintained outlots as well as HOA owned and maintained outlots need to provide 100% irrigation coverage for all proposed landscape improvements excluding native seeding areas.
- B. Landscape irrigation designs shall be crafted in workmanlike fashion preferably using CAD-based software. Scaled irrigation plans shall include the entire project limits. Designs and supporting documents shall be furnished in reproducible electronic and hardcopy fashion, to the City of Lake Elmo for approval prior to commencing work. No landscape irrigation installation work shall commence without written consent of the City of Lake Elmo, MN.
- C. Landscape irrigation design(s) and supporting documents shall depict and describe all components of the proposed landscape irrigation system including but, not limited to:
 - a. Water supply and detail including proposed enclosures and slabs
 - b. Pipeline sizing throughout
 - c. Sprinkler emitter proposed brand, model and nozzle sizing
 - d. Drip grids with associated required components
 - e. Controls including proposed pedestal enclosures and weather-based appurtenances
 - f. Projected seasonal water use month-by-month

1.3 DEFINITIONS

- A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves.
- B. Drain Piping: Downstream from circuit-piping drain valves.
- C. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves.
- D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 volts or for remote-control, signaling power-limited circuits.

1.4 ABBREVIATIONS

- A. FPT: Female pipe thread

~~RECEIVED~~

- B. MPT: Male pipe thread
- C. NPT: National pipe thread
- D. HDPE: high-density polyethylene
- E. PVC: Polyvinyl chloride plastic
- F. SDR: Standard Dimension Ratio
- G. SCH: Schedule Pipe
- H. AWG: American Wire Gauge

1.5 ELEMENTAL PERFORMANCE REQUIREMENTS

- A. Irrigation water supply shall be water re-use as primary.
- B. Backup irrigation water supply(ies) drawing from municipal or groundwater shall be properly permitted by authorities having jurisdiction and shall be constructed to conform to meet or exceed minimum requirements of the City of Lake Elmo, MN. See sample detail(s). All water supply(ies) and associated system mainline and circuit piping regardless of water source, shall be:
 - 1. sized not to exceed dynamic velocity greater than 5 feet per second;
 - 2. sized to enable simultaneous operation of not less than two stations of irrigation;
 - 3. sized to complete an irrigation cycle within 10 hours during the hottest month of the irrigation season.
 - 4. sized to enable operation of sprinklers at manufacturer recommended dynamic pressure(s).
- C. Irrigation stations shall not mix rotor or multi-stream, multi-trajectory sprinklers with misting spray-type sprinklers.
- D. Broadcast sprinklers shall be placed to enable 100 percent coverage, sprinkler-to-sprinkler.
- E. Turf areas shall have broadcast sprinklers.
- F. Islands and planting beds shall have drip irrigation.
- G. Broadcast sprinkler emission devices shall include matched precipitation/application rates.
- H. Broadcast sprinklers located at the bottom of slopes shall have check-valve or similar features to prevent or reduce low-head drainage.
- I. Broadcast sprinklers shall not throw over public walks or roadways.
- J. Broadcast sprinklers shall be placed and adjusted to minimize overspray onto hard surfaces.
- K. Broadcast sprinklers in the vicinity of conifers shall be placed to minimize broadcast onto conifers.
- L. Sprinklers and piping installed upon slopes shall be installed perpendicular to the slope wherever feasible.
- M. System zoning priority shall be given to soil type, plant type, topography and microclimate.
- N. Single row broadcast sprinklers shall be allowed in boulevard areas or strips of eight feet width or less.
- O. Single row broadcast sprinklers shall be placed to throw away from walks and toward streets.
- P. Use schedule 40 PVC pipe or greater for sleeves under hard surfaces.
- Q. Sleeve(s) dimension shall be a minimum of two times the outside dimension of the pipe passing through.
- R. Use NSF-rated HD100 polyethylene pipe, where applicable.
- S. Use up to 2" polyethylene pipe in sleeves.

- T. Thrust block pressure pipe 3" or larger. Follow published industry best practices.
- U. Top of mainline pipe 3" and smaller shall not be less than 18" from final grade.
- V. Top of circuit piping shall be not less than 12" from final grade.
- W. Plan for and install controller and field grounding equipment per manufacturer recommendations.

1.6 QUALITY ASSURANCE:

A. Products Criteria:

1. When two or more units of the same type or class of materials or equipment are required, these units shall be products of one manufacturer.
2. A nameplate bearing manufacturer's name or trademark, including model number, shall be securely affixed in a conspicuous place on equipment. In addition, the model number shall be either, cast integrally with equipment, stamped, or otherwise permanently marked on each item of equipment.

B. Installer Minimum Qualifications:

The selected installing contractor shall be an employer of workers that include not less than one Certified Irrigation Contractor in good standing as accredited by The Irrigation Association, Fairfax, VA (www.irrigation.org) and who shall be currently employed by the selected installing contractor and who shall personally conduct or oversee the conduct of all work upon this project. The selected installing contractor shall be registered in the State of Minnesota as a Technology Systems Contractor in good standing employing not less than one Minnesota licensed Power Limited Technician in good standing who shall be currently employed by the selected installing contractor and who shall personally conduct or oversee the conduct of all low voltage irrigation electrical work. The selected installing contractor shall be prepared to furnish proof of not less than 5 successful installations of projects of similar scope and complexity within the past 3 calendar years including but, not limited to successful installation, programming and operation of digital two-wire decoder irrigation control systems.

C. System Requirements:

100 percent irrigation coverage of irrigated areas is required. The actual and spirit of intent of this project outcome is clearly indicated upon the drawing sheets and within the specification documents. The selected installing contractor shall, at no additional cost be prepared to make minor adjustments necessary to avoid obstructions such as hard surfaces signs, utilities and light standards and achieve full and complete coverage of irrigated areas without overspray on roadways, sidewalks, window wells or buildings and shall protect trees from close high-spray velocity.

PART 2 - PRODUCTS

2.1 PIPES, TUBES AND FITTINGS

- A. PE pipe with controlled ID shall be ASTM F771, PE 3408 compound;
- B. Insert fittings for PE pipe: ASTM D2609, nylon or propylene plastic with barbed ends. Include stainless steel bands or other fasteners.

- C. PE pressure pipe: AWWA C906, with DR of 7.3, 9, or 9.3 and PE compound number required to give pressure rating not less than 160 psi (1100 kPa)
- D. PE butt, heat-fusion fittings shall be ASTM D3261.
- E. PE socket-type fittings shall be ASTM D2683.
- F. PVC sleeve pipe: ASTM D1785, PVC 1120 compound, Schedule 40.
- G. PVC socket fittings shall be ASTM D2466, Schedule 40 PVC threaded fittings: ASTM D2464, Schedule 80.
- H. Swing joints: Threaded fittings with elastomeric seals that allow 360 degree rotation, and designed for minimum 200 psi (1375 kPa) working pressure, may be used in lieu of standard threaded fittings.
- I. PVC socket unions: Both headpiece and tailpiece shall be PVC with socket ends.
- J. PVC Pipe: ASTM D2241, PVC 1120 compound, SDR 26.
- K. PVC socket fittings: ASTM D2467, Schedule 80.
- L. PVC socket unions: Both headpiece and tailpiece shall be PVC with socket or threaded ends.

2.2 PIPE JOINING MATERIALS

- A. Solvent cements for joining PVC piping: ASTM D2564. Include primer according to ASTM F656.
- B. Plastic, Pipe-Flange Gaskets, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

2.3 VALVES

- A. Underground Shut-Off Valves:
 - 1. Butterfly valves 2 inches (50 mm) and larger: AWWA C504, iron body, bronze mounted, double disc with parallel or inclined seats, non-rising stem turning clockwise to close, 150 psi (1025 kPa) minimum working pressure.
 - 2. Ball valves, isolation valves, 1-1/2 inch (38 mm) and smaller: Full-port ball valves with bronze body, PTFE seats, and 90 degree on/off handle. Ball valves shall have NPT female end connections.
- B. Operations:
 - 1. Underground applications shall use valves with 2 inch (50 mm) nut for T-Handle socket wrench operation.
 - 2. Aboveground and valve pit applications shall use valves, with handwheels.
 - 3. Valve ends shall accommodate the type of main pipe adjacent to valve.
- C. Remote Control Valves:
 - 1. All remote control valves shall be of the manufacturer and models indicated on the drawing sheets furnished. No deviation from manufacturer or model call-outs once approved, shall be allowed.
 - a. Sizes and locations as indicated on the drawing sheets. Molded-plastic body, furnished as straight or angle pattern type, normally closed diaphragm type with manual shut off and flow control adjustment. Refer to sample details or furnished and approved details submitted at the time of approval application.

b. Single valve digital two-wire decoder installed concurrently with each remote control valve and within the same remote control valve box, one valve per decoder, one decoder per control valve, one valve box per valve and decoder combination. No deviation from manufacturer or model call-outs once approved, shall be allowed. Refer to sample details or furnished and approved details submitted at the time of approval application. Label decoders with stencils designating controller and circuit number with permanent white epoxy paint or with permanent paint pen.

1. Valves shall have a minimum of 150 psi (1025 kPa) working pressure.
2. Each sprinkler station shall be automatically operated by a remote control valve installed underground and operated by a single-station in-line digital decoder-governed solenoid.
3. Valve boxes shall be locking type-capable.
4. Valves shall be completely serviceable from the top without removing valve body from the system. Valves shall operate at no more than 7 psi (50 kPa) pressure loss at manufacturers maximum recommended flow rate.
5. Valves shall be diaphragm type designed to operate in water containing sand and debris and shall have a self-cleaning type contamination filter to filter all water leading to the solenoid actuator and the diaphragm chamber.

2.4 VALVE BOX

- A. Isolation valve boxes shall be precast concrete boxes with a compressive concrete strength in excess of 4000 psi (30 Mpa). Box dimension shall be adapted to depth of cover required over pipe at valve location. Mark box cover to say "Irrigation" and set flush with finished grade. Provide 2 (two) "T" handle socket wrenches of 5/8 inch (15 mm) round stock with sufficient length to extend 2 feet (600 mm) above top of deepest valve box cover.
- B. Irrigation control valve, decoder boxes and quick coupler boxes shall be HDPE green in color or black body with green cover. Boxes shall be lockable-ready. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.5 BACKFLOW PREVENTER

- A. Use reduced pressure zone backflow prevention assembly sized according to minimum system performance specifications contained herein and as approved by the authority having jurisdiction. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.6 WATER METER

- A. Use water meter brand and model specified by the authority having jurisdiction. Size meter according to minimum system performance specifications contained herein. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.7 AUTOMATIC CONTROL EQUIPMENT - INDEPENDENT ELECTRIC CONTROLLER WITH NO FLOW SENSING (FOR SMALL INSTALLATIONS)

- A. GENERAL STATEMENT: Irrigation control shall be digital, two-wire-based automatic operation including:

1. rain sensing technology, placed per manufacturer recommendations and/or referenced industry best practices to interrupt irrigation during periods of sufficient moisture and fully engaged;
 2. weather-based adjustment, placed per manufacturer recommendations and/or referenced industry best practices and fully engaged;
 3. controller shall be mounted in a pedestal manufactured by the selected controller manufacturer and shall be securely placed upon a concrete base per manufacturer recommendations and/or referenced industry best practices; See associated sample detail(s).
 4. field control valves shall be connected to digital control wire using one-station field decoders, placed in the associated control valve box and shall include waterproof wire fittings such as 3MDBR or equivalent on the signal input wires and the signal output wires. Follow manufacturer recommendations and/or referenced industry best practices. Field control valves shall be placed in plastic/composite surface boxes, one valve per box, minimum 10" round sized and in a fashion to prevent damage from surface activities and to enable basic field maintenance without requiring of the box. See associated sample detail(s).
- B. The independent electric automatic control system shall consist of one digital two-wire decoder-based controller located in a pedestal manufactured by the controller manufacturer, which operates individual remote control decoder-based valves and weather-based schedule adjustment (SMART) operation in accordance with timing schedules programmed into the independent unit. Refer to sample details or furnished and approved details submitted at the time of approval application.
- C. Connect, test electrically and program all irrigation stations to the digital two-wire decoder-based controller per manufacturer recommendations and Best Practices and incorporate all stations into the control system. Memorialize all programming data onto reproducible documents in a workmanlike fashion.

2.8 SPRINKLER HEADS

- A. Rotary pop-up sprinklers:
1. $\frac{3}{4}$ " inlet, closed-case, gear-driven, 4" minimum pop-up height or
 2. $\frac{1}{2}$ " inlet spray-body mounted, six-inch minimum pop-up height, multi-stream, multi-trajectory rotating nozzle.
 3. Matched precipitation/application shall be depicted on plan submittals and practiced at the time of installation. Placement appropriate to the area characteristics being watered.
 4. Refer to sample details or furnished and approved details submitted at the time of approval application.
- B. Spray-type sprinklers (fixed):
1. $\frac{1}{2}$ " inlet, 4" minimum pop-up height with nozzles and placement appropriate to the area characteristics being watered.
 2. Refer to sample details or furnished and approved details submitted at the time of approval application.

2.9 QUICK COUPLERS

- A. Quick couplers shall have all parts contained in a two-piece unit and shall consist of a coupler water seal valve assembly and a removable upper body to allow the spring and key track to be serviced without shut down of the main.
- B. Metal parts shall be brass.
- C. Lids shall be lockable vinyl covered and have springs for positive closure on key removal.
- D. Each quick coupler shall be contained in valve boxes. Refer to sample details or furnished and approved details submitted at the time of approval application.
- E. Furnish 1 (one) hose swivel and operating key.

2.10 LOW VOLTAGE CONTROL VALVE WIRE

- A. Wire shall be solid copper wire, Underwriters Laboratories Inc. approved for direct burial in ground. Wire shall be digital decoder-based control wire of the same outer jacket color as that installed upon the existing landscape irrigation system. Size of wire shall be consistent with manufacturer recommendations, never less than 14 AWG.

2.11 WIRE SPLICING MATERIALS: LOW VOLTAGE RATED UV RESISTANT MOISTURE-RESISTANT GREASE-FILLED POLYPROPYLENE TUBE

- A. 3M DBR/Y-6 Direct Bury Splice Kit UL486D-approved for direct burial in ground or equal. Use upon wire splices, decoder inlet wiring and decoder outlet wiring.

2.12 SLEEVE MATERIAL

- A. ASTM D2241, PVC Schedule 40.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine proposed irrigation areas for compliance with requirements and conditions affecting installation and performance.
- B. Verify limits of irrigation and compare against approved plans.

3.2 PIPE INSTALLATION - GENERAL

- A. Layout work as closely as possible to drawing sheets. **CALL BEFORE YOU DIG (811)**.
- B. Install sprinkler lines to avoid electric, storm and sanitary sewer lines and existing water and gas mains, all of which have the right of way.
- C. Existing sidewalks and curbs shall not be cut during trenching and installation of pipe. Install pipe under sidewalks and curbs by jacking, auger boring, or by tunneling. Repair or replace any cracked concrete, due to settling during the warranty period.
- D. Do not lay pipe on unstable material, in wet trenches weather conditions are unsuitable for work.
- E. Allow a minimum of 3 inches (80 mm) between parallel pipes in the same trench.

- F. Clean the interior portion of pipe and fittings of foreign matter before installation. Securely close open ends of pipe and fittings with caps or plugs to protect fixtures and equipment against dirt, water and chemical or mechanical injury. At completion of all work thoroughly clean fixtures, exposed materials and equipment.
- G. The full length of each section of (PVC) pipe shall rest upon the pipe bed with recesses excavated to accommodate bells or joints. Do not lay pipe on wood blocking.
- H. Hold pipe securely in place while joint(s) is/are being made.
- I. Do not work over, or walk on, pipe in trenches until covered by layers of earth, well tamped, in place to a depth of 12 inches (300 mm) over pipe.
- J. Irrigation lines and control wire shall run through designated lanes where possible. Refer to sample details or furnished and approved details submitted at the time of approval application.
- K. Concrete thrust blocks shall be installed upon piping 3-inch and larger where the irrigation main changes direction at "L" and "T" locations and where the irrigation main terminates. Do not pressurize pipe for a period of 36 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal water pressure. Thrust block material shall not be poured over and around pipe and /or control wire.
- L. Minimum cover over lines under constant pressure shall be 18 inches (750 mm) for pipe sizes of 3 inch and less. Cover laterals to minimum depth of 12 inches (600 mm).

3.3 SLEEVE INSTALLATION

- A. Furnish and install where pipe and control wires pass under walks, paving, walls, and other similar areas.
- B. Sleeves to be twice line size or greater to accommodate retrieval for repair of wiring or piping and shall extend 12 inches (300 mm) beyond edges of paving or construction.
- C. Bed sleeves with a minimum of 4 inches (100 mm) of sand backfill above top of pipe in areas where pipe is placed prior to hardscape is installed.

3.4 VALVE INSTALLATION

- A. Locations of remote control valves is/are diagrammatic. Group remote control valves wherever possible and aligned at a set dimension back of curb along roads. Do not install more than one valve per valve box unless using jumbo-sized valve box and per minimums depicted herein and upon sample details included with this written specification.
- B. No valves shall be set under roads, pavement or walks.
- C. Clean interior of valves of foreign matter before installation.
- D. Set valve box cover flush with finished grade.
- E. Control valves shall never be less than 3 inches (80 mm) below finished grade. Refer to minimums depicted herein and see sample details.

3.5 SPRINKLER AND QUICK COUPLER INSTALLATION

- A. Place part circle rotary sprinklers no greater than 6 inches (150 mm) from edge of and flush with top of adjacent walks, curbs, and mowing aprons, or paved areas at time of installation.
- B. Install all sprinklers using swing joints or flexible hose-and-fitting joints (a.k.a. swing pipe). Refer to sample details included with this written specification.
- C. Install all quick couplers on swing joints. Stake for support. Refer to sample details included with this written specification.
- D. Set shrub sprinklers 4 inches (100 mm) above grade or even with bedding mulch depth and 4 inches (100 mm) from edge of curb or pavement. Place 4 inches (100 mm) from walls. Stake sprinklers prior to backfilling trenches. Support stakes shall be parallel to riser.

3.6 AUTOMATIC IRRIGATION - CONTROL SYSTEM INSTALLATION

- A. Attach new stations of irrigation to the digital two-wire decoder system and program and test each control valve for proper operation from the existing irrigation controller.
- B. Adjust master controller programming to incorporate new stations of irrigation within programs for similar plant-types or hydrozones and in accordance with necessary programming for weather-based (SMART) operation.

3.7 CONTROL WIRE INSTALLATION

- A. Wiring shall be located in trench with pressure main pipe. Splicing shall be held to a minimum. In the event a wire splice is required outside of a remote control valve location, the splice shall be contained in a valve box not smaller than 10" round with not less than 24 inches of leader or expansion looping on each end of the splice. Use 3M DBR waterproof wire splices or equivalent.
- B. Provide 12 inch (300 mm) expansion loops in wiring at each wire connection or change in wire direction. Provide not less than 24 inch (600 mm) loop at remote control valves.

3.8 FIELD TEST AND QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Pressure test pressure main line(s) before joint areas are backfilled. Backfill a minimum of 12 inches (300 mm) over the pipe to maintain pipe stability during test period.
 - 2. Inspect each joint and repair leaks.
 - 3. Flush lines before installing sprinkler heads and quick couplers.
 - 4. After installation, charge system and test visually for leaks. Repair leaks and retest until no leaks exist.
 - 5. After electrical circuitry has been activated and final adjustment of sprinklers to permanent level at ground surface is complete, test each broadcast turf sprinkler section to indicate a uniform distribution within any one sprinkler area and over the entire area.
 - 6. Operate controller and automatic control valves to demonstrate the complete and successful installation and operation of all equipment.
 - 7. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

8. Prepare test and inspection reports, programming information (including SMART operation), decoder information and details for record drawings. Furnish records in a professional and workmanlike fashion.

3.11 ADJUSTMENTS

- A. Adjust settings of controller as needed during the establishment period. Should plant establishment requirements preclude engagement of weather-based (SMART) operation, assure weather-based operation is engaged prior to final walkthrough/turnover.
- B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
- C. Adjust sprinklers and devices to proper grade, radius and arc.

3.12 DEMONSTRATION AND DOCUMENTATION

- A. Program controller for weather-based (SMART) operation.
- C. Follow manufacturer's instructions and industry best practices.
- D. Maintain and provide a complete set of as built drawings in a professional and workmanlike presentation form which shall be corrected to show changes in locations of all pipe, valves, pumps, decoders and related irrigation equipment.
- E. Controller Drawings and Zone Chart(s):
 1. Prepare in electronic format a drawing mapping the location of all valves, decoders, lateral lines, and route of the control wires. Identify all valves as to size, station, number and type of irrigation. Digital formatted "as built" drawings may require approval before controller zone charts are prepared.
 2. Provide one controller zone chart for each automatic controller showing the area covered by the controller. The chart shall be a reduced drawing of the actual "as built" system and fit the maximum size controller door or pedestal will allow. If controller sequence is not legible when the drawing is reduced to door size, the drawing shall be enlarged to a size that is readable and placed protected from elements (such as laminated) inside the controller door.
 3. The final irrigation "as built" drawings shall be submitted in digital format with a different coding to show area of coverage for each station. All drawings and zone charts must be completed and approved prior to final inspection of the irrigation system. Upon completion, a full set of reproducible, electronic as-built drawings, decoder information and base weather-based (SMART) programming shall be furnished to the City of Lake Elmo.
 4. The most recent landscape irrigation industry best practices can be found at:
http://www.irrigation.org/uploadedFiles/Resources/BMP_Revised_12-2010.pdf.

---END---



MEMO

DATE: January 13, 2015

TO: Mitchell Cookas

FROM: Tim Malooly

RE: Comments on Lake Elmo best practices-based landscape irrigation performance specification guidance

The performance specification reviewed is intended to furnish minimum best practice-based criteria for design-build irrigation systems that helps ensure consistency of system design and installation and to furnish criteria from which to review, approve, request improvements to or reject plans submitted to the owner or owner's representative prior to installation. The specification also furnishes criteria from which, to inspect and accept or reject equipment or installation practices as a condition of turnover to the owner.

1.1B. The Irrigation Association best practice documents are widely accepted nation-wide in myriad forums including local codes and green-build supplements. Each best practice is easily defended from many points including efficient use of resources and system maintainability.

1.2A 100% coverage ensures even distribution of water on to a planted area and conforms to best practices and manufacturer recommendations.

1.2C This directive enables the owner to properly catalogue, obtain inventory, maintain and perhaps most importantly, properly schedule irrigation events.

1.5A, B Whenever opportunity exists to avoid use of municipal potable water, feasibility of use of non-potable water shall be undertaken and if deemed feasible, municipal water shall be used as backup only. If reuse water source is deemed non-feasible, documentation will exist to defend such a decision.

Items 1-4 conform to best practices, system longevity and contribute to water manager's ability to properly complete irrigation events in reasonable timeframes.

- 1.5H Although slightly more costly to purchase, check valve-equipped sprinklers located at bottom of slopes will conserve water, reduce damage to landscapes and hard surfaces and reduce liability to the City associated with pedestrian injury from slippery surfaces.
- 1.5I, J & O No water over walkways is a water efficient best practice and reduces liability to the City associated with pedestrian injury from slippery surfaces.
- 1.5K Conifer damage is costly, unsightly and expensive. Avoiding direct spray onto such plants reduces risk of damage or death.
- 1.5S Flexible pipe in sleeves where applicable helps reduce costly maintenance resultant of cracked pipes in sleeves from winter freeze conditions.
- 1.6A This provision helps ensure products are new, matching and easily maintained by City personnel.
- 1.6B PLT is Minnesota law. CiC helps minimize risk of installation deficiencies and maintenance challenges resultant of non-qualified installers. CiC is nationally-recognized, third party accredited. Many local contractors have employees who are CiC.
- 2.3Cb Decoder-based irrigation systems enable long term flexibility and reasonable ability to retrofit systems with new technology over time. When installing digital decoder-based control, single decoder per control valve assures proper installation and minimizes confusion during maintenance.
- 2.4A Identification of control boxes and adequate slack of control wire contributes to efficient maintenance and lower corresponding costs of maintenance.
- 2.7A1 Including properly functioning rain sensing technology is Minnesota law.
- 2.7A2 SMART irrigation control minimizes waste of resources and reduces cost of maintenance.
- 2.73 Pedestal-based installation reduces propensity of non-code conforming installation, ensures safe operation of control equipment.
- 2.8A3 Matched application nozzles reduce water waste, reduce plant death from overwatering and promote an even look to the landscape.

- 3.3B Sleeves sized 2x pipe passing through ensures ability to repair damaged pipe if necessary and reduces propensity of damage to inserted pipe or wire at the time of construction.
- 3.4A Grouped or manifolded control valves reduces the number of potential points of vandalism/damage from mowers, etc. and promotes efficient maintenance.
- 3.8A1 Pressure testing mainline is a best practice. This call-out has been minimized (from common expectations) in terms of requirements for passage to minimize unnecessary installation cost.
- 3.12E Completing the work listed ensures the owner will have necessary and workmanlike records to catalogue systems and efficiently maintain systems.



Timothy R. Malooly, CID, CIC, CLIA
Minnesota Licensed Water Operator
President
TimM@WaterMotion.com

Water in Motion proudly employs EPA WaterSense Partners.

1. PRIOR TO TREE STAKING AND PLANTING OPERATIONS CONTRACTOR MUST CONTACT GOPHER STATE ONE CALL (www.gopherstateonecall.org or 811) TO VERIFY UNDERGROUND UTILITIES. WHERE PRIVATE UTILITIES EXIST ON-SITE THE CONTRACTOR IS REQUIRED TO HAVE THOSE LOCATED AS WELL.
2. PLANT MATERIALS SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z60.1 LATEST EDITION.
[http://americanhort.org/documents/ANSI Nursery Stock Standards AmericanHort 2014.pdf](http://americanhort.org/documents/ANSI_Nursery_Stock_Standards_AmericanHort_2014.pdf)
3. NO PLANT SUBSTITUTIONS SHALL BE MADE WITHOUT THE PRIOR WRITTEN AUTHORIZATION FROM THE CITY.
4. ALL TREE PROTECTION MEASURES TO BE FIELD STAKED PRIOR TO INSTALLATION. CONTRACTOR TO COORDINATE FIELD REVIEW OF PROPOSED TREE PROTECTION LOCATIONS WITH THE CITY AND PROJECT LANDSCAPE ARCHITECT PRIOR TO ANY TREE PROTECTION INSTALLATION.
5. ALL TREE LOCATIONS TO BE FIELD STAKED PRIOR TO INSTALLATION. CONTRACTOR TO COORDINATE FIELD REVIEW OF PROPOSED TREE LOCATIONS WITH THE CITY AND PROJECT LANDSCAPE ARCHITECT PRIOR TO ANY TREE INSTALLATION.
6. ALL PLANTS SHALL BE PLANTED IMMEDIATELY UPON ARRIVAL TO PROJECT SITE. NO PLANT MATERIAL IS TO BE LEFT OVERNIGHT ON THE PROJECT SITE WITHOUT BEING INSTALLED UNLESS WRITTEN APPROVAL BY CITY.
7. ALL TREES, SHRUBS, PERENNIALS AND TURF LAWN TO HAVE A TWO YEAR WARRANTY BEGINNING UPON WRITTEN ACCEPTANCE BY THE CITY. DEFECTIVE PLANTS AS DETERMINED BY THE CITY SHALL BE REPLACED WITHIN 30 DAYS OF NOTICE DURING THE GROWING SEASON, AND REPLACEMENT MATERIALS SHALL RECEIVE THE SAME TWO YEAR WARRANTY UNTIL PLANTS ARE SUCCESSFULLY ESTABLISHED.
8. CONTRACTOR TO PROTECT AND MAINTAIN ALL PLANTINGS AND PLANT BEDS, INCLUDING PROTECTION FROM WILDLIFE, WEEDING, RE-MULCHING, FERTILIZATION, IRRIGATION AND ALL OTHER TYPICAL FORMS OF HORTICULTURAL CARE UNTIL THE END OF THE WARRANTY PERIOD AS DETERMINED AND APPROVED BY CITY.
9. ALL AREAS DISTURBED ADJACENT TO THE PROJECT SITE INCLUDING BOULEVARDS SHALL BE REPAIRED AND MAINTAINED PER CITY DIRECTION.
10. PROVIDE A THREE YEAR MAINTENANCE PLAN FOR ALL SEEDING OF PLANT MATERIALS/AREAS WITHIN ALL COMMERCIAL PROPERTIES, COMMONLY HELD HOA AREAS, CITY OUTLOTS AND R.O.W. AREAS.
11. ALL TREE, SHRUB AND PERENNIAL BEDS, WITHIN THE R.O.W. OR LOCATED ON COMMERCIAL PROPERTIES OR ON COMMONLY HELD HOA PROPERTY AND CITY OUTLOTS WITHIN DEVELOPMENTS ARE REQUIRED TO HAVE AN AUTOMATIC IRRIGATION SYSTEM DESIGNED BY AN EPA WATER SENSE CERTIFIED PROFESSIONAL. THIS PLAN IS REQUIRED FOR CITY REVIEW AT THE SAME TIME AS LANDSCAPE PLAN REVIEW.
12. ALL TRADITIONAL TURF LAWN AREAS WITHIN R.O.W. OR LOCATED ON COMMERCIAL PROPERTIES OR ON COMMONLY HELD HOA PROPERTY AND CITY OUTLOTS WITHIN DEVELOPMENTS ARE REQUIRED TO HAVE AN AUTOMATIC IRRIGATION SYSTEM DESIGNED BY AN EPA WATER SENSE CERTIFIED PROFESSIONAL. THIS PLAN IS REQUIRED FOR CITY REVIEW AT TIME OF LANDSCAPE PLAN REVIEW.

STANDARD PLAN NOTES

LANDSCAPE PLANS

FEBRUARY 2015



CITY OF LAKE ELMO

STANDARD DRAWING NO.

900

LAKE ELMO



MAYOR & COUNCIL COMMUNICATION

DATE: 06/21/2016
REGULAR
ITEM # 29

AGENDA ITEM: Municipal Separate Storm Sewer System (MS4) Permit – Annual Public Meeting and Accept the 2015 MS4 Annual Report

SUBMITTED BY: Ryan Stempiski, Assistant City Engineer

THROUGH: Kristina Handt, City Administrator

REVIEWED BY: Jack Griffin, City Engineer
Julie Johnson, City Clerk
Mike Bouthilet, Public Works

SUGGESTED ORDER OF BUSINESS:

- Introduction of Item..... Assistant City Engineer
- Report/Presentation..... Assistant City Engineer
- Questions from Council to Staff Mayor Facilitates
- Annual Public Meeting, request public input.....Mayor Facilitates
- Call for Motion Mayor & City Council
- Discussion..... Mayor & City Council
- Action on Motion..... Mayor Facilitates

POLICY RECOMMENDER: Engineering

FISCAL IMPACT:

None. The Annual Public Meeting and Annual Report are MS4 Permit requirements.

SUMMARY AND ACTION REQUESTED:

The City Council is respectfully requested to conduct the Annual Public Meeting required by the MS4 Permit and receive public input and comments. After receiving a staff presentation and public comments, it is respectfully requested that the City Council accept the 2015 MS4 Annual Report and authorize staff to submit this report to the MPCA by June 30, 2016. The recommended motion for this action is as follows:

“Move to accept the Municipal Separate Storm Sewer System (MS4) Annual Report for 2015, and authorize staff to submit this report to the MPCA by June 30, 2016.”

LEGISLATIVE HISTORY/BACKGROUND INFORMATION:

The MS4 General Permit is mandated by the federal regulations under the Clean Water Act and administered by the Minnesota Pollution Control Agency. A municipal separate storm sewer system (MS4) is a conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains) owned by a municipality. The MS4 program gives owners or operators of MS4's approval to discharge storm water to lakes, rivers and wetlands in Minnesota. The MS4 General Permit focuses on reducing the pollution that enters these public systems and discharges to wetlands, streams and lakes (“waters of the state”). By federal rule, storm water systems in urban areas are labeled Mandatory MS4s. The City of Lake Elmo is a Mandatory MS4 City.

As a MS4 City, Lake Elmo was required to obtain and comply with a National Pollutant Discharge and Elimination System (NPDES) storm water permit. To meet these requirements the City prepared and implemented a five year Storm Water Pollution Prevention Program (SWPPP) beginning in 2006 and extending through 2010. The MPCA reissued a new five year program effective August 1, 2013 that extends to July 31, 2018.

The SWPPP specifies and outlines a series of best management practices intended to satisfy the permit requirements for each of the six minimum control measures. The six minimum control measures are:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Controls
5. Post-Construction Storm Water Management for development and redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

As part of the on-going permit requirements as a mandatory MS4 City, Staff has prepared the 2015 MS4 Annual Report and will present a summary report to the City Council and general public. The City must hold an Annual Public Meeting to encourage public discussion and participation regarding its storm water quality and steps it is taking to address the MS4 Permit requirements. Notice of this meeting was posted at City hall and published in the Oakdale-Lake Elmo Review on May 11, 2016 (see attachment). Public input received will be considered for updating the City's Storm Water Pollution Prevention Program (SWPPP) and the meeting minutes will be incorporated into the City's final report. The 2015 MS4 Annual Report must be submitted to the MPCA by June 30, 2016. A copy of the City's Storm Water Pollution Prevention Program (SWPPP) is available on the City website.

The Annual Meeting is scheduled to be held as part of the regular City Council meeting at City Hall. The agenda for this meeting will include:

- A presentation about implementation of the City's Storm Water Pollution Prevention Program in 2015,
- Affording interested persons an opportunity to make oral statements concerning the Storm Water Pollution Prevention Program,
- Consideration of relevant written materials that interested persons submit concerning the Storm Water Pollution Prevention Program; and,
- Consideration of public input in making adjustments to the 2016 implementation plan for the Storm Water Pollution Prevention Program.

2015 MS4 REPORT HIGHLIGHTS

The City's annual implementation of its Storm Water Pollution Prevention Program (SWPPP) addresses all permit requirements through six minimum control measures (MCM) as outlined below:

MCM 1 & 2: Public Education & Outreach, Public Involvement & Participation: In 2015, the City renewed its contract with the East Metro Water Resource Education Program (EMWREP), which continues to be a high value, low cost solution to address many of the educational and public outreach requirements of the City's permit program. A copy of the 2015 EMWREP Annual Report has been attached. Lake Elmo Staff used EMWREP as a primary resource to create educational materials for the public on storm water best management practices (available at City Hall, in City Newsletters and on the City's website).

MCM 3: Illicit Discharge Detection and Elimination: No known illicit discharges were recorded in 2015. A list of subsurface sewage treatment systems (SSTS) with known problems was provided in 2015 by Washington County. The City will continue to work with the County to address these issues with property owners. An emergency response procedure (ERP) was reviewed with the Fire Chief and Public Works Superintendent as document to follow should an illicit discharge occur within the City.

MCM 4: Construction Site Storm Water Controls: All new developments in the City were required to prepare a site specific SWPPP to address erosion and sediment control during construction activity. In 2015 there were 9 written notices given and 3 fines issued to builders for non-compliance to the City's Erosion and Sediment Control Ordinance.

MCM 5: Post-Construction Storm Water Management: Updates were made to the Engineering Design Standards Manual for Private Development, based on input during 2015 construction. Storm Water Maintenance Agreements were required for new developments to ensure on-going maintenance of newly constructed storm water facilities. Checklists are in place to review for impervious surface compliance on new building permits.

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations: The Public Works Department reported that inspections to the storm sewer system were not completed in 2015. Street sweeping was completed on all City streets in April 2015. The City continued to work with the Washington Conservation District to maintain rain gardens installed on past street

improvement projects. Public Works responded to resident drainage issues and completed routine maintenance on the storm sewer system. Public Works also contracted out services to re-grade and establish a main drainage way within the Tablyn Park neighborhood.

MS4 GENERAL PERMIT UPDATE:

On May 21, 2013, the Minnesota Pollution Control Agency (MPCA) reissued the General Permit for discharges of stormwater associated with small MS4s. The new state-wide permit became effective on August 1, 2013. As part of the new permit requirements, the City was required to complete and submit a pond inventory by April 3, 2015. The City continues to work toward annual compliance of its SWPPP and make progress toward program updates that are included in the permit reissuance.

RECOMMENDATION:

Staff is recommending that the City Council accept the MS4 Annual Report for 2015, and authorize staff to submit this report to the MPCA by June 30, 2016. The recommended motion for this action is as follows:

“Move to accept the Municipal Separate Storm Sewer System (MS4) Annual Report for 2015, and authorize staff to submit this report to the MPCA by June 30, 2016.”

ATTACHMENT(S):

1. Notice of MS4 Annual Public Meeting.
2. 2015 MS4 Annual Report.
3. EMWREP Annual Report – Executive Summary (full Report available upon request).

2015 Executive Summary

General Education Campaign: During 2015, EMWREP continued to use a variety of strategies to educate the general public about stormwater pollution and other issues affecting the quality of surface and groundwater resources, and to inform them about partner programs and activities. EMWREP contributed 73 press releases and news columns to 18 area newspapers, in addition to producing educational content for city newsletters, social media, and on-line news sites. EMWREP staff attended more than 20 community events and participated in the planning and program development for several regional water education initiatives as well.

Though the impact of these larger public education and awareness raising efforts is often hard to measure directly, we know they greatly improve the success of our targeted outreach activities and are usually the initial gateway through which people learn about EMWREP partner organizations and engage at a higher level by attending a workshop, participating in a watershed planning process, or installing a clean water project on their property.

In 2015, EMWREP also conducted the following special education projects:

- Continued outreach with Homeowners' Associations
- Provided education about groundwater and water conservation
- Worked to build relationships with lake associations
- Engaged citizens in watershed activities and plan updates
- Supported water education for area youth
- Helped WaterShed Partners develop a new metro-wide water education initiative

Blue Thumb Program: EMWREP uses Blue Thumb – Planting for Clean Water (www.BlueThumb.org) tools and resources to conduct public education and enhance outreach efforts, as well as promote watershed cost-share programs, conduct targeted outreach for neighborhood raingarden projects, and teach educational workshops for homeowners. The program was developed by the Rice Creek Watershed District in 2006 and is now led by Metro Blooms.

- In 2015, EMWREP conducted raingarden design workshops in Bayport and Marine on St. Croix, and held raingarden maintenance workshops in Lake Elmo and Stillwater. We also coordinated neighborhood parties in Stillwater and Oakdale.
- In January 2015, we conducted a survey of 433 BMP participants and workshop attendees from 2010-2015. 82 people responded.
- For 2015, BMP program staff reported:
 - 292 site visits
 - 31 new projects installed; 14 projects from previous years completed
 - 97.5 pounds of phosphorus (P) captured by all projects installed in 2015
 - 19,389 pounds of total suspended solids (TSS) captured by all projects in 2015

Rural Outreach: During 2015, EMWREP offered a workshop for horse owners. In addition, EMWREP provided outreach support for Washington Conservation District's Turf to Prairie grant, Top50P!, and nitrates well water testing in southern Washington County.

Blue Biz: The Blue Biz program consists of a website (www.cleanwaterMN.org/businesses) and outreach materials that partners can use to engage commercial property owners in BMP projects.

Stormwater U: In 2015, EMWREP coordinated with Minnesota Extension, the University of Minnesota Erosion and Stormwater Management Certification Programs, and the Minnesota Erosion Control Association (MECA) to provide professional training and workshops for local government staff and consultants, as well as builders, developers and contractors, including:

- 1) Turfgrass Maintenance
- 2) Stormwater Practices Inspections and Maintenance; and
- 3) Erosion Control

We also distributed a set of ten 10-minute PowerPoint presentations for municipal partners to use during monthly staff meetings. The presentations cover training topics included under Minimum Control Measure 6 of the MS4 permit.

NEMO: The Northland NEMO program (Non-point Education for Municipal Officials) provides local elected officials and decision makers with resources and information to make informed decisions about land use and water quality in their communities. Northland NEMO is hosted by the University of Minnesota Extension and EMWREP is a partner organization.

During 2015, EMWREP collaborated with NEMO and local partners to host two workshops for local decision makers:

- *St. Croix River Workshop on the Water: Aug. 6*
- *Protecting and improving lakes and streams in Forest Lake: Sept. 1*

MS4 Toolkit: The MS4 toolkit is hosted on the Clean Water MN website at www.cleanwatermn.org. The on-line kit includes training materials to help MS4 entities and EMWREP partners meet the six minimum control measures outlined in the MS4 permit.

CITY OF LAKE ELMO
NOTICE OF ANNUAL PUBLIC MEETING
ON THE CITY STORM WATER POLLUTION PREVENTION PROGRAM

Notice is hereby given that the City Council of Lake Elmo will meet at City Hall at 7:00 p.m. on Tuesday, June 21, 2016, to conduct a public meeting to encourage public discussion and participation regarding its storm water quality and Storm Water Pollution Prevention Program (SWPPP).

A 1987 Amendment to the Federal Clean Water Act required implementation of a two-phase comprehensive national program to reduce pollution from storm water runoff. A National Pollutant Discharge Elimination System (NPDES) permit from the Minnesota Pollution Control Agency (MPCA) is required as part of this program. The permit identifies a number of measures that must be met or implemented by each community. The six minimum measures are:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Controls
- Post-Construction Storm Water Management for development and redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

The City's Storm Water Pollution Prevention Program specifies best management practices intended to satisfy the permit requirements for each of the minimum measures. As part of this program, the City is required to hold an annual meeting to encourage public discussion and participation regarding its storm water quality and steps it is taking to address the six minimum control measures. A copy of the SWPPP is available on the City website or by contacting the City Engineer. An annual report will be submitted to the MPCA in June 2016. The minutes of the annual public meeting will be incorporated into the City's annual report.

The meeting will be held as part of the regular city council meeting at City Hall. The agenda for this meeting will include:

- 1) A Presentation about implementation of the City's Surface Water Pollution Prevention Program in 2015,
- 2) Affording interested persons the opportunity to make oral statements concerning the Storm Water Pollution Prevention Program,
- 3) Consideration of relevant written materials that interested persons submit concerning the Storm Water Pollution Prevention Program; and,
- 4) Consideration of public input in making adjustments to the 2016 implementation plan for the Storm Water Pollution Prevention Program.

DATED: May 5, 2016

BY ORDER OF THE LAKE ELMO CITY CLERK
Julie Johnson, City Clerk

(Published in the Oakdale-Lake Elmo Review on May 11, 2016)



You are currently logged in as:

Lake Elmo City MS4

If this is correct, click the 'Next' button. If this information is incorrect, contact Cole Landgraf (651-757-2880, cole.landgraf@state.mn.us) or Rachel Stangl (651-757-2879, rachel.stangl@state.mn.us).

Before you begin...

A fillable Microsoft Word document with all of the questions is available at <https://www.pca.state.mn.us/sites/default/files/wq-strm4-06a.doc> (for personal use only, not for submittal).

The MS4 Annual Report for 2015 will automatically save your answers when you hit the 'Next' button at the bottom of each page.

If you wish to leave the MS4 Annual Report for 2015 and complete the document at another time, you may do so by hitting 'Next' at the bottom of your current page to save your progress before exiting the document. Return to the survey by following the previously used web link, and again login using your email and assigned password credentials. Once you successfully log in, your previous answers will appear.

The MPCA will email a PDF of your MS4 Annual Report for 2015 information to you in a confirmation email within three business days after you submit this form.

You may print a copy of the MS4 Annual Report for 2015 for your records at any time by pressing the 'Print' button at the bottom of the page.

Additionally, it is possible to save a PDF copy of the MS4 Annual Report for 2015 if you are working on a computer with OneNote (a program often included in Microsoft Office packages). Detailed saving instructions are available at stormwater.pca.state.mn.us/index.php/Guidance_for_saving_MS4_annual_reports.

MS4 Annual Report for 2015

Reporting period: January 1, 2015 to December 31, 2015**Due:** June 30, 2016

Instructions: Complete this annual report to provide a summary of your activities under the 2013 MS4 Permit (Permit) between January 1, 2015 and December 31, 2015. MPCA staff may contact you for additional information.

Fillable document available at <https://www.pca.state.mn.us/sites/default/files/wq-strm4-06a.doc> (for personal use only, not for submittal).

Questions: Contact Cole Landgraf at 651-757-2880 or cole.landgraf@state.mn.us or Rachel Stangl at 651-757-2879 or rachel.stangl@state.mn.us.

MS4 General Contact Information

Full name	Ryan Stempski
Title	Assistant City Engineer
Mailing address	3800 Laverne Avenue N
City	Lake Elmo
State	Minnesota
Zip code	55042
Phone	651.300.4267
Email	ryan.stempski@focusengineeringinc.com

Preparer Contact Information (if different from the MS4 General Contact)

Full name	<input type="text"/>
Title	<input type="text"/>
Organization	<input type="text"/>
Mailing address	<input type="text"/>
City	<input type="text"/>
State	<input type="text"/>
Zip code	<input type="text"/>
Phone	<input type="text"/>
Email	<input type="text"/>

MCM 1: Public Education and Outreach

The following questions refer to Part III.D.1. of the Permit.

Q2 Did you select a stormwater-related issue of high priority to be emphasized during this

Permit term? [Part III.D.1.a.(1)]

- Yes
- No

Q3 What is your stormwater-related issue(s)? Check all that apply.

- TMDL(s)
- Local businesses
- Residential BMPs
- Pet waste
- Yard waste
- Deicing materials
- Household chemicals
- Construction activities
- Post-construction activities
- Other

Q4 Have you distributed educational materials or equivalent outreach to the public focused on illicit discharge recognition and reporting? [Part III.D.1.a.(2)]

- Yes
- No

Q5 Do you have an implementation plan as required by the Permit? [Part III.D.1.b.]

- Yes
- No

Q6 How did you distribute educational materials or equivalent outreach? Check all that apply and provide circulation/audience associated with each item. [Part III.D.1.a.]

- Brochure
- Newsletter
- Utility bill insert
- Newspaper ad
- Radio ad
- Television ad
- Cable access channel
- Stormwater-related event
- School presentation or project
- Website
- Other (1)
- Other (2)
- Other (3)

Q7 Intended audience? Check all that apply.

	Residents	Local Businesses	Developers	Students	Employees	Other
Brochure	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Newsletter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Website	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Q8 Enter the total circulation/audience (if unknown, use best estimate):

Brochure	1000
Newsletter	7000
Website	2000

Provide a brief description of each activity related to public education and outreach (e.g. rain garden workshop, school presentation, public works open house) held and the date each activity was held from January 1, 2015 to December 31, 2015. [Part III.D.1.c.(4)]

Q9 Date of activity

Q10 Description of activity

Date (mm/dd/yyyy)

Q11 Between January 1, 2015 and December 31, 2015, did you modify your BMPs, measurable goals, or future plans for your public education and outreach program? [Part IV.B.]

- Yes
- No

MCM 2: Public Participation/Involvement

The following questions refer to Part III.D.2.a. of the Permit.

Q12 You must provide a minimum of one opportunity each year for the public to provide input on the adequacy of your Stormwater Pollution Prevention Program (SWPPP). Did you provide this opportunity between January 1, 2015 and December 31, 2015? [Part III.D.2.a.(1)]

- Yes
- No

Q13 What was the opportunity that you provided? Check all that apply.

- Public meeting
- Public event
- Other

Q14 Did you hold a stand-alone meeting or combine it with another event?

- Stand-alone
- Combined

Enter the date of the public meeting (mm/dd/yyyy):

6/2/2015

Enter the number of citizens that attended and were informed about your SWPPP:

0

Q17 Between January 1, 2015 and December 31, 2015, did you receive any input regarding your SWPPP?

- Yes
- No

Q19 Between January 1, 2015 and December 31, 2015, did you modify your BMPs, measurable goals, or future plans for your public participation/involvement program? [Part IV.B.]

- Yes
- No

MCM 3: Illicit Discharge Detection and Elimination

The following questions refer to Part III.D.3. of the Permit.

Q20 As of December 31, 2015, have you enacted a regulatory mechanism which prohibits non-stormwater discharges to your MS4?

- Yes
- No

Q21 Provide either a website address to the above regulatory mechanism or upload a copy. How will you provide this regulatory mechanism?

- Website address
- Upload

Q22 Website address:

<http://www.lakeelmo.org/public-works/stormwater-utility/illicit-discharge>

Q24 Did you identify any illicit discharges between January 1, 2015 and December 31,

2015? [Part III.D.3.h.(4)]

- Yes
 No

Q33 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your illicit discharge regulatory mechanism(s)? [Part III.B.]

- Yes
 No

Q34 Provide either a website address to the above ERPs or upload a copy. How will you provide these ERPs?

- Website address
 Upload

Q36 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.

ref:0000000137:Q36

Q37 Did you train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigations? [Part III.D.3.e.]

- Yes
 No

The following questions refer to Part III.C.1. of the Permit.

Q39 Did you update your storm sewer system map between January 1, 2015 and December 31, 2015? [Part III.C.1.]

- Yes
 No

Q40 Does your storm sewer map include all pipes 12 inches or greater in diameter and the direction of stormwater flow in those pipes? [Part III.C.1.a.]

- Yes
 No

Q41 Does your storm sewer map include outfalls, including a unique identification (ID) number and an associated geographic coordinate? [Part III.C.1.b.]

- Yes
 No

Q42 Does your storm sewer map include all structural stormwater BMPs that are part of your MS4? [Part III.C.1.c.]

- Yes
 No

Q43 Does your storm sewer map include all receiving waters? [Part III.C.1.d.]

- Yes
- No

Q44 In what format is your storm sewer map available?

- Hardcopy only
- GIS
- CAD
- Other

Q45 Between January 1, 2015 and December 31, 2015, did you modify your BMPs, measurable goals, or future plans for your illicit discharge detection and elimination (IDDE) program? [Part IV.B.]

- Yes
- No

Describe those modifications:

New ERP Implementation

MCM 4: Construction Site Stormwater Runoff Control

The following questions refer to Part III.D.4. of the Permit.

Q46 As of December 31, 2015, have you enacted a regulatory mechanism that is at least as stringent as the Agency's general permit to Discharge Stormwater Associated with Construction Activity (CSW Permit) No. MN R100001 (<http://www.pca.state.mn.us/index.php/view-document.html?gid=18984>) for erosion and sediment controls and waste controls? [Part III.D.4.a.]

- Yes
- No

Q47 Have you developed written procedures for site plan reviews as required by the Permit? [Part III.D.4.b.]

- Yes
- No

Q48 Have you documented each site plan review as required by the Permit? [Part III.D.4.f.]

- Yes
- No

Q49 Enter the number of site plan reviews conducted for sites an acre or greater of soil disturbance between January 1, 2015 and December 31, 2015:

16

Q50 What types of enforcement actions do you have available to compel compliance with your regulatory mechanism? Check all that apply and enter the number of each used from January 1, 2015 to December 31, 2015.

- Verbal warnings
- Notice of violation
- Administrative orders

- Stop-work orders
- Fines
- Forfeit of security of bond money
- Withholding of certificate of occupancy
- Criminal actions
- Civil penalties
- Other

Enter the number of verbal warnings issued:

Enter the number of notice of violations issued:

Enter the number of stop-work orders issued:

Enter the number of fines issued:

Enter the number of forfeitures of security bond money issued:

Enter the number of withholdings of certificate of occupancy issued:

Enter the number criminal actions issued:

Enter the number of civil penalties issued:

Q51 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your construction site stormwater runoff control regulatory mechanism(s)? [Part III.B.]

- Yes
- No

Q52 Enter the number of active construction sites an acre or greater that were in your jurisdiction between January 1, 2015 and December 31, 2015:

Q53 Do you have written procedures for identifying priority sites? [Part III.D.4.d.(1)]

- Yes
- No

Q55 Do you have a checklist or other written means to document site inspections when determining compliance? [Part III.D.4.d.(4)]

- Yes
- No

Q56 Enter the number of site inspections conducted for sites an acre or greater between

January 1, 2015 and December 31, 2015:

32

Q57 Enter the frequency at which site inspections are conducted (e.g. daily, weekly, monthly): [Part III.D.4.d.(2)]

weekly

Q58 Enter the number of trained inspectors that were available for construction site inspections between January 1, 2015 and December 31, 2015:

2

Q59 Provide the contact information for the inspector(s) and/or organization that conducts construction stormwater inspections for your MS4. List your primary construction stormwater contact first if you have multiple inspectors.

(1) Inspector name	Dave Klocker
Organization	Hyperion Consulting, Inc.
Phone (Office)	
Phone (Work Cell)	651/300-9302
Email	dmklocker@gmail.com
Preferred contact method	phone
(2) Inspector name	Frank Borich
Organization	Focus Engineering, Inc.
Phone (Office)	
Phone (Work Cell)	651/955-6677
Email	frank.borich@focusengineeringinc.com
Preferred contact method	phone
(3) Inspector name	
Organization	
Phone (Office)	
Phone (Work Cell)	
Email	
Preferred contact method	

Q60 What training did inspectors receive? Check all that apply.

- University of Minnesota Erosion and Stormwater Management Certification Program
- Qualified Compliance Inspector of Stormwater (QCIS)
- Minnesota Laborers Training Center Stormwater Pollution Prevention Plan Installer or Supervisor
- Minnesota Utility Contractors Association Erosion Control Training
- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Professional in Stormwater Quality (CPSWQ)

- Certified Erosion, Sediment and Storm Water Inspector (CESSWI)
 Other

Q61 Between January 1, 2015 and December 31, 2015, did you modify your BMPs, measurable goals, or future plans for your construction site stormwater runoff control program? [Part IV.B.]

- Yes
 No

Describe those modifications:

Design Standards are reviewed annually and updated to incorporate revisions for continuous improvement.

MCM 5: Post-Construction Stormwater Management

The following questions refer to Part III.D.5. of the Permit.

Q62 As of December 31, 2015, have you enacted a regulatory mechanism to incorporate all requirements as specified in Part III.D.5.a. of the Permit?

- Yes
 No

Q63 What approach are you using to meet the performance standard for Volume, Total Suspended Solids (TSS), and Total Phosphorus (TP) as required by the Permit? [Part III.D.5.a.(2)]

Check all that apply.

Refer to the link <http://www.pca.state.mn.us/index.php/view-document.html?gid=17815> for guidance on stormwater management approaches.

- Retain a runoff volume equal to one inch times the area of the proposed increase of impervious surfaces on-site
 Retain the post-construction runoff volume on site for the 95th percentile storm
 Match the pre-development runoff conditions
 Adopt the Minimal Impact Design Standards (MIDS)
 An approach has not been selected
 Other method (Must be technically defensible--e.g. based on modeling, research and acceptable engineering practices)

Q64 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your post-construction stormwater management regulatory mechanism(s)? [Part III.B.]

- Yes
 No

Q65 Between January 1, 2015 and December 31, 2015, did you modify your BMPs, measurable goals, or future plans for your post-construction stormwater management program? [Part IV.B.]

- Yes
 No

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

The following questions refer to Part III.D.6. of the Permit.

Q66 Enter the total number of structural stormwater BMPs, outfalls (excluding underground outfalls), and ponds within your MS4 (exclude privately owned).

Structural stormwater BMPs	<input type="text" value="7"/>
Outfalls	<input type="text" value="118"/>
Ponds	<input type="text" value="79"/>

Q67 Enter the number of structural stormwater BMPs, outfalls (excluding underground outfalls), and ponds that were inspected from January 1, 2015 to December 31, 2015 within your MS4 (exclude privately owned). [Part III.D.6.e.]

Structural stormwater BMPs	<input type="text" value="0"/>
Outfalls	<input type="text" value="0"/>
Ponds	<input type="text" value="0"/>

Q68 Have you developed an alternative inspection frequency for any structural stormwater BMPs, as allowed in Part III.D.6.e.(1) of the Permit?

- Yes
 No

Q69 Based on inspection findings, did you conduct any maintenance on any structural stormwater BMPs? [Part III.D.6.e.(1)]

- Yes
 No

Q71 Do you own or operate any stockpiles, and/or storage and material handling areas? [Part III.D.6.e.(3)]

- Yes
 No

Q72 Did you inspect all stockpiles and storage and material handling areas quarterly? [Part III.D.6.e.(3)]

- Yes
 No

Q73 Based on inspection findings, did you conduct maintenance at any of the stockpiles and/or storage and material handling areas?

- Yes
 No

Q75 Between January 1, 2015 and December 31, 2015, did you modify your BMPs,

measurable goals, or future plans for your pollution prevention/good housekeeping for municipal operations program? [Part IV.B.]

- Yes
 No

Describe those modifications:

Due to staff turnover, inspection goals were not met in 2015. Inspections will be increased in 2016 to catch up on inspections not completed in 2015.

Discharges to Impaired Waters with a USEPA-Approved TMDL that Includes an Applicable WLA

You must complete the **TMDL Annual Report Form**, available at:

http://stormwater.pca.state.mn.us/index.php/Upload_page_with_TMDL_forms. Attach your completed TMDL Annual report form to this Annual Report as instructed below. [Part III.E.]

- Q77 Click the "up arrow" icon below to upload your TMDL Annual report form. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.



Partnerships

- Q84 Did you rely on any other regulated MS4s to satisfy one or more Permit requirements?
- Yes
 No

Additional Information

If you would like to provide any additional files to accompany your annual report, use the space below to upload those files. For each space, you may attach one file. You may provide additional explanation and/or information in an email with the subject *YourMS4NameHere_2015AR* to ms4permitprogram.pca@state.mn.us.

- Q86 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.



- Q87 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.



Q88 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.



Q89 Optional, describe the file(s) uploaded:

Owner or Operator Certification

The person with overall administrative responsibility for SWPPP implementation and Permit compliance must certify this MS4 Annual Report. This person must be duly authorized and should be either a principal executive (i.e., Director of Public Works, City Administrator) or ranking elected official (i.e., Mayor, Township Supervisor).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete (Minn. R. 7001.0070). I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Minn. R. 7001.0540).

Yes

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that information can be used for the purpose of processing my MS4 Annual Report.

Name:

Title:

Date:
(mm/dd/yyyy)

When you are ready to submit, you must click the 'Submit' button at the bottom of this page.

Provide the email(s) of the individual(s) you would like to receive the MS4 Annual Report for 2015 submittal confirmation email from the MPCA. After you click the

Submit button below, please allow up to three business days to receive this email.

Email (1)

Email (2)

Email (3)

Print or save a copy of your completed MS4 Annual Report for 2015 for your records. The MPCA will email a PDF of your MS4 Annual Report for 2015 information in a confirmation email within three business days after you submit this form to the email(s) you provided above.

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If you have any questions, contact MPCA staff Cole Landgraf (cole.landgraf@state.mn.us, 651-757-2880) or Rachel Stangl (rachel.stangl@state.mn.us, 651-757-2879).



MAYOR AND COUNCIL COMMUNICATION

DATE: 6/21/2016

REGULAR

ITEM #: 30

AGENDA ITEM: Call for a Public Hearing on Extension of the Interim Ordinance (Moratorium)

SUBMITTED BY: Stephen Wensman, Planning Director

THROUGH: Kristina Handt, City Administrator

REVIEWED BY: Sarah Sonsalla, City Attorney

BACKGROUND:

On July 7, 2017, the City Council adopted Interim Ordinance No. 08-123 declaring a moratorium pertaining to development in the Stage 1, 2 and 3 development areas for a one year period. The interim ordinance (moratorium) went into effect upon its publication on July 22, 2015. It is due to expire on July 22nd of this year.

Within the Stage 1, 2, and 3 development areas there are six water bodies, whose corresponding shoreland areas will have an impact on development. The City's shoreland ordinance has been revised to comply with the Minnesota Department of Natural Resources' model shoreland ordinance. It is currently being reviewed by the DNR, which is required by law. Pursuant to Minnesota Statutes Section 462.355, subdivision 4 (c)(1), a city may extend its interim ordinance (moratorium) up to an additional 120 days following the receipt of the final approval or review by a federal, state or metropolitan agency when the approval is required by law and the review or approval has not been completed and received by the city at least 30 days before the extension of the interim ordinance (moratorium).

Because the shoreland ordinance is currently being reviewed by the DNR and the DNR's review will most likely not have been completed and received by the City within 30 days before the expiration of the interim ordinance (which would be June 22nd) and this review is required by law, the City may extend the interim ordinance (moratorium) for up to an additional 120 days following the receipt of the final approval or review by the DNR. Having approved shoreland regulations in place are important to the orderly development in the Stage 1, 2, and 3 development areas. Therefore, the City Council may want to consider extending the interim ordinance (moratorium) in order to allow for the shoreland ordinance to be reviewed by the DNR and adopted by the City Council.

ISSUE BEFORE COUNCIL:

Whether to call for a public hearing on the extension of the interim ordinance (moratorium).

PROPOSAL DETAILS/ANALYSIS:

In order to extend the interim ordinance (moratorium), the City Council will need to call for and conduct a public hearing on the proposed extension. The public hearing must be held at least 15 days but not more than 30 days before the expiration of the interim ordinance (moratorium). In this case, the interim ordinance expires on July 22nd, so the public hearing should be held at the next regular City Council meeting on July 5, 2016. After the public hearing is held, the City Council will then need to decide whether or not it wants to extend the interim ordinance (moratorium).

RECOMMENDATION:

Staff recommends that the City Council call for a public hearing to be held at the July 5th Regular City Council meeting with the following motion:

“Move to direct staff to call a public hearing on the extension of the interim ordinance (moratorium) to be conducted by the City Council at its regular meeting on July 5, 2016.”

ATTACHMENTS:

None



MAYOR AND COUNCIL COMMUNICATION

DATE: //2016

REGULAR

ITEM #: 31

AGENDA ITEM: Lot Coverage Requirements as they pertain to Pools

SUBMITTED BY: Stephen Wensman, Planning Director

THROUGH: Kristina Handt, City Administrator

REVIEWED BY: Emily Becker

BACKGROUND:

The City of Lake Elmo Code, Section 11.01 Definitions, defines impervious surfaces and includes swimming pools as an impervious surface. It has been brought to Staff's attention that the past practices in the City of Lake Elmo was to treat swimming pools as pervious. In a recent building permit application for a pool, Staff rejected the permit because the lot would exceed the impervious surface requirements if the pool were constructed. The developer brought this issue before the City Administrator and requested the issue be brought before the City Council for discussion.

ISSUE BEFORE COUNCIL:

The City Council is respectfully being requested to discuss whether the lot coverage (maximum impervious surface) requirements be amended to address the desire of residents to have more impervious surfaces for structures such as pools.

PROPOSAL DETAILS/ANALYSIS:

The City's definition of impervious surface clearly defines swimming pools as an impervious surface:

IMPERVIOUS SURFACE. Any structure or surface which interferes to any degree with the direct absorption of water into the ground, including but not limited to building footprints, sidewalks, paved or gravel driveways and parking areas, patios, sport courts, swimming pools, or any other similar surface. Decks, pervious landscaping fabric, and retaining walls shall not be included as impervious surface.

Pools clearly are not pervious and do not infiltrate water into the ground, or they would not be pools. Since November, 2016 Planning Staff has been reviewing building permit applications for pools with the understanding that pools are impervious as defined above, regardless of alleged past practice by Staff. Swimming pools and their surrounding patios can add significantly to impervious surfaces on lots, and on urban lots, push them beyond the maximum impervious surface allowance. The maximum impervious surface allowed for the LDR, MDR and HDR zoning districts are 40%, 50% and 75% respectively. As with all building permit reviews, Staff reviews setbacks, impervious limits, easements and other

requirements to ensure City standards are being met. In many cases, Staff rejects applications because of nonconformance with City standards, swimming pool applications included. In the building code, and by definition, swimming pools are impervious structures and like all structures, need to adhere to City standards.

FISCAL IMPACT:

None

OPTIONS:

The City Council is respectfully being requested to consider the swimming pool issue and whether Staff should increase the lot coverage requirements in the urban districts.

RECOMMENDATION:

Staff recommends the City Council consider the swimming pool issue and to provide Staff guidance as to whether the urban district lot coverage requirements should be increased.

ATTACHMENTS:

None



MAYOR AND COUNCIL COMMUNICATION

DATE: June 21, 2016

REGULAR

ITEM #: 32

MOTION

AGENDA ITEM: Rejoining the Washington County Library System as a Branch Library

SUBMITTED BY: Kristina Handt, City Administrator

BACKGROUND:

Under MN Stat. 134.07, the governing body of any city or county may establish and maintain public library service for the use of its inhabitants. By ordinance or resolution it may set apart for the benefit thereof any public property of the city or county. In any statutory city and in any city of the second, third, or fourth class, and in any county, the governing body may levy an annual tax on all taxable property therein except counties may not tax property which is already taxed for public library service. The proceeds of the tax shall be known as the library fund.

For the last five years, the City of Lake Elmo has levied a tax for library services under the above statute. If the City Council would like to no longer levy that tax and allow Washington County to do so, then they must give notice to the County Auditor of the change by July 1 under MN Stat. 275.067.

The library board and Council have previously discussed options of rejoining the county library system as an associate library or branch library. Associate status only exists for those libraries that were in place before the County system was created. Representatives from the library have been meeting with county staff to discuss options. No agreement has come out of those discussions to date, however the City is approaching the key deadline of July 1st to make a decision about the levy.

ISSUE BEFORE COUNCIL:

Should the Council provide notice to the County Auditor they will not be levying the library levy in 2017?

PROPOSAL DETAILS/ANALYSIS:

Mayor Pearson and Council Member Bloyer have asked that this item be put on the Council agenda for discussion given the approaching July 1 deadline and this being the last regularly scheduled Council meeting prior to that deadline.

FISCAL IMPACT:

Library levy was \$256,957 in 2016, \$231,261 in 2015, \$256,957 in 2014, \$256,957 in 2013, \$260,078 in 2012.

OPTIONS:

- 1) Direct staff to notify the County Auditor of the City's intent not to levy a library levy for 2017.
- 2) Direct staff to prepare a 2017 budget which includes a City levy for library services.

RECOMMENDATION:

Mayor Pearson would recommend option 1

Motion to direct staff to notify the County Auditor of the City's intent not to levy a library levy for 2017.



MAYOR AND COUNCIL COMMUNICATION

DATE: June 21, 2016

REGULAR

ITEM #: 33

MOTION

AGENDA ITEM: Wastewater Incentive Program

SUBMITTED BY: Kristina Handt, City Administrator

REVIEWED BY: Cathy Bendel, Finance Director

Sarah Sonsalla, City Attorney

Jack Griffin, City Engineer

BACKGROUND:

Over the course of three Finance Committee meetings, staff has been asked to look into providing some financial break to properties with existing on-site sewage treatment systems that will be required to hook up to municipal sewer in the future. At the May meeting, staff referenced an incentive offered by the Melrose Public Utilities Commission. Direction was given to look into that option more.

The City Attorney was also asked to look into what is allowed under statute. Water and sewer fees are guided by Minnesota Statutes Section 444.075, which provides broad authority to cities to charge “just and equitable” fees for the use and availability of water and sewer service. There is case law that discusses the broad legislative authority of cities to create and set these fees. Based on that, the City Council could consider and adopt a formal policy or program which lays out how credits will be awarded, who is eligible, etc. If the program is being offered to any property with an existing septic system that is in an area where the property may be hooked up to the City’s sanitary sewer system, that could be considered “just and equitable” under the statute. In this situation, the City would be treating all similarly situated residents the same.

ISSUE BEFORE COMMITTEE:

Should the Council approve an incentive to encourage folks to move from subsurface sewage treatment systems (SSTS) to municipal sewer when it is available?

PROPOSAL DETAILS/ANALYSIS:

Included in your packet is a draft of a letter that could be sent to qualifying properties (those currently on SSTS) after municipal sewer is completed in front of their property. The committee did not want to extend the incentive program to those currently on city owned and operated community systems but will review those. A map showing those systems is included in your packet.

The dates are estimates as the sewer project is still in progress. The first letters could be sent out after the final assessment hearing for phase one this fall. A letter making this change retroactive could also be sent to those properties first impacted when sewer was brought up 39th St. (i.e. Brookfield, condos, etc.). This was recommended by the Finance Committee.

To encourage people to connect to the municipal sewer sooner rather than later and potentially eliminate environmental concerns related to some private systems, an incentive of 50% or (\$2,000 per REC unit) of the SAC and connection fee would be offered.

In order to make this work however, the City would also need to update ordinance 51.022 to change the required time for connection from one year to two, which would also be consistent with Met Council Rules..

§ 51.022 CONNECTIONS WITH SEWER REQUIRED.

(A) Any building used for human habitation or in which a toilet or other plumbing facility for the disposal of human waste is installed and located on property adjacent to a sewer main, or in a platted block through which the system extends, shall be connected to the municipal sanitary sewer system within ~~1-year~~2 years from the date on which a connection is available to the building.

(B) All buildings subsequently constructed within the city on property adjacent to a sewer main or in a platted block through which the municipal sanitary sewer system extends, shall be provided with a connection to the sewer system for the disposal of all human waste.

(1997 Code, § 705.03) Penalty, see § 10.99

Increasing the time for connection may also help some with their financial planning, even if they take the full two years to connect.

FISCAL IMPACT:

Approximately 300 RECs (Residential Equivalent Connections) could be impacted by this incentive. An additional 50 RECs are currently on the city owned community sewage treatment systems within the MUSA area.

Impact to the wastewater fund could be a loss of \$600,000 in future revenue if all participate in the incentive. The wastewater fund had an ending cash balance of \$850,198 as of 12/31/15. That balance is projected to increase each year by at least \$500,000 to over \$1,000,000 until 2022.

OPTIONS:

- 1) Approve the incentive as presented
- 2) Amend the incentive to increase/decrease amount of incentive then approve
- 3) Approve a different incentive or financing plan for properties moving from private to municipal sewage treatment system.

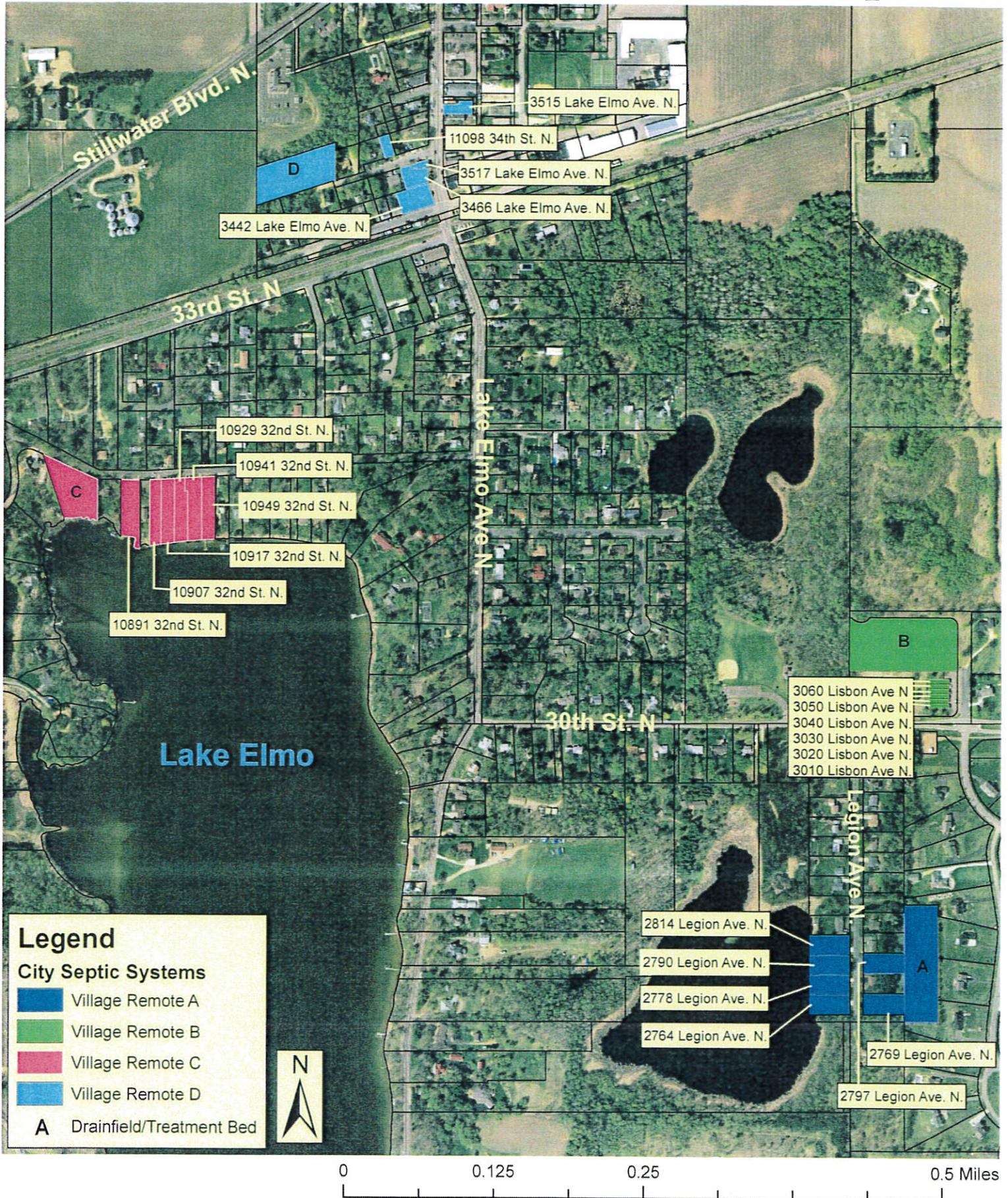
RECOMMENDATION:

Finance Committee is recommending approval of the incentive as presented.

Motion to adopt the Connection Fee and SAC Incentive of 50% discount for those properties with existing on-site sewage treatment systems who connect to municipal sewer within one year from the date the main is available to their property.

Staff's previous recommendation to the Finance Committee was not to approve any changes to fees. Instead the Council should look at lowering assessments in order to minimize risks to the fund from potential challenges. Fees cannot be challenged in the same manner as assessments. For example, instead of lowering fees by \$2,000 as presented above, the assessment per REC could be lowered by \$2,000 (currently set at \$13,000) and have the same impact to the fund while also helping the property owners.

Lake Elmo Village Area Public Septic



June 21, 2016

XXXXXX
XXXXXX
Lake Elmo, MN 55042

Re: Connection Incentive/Wastewater Charge

Dear XXXXXXXXXXXXX,

The City of Lake Elmo is offering a onetime incentive of a 50% discount, or \$2,000, towards the connection fee and Sewer Availability Charge (SAC) to connect to the City's wastewater system. The City is encouraging properties that are currently on private septic systems to connect within one year from the time the main is available as opposed to the two years allowed by ordinance. The incentive for your property will expire on XX XX, 2017.

If you connect to the wastewater main after XX XX, 2017, you will be charged the full \$4,000 connection fee and SAC. This charge may be adjusted periodically to offset increased costs. The connection fee and SAC charge is established to fund the initial construction and future replacement of trunk lines, lift stations and other wastewater system infrastructure necessary to keep the system functioning. The current city policy for the replacement of wastewater system infrastructure which benefits the system is to have the wastewater fund pay for those items, not assess properties for the updates.

We are here to assist you with the transition from private septic to the City wastewater system. If you would like to discuss this in more detail, please feel free to contact me at 651.747.3905 or khandt@lakeelmo.org

Sincerely,

Kristina Handt
Administrator, City of Lake Elmo