W R G
DESIGN INC.

MEMORANDUM

To: City of Newberg
Department of Planning and Building

From: Richard D. Boyle, PE
Civil Project Manager

Date: June 30, 2009

Project: **South Industrial Area Master Plan**
WRG#: **CON 8829 SD3**
Re: **Utilities**

Site Description:

The South Industrial Area Master Plan site is a prominent plateau of approximately 375 acres bounded by the Hess Creek Drainage on the west and the Springbrook Creek drainage on the east. Elevations of this plateau range from slightly above 170-feet of elevation to 110-feet of elevation along the incised drainages at the boundaries of the master plan area. Natural existing soils of the Chehalem Valley consist predominately of clays with incidence of perched water tables and have very low infiltration potential.

Wastewater:

Wastewater service to the master plan area can be provided by sighting a pump station on property south of Wynooski Road across from the existing waste water treatment plant. This pump station should be deep enough, 20 to 22 feet, to allow the extension of a large diameter trunk line to serve the South Industrial Area Master Plan with ad force main back to the existing waste water treatment plant headworks. At this depth the wastewater trunk line can be extended east along Wynooski Road to HWY 219 and south along HWY 219 at minimum slope. This wastewater trunk line along with the pump station will provide the backbone for wastewater service to the area and provide a basis for systematic extension of facilities and services from HWY 219 to the boundaries of the plan area.

Installation of interceptor and service mains from this backbone infrastructure can be extended along the alignments of Street “A”, Street “B”, Street “C”, the proposed realignment of Wynooski Road and along optional or local service roads to proved wastewater service to the master plan area. The 10 acre area east of HWY 219 at the southern end of the planning area will required a small local lift station to address the 50-foot drop in elevation.

Recycled water should be extended to the master plan area to extend the benefits that this service provides. Recycled water can be extended from the waste water treatment plant or a connection could be made to the main the services the Chehalem Glenn Golf Course in the area of Springbrook Road and/or Wilsonville Road. Location of the connection to the existing system and transmission main sizes should be determined from further investigation into availability of reclaim water and demand estimates for the plan area. Currently recycled water is only available on demand and is a non-pressurized distribution system at this time. Potential customers would need to work closely with the City of Newberg to address Department of Environmental Quality standards and requirements.

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Storm Water:

The City of Newberg currently does not require storm water quality treatment for storm water runoff. In addition current City development requirements require detention when minimizing the rate and volume of runoff to receiving systems and streams is necessary to ensure that new development does not increase downstream flooding or erosion.

In July of 2008 the City published the "Willamette TMDL Implementation Plan" that has established the basis for storm water quality treatment in the City of Newberg in anticipation of future requirements of the Oregon Department of Environmental Quality's (DEQ) Municipal Separate Storm Sewer System (MS4) NPDES Phase II Permit. This document states the City's goal to obtain public input regarding the establishment of an ordinance for storm water quality-related standards for new development in the year 2010. To support this goal of storm water quality treatment for new development within the plan area the City may implement and refer to the water quality treatment standards and requirements of Clean Water Services, City of Portland Bureau of Environmental Services or Water Environmental Services of Clackamas County. These jurisdictions are all current MS4 NPDES Phase II Permit holders.

New regulations regarding storm water detention are being implemented by The Oregon Department of Environmental Quality based on the direction and authority of the Federal Environmental Protection Agency. The Oregon Department of Environmental Quality in cooperation with the Oregon Department of Transportation is requiring detention for all developments that affect a state highway facility or require 404 or 401 water quality permit. The implementation of the Newberg South Industrial Area Master Plan will affect HWY 219, a state facility, and storm water from the area will discharge to Springbrook Creek and Hess Creek which contain wetlands that may require 404 and/or 401 permits from DEQ. Therefore, it is reasonable to ascertain that storm water detention can be an anticipated requirement for development of the plan area.

Water quality treatment can be achieved by implementation of multiple best management practices (BMPs) throughout the plan area. Consideration should be given to low impact design water quality treatment facilities. These facilities treat storm water impurities at the source, impervious surfaces, prior to conveyance and discharge to receiving water bodies. Examples of these facilities are a storm water filter basin in landscape islands that provide treatment to the adjacent asphalt parking area. A few other examples are vegetated filter strips, sand filters, planter boxes and vegetated or grassy swales. These facilities tend to be smaller is size due to the contributing area draining to the facility and may require multiple facilities to serve an area of significant size.

Individual lot by lot, development by development, water quality facilities can also be implemented throughout the plan area. This approach would require the individual industrial development to provide water quality treatment to the impervious surfaces required by its facilities.

Localized regional water quality treatment areas can be implemented within the plan area. These treatment areas can be swales and or ponds in open spaces, parks and along the drainage ways of Hess Creek and Springbrook Creek. These facilities will tend to be large in size due to the large areas of impervious surfaces contributing to the facility.

In summary, water quality treatment can be provided through implementation of BMPs throughout the plan area. Further investigation and development of the minimum requirements and frame work for implementation is necessary to achieve water quality treatment for the plan area. These facilities can be public or private or a combination of public and private with indentified considerations of long term maintenance responsibilities.

Detention can be achieved throughout the plan area effectively by utilizing the preferred water quality treatment systems and expanding them for detention. The plan area is of significant size in which the storm drainage treatment and conveyance system can be used to delay the post development peak discharge to achieve significant detention.

Water System:

The City of Newberg Water System Master Plan states that a 24" main should be extended to the site from the water treatment plant to the plan area and allow for further extension up Springbrook Road. City staff has stated that quantity and pressure are sufficient to serve the area. It can be assumed that pressures would be significantly high enough that a pressure reduction measures would be necessary. Extension of water mains along with the alignments of the proposed streets within the plan area will provide adequate water service and redundancy. Further demand analysis should be implemented with each development to ensure adequate volume and pressure is available for the needs of the user.

Franchised Utilities:

Natural Gas:

Natural gas services would be extended from the existing 12-inch high pressure main in Wynooski Road to the plan area. The plan should contain a high pressure reduction facility consisting of a 20-foot by 40-foot area to reduce the pressure for normal commercial use.

Power:

Electrical power services would be extended to the plan area from the existing substation along Springbrook Drive. Existing overhead lines along the Right-of-Way of HWY 219 are anticipated to be relocated underground with the extension of services to the plan area. Common utility easement widths are 10-feet along all public Right-of-Way with the additional 20-foot by 30-foot easement around power switch vaults where required.

Phone & Broadband Communications:

Telephone and broadband communications will need to be extended to the plan area from Springbrook Drive. Redundancy in the system which may be required by individual end users may be achieved by a secondary connection from Wilsonville Road.