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MEMORANDUM

DATE: October 26, 2015

PROJECT NO.: 13-1450.101

TO: Mr. Terry Haugen, Public Works Director
City of Grants Pass

FROM: Brian M. Ginter, P.E.
Lael L. Alderman, P.E.
Murray, Smith & Associates, Inc.

RE: City of Grants Pass – Water Treatment Plant Siting, Pre-Purchase Site Due Diligence

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Purpose

The City of Grants Pass (City) has requested Murray, Smith & Associates, Inc. (MSA) prepare this memorandum to document the due diligence process recommended in acquiring a property for siting a future new water treatment plant. Included with the due diligence review are anticipated durations for completing tasks as well as budget level cost estimates for planning purposes.

Background

In 2014, the City completed a Water Treatment Plant Facility Plan Update. The key findings of the Plan are:

1) The existing water treatment plant (WTP) has reached the end of its useful life and is beginning to show signs of structural failure of multiple components;
2) The WTP lacks the capacity to meet long-term water demands; and
3) Rehabilitation and expansion of the WTP carries a higher risk and capital cost than construction of a new replacement WTP.

The recommended implementation plan for development of a new WTP which will meet the City's long-term water supply needs included a number of near-term actions. This

memorandum addresses activities required to support the identification and acquisition of a property for the siting of the future WTP.

Preliminary Site Due Diligence

Prior to undertaking engineering due diligence investigations at desirable properties, the City will want to complete a number of preliminary site due diligence matters. Due diligence reviews with respect to past and current land use, title, and boundary surveys should be completed.

Engineering Due Diligence

When considering acquisition of a property, the need for completing a thorough engineering due diligence investigation cannot be overstated. Avoiding potentially costly environmental cleanup costs, determining in advance possible geotechnical issues, and noting the likely presence of critical habitat on a potential WTP site may all save the City time, money and liability in the future.

Determining the potential for discovering environmental contamination at or near a site is of particular concern and a primary focus of the due diligence process. Prior to initiating an engineering due diligence review for a property, the City should request the current owners for all properties of interest provide copies of all environmental reports and studies in their possession which may have been conducted at or in the vicinity of their property. Review of this information may allow the City to eliminate a property or properties from its consideration without incurring any costs.

Once a finalized listing of desirable properties has been established, the typical program for performing Engineering Due Diligence will include the following work:

- Environmental Site Assessment;
- Geotechnical Site Assessment;
- Biological Site Assessment; and
- Wetland Site Assessment.

A stepwise approach should be considered the best practice for performing an engineering due diligence review at any particular site of interest. It is recommended due diligence activities be completed in the order presented as follows.

Environmental Site Assessment

The City will need to complete a site-specific Environmental Site Assessment (ESA) as the first step in performing its Engineering Due Diligence for any property being considered for purchase. A properly conducted ESA is the standard for financial institutions in evaluating a property for potential environmental contamination and, if any contamination is found, assessing the potential liability for that contamination present at the property. Additionally,

should the City purchase a property following completion of a Phase I ESA with no reported findings but still uncover environmental contamination at the site, a Phase I ESA will prove useful in future litigation.

Phase I Environmental Site Assessment

A site specific Phase I ESA will be conducted to identify environmental conditions which may present a potential liability should the City purchase a subject property. Ground-level investigations and a review of governing and regulatory agencies' records for both the underlying land as well as the existing physical improvements to the property will be the basis for this work.

The Phase I ESA should be performed to the meet the typical requirements of local financial institutions and the most recent version of American Society for Testing and Materials (ASTM) Standard E1527 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process). A Phase I ESA is to be completed by an environmental professional specializing in this field of work. A preferred consultant recommended for completing the scope of work presented below is Rabe Consulting of Klamath Falls, Oregon

Process – The scope of work for a typical Phase I ESA should include, at a minimum, the following items:

- *Review available geologic and groundwater information*. A review of all available reporting will be used to generally characterize the geotechnical and environmental conditions of the site.

- *Examine historic aerial photography of the vicinity*. Aerial photographs, both current and historical, will be reviewed for indications of past site occupants or businesses which may have had the potential to contaminate the soil or groundwater beneath the site.

- *Examine current USGS mapping of the vicinity*. Mapping will be used to determine area topography and drainage patterns which may have the potential to affect the site.

- *Conduct file searches with public agencies for potential contaminant sources in the vicinity*. Hazardous material records from the U.S. Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (DEQ) will be compiled and reviewed for indications of recognized environmental conditions. Searches will also be conducted through other agencies having oversight relative to water quality and soil contamination issues.

- Conduct searches for recorded environmental cleanup liens.

- *Reviews of federal, tribal, state and local government records.* Reviews should also include examining municipal and county planning files to check prior land use and permits granted to subject property and surrounding properties within a search radius of 1/8- to 1 mile.

- *Perform a ground-level reconnaissance*. An on-site investigation will document present conditions and evaluate any likely environmental hazardous site history. Indications that the property was used in a manner which may have resulted in contamination (chemical spill residue, die-back of vegetation, presence of above-ground or underground storage tanks) will be noted and reported. A visual survey of the neighboring properties will also be conducted to note businesses or features which may have the obvious potential to affect the site.

- *Interviews with persons knowledgeable of property history.* Brief discussions with past owners, present owner, key site manager, present tenants and neighbors, as may be available or applicable, will focus on possible knowledge of previous activities at site.

A Phase I ESA meeting or exceeding this scope of work must be completed less than 180 days prior to the date of acquiring the property to be presumed valid by a financial institution or for use in any future litigation involving possible future discovery of environmental contamination at the property. An existing Phase I ESA for which the information was collected or updated within one year prior to the date of acquiring the property may still be considered valid once the following items are conducted and/or updated within 180 days of the date of purchase:

- Reviews of federal, tribal, state and local government records;
- Searches for recorded environmental cleanup liens;
- Perform a ground-level reconnaissance;
- Interviews with persons knowledgeable of property history; and
- The declaration by the environmental professional responsible for the assessment or update.

Outcome – A report will be prepared for the City identifying potential or existing environmental liabilities at the subject property. Based upon the reported findings of the Phase I ESA, the City may decide to conduct a Phase II ESA. Should the Phase I ESA find no concern for potential environmental liabilities, the environmental assessment portion of the Engineering Due Diligence process may be deemed complete.

Duration – Site investigations, records review and reporting should be anticipated to be complete within two to three weeks following authorization to proceed from the City.

Budget – A budgetary cost of approximately $4,000 per site should be anticipated for conducting a Phase I ESA as detailed above.

Phase II Environmental Site Assessment

Where a Phase I ESA is a paper study conducted to find general areas and particular items of potential environmental concern on a property, a Phase II ESA is an actual screening of subsurface soils to determine if potential or suspected contamination or hazardous materials are present. If any items found in conducting the Phase I ESA work raise the concern of the City or environmental professional, and the City still wishes to pursue the potential purchase of the property, a Phase II ESA may be ordered. A Phase II ESA may also be required should contaminated materials be uncovered during construction activities at a selected site, even if those materials were not suspected to be present during the Phase I ESA. Previous site uses which could be anticipated to warrant initiation of a Phase II ESA include the presence of above-ground or underground storage tanks, automotive and machine shops, and manufacturing facilities.

It should be understood that undertaking a Phase II ESA is not an action to be taken lightly and any property warranting a Phase II ESA should be considered less desirable than another that does not. It is recommended a Phase II ESA only be pursued for a property the City is seriously considering for purchase. It is further recommended for the City to have extensive discussions with the contracted environmental professional completing Phase I work as to the risks in pursing Phase II work. In initiating a Phase II ESA, the City will want to have a signed agreement in place with the current property owner concerning the handling and possible payment for remediation and cleanup of contaminated soil or other hazardous materials should any be uncovered. Subsequent site remediation and cleanup efforts, if deemed necessary, will need to be coordinated and completed in accordance with DEQ guidance.

The Phase II ESA should be performed to meet the typical requirements of local financial institutions and the most recent version of ASTM Standard E1903 (Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process). A Phase II ESA is to be completed by an environmental professional specializing in this field of work. A preferred consultant recommended for completing the scope of work presented below is Rabe Consulting of Klamath Falls, Oregon.

Process – The work plan for a Phase II ESA will need to be tailored to the specific needs of an individual site. The scope of work for a typical Phase II ESA will include, at a minimum, the following items:

- *Perform geophysical survey.* Geophysical surveys are often included as part of a Phase II ESA to help locate subsurface objects, a reliable indicator in identifying suitable locations for soil sampling and possible installation of groundwater monitoring wells.

- *Conduct shallow soil sampling and analysis of soil samples.* Analysis of soil samples collected at the site will assist in determining if there is a presence of materials which may represent human health and/or ecological risks. Further actions may be required.

The scope of work for a Phase II ESA may expand by necessity to include some or all of the following items:

- Soil testing, profiling and disposal;
- Groundwater monitoring well installation and monitoring (this may extend to neighboring properties as well to determine the presence of contamination);
- Groundwater remediation, sampling and plume mapping;
- Remediation design and management; and
- Regulatory agency interaction and site closure.

Outcome – A report will be prepared for the City identifying the nature of existing environmental liabilities at the subject property. It should not be anticipated that reporting will include characterization of the contamination (mapping of contamination, source of contamination), nor will reporting detail the feasibility of site cleanup or remediation; however, this information may be provided if included in the City's scope of work. The City should request reporting include possible recommendations for next steps, additional site investigation needs and a Contamination Materials Management Plan.

If a Phase II ESA is initiated, the City should be prepared to amend the scope of work as needed and to share or shoulder the full burden of costs for property preparation and cleanup if purchase of the property is still desired. Purchasing agreements may be negotiated with a seller requiring the current landowner to clean up the property prior to sale, or the City may decide to pursue purchase and be responsible for the cleanup and environmental liabilities present at the site. The City, as the initiator and owner of the Phase II ESA, not the seller, should establish cleanup standards with DEQ prior to finalizing sales agreements or beginning any cleanup efforts.

Duration – The schedule necessary to complete a Phase II ESA is difficult to estimate. A stepwise approach to the assessment and possible property preparation should be considered as the best practice. It is, again, recommended that if a Phase II ESA is initiated the City only consider completing the limited scope of work previously noted; performing the limited work may make it simpler for the City to walk away from purchasing the property. However, should the contamination uncovered be extensive, and should regulatory agencies become concerned by those findings, it will likely be difficult for the City to not continue with site cleanup efforts. Duration of cleanup efforts are dependent upon methods employed.

Budget – The budget for a Phase II ESA is dependent upon the scope of work developed by the City. The cost for a Phase II ESA can vary greatly, depending on site specific details. Typical due diligence Phase II ESA studies with no or limited property preparation for sale required may be in the $6,000 to $25,000 range; however, costs have been known to climb to $200,000 or higher in the more extreme cases involving extensive testing and site cleanup.

Geotechnical Site Assessment

A geotechnical site assessment may be used in determining the suitability of existing subsurface conditions at a given site for the development of a potential WTP. A preliminary evaluation of the existing geotechnical conditions and geological features at a potential site will be conducted by either or both a registered geologist and a licensed geotechnical engineer. It is recommended the City engage those professionals which may be familiar with the local subsurface conditions in the area. A preferred consultant recommended for completing the scope of work presented below is the Galli Group of Grants Pass, Oregon.

Process – The scope of work for a typical geotechnical site assessment should include the following items:

- *Review available geologic and geotechnical information*. A review of all available reporting will be used to generally characterize the subsurface conditions of the site. Reviews will examine the possible presence of liquefiable soils in the vicinity as well as the potential for old construction debris fill sites. Available seismic mapping will be reviewed.

- *Perform a ground-level reconnaissance*. An on-site investigation will document exposed materials and conditions at the site. The site visit will be used to determine areas of potential geotechnical or geological interest and establish locations of geotechnical borings.

- *Perform geotechnical borings*. With a new WTP requiring the purchase of a 3 to 5 acre property, it is recommended that three individual borings be installed at any particular site of interest. Borings should be installed to a depth of approximately 25 feet to obtain a preliminary characterization of the site's subsurface conditions. It is further recommended to install piezometers at each boring location to obtain seasonal information on the existing groundwater levels in the area.

- *Discussions with City staff*. Brief discussions will focus on staff's possible knowledge of previous activities at the site as well as preliminary thoughts on potential orientation of the WTP facility on the property.

Outcome – The results of the preliminary site evaluations will be summarized in a technical memorandum. The technical memorandum will provide preliminary conclusions regarding the suitability of the site based upon geological and geotechnical considerations.

Duration – Site assessment and subsequent reporting may be completed within two to three weeks once authorization is provided from the City. Note scheduling of drill rigs for performing geotechnical borings may push the timeline for site assessment out as much as

another 4 weeks. Once on site, geotechnical borings will likely be completed in less than one day.

Budget – A budgetary cost of approximately $6,000 per site should be anticipated for conducting preliminary geotechnical evaluations as detailed above. Note savings of up to $1,000 per site investigated may be realized by the City in performing geotechnical borings at multiple sites under the same drill rig mobilization.

Biological Site Assessment

A biological site assessment may be used to determine the possible presence of critical plant and wildlife habitat, as well as the potential for threatened or endangered plant and wildlife species, at a particular site. Investigations and reporting will be conducted by environmental professional specializing in this field of work. A preferred consultant recommended for completing the scope of work presented below is Rabe Consulting of Klamath Falls, Oregon.

Process – The scope of work for a typical biological site assessment should include the following items:

- *Review available information*. A review of all available and relevant listings from jurisdictional agencies (i.e., U.S. Fish & Wildlife, Register of Natural Heritage Resources) will be used to generally characterize the biological conditions of the site. Reviews will focus on determining the possible presence of critical plant & wildlife habitat in the area, as well as noting any threatened or endangered plant & wildlife species in the vicinity.

- *Perform a ground-level reconnaissance*. An on-site investigation will document the presence of any critical habitat and threatened or endangered species at the site.

Should the review of information turn up any items for possible concern, and should the ground-level reconnaissance confirm the presence of any critical habitat or possible presence of threatened and endangered species at the site, a biological survey of the property may be requested by the City. A biological survey should only be performed if the City is still interested in purchasing the property; there is no obligation on the part of the City to conduct a biological survey if there is no further interest in purchasing the property at this point. Note scheduling of the biological survey may prove to be difficult, as the timing of this work will likely require observations take place within the typical migratory patterns of wildlife and flowering seasons for plant life.

Outcome – The results of the preliminary biological site assessment will be summarized in a technical memorandum. The technical memorandum will provide preliminary conclusions regarding the presence or non-presence of any critical habitat or threatened and endangered species at the site. Additional reporting will be provided to document the biological survey of the property, if requested. The presence of critical habitat or certain wildlife and plant

species at a property may impact its allowable uses and the extent to which the area may be developed.

Duration – A limited biological site assessment, including only a review of available information and on-site investigations, may be assumed to take approximately 3 weeks to complete and provide reporting. If a biological survey of the site is desired, an additional 9 to 12 months may be required to allow for seasonal observations as needed.

Budget – A budgetary estimate of $3,000 per site should be considered appropriate for completing the limited biological assessment and subsequent reporting. Note there may be an opportunity for cost savings if multiple sites are examined at the same time, or if the City employs an environmental professional capable of performing a site's Phase I ESA and limited wetland site assessment concurrent with the biological site assessment.

If a biological survey is requested, depending upon the possible variety of wildlife & plants and necessary investigations into critical habitats, costs can escalate closer to $15,000 for the complete scope of work. Note that if federal funding is anticipated to be used for any facet of the WTP design or construction, a more formalized, systematic type of reporting of findings will need to be completed and may increase costs by as much as 20 percent.

Wetland Site Assessment

A wetland site assessment may be used to determine the possible presence of wetland habitat at a particular site. Investigations and reporting will be conducted by environmental professional specializing in this field of work. A preferred consultant recommended for completing the scope of work presented below is Rabe Consulting of Klamath Falls, Oregon.

Process – The scope of work for a typical wetland site assessment should include the following items:

- *Review available information*. A review of available information (i.e., aerial photographs, City wetland inventories) will focus on determining the possible presence of wetlands in the vicinity.

- *Perform a ground-level reconnaissance*. An on-site investigation will document the presence of any wetland habitat at the site.

Should the review of information turn up any items for possible concern, and should the ground-level reconnaissance confirm the presence of wetland habitat, a wetlands delineation survey may be requested by the City for the property. A wetlands delineation should only be requested if the City is still interested in purchasing the property; there is no obligation on the part of the City to conduct a wetland delineation if there is no further interest in purchasing the property at this point. Findings from the wetlands delineation must then be provided to both the Oregon Department of State Lands (DSL) and U.S. Army Corps of Engineers

(USACE) for review and concurrence on the reported findings. Following an issuance of concurrence from both agencies, a plan for wetland mitigation will be developed.

Outcome – The results of the preliminary wetland site assessment will be summarized in a technical memorandum. The technical memorandum will provide preliminary conclusions regarding the presence or non-presence of any wetland habitat at the site. Additional reporting will be provided to document wetland delineations at the property, if requested. The presence of wetland habitat may impact the allowable uses and the extent to which areas of the property may be developed.

Duration – A limited wetland site assessment, including only a review of available information and on-site investigations, may be assumed to take approximately 3 weeks to complete and provide reporting. When a wetland delineation is requested, additional time may be required to allow for seasonal observations as needed. A conservative timeline for obtaining DSL and USACE concurrence would be 6 months following submittal of survey and reporting.

Budget – A budgetary estimate of $3,000 per site should be considered appropriate for completing a limited wetland assessment and the subsequent reporting. Note there may be an opportunity for cost savings if multiple sites are examined at the same time, or if the City employs an environmental professional capable of performing a site's Phase I ESA and limited biological site assessment concurrent with the wetland site assessment.

If a wetland delineation is desired by the City, costs can escalate closer to $15,000 to complete the full scope of work. Note that if federal funding is anticipated to be used for any facet of the WTP design or construction, a more formalized, systematic type of reporting of findings will need to be completed and may increase costs by as much as 20 percent.

Summary

This memorandum has been completed to document the engineering due diligence process recommended for the City in acquiring a property for siting a future WTP. It is recommended that prior to undertaking engineering due diligence investigations at desirable properties, the City complete non-engineering due diligence reviews with respect to past and current land use, title and boundary surveys. An engineering due diligence review for a property should be advanced in a stepwise manner which may be stopped should undesirable results be obtained at any point in the process.

A limited engineering due diligence review should include the items listed in the following table, with the anticipated durations and budgetary level cost estimates for each item being provided on a per site basis. Note anticipated durations for tasks and associated budgetary level cost estimates do not include advanced site assessments such as completing a Phase II ESA or wetland delineation.

Task	Duration	Cost
Environment Site Assessment, Phase I ESA only	3 weeks	$4,000
Geotechnical Site Assessment	3 weeks	$6,000
Biological Site Assessment	3 weeks	$3,000
Wetland Site Assessment	3 weeks	$3,000
Totals:	**12 weeks (3 months)**	**$16,000**

It should be anticipated that a limited engineering due diligence review for a site will take approximately 3 months to complete at an estimated cost of $16,000. There may be an opportunity for cost savings if multiple sites are examined at the same time, or if the City employs an environmental professional capable of performing a site's Phase I ESA and limited biological site assessment concurrent with the wetland site assessment.