

MEMORANDUM

DATE: January 28, 2015

TO: Dave Kuhl, Development Services Director; Members of the Woodinville Planning Commission

FROM: Lisa Grueter, Manager, BERK Consulting

RE: Comprehensive Plan and Municipal Code Update and EIS –Status of Documents and Responses to Comments

PROGRESS TO DATE

The City issued four documents regarding the Comprehensive Plan and Municipal Code Update in November 2014 (Exhibits 2-5):

- Draft Comprehensive Plan Update 2015
- Draft Municipal Code Update & Best Available Science Review
- Draft Environmental Impact Statement
- Revised Draft Existing Conditions Report

After a well-attended public workshop held November 19, 2014, and Planning Commission study sessions December 3 and 17, 2014, City staff and consultants developed some policy and code amendments responding to comments on the location of Regional Retail Overlay and uses in Industrial areas, views, and transportation (Exhibit 6).

At the public hearing on January 7, 2015 and extended hearing January 21, 2015, there was additional input on the Regional Retail Overlay and Industrial areas with general support for the direction of the changes developed (Exhibit 6), but with questions regarding whether some businesses' specific improvements would be covered well enough.

Overall, public and agency comments received during the 45-day comment period (November 17, 2014 to January 9, 2015) and extended public hearings in January and February 2015 would result in refinements to the Draft plan elements and code proposals across a variety of topics (Exhibits 10, 11, 15, 16, and 20; see also additional comments from Muckleshoot Indian Tribe and responses in BERK memo January 27, 2015 and additional responses to comments in Table 1 in this memo).

Meeting Topics

The focus of Planning Commission meetings in December 2014 was on the Land Use and Transportation Elements; these elements together with Housing were also a focus of the January 21, 2015 Planning Commission meeting.

At the February 4, 2015 meeting, it is recommended that the Planning Commission focus on remaining Comprehensive Plan elements, in particular the Environmental Element and Best Available Science Review/Gap Analysis Code Amendments.

Comprehensive Plan Elements – Topics for February 4, 2015 (Areas of focus)

- Introduction and Vision
- Economic Development
- Parks, Recreation, and Open Space
- Capital and Public Facilities
- Utilities
- Environment

Proposed Woodinville Municipal Code Amendments associated with 2015 Comprehensive Plan Update – Topics for February 4, 2015 (Areas of focus)

- Critical Areas Best Available Science (BAS) Review
- Gap Analysis
- Geologic Hazards Review (prepared by Golder Associates)

Beyond the documents associated with the Woodinville Municipal Code Amendments (Exhibit 3), the City authorized a peer review of the Geologic Hazards Review conducted by Zipper Geo Associates (January 15, 2015), provided as an Attachment to this memo.

Representatives of Golder will be available to present the Geologic Hazards Review and touch on Zipper Geo's peer review at the February 4, 2015 meeting.

TIMELINE FOR RECOMMENDATIONS

The Planning Commission has had preliminary draft element reviews since spring 2014 and more formal review of the Comprehensive Plan and Municipal Code Update since fall 2014. The schedule calls for Planning Commission recommendations by February 18, 2015.

Recognizing the complexity of the materials, City staff and consultants recommend the Planning Commission be prepared to make recommendations on:

- Draft Comprehensive Plan Update 2015 (Exhibit 2 with amendments in Exhibit 6 and subsequent exhibits developed for the February 4 and 18, 2015 meetings): All Draft elements together with policy amendments would be under consideration.
- Draft Municipal Code Update & Best Available Science Review (Exhibit 3 as modified by Exhibit 6 and subsequent exhibits developed for the February 4 and 18, 2015 meetings): Focus on Critical Areas Regulations only at this time.
- Draft Environmental Impact Statement (Exhibit 4, Appendix C as modified by subsequent exhibits developed for the February 4 and 18, 2015 meetings): Be prepared to consider the Planned Action Ordinance.

Staff and consultants recommend that the Municipal Code amendments regarding Zoning be delayed and considered between March and December 2015 after the Planning Commission makes recommendations on the Land Use Element and associated Comprehensive Plan Elements, and Critical Areas and Planned Action code amendments. Delaying the zoning code changes would allow the Planning Commission to spend some time on Zoning with the affected property owners and public over March-June 2015. Then the City Council would work on Zoning between July and December 2015.

Table 1. Summary of Comment Letters and Emails and Responses

Date	Exhibit	Comments	Responses	Document Amended
June 4, 2014	15	<p>Housing Development Consortium</p> <ul style="list-style-type: none"> • General, Support provision of development incentives that leverage the power of the private market to create affordable homes and through the City's allocations to the ARCH Housing Trust Fund • Public Funding, Support Draft Policy to support the Regional Housing Trust Fund. This should be fully implemented and support should be bolstered. • Homelessness, City should continue to partner to improve opportunities to site housing and services for this need. • Implementation, fully implement commitments to affordability 	<p>Comments noted. The Draft Housing Element issued in November 2014 continues to have the draft policies referenced and the implementation strategy. The Draft Code includes proposed revised incentives. The City participates as a member of ARCH. Regular reporting on Element progress should help advance Housing goals.</p>	<p>No further amendments proposed</p>
November 19, 2014	10	<p>Comment Cards</p> <ul style="list-style-type: none"> • "H-2 – a bit 'pie in the sky'." Refers to "Goal H-2. Create opportunities for all Woodinville households at all income levels to secure quality housing." • "H-3 needs better definition – too broad." Refers to "Goal H-3. To provide housing opportunities in Woodinville and support for human services for people with special needs." • "What does cohesive mean in regard to residential neighborhoods?" Refers to "Goal LU-7. Provide for attractive, safe, diverse, and 	<ul style="list-style-type: none"> • Housing Element policies implementing Goal H-2 are to encourage home ownership, work with other jurisdictions to promote housing affordable to those with low and moderate incomes, support for the Regional Housing Trust Fund, promotion of housing near transit, and promotion of housing incentives. With these specifics, Consultant team suggests the goal is backed up by specific strategies and does not need more 	<ul style="list-style-type: none"> • In Goal LU-7, replace the word "cohesive" with "well-designed".

Date	Exhibit	Comments	Responses	Document Amended
		<p>cohesive residential neighborhoods.”</p> <ul style="list-style-type: none"> “Parks – PROS-4 Way, way too broad – needs better definition.” Refers to “Goal PROS-4. To create effective and efficient methods of acquiring, developing, operating, and maintaining facilities and programs that are accessible, safe, maintainable, and that account for long term costs and benefits.” 	<p>specifics.</p> <ul style="list-style-type: none"> Housing Element policies implementing Goal 3 address fair housing laws, senior housing, emergency housing, and human service delivery. The City has a Human Services Element now but it is not carried forward as some policies are included in the Housing Element. No additional detail is proposed in the Goal as the policies provide direction. Goal LU-7. Cohesive means well-integrated or unified in its planning. An alternative phrase would be “well-designed”. Goal PROS-4. Policies implementing Goal PROS-4 include developing low maintenance high capacity design standards for facilities, multiple finance methods, coordination with other agencies, concessions or leasing agreements, and others. No additional detail is proposed in the Goal as the policies provide direction. 	
December 17, 2014	10	<p>Steven Mullen-Moses, Director of Archaeology & Historic Preservation, Snoqualmie Tribe Regarding the SEPA Checklist in Appendix of the Draft EIS, would prefer the response say “Native American have used” rather than “used”. Urge</p>	<p>The SEPA Checklist recommends the following be included in the Planned Action Ordinance:</p> <ul style="list-style-type: none"> Should construction activities unearth any remains of historic or 	<p>The wording change “have used” can be addressed in the Final EIS through responses to comments.</p>

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		<p>inclusion of a requirement that development prepare an archaeological unanticipated discovery plan or similar.</p>	<p>archeological significance, construction activities shall stop and the appropriate tribal, state and local agencies shall be notified.</p> <ul style="list-style-type: none"> For future projects that involve significant excavation in the study area the City must enter into consultation with DAHP to determine the likelihood of and recommendations to address potential archaeological resources. It may be necessary to complete archaeological testing prior to significant excavation in the study area, such as digging for footings or utilities. In the portions of the study area near existing waterways, which may be high probability areas for cultural resources, it may be necessary to complete archaeological testing for projects that involve changes to vegetation and landforms. Such changes could include, but are not limited to, any ground disturbance required to plant new vegetation, the removal of existing vegetation, and landform grading. Archaeological project monitoring may be recommended for subsurface excavation and construction in these high probability areas. 	<p>The proposed Planned Action Ordinance in the Draft EIS could include the SEPA Checklist mitigation measures plus an additional one:</p> <ul style="list-style-type: none"> <u>The City shall require the development prepare an archaeological unanticipated discovery plan where development is proposed in the portions of the study area near existing waterways, which may be high probability areas for cultural resources.</u>

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			<ul style="list-style-type: none"> In the event that a future development project in the study area is proposed on or immediately surrounding a site containing an archaeological resource, the potential impacts on the archaeological resource must be considered and, if needed, a study conducted by a qualified professional archaeologist to determine whether the proposed development project would materially impact the archaeological resource and what mitigation measures may be appropriate to avoid or minimize impacts. 	
January 7, 2015	11	<p>Support for code amendments allowing increased size for grocery store. Request to change code requirement to have fire places. Request for amendments to public benefit incentives.</p>	See Exhibit 16, response from Makers	Some responses suggest amendments to code or additional research to develop revisions to code amendments. See cover memo for approach to code amendments in general.
January 9, 2015	Pending #	<p>Karen Walter, Watersheds and Land Use Team Leader, Muckleshoot Indian Tribe Fisheries Division, Habitat Program Request to address removal of fish passage barriers in the transportation, utilities, and natural environment elements Request to address Sammamish ReLeaf program in Environmental Element</p>	See BERK memo responding to comments dated January 27, 2015, Exhibit number pending.	Some edits are recommended to transportation, utilities, and environment elements, the Gap Analysis table of local species, the Planned

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Date	Exhibit	Comments	Responses	Document Amended
		Support for Gap Analysis Amendments to Critical Areas Regulations – some suggestions regarding stream typing, buffers, stormwater regulations, and consideration of species of local importance, and additional studies in best available science review		Action Ordinance mitigation for stormwater, and supplemental information in the BAS review – see BERK memo responses under separate cover.
January 20, 2015	Pending #	Email, Jim Hansink to Thomas Hansen, addressing transportation improvements	See response from Public Works Director Hansen regarding traffic modeling results.	No additional changes proposed.
January 21, 2015	20	Handout, Types of Shopping Centers, Everett Market Study	Information can be considered as code amendments for Regional Retail Overlay are discussed.	Under consideration as part of code amendments.

ATTACHMENT: ZIPPER GEO

Zipper Geo Associates, LLC
Geotechnical and Environmental Consulting

Project No. 1407.08
15 January 2015

City of Woodinville
17301 – 133rd Avenue NE
Woodinville, Washington 98072

Attention: Mr. Thomas E. Hansen, PE, Public Works Director

Subject: Summary of Comprehensive Plan Updates Geotechnical Review (Revised)
Woodinville, Washington
Task Order No. 2014-4

Dear Mr. Hansen:

This letter summarizes the geotechnical review completed by Zipper Geo Associates, LLC (ZGA) of the proposed updates to the City of Woodinville Comprehensive Plan in regard to geologically hazardous areas regulated under the Woodinville Municipal Code. Our services have been provided in general accordance with the scope of services summarized in Task Order No. 2014-4. Verbal authorization to proceed with our review was provided by you on 16 December 2014. This letter is an instrument of service and the conclusions and recommendations presented herein have been prepared in accordance with generally accepted geotechnical engineering consulting practice. This letter has been prepared for the exclusive use of the City of Woodinville, and its agents, for specific application to the subject properties and stated purpose. This letter may replace our original comment letter dated 5 January 2015.

SCOPE OF SERVICES

Our authorized scope of services included the following tasks:

- Reviewing technical memoranda prepared by Golder Associates, Inc. regarding updated mapping of geologic hazards and critical aquifer recharge areas regulated under the Woodinville Municipal Code;
- Reviewing the July 2014 report prepared by the Geotechnical Extreme Events Reconnaissance (GEER) working group, sponsored by the National Science Foundation, regarding the March 2014 Oso Landslide;

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- Meeting with City staff to discuss the document review and preparing this letter summarizing our review comments and conclusions and recommendations regarding Woodinville Municipal Code language regarding regulated geologic hazards.

DOCUMENT REVIEW

In accordance with our authorized scope of services, we reviewed the following documents and information sources:

- Woodinville Municipal Code (WMC) Section 21.24 pertaining to geologic hazards;
- Golder Associates, Inc., *Technical Memorandum re: City of Woodinville Geologic Hazard Areas and Critical Aquifer Recharge Areas*, Project No. 14-05198.004, dated 13 November 2014;
- Golder Associates, Inc., *Technical Memorandum re: City of Woodinville – Comments on Ordinance 275 Geologically Hazardous Areas Section 21.24.290 through 21.24.310*, Project No. 14-05198.004, dated 17 October 2014;
- National Science Foundation, *Geotechnical Extreme Events Reconnaissance (GEER), The 22 March 2014 Oso Landslide, Snohomish County, Washington*, dated 22 July 2014.

In addition, we also reviewed the following document:

- The SR 530 Landslide Commission, *The SR 530 Landslide Commission Final Report*, dated 15 December 2014.

REVIEW COMMENTS

The Golder Associates, Inc. (GAI) technical memorandum (13 November 2014) includes a discussion regarding updated mapping of geologic hazards. Geologically hazardous areas regulated under the WMC include erosion, landslide, and seismic hazard areas, other geological events including mass wasting debris flows, rock falls, and differential settlement. GAI addresses these hazards, as well as problem soil areas and fault hazard areas. GAI includes a thorough discussion regarding the methodology employed to evaluate the areal extent of the hazard areas and the use of Best Available Science. GAI also employed currently available LiDAR data in the

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preparation of the hazard area maps, and this is particularly useful and currently considered state-of-the-art when evaluating landforms as part of assessing potential landslide hazards. Likewise, the discussions regarding the preparation of maps delineating the extent of potential problem soils area, fault hazard areas, and Critical Aquifer Recharge Areas (CARAs) indicate that GAI employed Best Available Science as basis for their assessments.

We spoke with Mr. David P. Findley, LG, LEG of GAI over the course of our review. Mr. Findley indicated that GAI had determined the limits of potentially liquefiable soils (as shown on the Potential Liquefaction Hazard Areas, Figure 3) based on soil mapping. GAI has not reviewed the geotechnical engineering reports prepared by Associated Earth Sciences, Inc. (AESI) for the Woodin Creek development that is currently under construction to the east of City Hall. One of the AESI reports provided for our review by City staff indicates that liquefiable soils are present at the Woodin Creek site. We recommend that the AESI geotechnical reports, or others that the City may have available that address site-specific liquefaction hazards, be provided to GAI for their review. This would allow GAI to verify the limits of the Potential Liquefaction Hazard Areas map (Figure 3) of the 13 November 2014 Technical Memorandum.

GAI'S 17 October 2014 Technical Memorandum includes review comments concerning specific language in WMC Sections 21.24.290 through 21.24.290. Our comments are summarized below.

Regarding GAI's comment concerning the wording of Section 21.24.300 Development Standards – General Requirements, we take no exception with their recommendation regarding substitution of “no increased adverse impacts beyond the pre-development condition”.

We concur with GAI's comment concerning dropping “eliminate” from WMC 21.24.310 Performance Standards: Specific Hazards (in specific reference to buffers). The City may also want to consider dropping “minimize” as well given that “minimize” can be interpreted as subjective. As GAI indicates, risk level can be reduced (and a reduction can be quantified), and “minimize” may be subject to interpretation.

GAI makes the case in their comment regarding the use of designs that require regular and periodic maintenance [WMC 21.24.310.1(c)] would exclude the use of time-proven means of improving slope stability, such as horizontal drains. We agree with GAI's comment. However, it would be in the City's best interests in such situations to also determine to the extent possible that funds will be available to completed regular and periodic maintenance following construction when considering whether such stabilization methodologies are permissible.

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GAI's final comment regarding the standards for factors of safety relative to landslide occurrences in the pre-development and post-development cases as described in WMC 12.24.310.1.(c)(i) would be beneficial provided that detailed geotechnical analysis indicates that proposed development activity will have no impact of slopes near the development activity.

GEER Report Review Comments

In response to the City's request to identify information in the 22 July 2014 GEER report regarding the Oso Landslide that may be applicable to Woodinville, we offer the following:

Do the geologic conditions at Oso apply to Woodinville? The general geologic conditions of the hillsides within the Woodinville city limits are not as complex as those present in the Stillaguamish River valley and at the Oso landslide location. Woodinville hillside stratigraphy typically includes, in descending stratigraphic order, granular recessional outwash deposits, Vashon lodgement glacial till, granular advance outwash, and relatively fine-grained Transitional Beds. Localized variation in this sequence is influenced by slope height and the nature of the glacial deposits and depositional and erosional history, factors which have influenced the distribution of the geologic units. Groundwater may be present in the recessional outwash and advance outwash deposits, although the groundwater occurrence varies by location. Based upon the research GAI conducted while preparing the Potential Landslide Hazard Areas map (Figure 2 in the 15 October 2014 draft Technical Memorandum), the primary geologic contact along which landslides have a significant potential for occurrence is the boundary between the advance outwash deposits and the underlying, fine-grained Transitional Beds. This contact has been shown on a regional basis to have a relatively high potential for landslide development when groundwater within the advance outwash deposits is present above the less permeable Transitional Beds. GAI also identified potential debris flow hazard areas in association with incised drainage channels with steep side slopes. One potential ancient (pre-Holocene) landslide feature in north-central Woodinville was identified based upon GAI's landform analysis.

Geologic conditions at the Oso landside are far more complex than those present along Woodinville hillsides if for no other reason that the slopes along the Stillaguamish River valley are much taller (well over twice the height of the tallest slopes in Woodinville) and therefore expose a far thicker geologic section. The section includes multiple horizons of water-bearing granular soils above less permeable fine-grained soils, disturbed fine-grained soils, and the feature contains and is flanked by incised streams. The site of the 2014 Oso landslide had also been

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subject to multiple episodes of slope movement in the past, resulting in the emplacement of disturbed and weakened soils on the slope. These older landslide deposits are far more likely to yield future landslide activity than intact and otherwise undisturbed soils. There is no evidence suggesting that the slopes in Woodinville have been subject to repeated landslides in the past 10,000 years, nor have significant occurrences of disturbed fine-grained soils been mapped in Woodinville.

To the extent that the slopes in southwest Woodinville have been mapped as containing a contact between the granular advance outwash deposits and the underlying fine-grained Transitional Beds, there is some similarity with the conditions at Oso, but on a much smaller scale. Likewise, the incised drainages identified on GAI's Figure 2 are on smaller scale than Oso. The one historic landslide identified by GAI is thought to be very old and dormant, unlike the previous landslides at Oso which were relatively young and much more likely to re-activate.

A significant factor that makes the slopes along the Stillaguamish River more likely to experience landsliding, and to differentiate it from conditions in Woodinville, is the lateral migration of the Stillaguamish River over time. As the river has flowed along the base of the adjacent steep slopes, erosion has taken place, and this has created unstable conditions that have contributed to numerous landslides. The Sammamish River is currently not flowing adjacent to the steep slopes in Woodinville, so the risk of destabilizing river influences is not applicable.

The Oso landslide caused extensive property damage and fatalities due to its long runout of mudflow/landslide debris. Site-specific geologic and topographic conditions contributing to this long runout are not fully understood following the GEER report. It is known that similar large-scale mudflow/landslide debris runouts had occurred in the Stillaguamish River valley in the past. Although conditions that increase the risk of comparably long runouts of mudflow/landslide debris are not known to be present in the mapped landslide hazard areas of Woodinville, additional site-specific study of this topic may be warranted to establish buffers at slope toes if such conditions are suspected or identified.

Does anything in the GEER report apply to Woodinville regarding approaches to planning, land use, and lessons learned? A critical point that may be taken from the GEER report is that communication regarding potential geologic hazards needs to be improved between departments within public agencies and also with the public. Several studies that identified the risk of landslides at Oso had been undertaken since the late 1940s but much of this information was not disseminated to public agencies responsible for land use policy making and planning, nor

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with the public. Local agency outreach to citizenry regarding the potential risks associated with geologic hazards would help in this communication process. The City of Woodinville is taking steps in the right direction by updating the geologic hazard sections of the WMC. Making the hazard maps readily available to the public will be beneficial in terms of improving the general public's awareness of geologic hazards.

The communication process does not need to be expensive or sophisticated. For example, the City of Mukilteo provides its residents with a simple three-page flyer that describes in basic terms the potential risks associated with steep slopes in terms of landsliding and erosion. Some local jurisdictions hold workshops staffed by local geotechnical professionals (who typically volunteer their time) as well as agency planning professionals, to help raise awareness regarding geologic hazards among the public.

Should the WMC regarding geologic hazards be modified based on the GEER report conclusions?

Based upon our review of the WMC and our experience with other local jurisdiction's code requirements regarding regulated geologic hazards, it is our opinion that the WMC is largely adequate in terms of its handling of regulated geologic hazards. However, the GEER study noted that damage and fatalities occurred at Oso within a large part of the valley that was not within the designated landslide hazard area or buffers from the mapped landslide hazard area slope toe. Section 21.24.300 of the WMC does not specifically address assessment of risks to properties potentially affected by long runouts of debris flows or mudflows. It would be prudent for the WMC to require assessment of this risk on a site-specific basis as part of critical areas studies for land use proposals for properties located below possible debris flow hazard areas as delineated on GAI's Figure 2.

We recommend that the City consider amending WMC 21.24.130 Contents of Critical Area Special Study to require review of available LIDAR data as part of assessing potential landslide hazard areas. LiDAR imagery has been shown to be quite useful in this regard.

In light of the potential for long runouts from possible debris flow hazard areas, we recommend that the City consider amending WMC 21.24.300(1) to read *Will not increase the threat of the geological hazard to adjacent and potentially affected properties.*

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SR 530 Landslide Commission Final Report Review Comments

The SR 530 Landslide Commission was developed by Governor Jay Inslee in order to review the events and circumstances concerning the March 2014 Oso landslide. The Commission's charter was to *...better understand the collective response and inform recommendations for the future that will guide policy makers as well as to improve planning and response for similar events.* The report includes 17 recommendations. Our comments regarding the Commission's recommendations relative to geologic hazards and steps that the City may consider are summarized below.

Recommendation 2 – Support a Statewide Landslide Hazard and Risk Mapping Program: This recommendation considers expanding data collection and landslide mapping efforts in order to assist public and private land use planning and decision making. The use of LiDAR in this effort has been recommended. The City has already made steps in this direction with the current updates to the mapping of geologic hazards as completed by GAI, including the use of current LiDAR data in the mapping effort.

Recommendation 15 – Update the WACs Related to Critical Area Regulations: Similar to the Commission's recommendation that state regulations be updated, the steps that the City is taking to update the WMC regarding regulated geologic hazards and providing current hazard mapping will enhance the public's awareness of geologic hazards and assist the land use planning process.

Recommendation 17 – Advance Public Awareness of Geologic Hazards: Similar to the GEER report, the Commission recommends that local governments develop public awareness initiatives to inform property owners and the general public of geologic hazards. As discussed previously, these efforts can be relatively straightforward and relatively inexpensive.

ADDITIONAL CONSIDERATIONS

It would be beneficial, in our opinion, for the City to require the inclusion of language in property titles that discloses the presence of geologic hazards. Some local jurisdictions, such as Seattle and Mercer Island, require that a covenant associated with property titles characterize the critical area(s) as applicable. This helps to make sure that property owners and purchasers are aware of the presence of regulated geologic hazards.

It would also be beneficial for the City to compile information regarding landslides when they occur and maintain this information in a file system that is available to City staff and the public. Other

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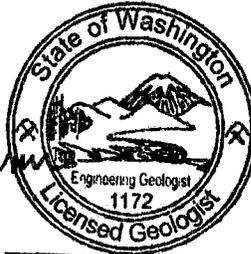
local jurisdictions maintain files such as these and they are a very good resource in terms of understanding property history.

CLOSURE

We hope that this letter meets your current needs. Please do not hesitate to contact us should you have any questions.

Respectfully submitted,
Zipper Geo Associates, LLC

David C. Williams
David C. Williams, LG, LEG
Principal Engineering Geologist



DAVID C. WILLIAMS

John E. Zipper
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Managing Principal



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