



**CITY OF NEWPORT
SPECIAL JOINT WORK SESSION WITH NEWPORT CITY COUNCIL AND NEWPORT PLANNING
COMMISSION
NEWPORT CITY HALL
JUNE 10, 2014 - 5:30 P.M.**

MAYOR: Tim Geraghty
COUNCIL: Tom Ingemann
Bill Sumner
Tracy Rahm
Steven Gallagher

PLANNING COMMISSION: Dan Lund
Anthony Mahmood
Susan Lindoo
Matt Prestegaard
Kevin Haley

AGENDA

- 1. CALL TO ORDER**
- 2. WELCOME AND INTRODUCTIONS - MAYOR GERAGHTY**
- 3. PURPOSE OF MEETING - MELISSA TAPHORN, WCHRA**
- 4. NEW HOUSING AND IMPACT ON SCHOOLS - MR. MIKE VOGEL, SCHOOL DISTRICT #833 ASSISTANT SUPERINTENDENT**
- 5. RED ROCK CROSSING HOUSING PLAN - KATHRYN PAULSON, WCHRA**
- 6. RED ROCK CROSSING FINANCING ISSUES - STACIE KVILVANG, EHLERS**
- 7. PROPOSED STORMWATER PLAN - SHERRI BUSS, TKDA**
- 8. DISCUSSION ON NEXT STEPS**
- 9. ADJOURNMENT**



444 Cedar Street, Suite 1500
Saint Paul, MN 55101
651.292.4400
tkda.com

Memorandum

To:	<u>Newport City Council and Planning Commission</u>	Reference:	<u>Red Rock Redevelopment Area Stormwater Plan</u>
Copies To:	<u>Deb Hill, City Administrator</u>		
	<u>Renee Eisenbeisz, Executive Analyst</u>		
	<u>Jon Herdegen, MSA, City Engineer</u>		
	<u>Washington County HRA staff</u>	Project No.:	<u>15496.000</u>
From:	<u>Sherri Buss, RLA AICP, TKDA</u>	Routing:	
Date:	<u>June 4, 2014</u>		

Background

In December, 2013, the City Council authorized MSA and TKDA to develop an innovative plan for stormwater management and connections from the Red Rock Redevelopment Area to the Mississippi River. The Washington County HRA requested that the City complete the plan in order to improve the City's prospects to receive a Livable Communities grant for the redevelopment effort from the Metro Council. The goals of the project included:

- An innovative plan for stormwater management that would improve the quality of stormwater flowing to the Mississippi River from the redevelopment area
- Utilize the stormwater infrastructure and groundwater at the site to provide amenities for development
- Provide trail connections within the redevelopment area, and to local parks and trails, and to the Mississippi River

MSA and TKDA recently presented our concept plans to City and HRA staff. I will give a brief overview of the concept plans during the Council and Planning Commission meeting on June 10.

Some key elements of the plans include the following:

Stormwater Management

Jon Herdegen and Eric Thompson of MSA analyzed the existing stormwater runoff in the area, and the potential runoff with the new development proposed. They determined the requirements for runoff volume and quality based on the Watershed District and City requirements. Finally, they developed some options for how to meet the stormwater

management requirements with the proposed redevelopment that met the criteria to use an “innovative” approach. Their technical memo is attached. The approach includes:

- Disconnect impervious areas from the traditional stormwater pipe system. In the proposed system, stormwater from roof top drains and impervious surfaces such as sidewalks and parking lots will not drain to the City’s stormwater pipe system, which flows to the Mississippi River in this area. Instead, the runoff will be directed to infiltrate into the soils on the site.
- Infiltrate stormwater using “soil augmentation areas.” The approach includes constructing soil areas to infiltrate stormwater runoff, called “soil augmentation areas.” The areas are shown on the attached graphic. The soils in these areas will be constructed with additional compost and materials to encourage infiltration. Runoff from roofs will be directed to the special soil areas.
- Infiltrate stormwater runoff in “tree trenches.” Stormwater from parking lots and sidewalks will be directed to “tree trenches”—planters created below-grade with gravel/sandy soils that aid infiltration. The planters will be planted with trees and ground covers. The locations proposed for tree trenches are shown on the plan, and the perspective view shows how they may look. The trenches are designed to be an attractive boulevard feature. The design will include some “forebay” areas to remove sand and grit to help maintain the infiltration functions of the trenches. A photo is attached that shows some trenches used in Portland, Oregon. Similar tree trenches are currently being added to parking lots at Maplewood Mall.

Groundwater as a Resource

Groundwater flows from the bluff areas in Newport to the east of Highway 61 through the redevelopment site to the Mississippi River. The flows are relatively shallow, and occur year-round. MSA completed soil borings at the site, and determined the location and amount of groundwater available.

- The proposed landscape plan includes a creek that flows through the redeveloped area south of the railroad spur. The creek begins at a pool where groundwater will be tapped to create the creek. The creek will serve as an amenity that connects the area, and could be similar in function to the creek in Mears Park in Saint Paul.
- The creek provides the focus for a small park that would serve the redevelopment area.
- Trails connect the park to the existing trail on 7th Avenue and Maxwell, and to Lions Park.
- The creek should include interpretive information about Newport’s history and natural resources. The information should show the trail connections between the neighborhoods east and west of Highway 61, and how the groundwater resources provide a connection between the bluffs and the river.

Other Amenities

The concept site plan and perspective include a variety of amenities to support the redevelopment in the Red Rock area:

- A strong north-south “spine” including streets, sidewalks, trees, and the creek that runs from the north to the south through the site. The spine will help to provide visual connections between the north and south. In the long term, if the spur line were removed, the “spine” could be connected to create street and pedestrian connections between the north and south areas.



- Trails and sidewalks with boulevard trees provide pedestrian connections throughout the area
- Public gathering spaces are provided throughout the area--at the north end, near residential buildings, and along the stream amenity
- A trail connection is included from the north end of the redevelopment area to the Mississippi River
- The park and trails in the south area will connect to Lions Park, and in the future, to the new Levee Park





More ideas. Better solutions.®

MEMO

To: Sherri Buss, RLA, AICP
From: Eric Thompson, PE, CFM
Subject: Newport Red Rock Gateway Redevelopment Stormwater Management Summary
Date: April 10, 2014

Introduction

This memorandum documents the general approach and conceptual performance of a proposed stormwater management plan for the Red Rock Gateway Redevelopment project in the City of Newport.

Project Location

The project site is located at the southwest quadrant of I-494 and USH 61. This study encompasses an area of 19.2 acres which is part of an overall larger planning area of approximately 25 acres which also includes the Newport Transit Station.

Stormwater Management Standards

This site will be subject to the stormwater management standards of the South Washington Watershed District (SWWD). SWWD indicates that the following standards must be met:

1. Maintain peak discharge rate for the 2-, 10-, and 100-yr events.
 - a. *Note; as the proposed development density is less than existing it is assumed that this requirement will be met passively and so is not discussed further here.*
2. Meet the Total Phosphorus load standard of 0.22 lbs/acre/year
 - a. *Planning area = 19.2 acres; maximum allowable TP load = 4.22 lbs/yr*
3. Meet the TSS load standard for the Mississippi River TMDL of 169 lbs/acre/year
 - a. *Planning area = 19.2 acres; maximum allowable TSS load = 3,245 lbs/yr*

Development Plan & Traditional Stormwater Management Planning

The TKDA/MSA team was provided a neighborhood plan for the site which was used as a starting point for evaluation of stormwater management planning. Initial steps of the planning process involved review of traditional stormwater management practices and it was quickly realized that a standard wet detention pond would alone be insufficient to achieve the standards of SWWD. Additionally, site topography would tend to place the pond within some of the most valuable land on the site.

Offices in Illinois, Iowa, Minnesota, and Wisconsin

2901 International Lane, Suite 300, Madison, WI 53704-3133

(608) 242-7779 (800) 446-0679

FAX: (608) 242-5664 WEB ADDRESS: www.msa-ps.com

Page 1 of 3

C:\D\Newport_MN\Memo.doc

MEMO

April 10, 2014

Alternative Stormwater Management Planning

Team discussion regarding alternative stormwater management strategies focused on infiltration practices; which are about the only way to practically reduce TP loads to the required levels. This led to a discussion of site layout and proposed development densities and building-to-parking ratios. This in-turn led to a discussion regarding the ability to introduce pervious areas between proposed contiguous impervious areas to facilitate wholesale 'disconnection' of impervious surfaces. This disconnection is the fundamental basis of the proposed stormwater management plan.

Impervious Area Disconnection

In our experience, there is very little quantifiable research on what marks the boundary between a connected and unconnected impervious area. The following is an envelope of the most conservative numerical rules-of-thumb that a somewhat intensive internet search revealed including references from Philadelphia, PA; Wilmington, NC; Washington DC, and the states of New York and Wisconsin:

- Surface Impervious Areas
 - The contributing flow path over impervious cover is no more than 75 feet,
 - The surface imperviousness area to any one discharge location shall not exceed 5,000 ft²,
 - The length of overland flow is greater than or equal to the contributing length,
 - The soil is not designated as a hydrologic soil group "D" or equivalent,
 - The slope of the contributing impervious area is 3% or less, and
 - The slope of the overland flow path is 3% or less.
- Rooftop Impervious Areas
 - The contributing area of rooftop to each disconnected discharge point is 500 square feet or less
 - Downspouts must be at least 10 feet away from the nearest impervious surface to discourage "re-connections"

System Performance

Table 1 on the following page provides a summary comparison of TP and TSS loads from the project site under the originally proposed layout and under the current layout with greater disconnectivity of impervious area.

A WinSLAMM computer model was used to estimate TP and TSS loads from each individual source area within each land use on within the project limits. A sensitivity analysis was completed to determine loads from connected and unconnected areas.

Connectivity for the original layout was assumed to match 'typical' connectivity of upper Midwest development practices as documented in the WinSLAMM model. Connectivity of the proposed layout was determined according to the rule-of-thumb described above. It was

MEMO

April 10, 2014

assumed that all roofs would be disconnected, as would all sidewalks. Approximately 55% of proposed parking areas within the proposed layout can be disconnected. None of the street areas are proposed to be disconnection.

Table 1
Comparison of Traditional and Alternative Stormwater Management System Performance

			Original Layout	Proposed Layout
Land Uses	Connected Impervious Area	(acres)	11.29	3.36
	Unconnected Impervious Area	(acres)	0.49	7.16
	Pervious Area	(acres)	7.42	8.68
	TOTAL	(acres)	19.20	19.20
Base Loads	TSS Load	(lbs/yr)	4,596	2,428
	TP Load	(lbs/yr)	13.34	5.07
BMP- Reduced Loads	TSS After Active BMPs	(lbs/yr)	3,677	1,706
	TP After Active BMPs	(lbs/yr)	8.28	3.88

Disconnection of sidewalk areas will be achieved by simply buffering sidewalks by an equal area of turf. Disconnection of concentrated runoff points from roof downspouts and from large areas of sheet flow from parking lots will be accomplished through construction of large areas of augmented soils.

Tree Trenches

Note that the results in Table 1, while they do represent a substantial improvement in terms of TSS and TP loads relative to a traditional development show that disconnection alone (for this site) is not quite sufficient to achieve the required TP load (allowable TP load = 4.22 lbs/yr, allowable TSS load = 3,245 lbs/yr).

To achieve the required additional TP reduction the parking lots on the north and south ends of the project will be served by strategically placed tree trenches. The site plans identify a total length of 990 feet of tree trenches. If these trenches are constructed 5-feet wide, have three feet (or more) of high-infiltration rate soil media above 2-feet (or more) of a granular storage area, and a surface pool depth of 6-inches they will be sufficient to capture 100% of the runoff from the parking areas routed to them. This will be sufficient to reduce TP loads to TMDL limits.



CITY OF PORTLAND - TREE TRENCH EXAMPLE

NORTH-SOUTH "SPINE"

TRAIL CONNECTION TO MISSISSIPPI RIVER

PARK

NORTH

NORTH

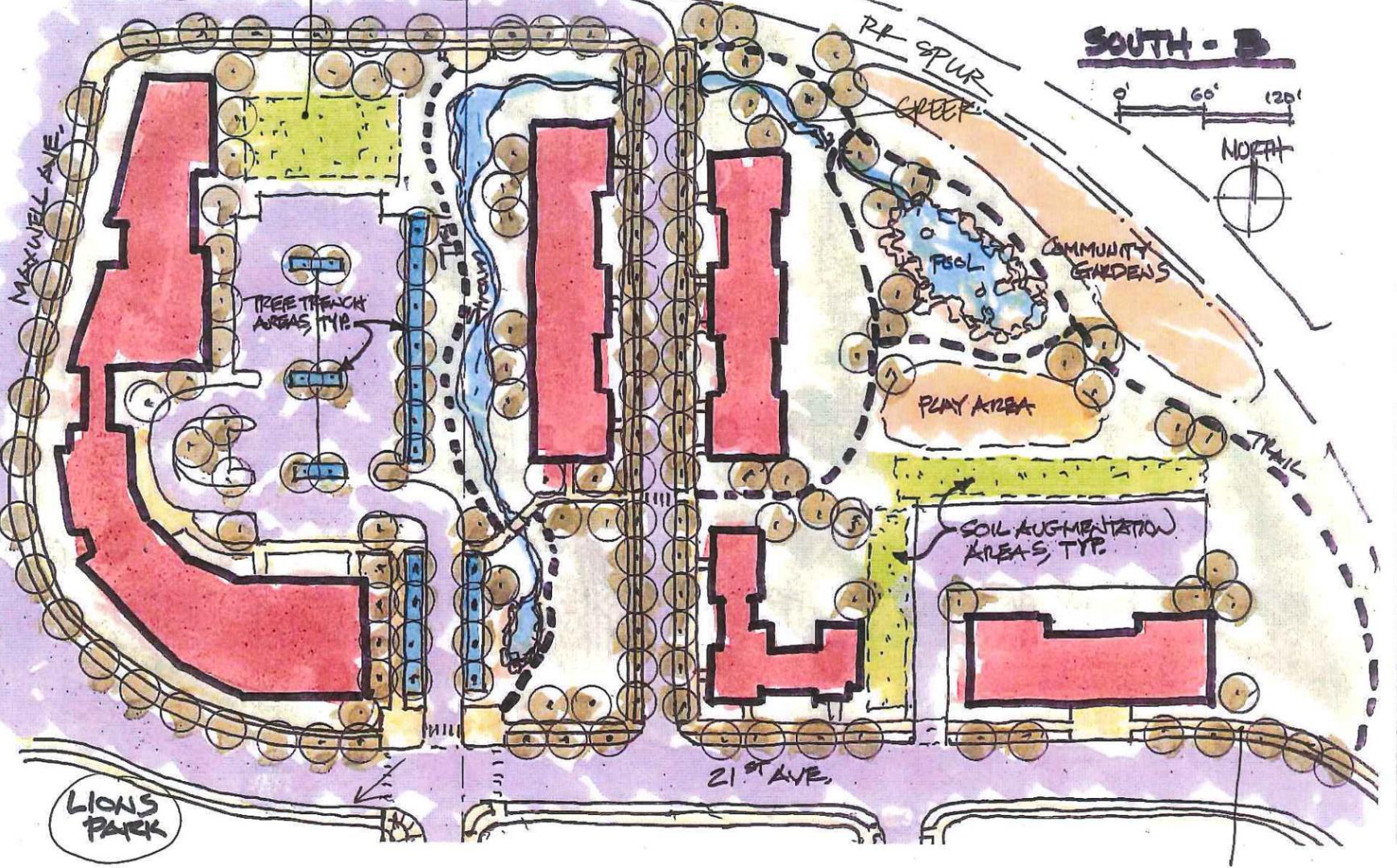
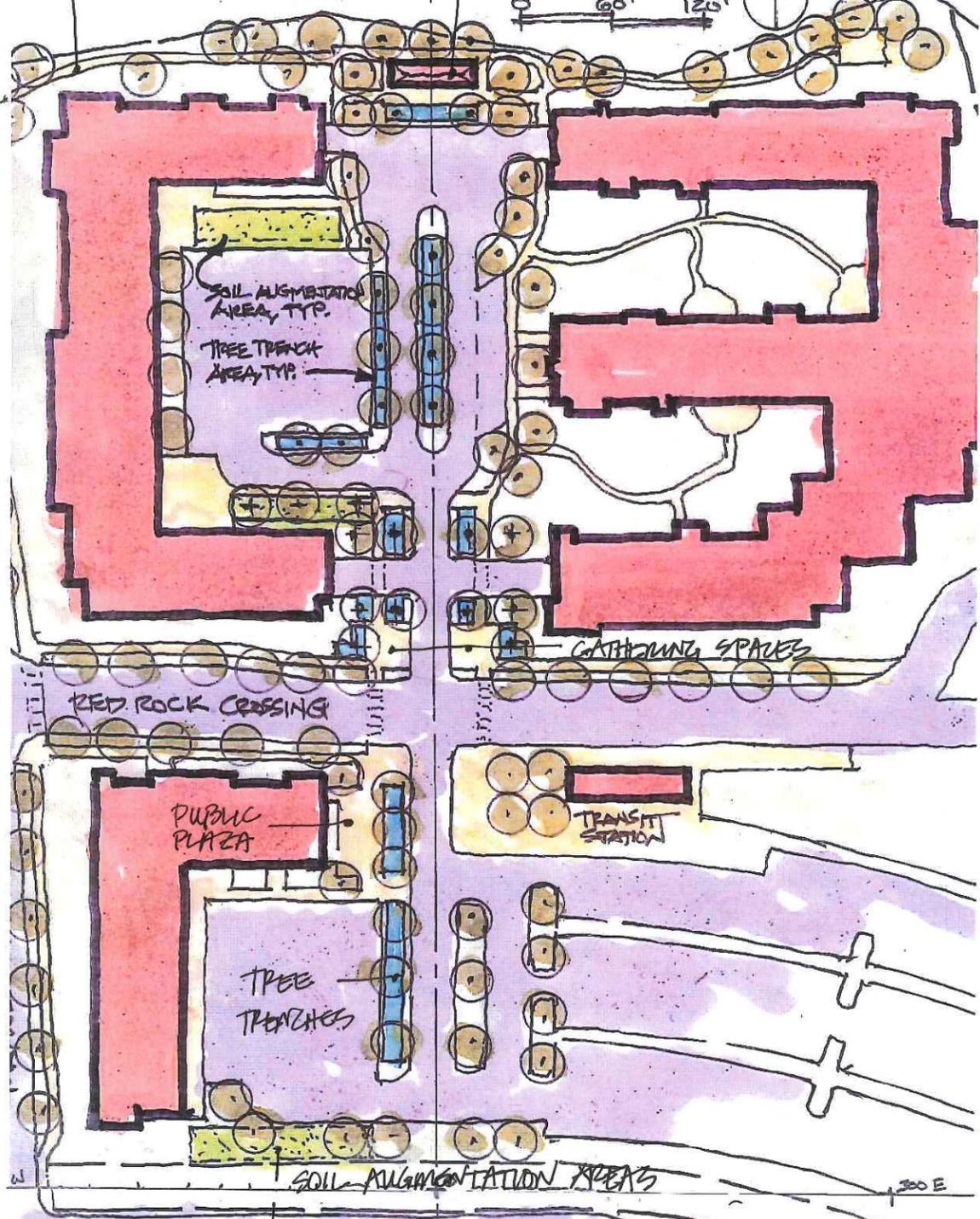
0 60' 120'

CONCEPT PLAN

STORMWATER AND PUBLIC AMENITIES -
RED ROCK PEDEVELOPMENT AREA

JUNE, 2014

TKDA



SOUTH - B

0 60' 120'

NORTH

EXISTING TRAIL

