Real Property
Value Impacts Study
in connection with
Kachess Drought Relief Pumping Plant-PN
(KDRPP)

Located

Vicinity of
Lake Kachess
Town of Easton
County of Kittitas
State of Washington

File No. #2256

FOR

Julie Sandberg
Real Estate Services Manager
Washington Dept. of Fish and Wildlife
600 Capital Way North
Olympia, Washington 98501-1091

Tom Tebb, Director
Office of the Columbia River
Washington Department of Ecology
303 South Mission Street, #200
Wenatchee, Washington 98801

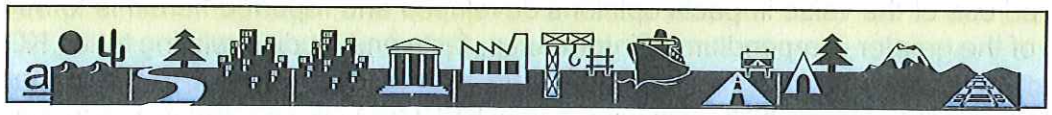
BY

Dean Potter, FRICS, MAI

Effective Date of Real Property Value Impacts Study
November 20, 2015

Date of Value Impacts Study Report
December 31, 2015

Dean Potter & Associates, Inc.



Commercial Real Estate Appraisal and Consulting
Office Location: 408 West Ninth Street, Suite 200
Mailing Address: PO Box 61428
Vancouver, Washington 98666-1428

Dean Potter & Associates, Inc.

Dean Potter, FRICS, MAI, President*
Sheryl Knittel, Certified Appraiser**
* General Appraisal Certification
Washington & Oregon
** General Appraisal Certification
Washington

Mailing Address: P. O. Box 61428, Vancouver, WA 98666-1428
Office Location: 408 West Ninth Street, Suite 200, Vancouver, WA
(360) 693-4482, (503) 243-5036
FAX: (360) 693-3755
Web Page: http://www.deanpotter.com
E-Mail: dean@deanpotter.com

December 31, 2015

Julie Sandberg,
Real Estate Services Manager
Washington Department of Fish & Wildlife
600 Capitol Way North
Olympia, WA 98501-1091

Tom Tebb, Director
Office of the Columbia River
Washington Department of Ecology
303 South Mission Street, Suite 200
Wenatchee, WA 98801

Re: Letter of Transmittal - Value Impacts Study; Lake Kachess, Kittitas County (Easton Vicinity), Washington. Clients: Tom Tebb, Director, Office of the Columbia River, Washington Department of Ecology *AND* Julie Sandberg, Real Estate Services Manager, Washington Department of Fish and Wildlife. **File #2256**.

Dear Ms. Sandberg and Mr. Tebb:

In response to your request, we have completed our Value Impacts Study of Lake Kachess developed in connection with the Kachess Drought Relief Pumping Plant project, and transmit it herewith. The purpose of our Value Impacts Study is to provide you our opinions regarding the general range of value impacts on real property in the vicinity of Lake Kachess, as well as the probable limits of such impacts. The intended use of this Value Impacts Study is for inclusion and/or reference to real property value impacts in the Kachess Drought Relief Pumping Plant project (KDRPP) Environmental Impact Statement. Intended users include the named clients as well as the United States Bureau of Reclamation. It is therefore important to understand that the intended use of the real property value impacts opinions developed and reported herein is NOT in connection with the value impacts of the KDRPP Project on a particular single property. Rather, the intended use of the value impacts opinions developed and reported herein is to become a part of the greater compendium of information, facts and studies relating to the KDRPP Project for consideration by appropriate State (SEPA) and Federal (NEPA) agencies charged with the responsibility of issuing a final RECORD OF DECISION regarding such project.

Certain elements of this Value Impacts Study express opinions about impacts on the market value of real property in the Lake Kachess vicinity in relation to the KDRPP project. The authors of this study are full time (General Certified) real estate appraisers. Opinions by appraisers about market value impacts incorporate elements of a real estate appraisal. Thus, this Value Impacts Study report likewise incorporates certain elements that comply with the Uniform Standards for Professional Appraisal Practice (USPAP) and Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA). The format for this report is that of an Appraisal Report as defined in USPAP.

In this connection, the Scope of Work report section within this study report has been developed consistent with the intended use of the study. A challenging aspect of reporting the value impact conclusions is to clearly delineate what the study includes and what it does not include. It includes a general description, analyses, and conclusion about the areas within the direct and proximate value influence of Lake Kachess, and the probable general value impacts on properties within that defined proximity to the lake. These value impacts rely on analyses of market data, and are expressed in a range of percentage amounts. Limited additional discussion is provided in connection with examples that would be impacted at the upper limit of the range and examples that would be impacted at the lower limit of the range. This study does not include conclusions either specific or discrete in connection with any particular individual property. The parameters of the study, based on the discussed elements of impact, are generally limited to those properties that have a developable or developed homesite within and below elevation 2,280' above sea level (asl) surrounding Lake Kachess, and that have at least a filtered view of the lake. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. Please see the map within the study report that generally describes our delineation of the impacted area. As developed within the accompanying study report, properties above such elevation, though some might have a lake view, it is a more distant lake view and thus, would not be significantly impacted since the lake continues to present a view amenity to these less proximate properties in its project influenced drawn-down condition.

Issues this value impacts study does not address include:

(1) Any significant reduction in domestic, municipal, irrigation or other types of ground / surface water sources that are secured by water rights, claims or certificates. It is an assumption of this study that the project will not impact such water sources, or if impacted, will be considered by the project proponents independent of the issues addressed by this Value Impacts Study;

(2) This value impacts study is not intended to include properties owned by any city, state or federal government agency, public or private utilities, or land trusts;

(3) This value impacts study is not intended to reflect inconvenience during project construction or due to circuity of travel;

(4) This value impacts study was developed on the basis of project information made available to these analysts. To whatever extent the final project design is different than that which was represented, any impacts resulting from such design differences were not included, and;

(5) Information about the individual properties that are located within the impacted area and subject to the value diminution conclusion developed here was derived from the Kittitas County Assessor's Office website, drive by inspections, and NWMLS property descriptions (where available). A physical inspection of each property was not an assignment condition. It is an extraordinary assumption of this value impacts study that these information resources are reasonably representative of these properties.

The foregoing become extraordinary assumptions of our Value Impacts Study. The sole hypothetical condition of these analyses relates to the After Condition as described herein; i.e., After the KDRPP project has been completed and is operational. Such After Condition does not yet exist. Thus, it is considered a hypothetical condition of the analyses and conclusions developed and reported herein.

In connection with the description, analyses and value impact opinions / conclusions developed within this Study, the Uniform Standards for Professional Appraisal Practice (USPAP) contemplates the development and reporting of such (value impact) opinions. (See USPAP Q&A, issued by the Appraisal Standards Board, July 16, 2015 - 2015-10, Appraisal Development - Scope of Work Issues, Impact on Values of Surrounding Properties), a copy of which is included in the addenda of this study report).

In order to develop and report our conclusions in a manner that is not misleading, and includes sufficient information for readers to understand it properly, the accompanying Value Impacts Study report generally delineates geographic limits of the impacted areas surrounding Lake Kachess. It describes the impacted areas as they exist without the influence of the KDRPP project (aka Before Condition), as well as the impacted areas after the KDRPP project has been completed (aka After Condition). Our opinions quantifying the value impacts are expressed herein as a percentage range. That percentage range should be considered generally applicable to properties within the area identified as potentially impacted by the project, which is consistent with the scope of work for this report. As noted, limited additional discussion is provided relative to stratification of properties identified as potentially impacted, and as relates to upper or lower limits of the percentage range of value impacts developed herein.

The conclusions of this value impacts study are that general levels of market prices for those properties within the impacted area delineated herein will be comparatively diminished by 5% to 10%. These conclusions are based on the comparative study of property sales that reflected pre-project conditions with otherwise similar property sales but instead reflect lake level conditions similar to that which will exist after the project is completed and is operational. Project impacts will be more prevalent during drought conditions. One measure of the project impact is that the lake surface will diminish by around 14% in the maximum drawn down condition. The Before Condition and After Condition comparisons necessarily assume the same effective date. Since real estate markets are constantly changing, the foregoing (effective date) assumption is necessary to solely isolate value impacts as of a certain date due to the project. The effective date of this study is November 20, 2015. Thus the Before and After Conditions are considered separately herein, but each is assumed to have existed as of that date.

In reality, the period of time during which the project would be constructed will likely experience normal and routine property value appreciation, except for periods of economic

recession. The first few years of project operation may or may not occur during a drought episode so the maximum lake draw-down operational parameters might not occur in the initial year or years. While Lake Kachess is located in an area of three prominent lakes (Lake Kachess, Keechelus Lake, and Lake Cle Elum), Lake Kachess is clearly the more desirable in terms of typical levels of property value. Nonetheless, these three lakes, and Lake Kachess in particular, are quite unique in terms of their proximity and (time-distance) accessability to the Seattle / Puget Sound population center, as well as presenting multiple / year around recreational activities. Except for periods of economic recession, the typical prevalent market conditions in the Lake Kachess area reflect property demand exceeding property supply; i.e., usually referenced as a seller's market. These unique characteristics fortify the resiliency of this real estate market in terms of the value impacts from the KDRPP project. Taking into consideration the foregoing factors, it is clear that during up-tempo real estate markets, prices can annually increase at rates exceeding the parameters of the value impacts concluded herein. Accordingly, a reasonable probability exists that, over time, the impacted area will not actually decline in value consistent with the 5% to 10% since the Before and After Condition circumstances cannot ever contemporaneously exist.

As noted, our conclusions should not be construed to represent specific applicability to a specific property within the impact study area. The scope of work is limited to generally quantifying a range of probable value impacts to a certain class of properties within a defined geographic area resulting from the KDRPP project. Since this study is intended to reflect project value impacts measured by the difference between the Before (project) condition and the After (project) condition, it is important to note that the methodology employed to develop this information contemplates each condition independent of the other. Thus, these (before and after condition) marketplaces may be comprised of the same buyers and sellers, in part the same potential buyers and sellers, or totally separate and distinct types of buyers and sellers.

Understand therefore, while market price levels corresponding with either the Before or After Condition are based on an adequate and relevant pool of potential buyers and sellers, differences between the before and after conditions resulting from the KDRPP project may reflect an after condition not being acceptable to a specific buyer/owner that may have otherwise found the before condition acceptable. In other words, the conclusion of this study reflects an analysis of comparative marketplaces and the probable reaction to the value impacts of the market in general. It is not intended to reflect the specific preferences of the same single buyer or seller relative to the project impacts to the same specific property.

The impacted area is focused on the most direct and proximate properties to Lake Kachess. Lake Kachess reportedly existed as a natural lake prior to the Bureau of Reclamation Irrigation Dam that increased the lake level to that which exists today. So prior to the referenced dam project, properties along the lake had frontage on the lake. After the dam construction and the resulting increase in elevation of lake level, the extent of the lakeward private ownership essentially is to the irrigation dam project boundary. While this is commonly referenced in the local real estate brokerage community as lakefront, in fact, it is not. Rather, publicly owned land must be crossed from these most proximate properties to access the water. In this connection, the property sales developed

in support of the opinions and conclusions derived herein were similarly bordering on an irrigation reservoir project boundary and/or proximate thereto.

Within the accompanying report, the Scope of Work necessary to develop credible assignment results is discussed in detail. Briefly, the scope of work involved (1) identifying probable limits of project impacts, and; (2) developing and analyzing market data that would quantify probable impacts. Inspection of the Lake Kachess perimeter led to the conclusion that properties within the direct and proximate value influence of the lake were the most likely to be impacted by the KDRPP project. While this land area is identified on a map included within the accompanying report, it is generally that land area lakeward and below elevation 2,280' asl. Such impact considerations are further limited to properties with at least a filtered view of the lake and having a developable or developed homesite. Given the reported maximum project diminution in lake surface (14%), properties with a more distant view will still be presented with a lake view.

In order to develop market data for this value impacts study, both an analysis methodology and geographic search area were necessarily identified. And to some extent, the analysis methodology was driven by the available market data. Real property values in the relevant geographic area are supported by several factors, including multiple and year around recreation activities presented by snow skiing and lake activities, proximity to the Puget Sound population center, and convenient year around access from the Puget Sound area by Interstate freeway. Our research was initiated along the eastern slope of the Cascade Mountain Range. While several areas were investigated relative to market data, in the final analysis, the Cle Elum, Easton, Roslyn & Ronald areas were determined to provide the best available evidence to support this study. Thus, market activity was developed from these areas, and primarily proximate to lakes. Lake Cle Elum has a past history of more severe drawdowns than Lake Kachess. In this connection, market data derived from the Lake Cle Elum area presented an opportunity for comparison with Lake Kachess. Such comparison, adjusted for basic location differences between Lake Cle Elum and Easton / Lake Kachess, produced a rather consistent difference of 5% to 10% isolated to the more severe lake drawdown associated with Lake Cle Elum. And thus, these conclusions were projected to the Lake Kachess location relative to the After Condition (i.e., after the KDRPP project is complete and operational).

The opinions developed herein are solely based on analysis of property sales. No elements of cost less depreciation or income analysis were incorporated into the study data. Such cost or income analyses are not well suited to make abstractions like that which has been developed from the analysis of property sales. In this connection, they are not considered applicable approaches. Furthermore, the opinions expressed herein are not subject to any other extraordinary assumptions or hypothetical conditions other than that which has been previously mentioned. If any of the foregoing extraordinary assumptions or hypothetical conditions as described herein are not realized, the value opinions expressed within this report could be altered or otherwise be considered invalid.

Since expressing opinions regarding market value (i.e., the conclusion of this value impacts study is essentially that the KDRPP project will likely result in a market value diminution for certain real property identified within the delineated impacted area in the amount of 5% to 10%), such opinions constitute an appraisal under the definition of USPAP. So while a customary "subject property" is not identified herein, an impacted area has been identified.

Nonetheless, to the extent possible, the analysis, opinions, and conclusions herein were developed in conformity with and are subject to, the requirements of the *Code of Professional Ethics and Standards of Professional Practice of the Appraisal Institute*. And further, to the extent possible for this atypical assignment, the analyses, opinions and conclusions were developed compliant with the rules and standards of the *Uniform Standards of Professional Appraisal Practice (USPAP) and Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA)*.

Included herewith is my report containing 175 pages and eight exhibits showing our method of approach and containing pertinent data gathered in our investigation. It is our opinion that, as of the 20th day of November 2015, and subject to the assumptions and limiting conditions, extraordinary assumptions and hypothetical conditions contained herein, the market value impacts resulting from the KDRPP Project, as defined geographically and by property characteristics, were in a percentage range between:

Five Percent and Ten Percent (Negative)
❖❖ - 5% and - 10% ❖❖

Respectfully Submitted,

Dean Potter, FRICS, MAI
General Appraisal Certification
1100151 (WA) C0000153 (OR)

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A-4, CERTIFICATION

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the impacted property area that is the subject of this report, and I have no personal interest with respect to the parties involved.

4. I have no bias with respect to the impacted property area that is the subject of this report or to the parties involved with this assignment.

5. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined conclusion or direction of such conclusion that favors the cause of the client, the amount of the opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the opinion developed herein. This assignment was not based on a requested minimum, maximum or specific amount.

7. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA) and within the context of the Scope of Work described herein.

8. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute within the context of the Scope of Work described herein. The foregoing also includes the Appraisal Foundation's Uniform Standards of Professional Appraisal Practice (USPAP).

9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives. Additionally, the use of this report is subject to the requirements of the Appraiser Licensure and/or Certification Agencies for the States of Washington and Oregon, relating to review by its duly authorized representatives.

10. As of the date of this report, Dean Potter, FRICS, MAI, has completed the continuing education program for Designated Members of the Appraisal Institute.

11. The undersigned has made a personal inspection of the impacted property area that is the subject of this report (see description of the inspection process within the accompanying report). No joint inspections of specific properties in the impacted area were conducted, nor was this a requirement of the assignment.

12. Sheryl Knittel provided significant professional assistance in researching and developing the opinions expressed in this report. However, the final selection of market data, and final value impact conclusions were solely developed by Dean Potter, FRICS, MAI.

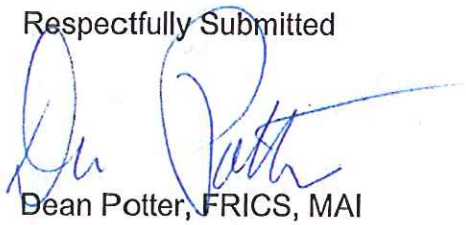
13. In connection with the opinions developed and reported herein, I have considered the Competency Provision of the Uniform Standards of Professional Appraisal Practice. I further certify that in connection with this type of value impacts study, as well as the geographic locale, I am competent to develop and report such opinions.

14. No appraisal or other real estate services in connection with the impacted property area have been provided by either Dean Potter, FRICS, MAI, or Sheryl Knittel, during the past three years.

It is our opinion that, as of the 20th day of November 2015, and subject to the assumptions and limiting conditions, extraordinary assumptions and hypothetical conditions contained herein, the market value impacts resulting from the KDRPP Project, as defined geographically and by property characteristics, were in a percentage range between:

Five Percent and Ten Percent (Negative)
❖❖ - 5% and - 10% ❖❖

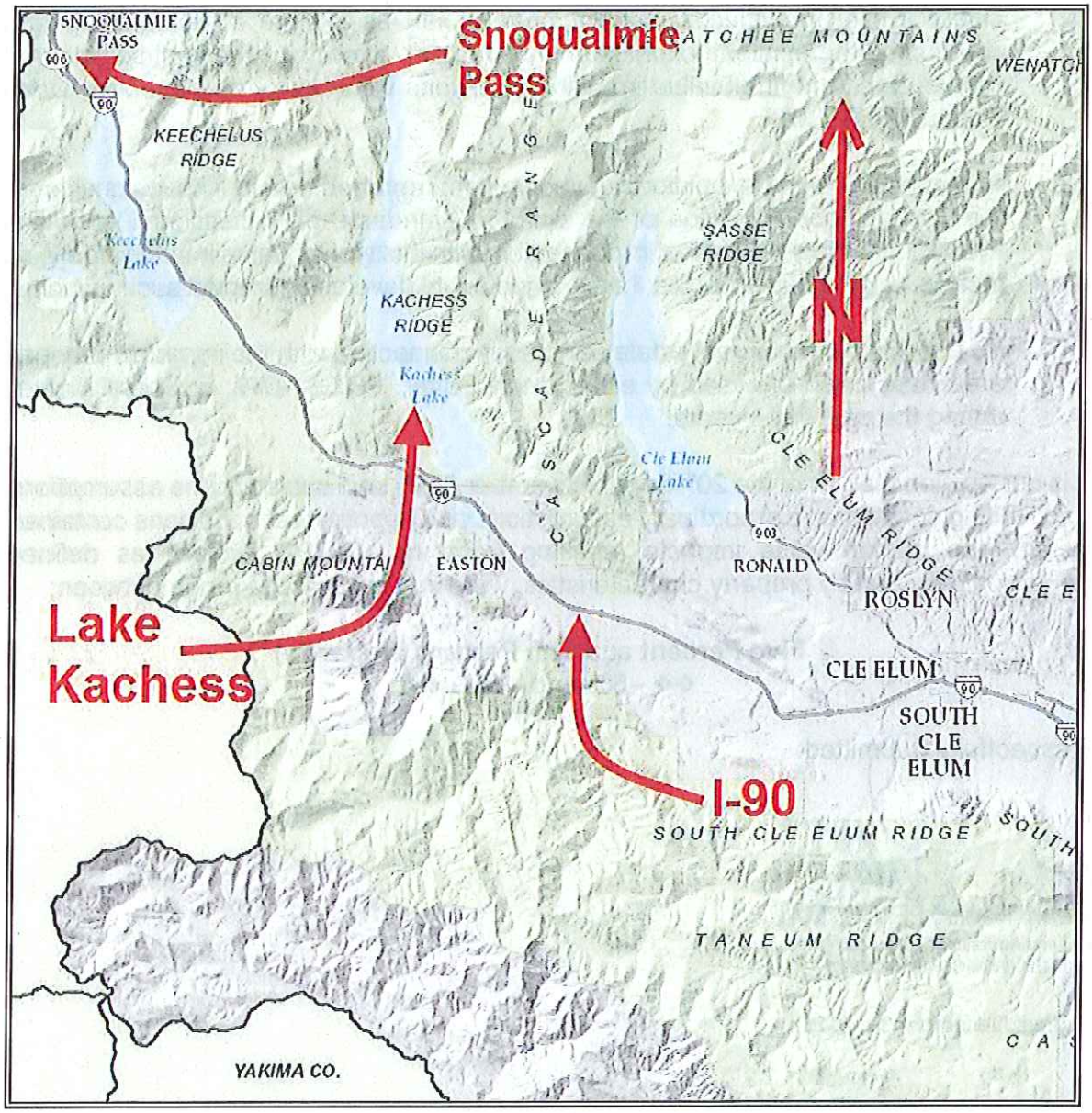
Respectfully Submitted



Dean Potter, FRICS, MAI
General Appraisal Certification
1100151 (WA) C0000153 (OR)

Signed: December 31, 2015

Area Relief Map



NOTE: Kachess Lake is located northerly of I-90, proximate to Snoqualmie Pass and Cle Elum, on the I-90 corridor and convenient by interstate freeway from the Puget Sound area of Western Washington. Historically, Lake Kachess water reservoir has experienced the least late summer / fall drawdown of the three lakes; i.e., Keechelus Lake, Cle Elum Lake and Kachess Lake. The KDRPP project will increase the drawdown during drought conditions.

Identification of the Impacted Area:

The general vicinity of the impacted area is that land surrounding Lake Kachess; i.e., Lake Kachess being located on the facing page map. Lake Kachess is situated on the easterly slope of the Cascade Mountain Range along the I-90 corridor and situated between Snoqualmie Pass and the Kittitas County town of Cle Elum. The most specific identification of the impacted area appears at the beginning of the forthcoming report section entitled Description of Impacted Area. Though such map best illustrates our delineation of the impacted area, the identified class of impacted properties within generally include developed or developable homesites with, as a minimum, a filtered view of the lake, and at or below elevation 2,280' asl. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary.

Ownership:

Properties considered within this value impacts study are solely those in private ownership. While certain property improvements in the vicinity of the lake exist as leaseholds on publicly owned land, such properties are not considered to be impacted by the KDRPP project. Thus, as of the effective date of this value impacts study, properties included within the impacted area are solely those in private ownership.

Objective of the Value Impacts Study:

The KDRPP Project will result in an increased drawdown of the Lake Kachess water level during drought conditions. The lake may or may not replenish itself annually during extended periods of drought. The objective of this Value Impacts Study is to study relevant real estate markets in order to develop information about probable market value impacts on real property within the areas impacted by the increased drawdown. The geographic limits of the impacted area delineated and identified herein are, to a great extent, oriented to the visual benefits of the lake amenity. However, properties that are within the direct and proximate value influence of Lake Kachess derive a use benefit as well.

The total list of lake benefits ever perceived by any buyer or any seller of real property within the direct and proximate value influence of Lake Kachess is long and diverse. Thus, every individual sale of Lake Kachess real property includes consideration of some or all of these items, and prioritized to the individual preferences of such individual buyers and sellers. It is therefore important to understand that the real estate market based methodology of this value impacts study

solely isolates total market value impacts, and does not allocate such total market value difference amongst multiple individual property attributes. Thus within such total value impacts, the aggregation of lake benefit elements is expressed in total, and as perceived by the buyers and sellers of the real property sales relied upon in support of the conclusions developed herein.

Methodology of the Value Impacts Study:

As referenced in the letter of transmittal, both an analysis methodology and geographic search area were first developed. The analysis methodology was driven by the available market data, to a great extent. Real property values near Lake Kachess are supported by several factors, including multiple year around recreation activities presented by snow skiing, land based and lake based recreational activities, proximity to the Puget Sound population center, as well as convenient year around access from the Puget Sound area by Interstate freeway. Therefore, market data research was focused on areas that reflected similar recreational activities. Initially our research was conducted along the eastern slope of the Cascade Mountain Range thereby incorporating the attraction held by westside Washington residents to this most proximate drier climate of the eastside, and to also incorporate quality winter sports opportunities, outdoor spring-summer-fall recreation activities, as well as the convenient commute / travel distances from population centers.

While several areas were investigated, it was determined that the Cle Elum, Easton, Roslyn & Ronald areas provided the best available market evidence to support this study. Market data was then developed from these areas, and primarily proximate to lakes. Lake Cle Elum has a past history of more severe drawdowns than Lake Kachess. In this connection, market data derived from the Lake Cle Elum area presented an opportunity for comparison with Lake Kachess market data. Such comparisons, adjusted for basic location differences between Ronald / (Lake) Cle Elum and Easton / Lake Kachess, produced a rather consistent difference of 5% to 10% isolated to the more severe lake drawdown associated with Lake Cle Elum. This conclusion was then projected onto the Lake Kachess location relative to the After Condition (i.e., after the KDRPP project is complete and operational).

Description of Impacted Area:

Lake Kachess is, at its widest, a little more than one mile wide, and at its longest (not including Little Kachess Lake), around 6½ miles long. This is a natural lake that has been increased in size by a Bureau of Reclamation Dam for the purpose of

agricultural irrigation. Thus, there is no private ownership fronting on the lake; rather, the most proximate properties to the lake border the project boundary of the irrigation project dam reservoir. Such rights were presumably purchased by the USA prior to the construction of the irrigation dam. Adjacent property owners routinely access the lake by traversing the public ownership. While permits are required to construct boat moorages, docks, floats, etc., to facilitate the operation of pleasure boats, the Forest Service reports that many existing private facilities are un-permitted.

In terms of the shoreline of Lake Kachess, along the more easterly shoreline, scattered recreational subdivisions of land exist with lots extending from the forest service road to the lake boundary. Lot sizes vary, most structures are modest and comparatively small in relation to those on the westerly shoreline of Lake Kachess. The Forest Service does not maintain the wintertime vehicle driveability of the road on the easterly side of the lake.

On the west side of the lake, several recreational subdivisions exist and are accessed by a combination of county roads, Forest Service roads, as well as private interior subdivision roads. For parts of this road system, wintertime vehicle driveability is maintained. Subdivided lots exist on both the lake side as well as the non lake side of the primary lake perimeter road. Lots on the non lake side are typically larger than on the lake side. The age, size quality and condition of the residential structures located on the west side is notably more upscale than the easterly side of the lake. Historically, Lake Kachess has experienced less significant drawdowns during episodes of drought and/or late summer - early fall time frames, as compared with nearby Lake Keechelus or Lake Cle Elum. Therefore, the historic and less severe Lake Kachess lake level operation represents the model for the Before Condition.

In terms of the After Condition, and as more fully developed in the property description and valuation report sections, the Lake Kachess impacted areas are generally limited to those properties that have a developable or developed homesite within and below elevation 2,280' asl surrounding Lake Kachess, and that have at least a filtered view of the lake. Properties above such elevation, though they might have a lake view, it is a more distant lake view. Therefore, they would not be impacted since the lake continues to present a significant view amenity, even in its project influenced drawn-down condition.

Current Use, Highest and Best Use and Use Considered by the Value Impacts Study:

Current use: The properties within the delineated impacted area include developed residential / recreational properties, undeveloped potential homesites for residential / recreational properties, undevelopable land, as well as land in forestry use. Properties within the boundary of the impacted area that are subject to the market value diminution opinion expressed in this report are those properties in private ownership, having (as a minimum) a filtered view of the lake, and having a developed or developable homesite generally at or below elevation 2,280' asl. It does not include properties in public ownership, or owned by land trusts, nor does it include properties that, due to physical or other constraints, are not feasibly developable. The **highest and best use** concluded for the properties subject to the value diminution opinion expressed herein, in terms of the vacant developable properties with at least a filtered lake view, is for future residential / recreational development. In terms of the residentially developed properties, for continued residential / recreational uses consistent with the amenities provided by the lake proximity. **Use Considered by the Value Impacts Study:** The market value diminution opinions developed herein applies to those properties within the defined area, that are either developed or developable for residential use; i.e., in the context of the highest and best use of the properties identified as being impacted.

Property Rights Considered:

In terms of the properties within the impacted area to which the value diminution opinions developed herein apply, the client has not provided a title report. However, the value diminution is considered applicable to ownerships held in fee simple title with no particular encumbrances that would preclude developability or continued use for residential purposes.

Clearly, those properties most proximate to the lake reservoir have frontage on the boundary of the lake reservoir. However, access to the lake requires crossing publicly owned land which is a different quality of lake proximity / frontage than a property that fronts on a naturally occurring lake. Having said that, in the past, the Forest Service (NFS) has reportedly not policed the development and use of docks on the Lake Kachess. And further, typical boat docks on naturally occurring lakes also require multi jurisdictional permission for construction and maintenance. In the final analysis, the property sales on which the value diminution opinions expressed herein are based are

located in lake view and/or lake reservoir proximity equivalent to that of Lake Kachess.

Project Description:

The KDRPP project will supplement downstream water volumes during drought conditions. It is planned to draw the lake down beyond the current maximum draw down of around 2,192'asl to 2,112'asl, or an additional approximate 80'. The lake surface will diminish by approximate 14% between the current maximum drawdown and the project maximum drawdown. In the following, the reference to the lake statistics pre-project is referred to as the **Before Condition**, and the lake statistics contemplated for the operation of lake levels after the project is completed is referenced as the **After Condition.**

In both the Before and After Conditions, the maximum pool elevation of the Kachess Dam reservoir is reported at 2,262' asl. Based on current operational statistics over the past 36 years (i.e., the **Before Condition**), the lowest pool elevation is 2,192' asl so there is a 70' difference between the past maximum and minimum lake levels; i.e., 2,262' asl - 2,192' asl. The "average" lowest level in the past 25 years has been 2,218' asl. The range between the lowest levels over the past 25 years is around 38'. The lake has been drawn to its maximum lowest level of 2,192' asl around 61% of past 36 years; i.e., 22 years of 36 years. Typically, the lake drawdown begins in June (42% of the time) and the minimum lake level for each year is reached in October (69% of the time). So past operational statistics for the lake reflect an unpredictable pattern and a significantly fluctuating lake level but nonetheless establish the Before Condition circumstances.

In the **After Condition**, a pumping station will be installed along the south / easterly side of the lake reservoir and will, when necessary due to drought conditions, pump the lake level down below the dam outfall elevation, to a maximum drawdown of around 2,112' asl. Thus, the maximum operating levels could fluctuate around 150'; i.e., 2,262 asl to 2,112'asl. As noted, the surface area of the lake, at maximum drawdown, will be around 14% less than the Before Condition maximum drawdown at 2,192' asl. This new maximum drawdown will be most noticeable to developed or developable properties with a direct and proximate location (and view) of the lake; i.e., those constructed below elevation 2,280 asl that are developed or developable, and with at least a filtered lake view. Most significant is that during extended periods of drought, the lake will potentially not replenish itself; thus, it could exist at / near the maximum drawdown for an extended period of time.

Extraordinary Assumptions of the Impacts Study:

An extraordinary assumption refers to a condition that is critical to the report's opinion, and which is believed to be likely, though if found to be other than that assumed, would potentially alter the concluded opinion. USPAP requires the "clear and conspicuous" disclosure of all extraordinary assumptions, thus they are stated here as well as within the body of the report. This value impacts study is subject to the following extraordinary assumptions:

(1) This study does not address any significant reduction in domestic, municipal, irrigation or other types of ground / surface water sources that are secured by water rights, claims or certificates. It is an assumption of this study that the project will not impact such water sources, or if impacted, will be considered by the project proponents independent of the issues addressed by this Value Impacts Study;

(2) This value impacts study is not intended to include properties owned by any city, state or federal government agency, public or private utilities, or land trusts;

(3) This value impacts study is not intended to reflect inconvenience during project construction or due to circuity of travel;

(4) This value impacts study was developed on the basis of project information made available to these analysts. To whatever extent the final project design is different than that which was represented, any impacts resulting from such design differences were not included, and;

(5) Information about the individual properties that are located within the impacted area and subject to the value diminution conclusion developed here was derived from the Kittitas County Assessor's Office website, drive by inspections, and NWMLS property descriptions (where available). A physical inspection of each property was not an assignment condition. It is an extraordinary assumption of the of this value impacts study that these information resources are reasonably representative of these properties.

The conclusions of this value impacts study are not subject to any other extraordinary assumptions. If any of the foregoing extraordinary assumptions as described herein are not realized, the opinions expressed herein could be altered or otherwise be considered invalid.

Hypothetical Conditions of the Impacts Study:

A hypothetical condition relates to an premise in which a condition of these analyses is assumed to be different than as it actually exists. USPAP requires the "clear and conspicuous" disclosure of hypothetical conditions, thus they are restated in the body of the report. In the case of the value diminution options expressed herein, and as relates to the After Condition only, the following hypothetical condition has been considered:

(1) The sole hypothetical condition of these analyses relates to the After Condition as described herein. Such After Condition does not yet exist. Thus, it is considered a hypothetical condition of the analyses and conclusions developed and reported herein.

The conclusions of this value impacts study are not subject to any other hypothetical conditions. If the foregoing hypothetical condition as described herein is not realized, the opinions expressed herein could be altered or otherwise be considered invalid.

Statement of Report Type:

This value impacts study includes the development and reporting of opinions in connection with real property. In this connection, it is considered an appraisal by definition of USPAP (See USPAP Q&A, issued by the Appraisal Standards Board, July 16, 2015 - 2015-10, Appraisal Development - Scope of Work Issues, Impact on Values of Surrounding Properties), a copy of which is included in the addenda of this study report). This report has been written to reflect an Appraisal Report format as defined within USPAP.

Jurisdictional Exception:

A jurisdictional exception is an assignment condition established by applicable law or regulation which precludes compliance with a part of USPAP. In certain instances, UASFLA conflicts with USPAP, requiring invocation of the USPAP Jurisdictional Exception. In this case, UASFLA requires elements of this value impacts study in which opinions are expressed relative to percentage relationships to market value, that such market value related opinions NOT be linked to a specific exposure period (Section B-2, Page 31, UASFLA). However, USPAP requires a statement of reasonable exposure period if referenced in the relevant market value definition. In deference to the UASFLA requirements, a USPAP jurisdictional exception is considered necessary as relates to exposure period.

Study Conclusions:	The conclusion of this study is that the KDRPP project will result in a probable 5% to 10% diminution in property value for those identified properties within the delineated impact area. The identified properties within the delineated impact area are those properties on the lake perimeter that meet the following criteria: (1) Are located at or below elevation 2,280' asl; (2) Have as a minimum a filtered lake view or better, and; (3) Include a developable homesite or are a developed homesite. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. The properties that would be impacted near/at the upper end of this percentage range would be those having frontage on the irrigation reservoir project boundary. Those properties within the impacted area, but not fronting on the irrigation reservoir boundary, would be impacted more so toward the lower end of this percentage range.
Effective Date of Opinion:	November 20, 2015
Date of Report:	December 31, 2015

A-6, Statement of Assumptions and Limiting Conditions

1. Since this value impacts study expresses an opinion relating to real property values, it is considered an appraisal in the context of the Uniform Standards of Professional Appraisal Practice (USPAP). The USPAP report format, as defined within USPAP is that of an Appraisal Report. Thus, the report is intended to comply with USPAP Standard Two, and within the context of the SCOPE OF WORK developed herein, and relative to the intended use and intended users of the report. Only the clients and intended users are authorized to rely on this report.

2. No responsibility is assumed for legal or title considerations. Title to the properties considered herein is assumed to be good and marketable. The Client did not provide title reports for any of the properties within the impact area.

3. Responsible ownership and competent property management are assumed unless otherwise stated in this report.

4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy. If any errors are found, the right is reserved to modify the conclusions reached herein.

5. Any illustrative material in this report is included only to assist the reader in visualizing the impacted property area.

6. It is assumed that there are no hidden or unapparent conditions of properties in the impacted area, subsoil, etc that render them more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them. In the absence of such a study, it is assumed these properties are free from such problems.

7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated in this report.

8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in this report.

9. It is assumed that all required licenses or other legislative or administrative authority from any local, state, or national governmental or private entity or organization have been or can be obtained or renewed for any use on which the opinions expressed in this report are based.

10. Inscriptions or location/directional references on any maps or aerial photos, in this report may show approximate distances or directions and are included to assist the reader in visualizing the impacted area. Maps and exhibits found in this report are provided for reader reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

11. With reference to any impacted property within the defined impact area, it is assumed that the utilization of the land is within the boundaries of such individual properties, and that there is no encroachment or trespass unless otherwise stated in this report.

12. We are not qualified to detect hazardous waste and/or toxic materials. Any comments in this report that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such determination would require investigation by a qualified expert in the field of environmental assessment. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may affect the value of real property. The conclusions of this value impacts study is predicated on the assumption that there is no such material on or in any of the properties within the impacted areas that would cause a loss in value unless otherwise stated in this report. No responsibility is assumed for any environmental conditions, or for any expertise or engineering knowledge required to discover them. The descriptions and resulting comments herein are the result of the routine observations made during the process of developing and reporting the value impact conclusions. **Should the presence of any such materials, as of the effective date of the conclusions reported herein, come to light at a future date, we reserve the right to amend our value conclusions.**

13. Except in connection with the intended use and clients/intended users stated within this report, possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the client and intended users without the written consent of the authors, and in any event, only with properly written qualification and only in its entirety.

14. Neither all nor any part of the contents of this report shall be disseminated to the public through advertising, public relations, news sales, or other media without prior written consent and approval.

15. Various analytical approaches and various mathematical calculations are used in developing the conclusions reported herein. In these calculations, certain arithmetical figures are rounded off to the nearest significant amount.

16. The data and conclusions embodied in this value impacts study are a part of the whole process. No part of this study or its conclusions is to be used out of context and, by itself alone, no part of this study or its conclusions is necessarily correct inasmuch as it merely represents only part of the evidence upon which the final conclusions are based.

17. Employment to make this value impacts study does not require testimony in court unless previous contract arrangements have been made as well as adequate notice being provided, and prior to the date on which such testimony is required.

18. The conclusions developed and reported herein reflect an opinion about the real property diminution in market value resulting from the KDRPP project, and relative to certain identified properties within the delineated impact area. Thus, the term "Market Value" is relevant to the conclusions developed and reported herein. Market Value is defined as:

> *Market Value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of the appraisal, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property at the time of the appraisal.* (Source: Uniform Appraisal Standards for Federal Land Acquisitions.)

19. One (or more) of the signatories of this report is a Member (or Candidate or Practicing Affiliate) of the Appraisal Institute. The Bylaws and Regulations of the Institute require each Member and Candidate to control the use of distribution of each report signed by such Member, Candidate or Practicing Affiliate. Therefore, the parties for whom this report was prepared (client and intended users) may distribute copies of this report, in its entirety, to such third parties as well as may be selected by the parties for whom this report was prepared; however, selected portions of this report shall not be given to third parties without the prior written consent of the signatories of this report. Further, neither all nor any part of this report shall be disseminated to the general public, by the use; of advertising media, public relations media, news media, sales media or other media for public communication without the prior written consent of the signatories of this report.

The term "Scope of Work" (aka Scope of the Appraisal) means the extent of the process of collecting, confirming, and reporting data, the analyses of such data, as well as the development of relevant and supported opinions based on such data. Since the opinions developed and reported herein are in relation to real property market value, the process followed herein is considered an appraisal as defined by USPAP. The client has also requested that this Value Impacts Study be developed and reported consistent with UASFLA, to the extent possible, and in the context of the intended use and intended users. As an example of this, the titles, sequence and content of the report sections presented herein are essentially consistent with those as outlined in UASFLA.[1]

The applicable USPAP and UASFLA Scope of Work requirements clearly impose a responsibility to determine the extent of the analyses and conclusions, as well as the report, in relation to the significance and nature of the identified problem. In this case, it relates to developing a supported opinion regarding value impacts resulting from the KDRPP project. Describing the scope of work is the way in which this responsibility is described and accepted. USPAP and UASFLA require that the Scope of Work (aka Scope of the Appraisal) be described in the report; i.e., as presented in the following paragraphs.

Given the atypical nature of this assignment, the following greater detailed discussion of the USPAP Scope of Work Rule is presented. This is done so as a means to describe the manner by which the final developed Scope of Work that was followed in the development and reporting of the conclusions reached herein satisfies USPAP and UASFLA. Development of an appropriate and relevant Scope of Work begins with consideration of the value question posed by the clients.

In this case, the value question posed by the clients is essentially that of developing an "Economic Impact Study of the potential value effects on privately owned real property within the Lake Kachess area in relation to the proposed Kachess Drought Relief Pumping Plant project". The intended use of such study is "...for incorporation into the Final EIS for this project." Therefore, such intended use is to become a part of the greater compendium of information, facts and studies

[1] Uniform Appraisal Standards for Federal Land Acquisitions, Interagency Land Acquisition Conference, December 20, 2000.

relating to the KDRPP Project for consideration by appropriate State (SEPA) and Federal (NEPA) agencies charged with the responsibility of issuing a final RECORD OF DECISION regarding such project.

The goal of developing an appropriate and relevant Scope of Work is that it will result in credible assignment results in the context of the intended use. "Thus, credibility relates directly to - and is measured in light of - intended use."[2] This includes consideration of multiple elements, but primarily the intended use and type of value opinion, effective date of opinion, relevant characteristics about the subject of the assignment, and assignment conditions. Pursuant to USPAP requirements, these elements are briefly discussed in the following as relates to the development of an appropriate Scope of Work that was followed in this Value Impacts Study.

As noted in the letter of transmittal, the intended use of this value impacts study is for incorporation into the Final KDRPP Project EIS. The objective of this value impacts study is to address one element of the broad range of considerations appropriately included in a Final Project EIS; i.e., real property value effects resulting from the KDRPP Project. Accordingly, this required understanding the project parameters, as well as planning an analytical methodology that will result in a credible opinion resulting from the project.

Therefore, such analytical methodology as applied herein, included not only the way by which data were analyzed to develop the amount of impact, but the geographic limits of such impacts as well. And of course, the communication and reporting of such methodology, geographic limits, and conclusions, were presented in this report with sufficient detail so as to not be misleading, to be properly understood, as well as disclosing all assumptions, extraordinary assumptions, hypothetical conditions and limiting conditions that were used in the assignment.

The type of opinion is likewise relevant to the Scope of Work followed in the development and reporting of the conclusions reached herein. The objective of the study is relative to the effects, or impacts, on *market value* of Lake Kachess real property resulting from the project. The market data developed for this value impacts study indicated that, relative to properties reflecting certain geographic proximity to the lake, as well as certain physical characteristics, a probable diminution in market value would result from the project. The

[2] Scope of Work, Appraisal Institute, 2006. Stephanie Coleman, MAI, SRA

conclusions drawn from the analyses of these data resulted in a percentage range of negative value impacts. The *type of opinions* expressed herein therefore contemplate a (percentage) relationship to market value as applicable to certain identified properties within the delineated impact area. Thus, the term "Market Value" is relevant to the conclusions developed and reported herein. Market Value is defined within the Purpose of the Appraisal report section.

The effective date of the opinions developed and reported herein is November 20, 2015. As developed within the accompanying report, the study's conclusions are based on the comparative study of property sales (i.e., paired sales) that reflected pre-project conditions (aka Before Condition) with otherwise similar property sales but instead reflect lake level conditions similar to that which will exist after the project is completed and is operational (aka After Condition). In this connection, and though both conditions could not exist as of the same effective date, for purposes of analysis, they reflect the same effective date.

There are multiple relevant characteristics about the subject of the assignment. Working backward from the question posed by the assignment, the two most obvious elements are first, application of a methodology by which any value impacts can be isolated by market data, and secondly, making a determination of the geographic limits of the project value impacts. In this connection, initial research was conducted relative to lake proximate residential / recreational properties along the easterly slope of the Cascade Mountain Range.

Given the convenient access and proximity of the Cle Elum area to the Puget Sound population concentration, as well as the combination of developed year around recreational activities, it was ultimately determined that market data from the Cle Elum area was the most relevant. Therefore, as reflected in this value impacts study, it relies on comparisons between Lake Kachess and Lake Cle Elum. Essentially (and historically), Lake Cle Elum has been subject to much more severe lake level drawdowns than Lake Kachess, thus providing a credible and sound basis for isolating the resulting impacts that would be similar to the KDRPP project.

In terms of the geographic limits of impacts as reflected within this study, the final determination was based on several related activities and factors. These included a physical inspection of the lake perimeter, analysis of over 100 lake oriented property sales, discussions with buyers, seller and local brokers, as well as studying the manner in which Lake Kachess properties (and

their lake amenities) are marketed - primarily through the NWMLS. Based on such investigation, the limits of the value impact study were defined by those properties with developable or developed homesites at or below elevation 2,280' asl, and having (as a minimum) a filtered view of the lake.

Assignment conditions takes into consideration assumptions, limiting conditions, extraordinary assumptions, and hypothetical conditions. All such elements have been stated in prior report sections and were carefully considered for compatibility with the intended use of this value impacts study results. Thus the assignment conditions have been satisfactorily considered in the context of the intended use and maintaining the credibility of the conclusions reached herein.

The opinions developed within this value impacts study have been expressed as a range of percentages to market value. In relating the scope of work to the intended use of this value impacts study, a range of percentages is considered most relevant to the intended use since it is applicable to any property located within the geographic area delineated that meets the criteria identified.

An acceptable Scope of Work also contemplates reporting of the conclusions. This assignment is somewhat atypical in comparison to an appraisal of a single property since the conclusions developed herein apply to an identified class of properties within an area delineated as potentially impacted. In this connection, and in addition to presenting a region and neighborhood description, the information considered appropriate and relevant as presented herein included descriptions of the more significant concentrations of residential lots and improved properties along the lake perimeter that are partially or totally within the delineated area. Additional descriptive exhibits included area maps and aerial photo exhibits that provide a description of the impact area delineation as well.

The conclusions developed herein, of course, rely on the analysis of market data. Therefore, detailed descriptions of such market data relied upon in the sale property comparison process have been included, along with location maps. As part of the appropriate Scope of Work, all such sales have been confirmed with buyer, seller or broker, and inspected (from the road and most by way of NWMLS information as well), along with the inspection of the Lake Kachess perimeter which includes the impacted area. These areas were inspected between October 10, 2015 and November 16, 2015.

Data sources relied upon included the Kittitas County Assessor's office as well as the NWMLS. In connection with the sale property exhibits, NWMLS photos were included with the market data descriptions since these photos were consistently more illustrative of each property owing to the better access an agent would have to execute such photography.

To effectively communicate the analytical process followed leading to the conclusions reached herein, this report also details the development of the sale property comparisons. Such sale property comparisons essentially report a paired sale analysis, and are displayed within this report in a tabular format with supporting narrative. A brief discussion of highest and best use, including market analysis for residential / recreational properties within the influence of Lake Kachess, is also presented. It is particularly relevant since the properties identified as impacted reflect a developed or developable use for lake oriented residential purposes. Such discussion was considered appropriate to contribute to a better understanding of the viability of the relevant real estate market.

The approach to the market value diminution is solely based on market data, and most closely associated with the comparative process within the Sales Comparison Approach as defined within USPAP. There was no application of elements relating to the Cost Approach or Income Approach as they were not considered relevant or applicable to the intended use of the opinions developed herein.

The Standards (USPAP and UASFLA) also require that the analyses and conclusions be developed and reported competently. Dean Potter, FRICS, MAI, is experienced in the development and reporting of value impacts resulting from public projects. In such matters, market data comparisons are typically developed to isolate the degree of impact as has been presented herein. Dean Potter, FRICS, MAI is also geographically experienced having previously performed real estate appraisals in Kittitas County, WA.

The foregoing described process of methodology and reporting is considered to represent an acceptable Scope of Work for this value impact study report's intended use therefore it is consistent with the requirements imposed by USPAP and UASFLA. Additional tests for an acceptable Scope of Work include the expectations of: parties who are regularly intended users of such reports, as well as; what an appraiser's peers would be in performing the same or similar assignments. In this connection, the scope of services as included with the

Request for Proposals (RFP) from WDFW was considered relevant, to wit:

The Contractor shall design and develop an analytical framework, data collection plan, identification and stratification of property groups, geographic boundaries of potential impacted properties, perform the empirical phase of study and develop a comprehensive final report with summaries using recognized standards. The final analysis shall explain the economic impact to the private property values in the Lake Kachess basin under the proposed model based projections of future reservoir drawdowns.

The WDFW RFQ was produced and/or reviewed by the client(s) and intended user of this value impacts study. Such individuals are experienced in the contracting and using of appraisals, similar studies and economic impact studies. The Scope of Work requested, and in the context of that which is provided herein, are quite similar in content - thus appearing to meet the expectations of parties who are regularly intended users of such reports.

Moreover, and without compromising any confidentiality, the format and content of this value impacts study was discussed with the appraiser's peers for the purpose of critical response to the acceptability of the foregoing described Scope of Work. Positive responses were received in the context of the planned methodology, format and content. In this connection, the Scope of Work applied herein is considered acceptable and in the context of that which is intended by USPAP.

Based on the foregoing, the Scope of Work relied upon in the development and reporting of this Value Impacts Study is considered consistent with the client provided scope of services, as well as USPAP and UASFLA. In this connection, it is considered to represent a sound basis for the development and reporting of the relevant opinions presented within this Value Impacts Study.

A-8, Purpose of the Value Impacts Study

Introduction:

The purpose of this value impacts study is to provide a supported opinion of the market value impacts resulting to the class of properties identified herein, and within the delineated impact area of Lake Kachess, and relevant to the KDRPP Project. Such value impacts have been reported in a range and expressed as a percentage. The Value Impacts reference a relationship to Market Value which is defined in a following paragraph, as well as previously within this report. Such definition of market value was derived from UASFLA.

Market Value Defined:

The conclusions developed and reported herein reflect an opinion about the real property diminution in market value resulting from the KDRPP project, and relative to certain identified properties within the delineated impact area. Thus, the term "Market Value" is relevant to the conclusions developed and reported herein. Market Value is defined as follows:

Market Value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of the appraisal, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property at the time of the appraisal. (Source: Uniform Appraisal Standards for Federal Land Acquisitions.)

Client, Intended Use and Intended Users of Value Impacts Study Report:

The clients in this value impacts study include Julie Sandberg, Real Estate Services Manager, Washington Department of Fish and Wildlife and Tom Tebb, Director, Office of the Columbia River, Washington State Department of Ecology. The intended use of this study is in connection with value impacts associated with the KDRPP Project and for potential inclusion or reference in the project Environmental Impact Statement. The intended users include the named client as well as Wendy Christensen of the United States Bureau of Reclamation. While others could be provided a copy of this value impacts study, anyone other than the stated intended user(s) is not considered an intended user.

The SCOPE OF WORK developed for this value impacts study was structured to appropriately address the intended use as defined by the client while also providing a credible analysis and conclusion. The intended use of the value impacts opinions developed and reported herein is to become a part of the greater compendium of information, facts and studies relating to the KDRPP Project for consideration by appropriate State (SEPA) and Federal (NEPA) agencies charged with the responsibility of issuing a final RECORD OF DECISION regarding such project. No other use is intended or authorized.

Statement of Owner Accompaniment:

No single property is considered the subject of this value impacts study. Rather, the conclusions developed and reported herein apply as an opinion of a value diminution relative to an identified class of properties within a geographically delineated area in association with Lake Kachess and resulting from the influence of the proposed KDRPP Project. Thus, owner accompaniment was NOT a condition of this assignment.

A-9, Summary of Value Impacts Study Problems

This report section provides an opportunity to explain any specific elements of the study that presented challenges, and how those elements were adequately resolved. The general processes followed were set forth in the previous Scope of Work report section. The more challenging elements of this Value Impacts Study are relevant to: (1) Development and Analysis of Market data; (2) Delineation of the Impact Area, and; (3) Identification criteria of Impacted Properties.

Since the appropriate methodology involves sale property comparisons for the purpose of abstracting the influence of an increased "lake drawdown", initial research for such market data took into consideration a single general location consideration; i.e., lake or irrigation reservoir proximate properties on the immediate east slope of the Cascade Mountain Range. Accordingly, preliminary market data research was performed between the north and south boundaries of the State of Washington. Further refinement of this process involved taking into consideration that there is a single year around Interstate Freeway between Western Washington and Eastern Washington; i.e., I-90. Predictably, its origin is the population concentration of surrounding Puget Sound. I-90 extends easterly of the Cascades very proximate to Lake Kachess. The proximity of the Puget Sound market is very significant to the Lake Kachess recreational / residential real estate market and presents a somewhat unique location attribute.

While there are other lake proximate or high amenity recreation areas along the east slope of the Cascades (Mazama, Lake Chelan, Lake Wenatchee, etc), none have the same combination of convenience of year around access and proximity to year around recreation (snow skiing, land based and lake based winter-autumn-summer & fall activities.) Lake Kachess exists in proximity to two other lakes; i.e., Lake Cle Elum and Lake Keechelus. Therefore, market data from the Lake Kachess / Lake Cle Elum and Lake Keechelus areas along the I-90 corridor would be most relevant to this study and address the unique location / interstate freeway attributes.

Both Lake Cle Elum and Lake Keechelus are irrigation reservoirs like Lake Kachess; however, are subject to comparatively earlier, more frequent, and more severe lake level drawdowns. Part of the Lake Cle Elum perimeter is developed with residential and recreational subdivisions somewhat similar to that of Lake Kachess. Thus, Lake Cle

Elum presents an opportunity to make a comparison with Lake Kachess; i.e., the lake level operation of Lake Cle Elum is more similar to that which will exist at Lake Kachess after development of the KDRPP Project.

As the research and analysis of market data in the Lake Cle Elum and Lake Kachess areas were being developed, it became clear that Lake Kachess generally reflects a superior location compared with Lake Cle Elum. By comparison with Lake Cle Elum, Lake Kachess is located more convenient to snow skiing on Snoqualmie Pass as well as I-90 access. Additionally, the inventory of residences on Lake Kachess appears to typically reflect larger and/or better quality structures. And of course, Lake Kachess has historically not been subject to the severity of lake drawdown as compared with Lake Cle Elum. Thus it was concluded that Lake Kachess is superior to Lake Cle Elum due to location as well as the comparative severity of lake drawdown. The proposed Lake Kachess drawdown will result in a reduction in lake surface of around 14% according to project information provided. Interviews with local real estate agents were mixed in terms of value impacts due to the lake drawdown, and ranging from nominal to non-existent impacts.

In view of the foregoing, and recognizing there are two fundamental differences between Lake Kachess and Lake Cle Elum, two sets of market data were developed for analyses. The first set of market data included property sale comparisons between non lake proximate locations in either the Cle Elum / Ronald / Roslyn areas with those in non lake proximate locations around Easton / Lake Kachess. This provided a range of (percentage) differences solely due to location. A second set of comparisons were then made between lake proximate sale properties in the two locations. This second set of data likewise reflected a range of percentage differences which included both the influence of the comparative Lake Cle Elum inferior overall location, but the Lake Cle Elum comparative inferior lake drawdown conditions as well. Subtracting the location difference (first data set) from the combined location / lake drawdown difference (second data set) resulted in an indication that a "NET" 5% to 10% diminution in property value would result solely from the Lake Kachess project; i.e., the more severe lake drawdown contemplated in the KDRPP project parameters.

While the foregoing process is simply explained, it relies on careful analysis of the paired data sets. In particular, development of the location difference was critical for an overall accurate result. In this connection, in addition to the

study of paired data sets relative to location, additional *market analysis* was conducted and presented in the highest and best use report section thereby further reinforcing the existence of a location difference between Lake Cle Elum and Lake Kachess. In this manner, this more challenging element of this Value Impacts Study was adequately addressed.

The delineation of the impacted area and the identification of impacted properties within was developed by a combination of field observation, review of property listings, discussions with real estate brokers and/or transaction principals. In particular, considering how properties around the lake are marketed produced a reflection of lake influence attitudes held by buyers, sellers and brokers of lake oriented properties. Based this information, it was concluded that, while multiple benefits are presented by the lake amenity, market evidence would not reflect a measurable impact if a property did not have, as one of many area amenities, at least a filtered view (or better) of the lake. The parameters of the study, based on the discussed elements of impact, are thus generally limited to those properties that have a developable or developed homesite within and below elevation 2,280' asl surrounding Lake Kachess, and that have at least a filtered view of the lake. Properties above such elevation, though they might have a lake view, it is a more distant lake view. Thus, it would not be significantly impacted since the lake continues to present a view amenity to these less proximate properties in its project influenced drawn-down condition. As described above, the more challenging elements of impact area delineation and identification of impacted properties were adequately addressed.

As presented in the foregoing, the more challenging elements of this value impacts study included: (1) Development and Analysis of Market data; (2) Delineation of the Impact Area, and; (3) Identification criteria of Impacted Properties. And that as described in the foregoing represents the processes applied in order to address these more challenging elements. The application of such processes, in the context of the Scope of Work developed and described in the prior report section, are thus considered a reasonably sound basis on which to describe, develop and conclude value impacts resulting from the Lake Kachess KDRPP Project.

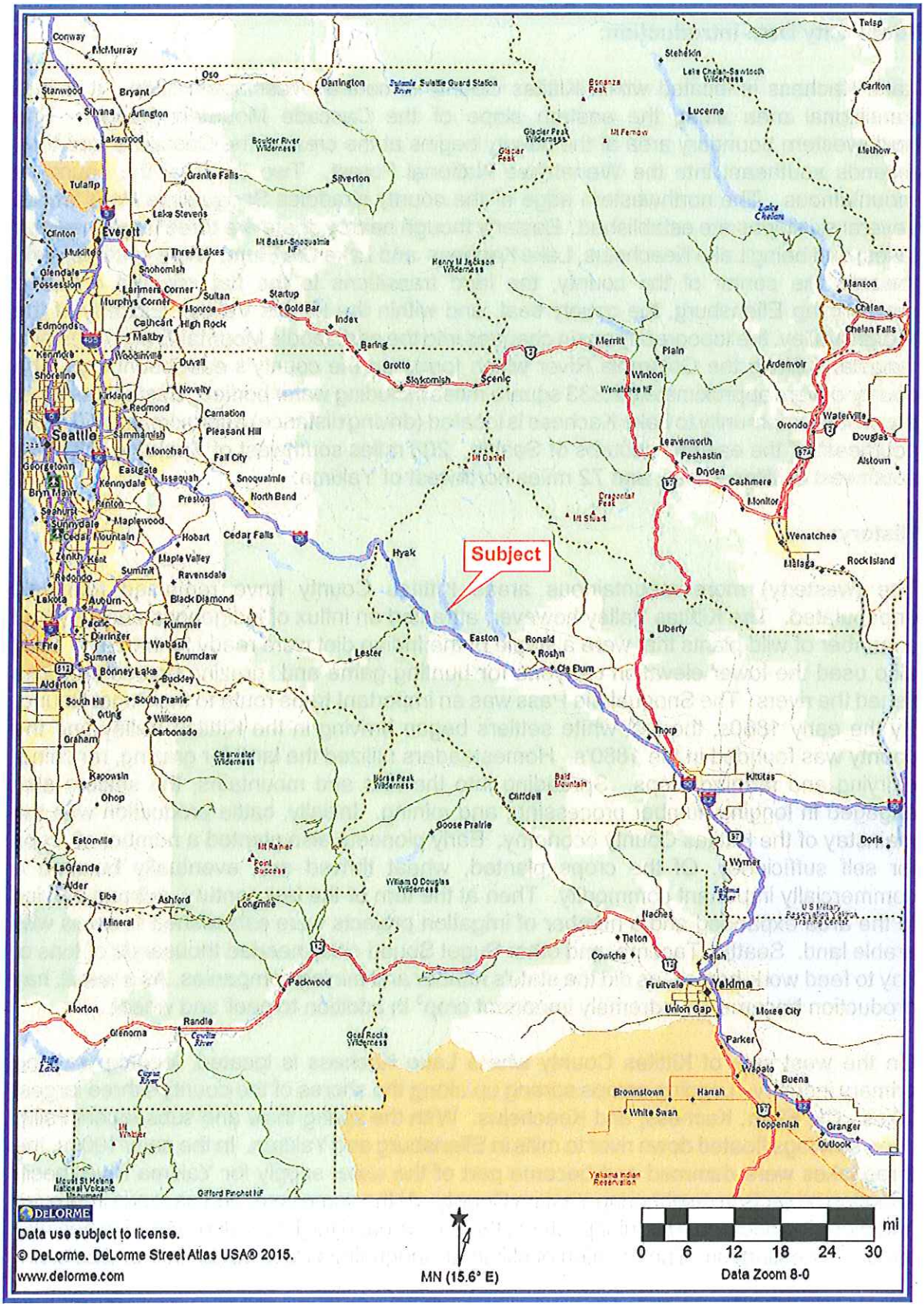
Effective Date of Value Impacts Study: November 20, 2015

Date of Report: December 31, 2015

PART II, FACTUAL DATA

The subject of this Value Impacts Study is that of those properties along the perimeter of Lake Kachess, at or below elevation 2,280' asl, and that have, as a minimum, at least a filtered lake view amenity, and include a developable or developed homesite. Thus, there is no particular legal description applicable. Maps generally identifying the property location parameters of this Value Impacts Study are included in the forthcoming Description of Impacted Area; i.e., an overview map along with maps associated with the descriptions of each of the subdivisions included therein. The impacted area incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary.

Regional / Area Map



Area / City Data Introduction:

Lake Kachess is located within Kittitas County in central Washington state. It is in a transitional area along the eastern slope of the Cascade Mountain Range. The northwestern boundary area of the county begins at the crest of the Cascades and then extends southeast into the Wenatchee National Forest. Two thirds of the county is mountainous. The northwestern edge of the county straddles Snoqualmie Pass where several ski slopes are established. Easterly though nearby, there are three large reservoir lakes, and being Lake Keechelus, Lake Kachess and Lake Cle Elum. More southeasterly towards the center of the county, the land transitions to the flat irrigated cropland surrounding Ellensburg, the county seat, and within the Kittitas Valley. Easterly of the Kittitas Valley, the topography again changes into the arid Saddle Mountains and open hilly rangeland along the Columbia River which forms on the county's east boundary. The county covers approximately 2,333 square miles including water bodies. Easton, the most proximate community to Lake Kachess is located (driving distance) approximately 50 miles southeast of the easterly suburbs of Seattle, 208 miles southwest of Spokane, 78 miles southwest of Wenatchee, and 72 miles northwest of Yakima.

History:

The (westerly) more mountainous areas Kittitas County have remained relatively unpopulated. The Kittitas Valley however, attracted an influx of indigenous people when a number of wild plants that were a staple of the Indian diet were ready for harvest. They also used the lower elevation canyons for hunting game and grazing horses and also fished the rivers. The Snoqualmie Pass was an important trade route to the Puget Sound. By the early 1860s, the first white settlers began arriving in the Kittitas Valley and the county was founded in the 1880's. Homesteaders utilized the land for grazing, ranching, dairying and farming crops. Spreading into the hills and mountains, the settlers also engaged in logging, lumber processing, and mining. Initially, cattle production was the mainstay of the Kittitas County economy. Early pioneers also planted a number of crops for self sufficiency. Of the crops planted, wheat thrived and eventually became a commercially important commodity. Then at the turn of the last century, railroad service to the area expanded and a number of irrigation projects were established in areas with arable land. Seattle, Tacoma, and other Puget Sound cities needed thousands of tons of hay to feed work-horses, as did the state's lumber and mining companies. As a result, hay production became an extremely important crop[3] in addition to beef and wheat..

On the west side of Kittitas County where Lake Kachess is located, logging was the primary industry. Logging camps sprang up along the shores of the county's three largest lakes - Cle Elum, Kachess, and Keechelus. With the spring thaw and subsequent rising river, saw logs floated down river to mills in Ellensburg and Yakima. In the early 1900s, the three lakes were dammed and became part of the water supply for Yakima River basin irrigation projects in neighboring Yakima County. At the same time, and as roads improved and motoring became a popular pastime, the area around the lakes also started to become a tourism destination. The tradition of skiing at Snoqualmie Pass began in the 1920's and

[3] http://www.co.kittitas.wa.us/about/history.aspx *About the County* by Jennifer Ochran

30's, and in 1937 the Snoqualmie Summit Ski Area opened and is the closest ski area to greater Seattle area. The north end of Lake Keechelus now has a ski-in village and is quite popular in the winter. Lake Kachess and Lake Cle Elum proved to be popular year round particularly with people from the greater Seattle/Puget Sound area. Residential areas around these two lakes initially developed with rustic cabins, and some that were built in the 1940s still remain today. Over the years, primitive cabins evolved to year round vacation homes. In recent years, the vacation homes have tended to become higher quality and larger in scale with a number of newer homes having sold over the last decade for upwards of $1,000,000.

Demographics:

While Kittitas County is the 8th largest county in the state, it is one of the less populous with an average of 18.57 people per square mile[4]. Forty-five percent of the county inhabitants live in incorporated areas with the vast majority living in Ellensburg, the county seat and the location of Central Washington University. The second most populous area is in the general vicinity of Lake Kachess and Lake Cle Elum towards the northwestern edge of the county and includes the incorporated communities of Cle Elum, Roslyn and South Cle Elum along with the unincorporated areas of greater Ronald and greater Easton. The table below details the population trends for Kittitas County and its incorporated communities. As illustrated, the population countywide has remained generally stable over the last five years[5].

Population: Kittitas County Cites & Towns
2010 - 2015

County Municipality	Census 2010	Estimate 2011	Estimate 2012	Estimate 2013	Estimate 2014	Estimate 2015
Kittitas	**40,915**	**41,300**	**41,500**	**41,900**	**42,100**	**42,670**
Unincorporated	18,063	18,315	18,440	18,785	18,890	19,120
Incorporated	22,852	22,985	23,060	23,115	23,210	23,550
Cle Elum	1,872	1,875	1,865	1,870	1,870	1,865
Ellensburg	18,174	18,250	18,320	18,370	18,440	18,810
Kittitas	1,381	1,430	1,450	1,450	1,475	1,455
Roslyn	893	895	895	895	895	890
South Cle Elum	532	535	530	530	530	530

Transportation:

The principal route through Kittitas County is Interstate-90 which extends from just south of Seattle in Bellevue through Snoqualmie Pass and continues in a southeasterly direction through Ellensburg where it shifts direction to the northeast and continues on to Spokane, into Idaho, and beyond. In Ellensburg, Interstate-82 originates and extends in a southeasterly direction through Yakima, the Tri Cities and on into Oregon merging with I-84 around the Oregon city of Hermiston.

[4]WSOFM Estimates of April 1 Population Density and Land Area by County

[5]Source: Washington State Office of Financial Management

Beyond these interstate freeways, highway transportation routes are limited to a few rural state highways, local county roads around populated areas, and an extensive network of unpaved forest service and logging roads meandering through most of the area's mountainous countryside. A Burlington Northern railroad freight line runs roughly parallel to I-90; at present passenger service is not available within the county. With respect to air travel, commercial air travel is available at SeaTac International Airport 57 miles west of the Snoqualmie Pass or another 56 miles east to Ellensburg. Regional airports with commercial airline services are also located in Yakima and Spokane. On a local level, Bowers Field in Ellensburg is a General Aviation airport. Closer to the subject area, the Easton State Airport is a 2,640 long grass airstrip open to the public, typically open from June through September and is owned and operated by the Washington State Department of Transportation.

Industry, Employment and Labor:

Just as hay was an extremely important export commodity for Kittitas County early in the last century, timothy hay today is a major Kittitas County cash crop. According to a September 4, 2011 article in the Seattle Times, 90% of the timothy grown in the Kittitas Valley "will never be eaten by an American horse or cow. . . Nearly all of the timothy from here is shipped by sea to Japan and, in lesser amounts, to countries such as South Korea and China and also to the United Arab Emirates." The article continues: "It means $35 million to $38 million is paid to the farmers and an additional $80 million or so pumped into the economy as the farmers then spend money on everything from equipment to labor, according to the Kittitas County Chamber of Commerce." Although not a labor intensive crop, the growing, storage and distribution of timothy hay is an important component of the local economy. The county is also home to Central Washington University (CWU) located in Ellensburg with an enrollment of 10,750 students in 2011.

In terms of wages generated within the Kittitas County economy, state and local governments dominate. In 2013, state government and local government accounted for 39.2 percent, or almost four out of every ten dollars of wages earned in Kittitas County. In Ellensburg, the county's most populous place, four out of the top five employers in are government organizations:

- Central Washington University
- Kittitas Valley Hospital
- Kittitas County government
- Ellensburg School District
- Anderson Hay & Grain

In 2009 the Kittitas County nonfarm economy was hit hard by the recent recession. It began to recover lost jobs in 2010. However, total non-farm employment countywide virtually stagnated in each of the four years from 2010 through 2013[6]. A comparison of average annual non-farm employment changes in the county during the recession years (2009-2013) bracketed by the non-recession years of 2008 and 2014 of non-farm employment is as follows:

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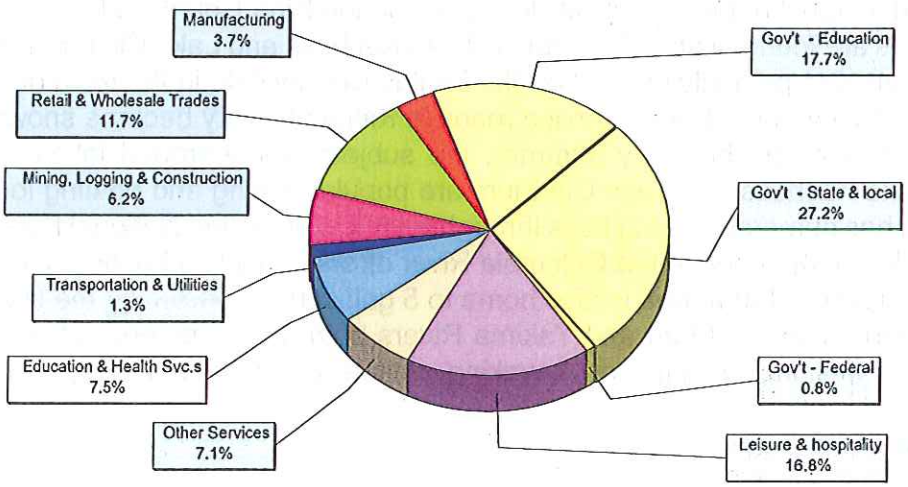
[6] *Source: Kittitas County Profile* by Don Meseck, regional labor economist Dec. 2014.

Kittitas County 2008 - 2014
Non-farm Jobs & Unemployment

	2008	2009	2010	2011	2012	2013	2014
Non-farm Jobs	15,180	14,500	14,880	14,930	14,880	14,900	15,120
Unemployment	5.90%	9.10%	9.40%	8.90%	8.30%	7.40%	7.10%

As of July 2015, preliminary unemployment in Kittitas County was reported at 6.1%, an improvement over revised July 2014's 6.9% level. The overall civilian labor force reported for July 2015 was 20,294 and total non-farm employment was 15,950. The largest growth sector for the comparing July 2014 to July 2015 was in *Mining, Logging & Construction* with an improvement of 26.9% and the majority these of jobs in were in construction. The *Professional Business Services* and *Leisure and Hospitality* were the next most improved sectors with an upswing of 16.1% each. The only sector to have a reduction of employees was *Federal Government* which declined 5.9%.

Non-Agriculture Workforce Summary
Kittitas County - July 2015



The above table illustrates the most current mix of non-agriculture employment[7]. Although manufacturing plays only a minor role in the region's economy, at present almost 46% of current employment is in government jobs (as illustrated in yellow on the preceding chart). Those employed by the federal and state government tend to be linked to management of the region's natural resources and agriculture.

Agriculture and Forestry The economy of Kittitas county is somewhat consistent with its geography. And, its geography is very diverse. The western portion of the county extends to the middle of the Cascade Mountain Range with the Yakima River headwaters coming from Lake Keechelus, Lake Kachess and Lake Cle Elum on the eastern slopes of the Cascades. The northern proximate half of the county lies within the Wenatchee

[7] Source: Washington State Labor Market Information www.workforceexplorer.com

Mountains. Together these mountainous areas comprise approximately two-thirds of the county and are primarily in forestry use with the majority of the land in public ownership as part of the Wenatchee National Forest. Additional land is owned by the State, and a number scattered tracts are owned by conservancies and intermixed blocks of privately owned timber. Land on the southern and eastern edges of the county is also mountainous but relatively arid. The vast majority of this land is also in government ownership but is typically leased to ranchers as rangeland. The Kittitas Valley lies in the proximate center of the county and with the exception of Ellensburg at it center, the land in this area is generally in commercial agriculture production. Farm gate market value in 2012, from an aggregate 1,006 farms covering 183,124 acres, was $21.8 million in livestock sales and $47.2 million in crop sales. Of this, the principal crop was premium-quality grass hay for the export market in the form of timothy, orchard grass / alfalfa, sudangrass, and annual grass hay[8].

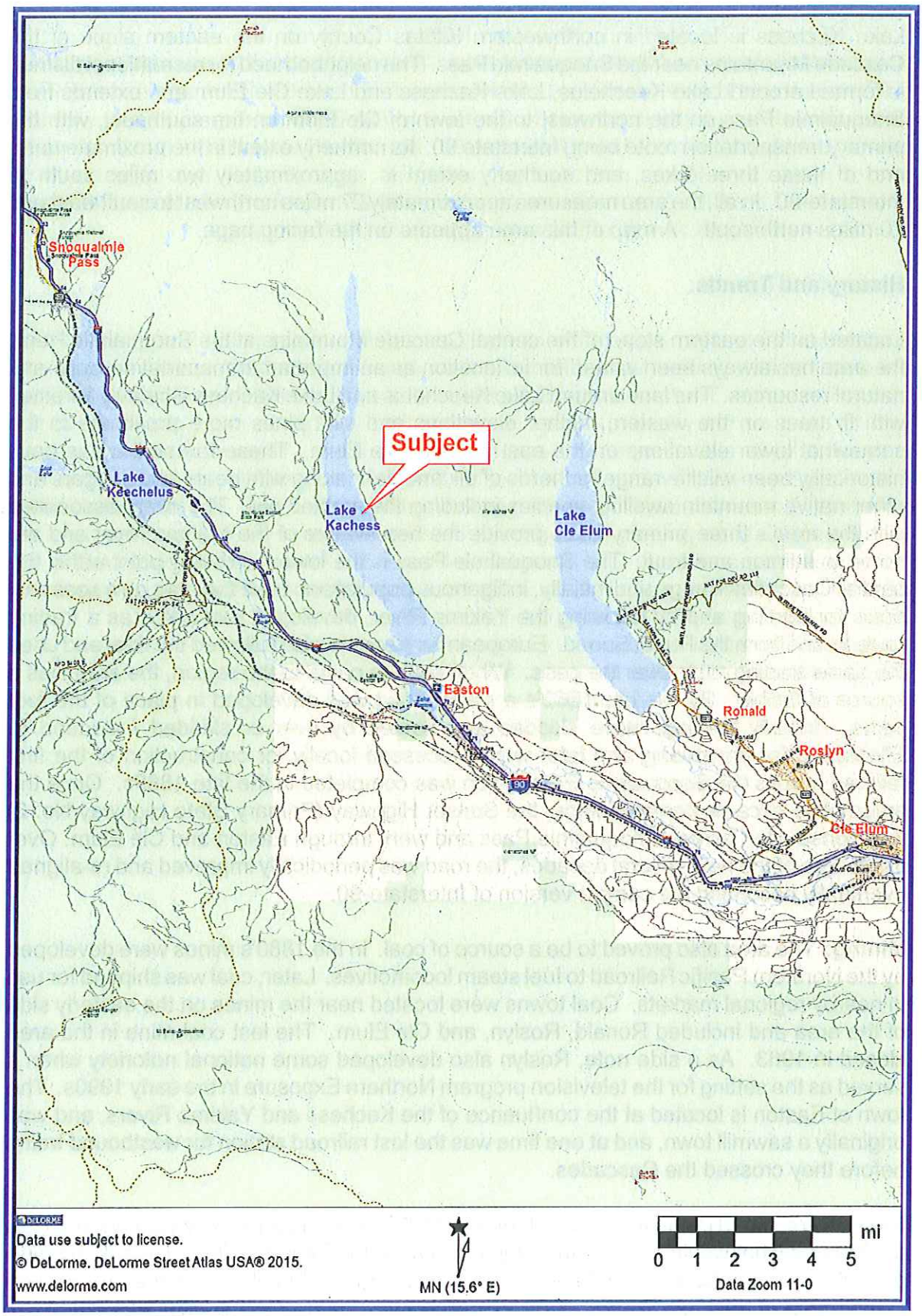
Recreation Another significant element of the economy of Kittitas County is recreation, and virtually all of which is linked to its natural resources. Kittitas County advertises itself as a winter sportsman's paradise with ample opportunities to ski, snowboard, snowmobile, snowshoe, or ice skate. The Snoqualmie Pass is the home of The Summit at Snoqualmie Pass, a 1,981 acre alpine ski area covering 4 peaks with 20+ lifts. The ski resort straddles the Kittitas County / King county line with slopes on both sides of the crest of the Cascades. While most of the actual ski slopes are on the King County side, most of the weekend cabins are found at Lake Keechelus, Lake Kachess and Lake Cle Elum. Goods and services are also primarily located on the Kittitas County side in the town of Easton and Cle Elum. Many of the Forest service roads in Kittitas County become snowmobile routes in the winter. In the early summer, the subject neighborhood lakes of Lake Keechelus, Lake Kachess and Lake Cle Elum are popular fishing and boating locations and the region has numerous hiking trails throughout the Wenatchee National Forest. On the eastern edge of the county, the Columbia River offers additional boating and fishing opportunities. The Cle Elum area is also home to 5 golf courses including the two at the Suncadia Resort. The Cle Elum and Yakima Rivers both offer a number of recreation opportunities as well, including fishing, kayaking, whitewater and float rafting.

Conclusion:

The Kittitas County region is very reliant upon its wealth of natural resources. The county is generally quite rural in nature and with the exception of tourism in the Snoqualmie Pass/Easton/Cle Elum areas, the economy is based upon timber and agriculture. Although the county was hit hard by the recently recession, the area appears to have generally recovered. Today, both its population and economy are considered stable with minimal growth projected into the foreseeable future.

[8]Source: 2012 Agriculture Census http://www.agcensus.usda.gov/

Subject Neighborhood Area



Lake Kachess is located in northwestern Kittitas County on the eastern slope of the Cascade Mountains near the Snoqualmie Pass. The neighborhood (or recreational district) is formed around Lake Keechelus, Lake Kachess and Lake Cle Elum and extends from Snoqualmie Pass on the northwest to the town of Cle Elum on the southeast, with the primary transportation route being Interstate 90. Its northerly extent is the proximate north end of these three lakes, and southerly extent is approximately two miles south of Interstate-90. In all, the area measures approximately 27 miles northwest to southeast and 10 miles north/south. A map of this area appears on the facing page.

History and Trends:

Located on the eastern slope of the central Cascade Mountains at the Snoqualmie Pass, the area has always been valued for its location as an important transportation route and natural resources. The land around Lake Keechelus and Lake Kachess is heavily forested with fir trees on the western, higher elevations and with pines more proximate to the somewhat lower elevations on the east by Lake Cle Elum. These forested areas have historically been wildlife range for herds of elk and deer along with bears and cougars and other native mountain dwelling species including the spotted owl. The rivers associated with the area's three primary lakes provide the headwaters of the Yakima River and are home to salmon and trout. The Snoqualmie Pass is the lowest crossing point within the central Cascades Range and initially, indigenous populations used the area on a seasonal basis for hunting and by following the Yakima River, developed foot paths as a trading route to and from the Puget Sound. European fur trappers also followed the river and used the same trading route over the pass. When settlers came to the region, the area was a source of timber. By the late 1860's a wagon road was developed in place of the foot paths. Initially the logs were skidded and floated by river or skidded / sledded to Ellensburg for processing and later were processed locally for construction of the first railroad across the Snoqualmie Pass which was completed in the late 1880s. Once the automobile became commonplace, the Sunset Highway (Primary State Highway No. 2) was constructed across Snoqualmie Pass and went through Easton and Cle Elum. Over the course of the next several decades, the road was periodically improved and re-aligned eventually becoming the current version of Interstate-90.

Mining: The area also proved to be a source of coal. In the 1880's mines were developed by the Northern Pacific Railroad to fuel steam locomotives. Later, coal was shipped for use in nearby regional markets. Coal towns were located near the mines on the easterly side of the area and included Ronald, Roslyn, and Cle Elum. The last coal mine in the area closed in 1963. As a side note, Roslyn also developed some national notoriety when it served as the setting for the television program Northern Exposure in the early 1990s. The town of Easton is located at the confluence of the Kachess and Yakima Rivers, and was originally a sawmill town, and at one time was the last railroad station for westbound trains before they crossed the Cascades.

Reservoirs: In 1911 the Kittitas Reclamation District began preliminary surveys and cost analysis for what would become the High Line canal, the Kittitas Valley's largest irrigation project. The ambitious project failed to get off the ground until 1925 when the federal Department of Interior's Bureau of Reclamation became involved in what was called the

Kittitas Project. In 1926 construction on the canal (officially called the Kittitas Diversion of the Yakima Project) commenced. The canal was completed in 1932. The High Line Canal diverts water from the Yakima River just above the town of Easton and transports it to irrigation canals completely encircling the Kittitas Valley, terminating where Turbine Ditch spills into the Yakima River. In conjunction with this, reservoirs were created on top of the subject area's three natural lakes at Kachess in 1912, Keechelus in 1917, and Cle Elum in 1933.

Since then, all three reservoirs experience annual summer drawdowns as water is needed for irrigation and fish habitat downstream. Historically, both Lake Keechelus and Lake Cle Elum have experienced the greatest impact with water levels dropping earlier in the summer and typically dropping to a more noticeable lower level than Lake Kachess. Regardless, all three lakes lose the use of their public boat launches as the water level gradually drops. Nevertheless, resourceful parties often drive across the exposed lake bed beaches and manage to get small watercraft in and out of the water.

Tourism: The area also has a history of being a popular tourist destination for almost a century with particular appeal for urbanites from the greater Seattle/Puget Sound area. Skiing on the slopes around Snoqualmie Pass began in the 1920's and 30's, and beginning in the 1930s, the Snoqualmie Pass was plowed during the winter to accommodate skiers. Hardy group of ski jumpers would drive to the area, hike up hill, and compete on a jump built by the Seattle Ski Club. Interest in the sport by both jumpers and spectators grew rapidly. In 1933 the Seattle Parks Department applied for a permit from the United States Forest Service to establish a ski hill at Snoqualmie Pass. In 1937, the Snoqualmie Summit Ski Area opened. In summer, the area's three reservoir lakes are also popular motoring destinations for west side urbanites. With the length of Lake Keechelus fronting on the railroad and highway and the route to Cle Elum passing through three active mining towns, Lake Kachess appears to have been the most popular for this recreational purposes. By the 1940s several small cabin resorts opened along the edge of the Lake Kachess and Lake Cle Elum reservoirs. Similarly, several public campgrounds were opened around both Lake Kachess and Lake Cle Elum as well as at nearby, Lake Easton State Park.

Populated Areas: The majority of the area's year round population is located in, and around, the small towns of Cle Elum, Roslyn, Ronald and Easton. Residents of these communities historically worked in, or provided services to, the local timber and coal mining industries. Outside of these towns, the area was initially sparsely populated. While individuals who favored the area as tourists may have desired building a vacation home near the ski slopes or on the shores of the areas reservoir lakes, the overwhelming majority of land in these particular areas was owned by government agencies and large commercial timber companies. Although the Forest Service did lease a few small lots for private cabin development, in general, developable tracts of land in close proximity to these venues were simply not available. Then in last quarter of the 20th century, the local resource based industries changed. The timber industry went into a decline from which it has not recovered, and the local coal mines closed as well. As a result, some privately owned timber tracts along Lake Kachess and Lake Cle Elum sold to developers, as well as played out abandoned coal mines nearby Cle Elum, Roslyn and Ronald.

Residential Development:

The mining and timber towns of Cle Elum, Roslyn, Ronald and Easton tend to reflect their origins with early 1900s storefronts and modest homes on very small lots also built in the early years of the last century. The outskirts of these towns have slightly larger lots with additional modest homes from the 1960s and 1970s.

At the north end of Lake Keechelus in the Hyak area of Snoqualmie Pass, ski-in condominiums and private vacation homes were constructed. The focus here, however, was the proximity to the slopes and not the nearby lake. Significant further development at this locale has not occurred. Lake Keechelus experiences significant drawdowns in mid to late summer and particularly during drought conditions.

Initially on Lake Kachess and Lake Cle Elum, a few primitive cabins were built; however, electricity was not available and cabin development less infrequent. In the 1970s land began to became available for development in several areas along southeastern side of Lake Cle Elum including on the hillsides overlooking the lake, power was extended and a population of vacation homes started to developed. Although none of the shorelines of the three reservoir lakes actually extend to their respective project boundaries, lots that abutted said boundaries were considered 'waterfront' by locals, and all three lakes include public boat launches. At first, these scattered subdivisions did not include "Covenants, Conditions & Restrictions" (CC&R's). Vacation homes tended to reflect the eclectic architecture of the era and were a mix of rustic cabins, 'A' frames, and basic subdivision style ranch houses. More often than not, these dwellings were fairly small and of a lower quality.

During this same period, electricity also was brought to the west side of Lake Kachess. Available land remained quite limited however. One planned unit subdivision known as *Kachess Village* development and was permitted with a total of 167 lots. This project included CCRs and provided a community boat launch and beach area. Adjacent to this, *Kachess Ridge* provided a few additional, somewhat larger lots with territorial lake views. Although a few lots additional lots developed in the 1970s and 1980s most construction occurred in the 1990s. Compared to homes on Lake Cle Elum, the *Kachess Village* and *Kachess Ridge* view homes were typically somewhat larger, more uniform in style and often higher quality. Because housing along Kachess Reservoir was concentrated to only a few small areas, the surrounding land on the perimeter of the lake remained relatively pristine. By comparison, the developable land along southeastern Lake Cle Elum was more abundant, and residential development tended extend farther along the shores with scattered lots developing with cabins and vacation homes. Over the years, interlying vacant lots on Lake Cle Elum periodically developed and today's result is that the quality and architecture is quite varied.

Due to the nature of the reservoir shoreline at Lake Kachess, and the historic manner in which the lake level has been managed, the water is more proximate to the shore for longer in the season and homeowners often build private boat docks within the reservoir boundaries that are moored to the shore. At Lake Cle Elum, wide swaths of beach appear earlier in the season and cars are driven onto these areas near the lake's southeastern homesites. At Lake Kachess Reservoir, the only 'car beach' is located in an undeveloped

portion of its southeastern shore and property owners along the perimeter of Lake Kachess refer to it, colloquially, as 'Freeloader's Beach'.

With each passing decade, new homes proximate to both lakes tended to become larger and better quality however, for a number of years the pace of development was gradual. Then beginning in the mid 1990's, the "Dot Com" boom hit the greater Seattle/Puget Sound area and brought new interest in the market for second homes. From downtown Seattle, homes located on the west side of Lake Kachess are an ±65 mile drive. By comparison, homes on the southeast lake side of Lake Cle Elum are a ±90 mile drive. However, both of these locales are mountain lake "getaways" that became very popular. On Lake Kachess, new homes with good views of the lake were built on the few remaining undeveloped lots and modest cabins began to be replaced with large upscale cedar homes, luxury log homes and stone and timbered Northwest Lodge styles. At Lake Cle Elum, more land had remained undeveloped amongst existing cabins and new homebuilders also had more alternative locations. Amongst them, the hills above the lake, though remote to the water, were sparsely wooded and offered small tracts of acreage with territorial views. In addition, located between the towns of Cle Elum and Roslyn along the Cle Elum River is *Suncadia*. The development is a high-end, planned, unincorporated community slated to have three golf courses, a 150-room lodge, a conference center, a spa and roughly 3,700 home sites. The project was in the planning stages from 1996 into the early 2000s. Single-family vacation homes on small lots between the golf courses began to be constructed during the last housing boom. The first wave of these upscale vacation homes have typically sold for between $1 and $2.5 million apiece. Also, above the eastern hills of Lake Cle Elum, a number of smaller new subdivisions developed over the old coal mines and large lots continue to become available further north on the east side of the lake. The east side of Lake Kachess is primarily "off the grid" and has seasonal access. The west side reflects more areas with year around access and full development infrastructure in place. In the current market, only a few large Lake Kachess tracts of acreage are available for "off the grid" homes on the east side, and little additional private land exists on the west side for expansion. The net result of the various differences between the residential prospects of Lake Kachess compared with Lake Cle Elum is that the limited supply of water oriented property at Lake Kachess appears to have given it a somewhat more of an exclusive cache than homes in close proximity to Lake Cle Elum.

Kachess Drought Relief Pumping Plant (KDRPP Project):

In 2009, the Bureau of Reclamation and Washington State Department of Ecology announced it was contemplating creating the Kachess Drought Relief Pumping Plant (KDRPP) (formerly identified as Kachess Reservoir Inactive Storage Project) as a means of withdrawing an additional 200,000 acre-feet of water from Lake Kachess and transferring that flow into the Yakima River for beneficial downstream use in a drought year.[9]

The Lake Kachess Reservoir as it currently is operated, has a maximum high pool water level of 2,262' asl. As the water is needed for irrigation and for enhancing river habitat purposes, the reservoir is partially drained each year until supplemental water is either no longer needed downstream or, until the reservoir reaches its current low pool minimum

[9]Source: http://www.usbr.gov/pn/programs/eis/kdrpp/

level at 2,192' asl. This drawdown typically begins in June and ends in October. Over the course of the winter and spring, the reservoir refills as snow melts in the surrounding mountains. An examination of data for the 36 year period between 1980 and 2015 reveals the following statistics:

Lake Kachess statistics for 1980-2015	(Before Condition)
Maximum pool elevation	2,262' asl
Lowest pool elevation	2,192' asl
Average/Mean lowest level 1980-2015	2,218' asl
Range between max. & min. levels	70'
Range of annual lowest levels	38'
No. years maximum level is reached	22 years (61%)
Start date of draw down	Typically in June (42% of time)
Date minimum level was reached	Typically in October (69% of time)
Public boat launch lowest elevation	2,235' asl (27' below reservoir's maximum)
Boat launch closure:	Typically no earlier than mid August
Boat launch opens:	When campground opens; May - July

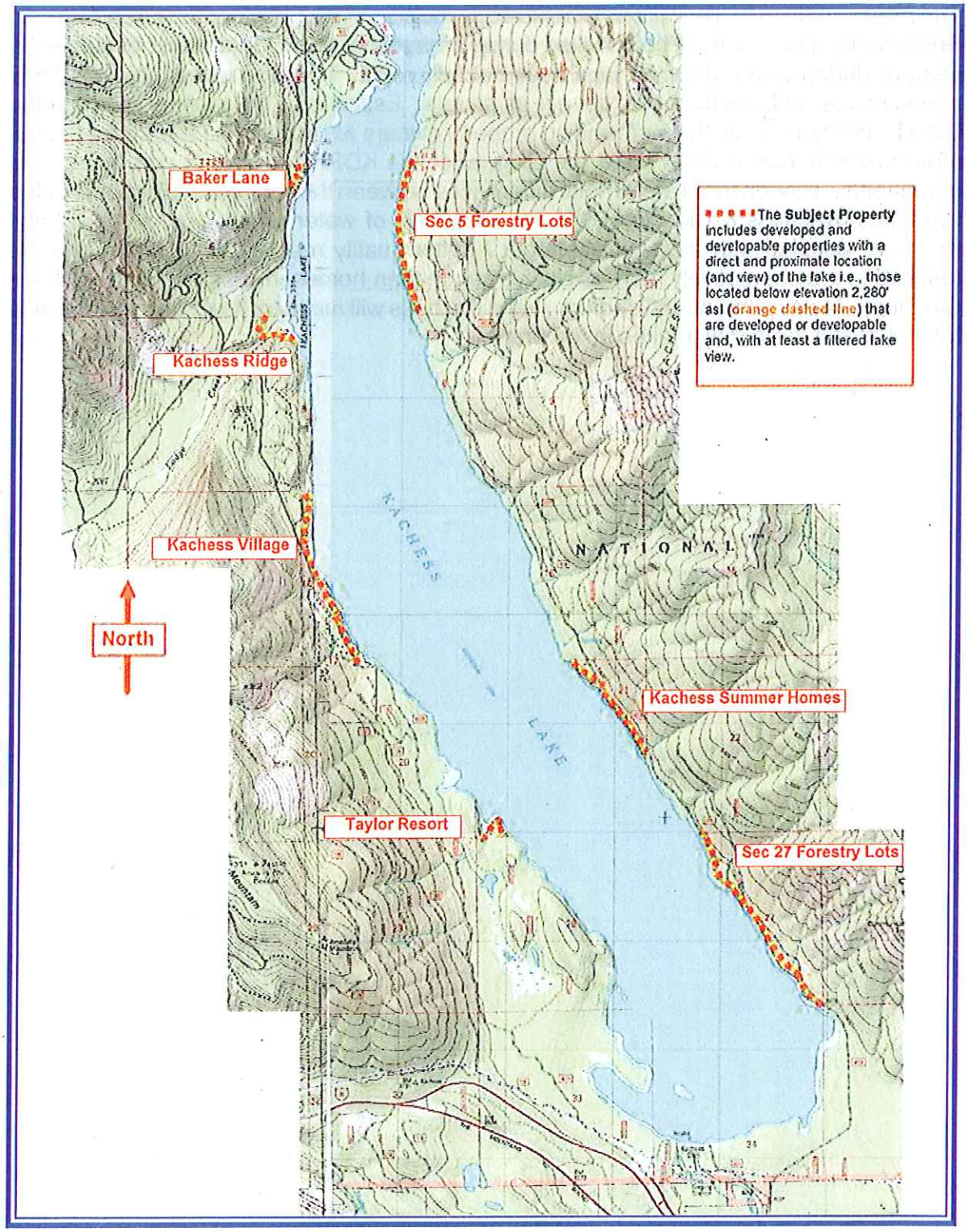
KDRPP Refill Pool (After Condition)	
Lowest pool elevation	2,112' asl
Range between max. & new min. levels	150' asl

At present, following winters where the mountains receive an insufficient amount of snow, the reservoirs do not completely refill. Once the proposed increased drawdown occurs, years with incomplete refilling of the reservoir would likely occur more frequently. The AFTER Condition of this Impact Study reflects Lake Kachess *after* the KDRPP plan is implemented. The level of the lake may be drawn down as low as 2,112' asl, or an additional 80' below its current maximum lowest level. At the 2,112' level, the lake surface will be 14% smaller than currently exists at 2,192'. The net result is that the Kachess lakeshore will exhibit a wider expanse of beach similar to what is currently experienced at Lake Cle Elum.

Conclusion:

Benefitting from good transportation linkages and a reasonably close proximity to the prosperous and densely populated greater Seattle/Puget Sound area, this picturesque, mountainous area has been able to successfully shift its economy from resource based timber and coal mining to resource based tourism. The areas skiing, reservoir lakes, rivers and national forest land have proved to be a great attraction. Although the areas permanent population is not significantly expanding, it has become a popular location for vacation homes, particularly for urbanites from the greater Seattle/Puget Sound area. Lake Keechelus is closest to the Snoqualmie Pass ski slopes but has less appeal for summer water sports. Nearby Lake Kachess though not 'ski in', is still quite close to the Summit ski area. This lake reflects more of an isolated pristine wilderness with relatively small enclaves of vacation homes on small lots, many of which front on the reservoir boundary emulating actual lake frontage. With respect to the year round homes, Lake Kachess developments typically have CCRs to uphold development standards.

The After condition KDRPP project will increase the size of the Lake Kachess beach areas. Some boating activities will be curtailed during drought conditions, and either earlier in the year, or during years when the lake does not fully re-fill. To some extent, this condition already exists at Lake Kachess, but not as severe. Essentially, the manner in which the Lake Kachess benefits the surrounding property owners will likely trend toward that of the more severely drawn down Lake Cle Elum after the KDRPP project is completed and operational. Though there are various differences between the residential prospects of the two lakes (Kachess & Cle Elum), the limited supply of water oriented property at Lake Kachess, coupled with the typically larger / better quality residences, appears to have resulted in a comparatively more exclusive cache than homes in close proximity to Lake Cle Elum. Thus, in the After Condition, Lake Kachess will maintain its location preference relative to the three major lakes in the area.



Kachess Lake Subject Property Overview Map

A-13a. Introduction:

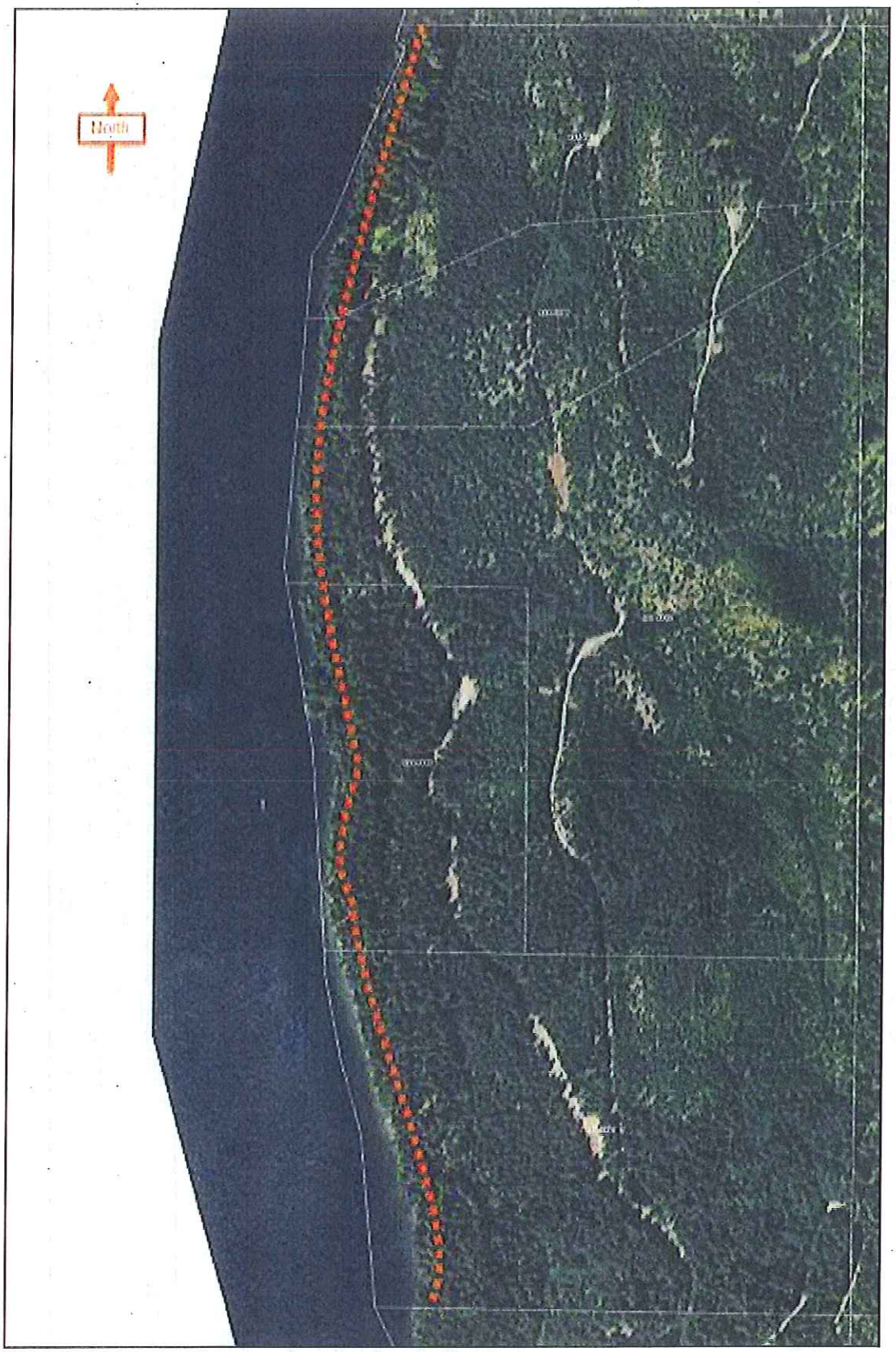
The subject of this Value Impacts Study are those properties along the perimeter of Lake Kachess that have a proximate and direct linkage with the lake. The process of delineation of the impacted area included observation of the lake perimeter and the developed and undeveloped properties, along with land use patterns; i.e., configurations of residential development. It was determined that land that was not in private ownership would not be included. Additionally, land owned by land trusts would likewise not be included. The area surrounding the lake is forested. Thus, the lake view quality diminishes rapidly as the distance from the lake shore increases. Moreover, while in private ownership, certain lake proximate parcels do not appear to be feasibly developed; i.e., due to physical constraints, development would be curtailed or improbable, so undevelopable properties were not considered impacted. Further investigation included market data confirmation interviews that were conducted with buyers, sellers and real estate agents in terms of the lake view amenity. And finally, review of property offerings; i.e., the manner in which Lake Kachess properties are marketed, and primarily through NWMLS, provided insight into the proximate lake influence on market value.

In the final analysis, and based on the foregoing, the impacted area was delineated at elevation 2,280' asl, or lower, along the lake perimeter. Properties considered impacted; i.e., subject to the value diminution opinions expressed herein as resulting from the KDRPP project, would be in private ownership, either feasibly developable or already reflecting a developed homesite, and at a minimum, benefitting from a filtered, or better, view of the lake. There are seven such areas along the Lake Kachess perimeter, and portrayed on the map appearing on the facing page. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. While building sites at higher elevations might have a view of the lake, this type of view is a more distant view. The KDRPP project will result in an approximate 14% lake surface reduction at maximum drawdown. In this connection, the lake will continue to present a reasonably similar distant view after the project is completed and becomes operational.

Included in the following are general descriptions of the homesite developments and/or areas that have land partially or totally within the impacted area. While the map on the facing page depicts the entire lake and the approximate

location of elevation 2,280' asl, the individual descriptions of the seven land areas have larger scale maps thereby better illustrating the delineation of the impacted areas.

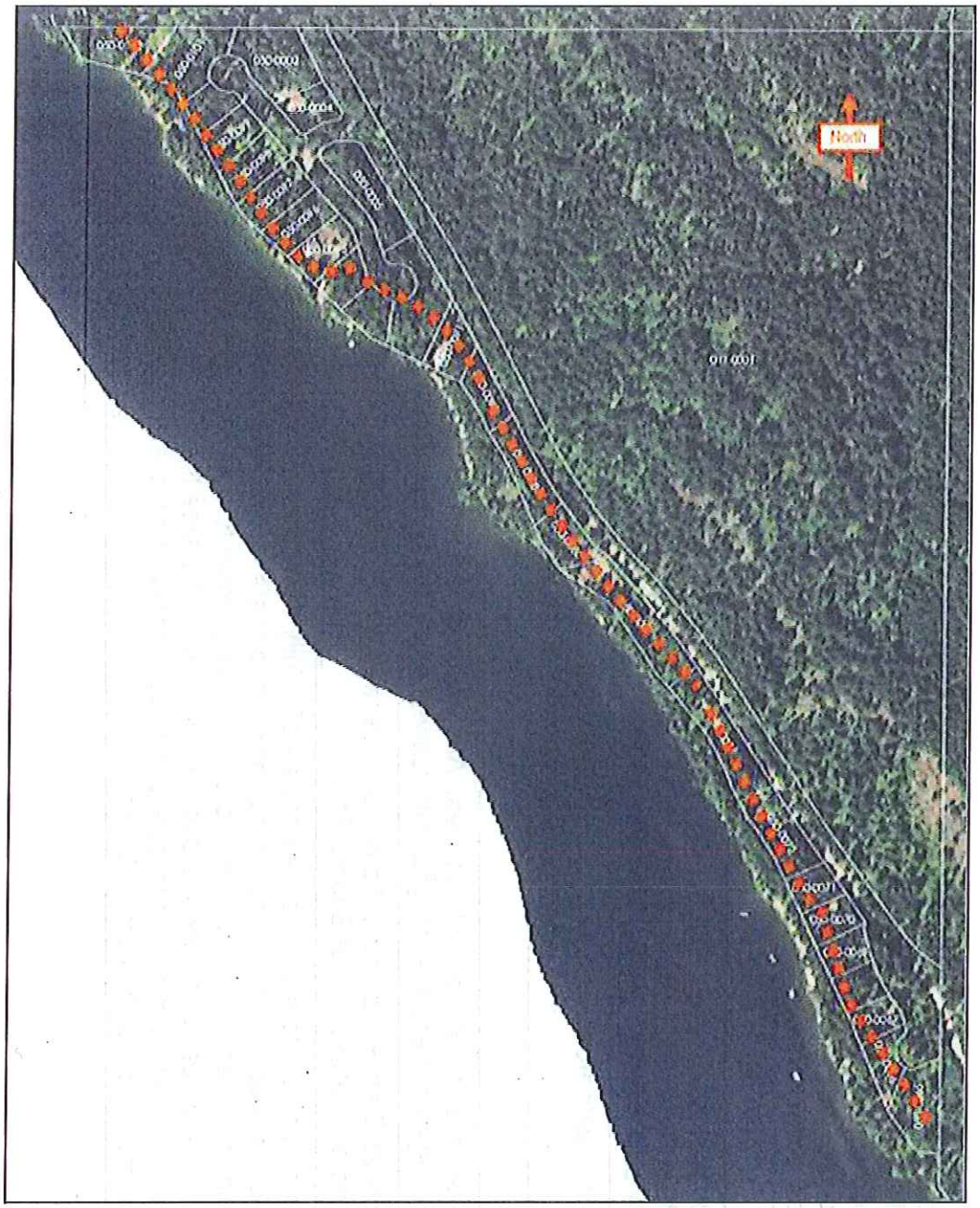
Summary - Section 5 Forestry Lots	
Location:	East side Section 5, T21N, R13E, WM at the northern terminus of Kachess Dam Road / FS 4818-000 Rd. All lots in the section front on the eastern Kachess Lake Reservoir Boundary and include land below the ±2,280' contour line with a full or partial, close up lake view.
Description:	All properties within this area are in are in commercial forestry use and private ownership. The lots have moderate to relatively steep topography. In 2011 the current owners had the parcels reconfigured to include frontage on the reservoir boundary and were reported to be in contemplation of potential homesites being located towards the water view oriented western edge of the lots. Land proximate to the shore generally has a moderately steep slope is considered accessible to pedestrians. Moving away from the lake shore the topography rises uphill with a moderate to somewhat steep slope. Because the land is wooded with primarily evergreen trees, land further from the water will typically have a view of the surrounding trees or at the higher elevations, potentially, a more remote territorial view that may include the lake.
Typical lot size:	20 ac. to 80 ac.
General description of homes:	None
Number lots:	5 - all with project boundary frontage above the lake.
No. of undeveloped lots:	5
Utilities:	The area is remote to public utilities. Any development will rely upon individual wells, septic systems and are 'off grid' with respect to electricity and land line telephone service.
Access:	Unpaved Forest Service road with seasonal access; ±6 miles from a paved public road (West Sparks Rd).
Comments:	Although all land within this area is zoned for Commercial Forest Use with a minimum lot size of 80 acres, these subject lots were developed prior to the implementation of the current CF zone. The intent of the zone is to support commercial timber production but also allows one home per legal lot.



Section 5 Forestry Lots

Approximate location of 2,280' asl elevation.

Summary - Kachess Summer Homes - Water Oriented Lots		
Location:	East side Section 21, T21N, R13E, WM between the eastern Kachess Lake Reservoir Boundary & ±2,280' contour line with a full or partial, relatively close up lake view.	
Description:	Land above the project boundary has a moderate to somewhat steep slope and pedestrian accessibility on the steepest lots relies upon development of staircases on the individual lots. Moving away from the lake shore, the topography rises uphill with a moderate to somewhat steep slope and cabins are typically built on narrow terraces. Because the Kachess Summer Homes area is heavily wooded with primarily evergreen trees, properties most proximate to the lake typically have a filtered view through the trees.	
Typical lot size:	0.30 ac. to 0.90 ac.	
General description of homes:	27% built ±2000 - to present; typically average quality 772 sq.ft. - 2,286 sq.ft 45% built ±1980s - 1900s; typically fair to average quality, 480 sq.ft. - 1,594 sq.ft 27% built ±1960s - 1970s; typically fair to avg. quality, 384 sq.ft. - 940 sq.ft	
Number lots:	25 with waterfront	3 lots in Summer Homes are not on the project boundary & have more filtered lake views.
No. of undeveloped lots:	6	
Utilities:	The area is remote to public utilities. Any development will rely upon individual wells, septic systems and are 'off grid' with respect to electricity and land line telephone service.	
Access:	Kachess Dam Rd, a gravel Forest Service road with seasonal access and ±3 miles from a paved public road (West Sparks Rd).	
Comments:	This portion of the subject area consists of a fully developed subdivision & is not eligible for further segregation. A number of property owners have placed small floating docks within the reservoir. A few of the lots with more gradual terrain have also been developed with private boat launches. Although all land within this area is zoned for Commercial Forest Use with a minimum lot size of 80 acres, these lots were developed prior to the implementation of the current CF zone.	



Kachess Summer Homes

Approximate location of 2,280' asl elevation.

Summary - Section 27 Forestry Lots	
Location:	East side Section 27, T21N, R13E, WM along Kachess Dam Road/FS 4818-000 ±1.5 miles North of West Sparks Rd. All lots in the section front on the eastern Kachess Lake Reservoir Boundary and include land below the ±2,280' contour line with a full or partial, close up lake view.
Description:	All properties within this area are in private ownership and are in commercial forestry use. The lots have moderate to relatively steep topography and a western exposure. In 2014 the current owners had the parcels reconfigured to include frontage on the reservoir boundary. Land proximate to the shore generally has a moderately steep slope and is considered accessible to pedestrians. Moving away from the lake shore, the topography rises uphill with a gradual to moderate slope and continues on the opposite side of the forest service road. Because the land is wooded with primarily evergreen trees, land further from the water will typically have a view of the surrounding trees or potentially at the higher elevations, a more remote, territorial view that may include the lake.
Typical lot size:	32 acres to 90 acres
General description of homes:	n/a
Number lots:	5 - all with project boundary frontage above the lake.
No. of undeveloped lots:	5
Utilities:	The area is remote to public utilities. Any development will rely upon individual wells, septic systems and are 'off grid' with respect to electricity and land line telephone service.
Access:	Unpaved Forest Service road with seasonal access; ±1.5 miles from a paved public road (West Sparks Road).
Comments:	Although all land within this area is currently zoned for Commercial Forest Use with a minimum lot size of 80 acres, these subject lots were developed prior to the implementation of the CF zone. The intent of the zone is to support commercial timber production but also allows one home per legal lot. Owners have placed a small floating dock within the reservoir.

Section 27 Forestry Lots

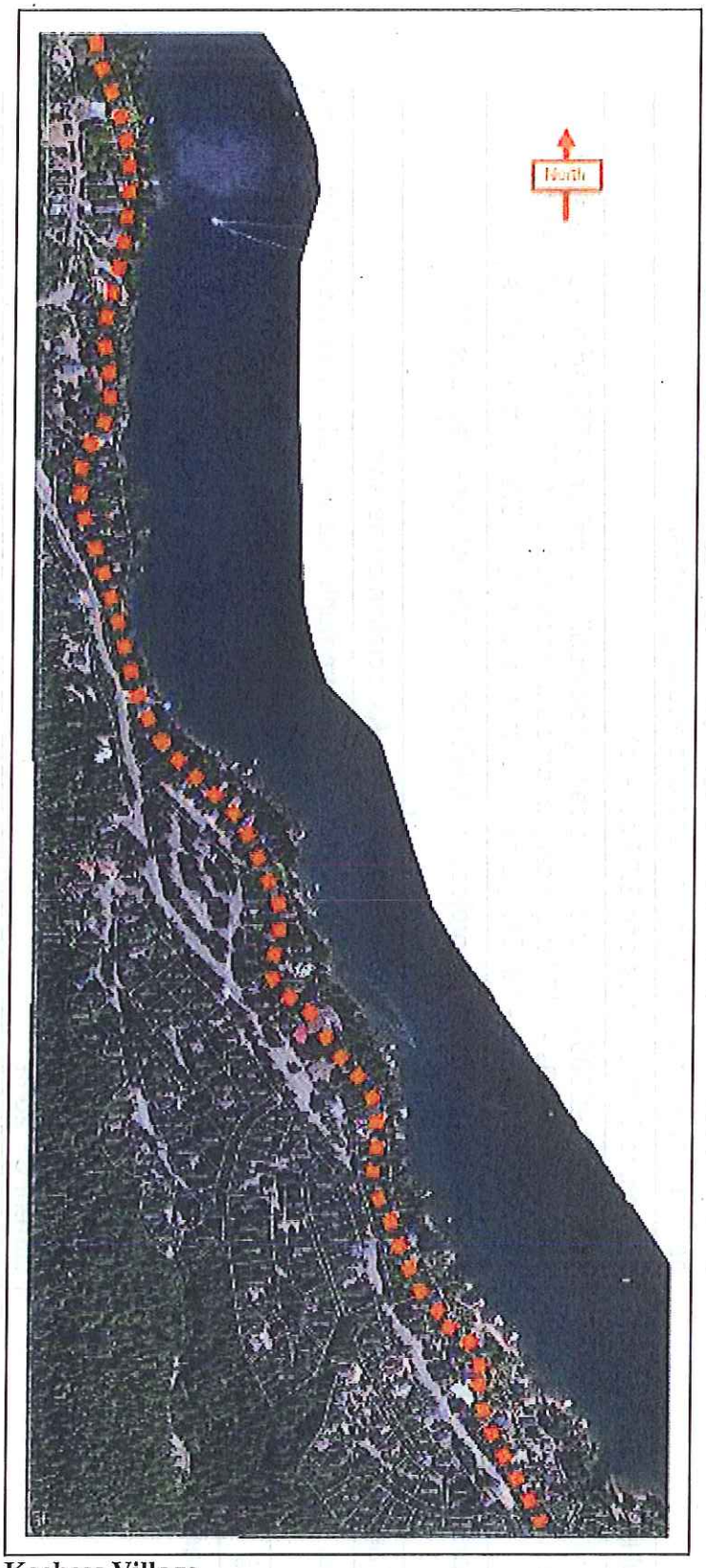
Approximate location of 2,280' asl elevation.

Summary - Taylor Resort Water Oriented Lots	
Location:	Southwestern most corner of Section 21, T21N, R13E, WM at the at eastern terminus of FS 4828-124 Road between the western Kachess Lake Reservoir Boundary and land below the ±2,280' contour line with a full or partial, close up lake view.
Description:	This area consists of a very small enclave of off grid vacation homes located on a small point of land on the southwestern edge of the Lake Kachess reservoir with the homesites abutting the project boundary. Land surrounding the 3 homesites is generally wooded with coniferous trees.
Typical lot size:	0.10 ac. plus a 7.45 acre 'community' lot
General description of homes:	Average quality cabins: one 518 sq.ft. built in 1958; two built in mid-1990s with 1,334 sq.ft. & 2,048 sq.ft.
Number lots:	4 - all with project boundary frontage above the lake.
No. of undeveloped lots:	1, i.e., the community lot
Utilities:	The area is remote to public utilities. Homes rely upon septic systems and a shared well.
Access:	Unpaved Forest Service road with 4-wheel drive, seasonal access.
Comments:	This location is 1.5 miles from a paved county road (Via Kachess). Taylor Resort homes share the use of a small boat dock with gangway to the shore access constructed within the reservoir boundary. Although all land within this area is zoned for Commercial Forest Use with a minimum lot size of 80 acres, these subject lots were developed prior to the implementation of the current CF zone.

Taylor Resort

Approximate location of 2,280' asl elevation.

Summary - Kachess Village Water Oriented Lots		
Location:	East side Section 17, T21N, R13E, WM between the western Kachess Lake Reservoir Boundary and land below the ±2,280' contour line with a full or partial, close up lake view.	
Description:	The Village has CC&Rs to control development standards. Properties within the Village have access to a community boat launch and to a community beach. Lots along the edge of the Kachess Reservoir boundary generally have a moderate to low bank approach towards the lake and which is readily accessible by pedestrians. Because this subject area is wooded with primarily evergreen trees, properties further from the water typically have a view of the surrounding trees and abutting homes.	
Typical lot size:	0.21 ac. to 0.41 ac. plus one 3.04 acre lot	
General description of homes:	17.5% built ±2000 - to present; typically good quality or better, 2,585 sq.ft. - 6,102 sq.ft 65% built ±1980s - 1900s; typically average to good quality, 1,300 sq.ft. - 4,335 sq.ft 17.5% built ±1960s - 1970s; typically fair to avg. quality, 1,078 sq.ft. - 3,360 sq.ft	
Number lots:	42 abutting the reservoir project boundary	6 with proximate view oriented location
No. of undeveloped lots:	2 excluding 3 in the Kachess Community Association ownership	
Utilities:	Public electricity is available. Water is via a community water system. Sanitation: individual septic systems.	
Access:	Paved public and paved private roads maintained for year round access.	
Comments:	Although none of the lots actually include lake frontage, certain homeowners have installed private boat docks within the Kachess Lake Reservoir property along the lakeshore closest to their parcels. All land within this area is zoned for Forest & Range use with a minimum lot size of 20 acres; in addition, 0.5 acre lots may be developed in cluster subdivisions. Most of these lots were, however, developed to a smaller size prior to the implementation to the current CF zone.	



Kachess Village

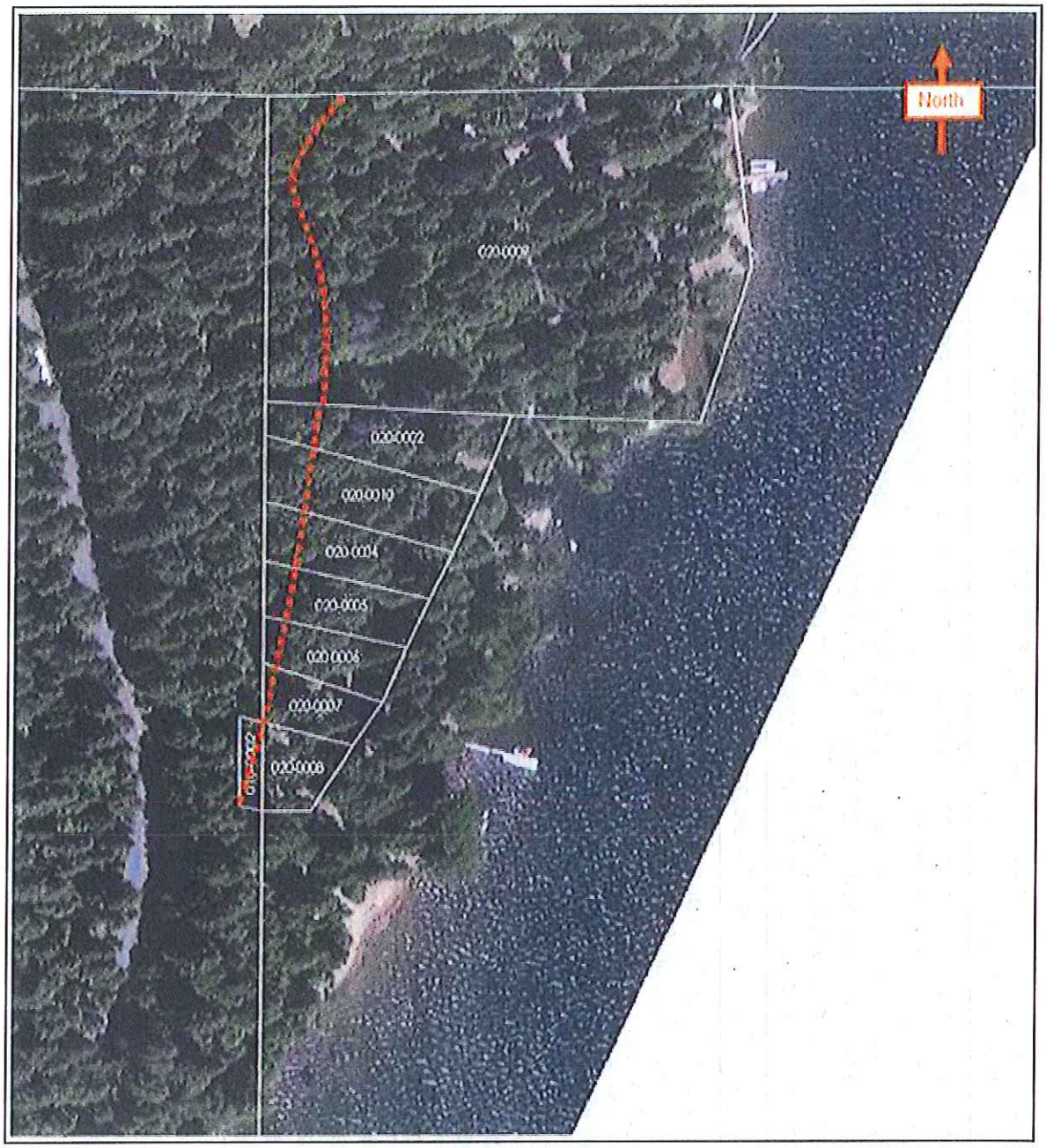
Approximate location of 2,280' asl elevation.

Summary - Kachess Ridge Water Oriented Lots	
Location:	East side Section 7, T21N, R13E, WM between the reservoir boundary & ±2,280' contour line with a relatively close up lake view.
Description:	Lots along the reservoir project boundary, generally have a moderate to low bank approach to the water.
Typical lot size:	2 ac. to 15 ac.
General description of homes:	1 lot is developed with 10 rental cabins, 168sq.ft. - 720sq.ft, low to fair quality, built in the 1940s & 1960s
Number lots:	3
No. of undeveloped lots:	2
Utilities:	Public electricity is available. Water is via private wells. Sanitation: individual septic systems.
Access:	Paved public road maintained for year round access.
Comments:	Kachess Ridge lots are wooded with evergreen trees and have filtered Lake views. The land is zoned R-5 which allows minimum lot sizes of 5 acres or 0.50 acres in a cluster plat. The 2 lots in this area that are smaller than 5 acres were developed prior to the implementation to the R-5 zone and not as part of a cluster development.

Kachess Ridge

Approximate location of 2,280' asl elevation.

Summary - Baker Lane Water Oriented Lots		
Location:	Northwestern most corner of Section 5, T21N, R13E, WM at Thetis Creek between the western Kachess Lake Reservoir Boundary and land below the ±2,280' contour line with a full or partial, close up lake view.	
Description:	A small enclave of rustic cabins is located off of Baker Lane. The road (Baker Lane) is developed inside and on the edge of the boundary of the Kachess Lake Reservoir property. Seven small lots are located adjacent to the westside of the road and have filtered lake views between the trees. The 8th larger lot was developed with a group of rental cabins and is also wooded. The Baker Lane area has flat to gradually sloping terrain and the lake front is readily accessible by pedestrians.	
Typical lot size:	0.12 ac. to 0.45 ac. + a 4.34 ac parcel with the rental cabins	
General description of homes:	Rustic cabins on individual lots were built ±1940s & 1950s; low quality, 450 sq.ft. - 600 sq.ft. (1 at 1,200 sq.ft); Baker Cabins (14) are of the same quality & age but run as small as 140 sq.ft.	
Number lots:	1 abutting the reservoir project boundary	8 with proximate view oriented locations
No. of undeveloped lots:	1; previously developed	
Utilities:	Public electricity is available. Water is via Thetis Creek; sanitation is via individual septic systems.	
Access:	Unpaved private road located 600' off of FS 4900 Road.	
Comments:	The Baker Lane lots share the use of the sole legally permitted boat dock on the lake. The Baker rental cabin property also developed a boat dock on the lake shore. Although all land within this area is zoned for Commercial Forest Use with a minimum lot size of 80 acres, these subject lots were developed prior to the implementation of the current CF zone.	



Baker Lane

Approximate location of 2,280' asl elevation.

Summary:

The seven sub-areas within the delineated impact area consist of privately owned land that is either developed, or considered developable, for residential lake shore view oriented uses. The properties either abut or are in close proximity to the Kachess Lake Reservoir project boundary at or below the 2,280' asl elevation contour and have a full or filtered, relatively close up, view of the lake. Though demand for properties within these subject areas would undoubtedly continue to be positive, our study of the market data suggests that these most proximate view oriented properties would tend to have some level of diminution in value in the After condition i.e. as a result of the shoreline waters of Lake Kachess retreating to a more distant location due to proposed lower drawdown level.

PART III, DATA ANALYSIS & CONCLUSIONS

A-13. Analysis of Highest and Best Use

Introduction: Highest and best use is that use, which as of a particular date, will result in the most profitable use of a given property. The definition of highest and best use as cited in the Appraisal Institute's *Dictionary of Real Estate Appraisal, Fifth Edition* is:

> The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value.
>
> The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

For any one use to be considered the highest and best use of a particular tract of land, its analyses must also include the following general considerations:

- Existing public and private land use regulations;
- Reasonably probable modifications of said regulations;
- Economic demand;
- Physical adaptability of the property;
- Neighborhood trends;
- Optimal use of the property;
- Effect of anticipated public or private improvements, located on or off site, to the extent that market actions reflect such anticipated improvements, and
- Anticipated economic feasibility as well as citing all significant market data utilized in developing such conclusions.

Highest and best use is relevant to this Value Impacts Study. And that relevance is in the context of the properties identified within the delineated impact area that have certain characteristics. As noted elsewhere in this report, the properties identified as impacted within the delineated area include those along the perimeter of the lake that are in private ownership, plus having certain additional characteristics. Namely, their respective locations are at, or below, elevation 2,280'asl, are considered to have a developed or developable homesite, as well as (at a minimum) a filtered view of the lake. In other words, they have a highest and best use for continued use for residential and/or future development for residential use in a configuration that benefits from a direct and proximate lake view. This incorporates approximately 102 properties of

which around 85 have frontage on the irrigation reservoir boundary. Thus, this report section discusses the characteristics of such properties that result lake oriented use being the highest and best use.

Noted elsewhere in this Value Impacts Study report is a narrative describing the preponderance of lake benefits being, to a great extent, oriented to its visual presence. Such properties also derive a use benefit as well. Such narrative goes on to describe the total list of lake benefits ever perceived by any buyer or seller of real property within the direct and proximate value influence of Lake Kachess is long and diverse. Thus, every individual sale of Lake Kachess real property includes consideration of some or all of these items, and prioritized to the individual preferences of such individual buyers and sellers. It is therefore important to understand that the real estate market based methodology of this value impacts study solely isolates total market value impacts, and does not allocate such total market value difference amongst multiple individual property attributes. Thus within such total value impacts, the aggregation of lake benefit elements is expressed in total, and as perceived by the buyers and sellers of the real property sales relied upon in support of the conclusions developed herein.

Having said that, the properties identified as impacted are close to the lake; i.e., direct and proximate to the lake. This is identified in the criteria; i.e., below a certain elevation, being developed or developable, and with at least a filtered view of the lake. Notwithstanding the fact that the total spectrum of lake benefits are diverse, observation and analyses of market evidence of lake proximate non view properties does not support the notion that the same (or any) diminution in value would result to a property on the lake perimeter that lacks a view. So in essence, the preponderance of lake benefits being "view related" in turn results in such lake view effectively being a threshold attribute for an included property identified as subject to the value impacts resulting from the project. Essentially, non view properties along the lake perimeter are not considered to be materially impacted.

And, at the other end of the spectrum, properties at higher elevations and having a more distant view of the lake are not considered to be materially impacted either. Essentially, the lake surface, at the most extreme draw down condition, will only result in a lake surface reduction of around 14%. In this connection, a view expectation of a large lake will be reasonably maintained for properties with a more distant view.

The properties identified as impacted within the delineated impact area are also further qualified by developability; i.e., either are already developed as a homesite, or have that (feasible) potential. Lakes form in topographic depressions, and usually between land forms that exist at higher elevations thus containing a body of water. Accordingly, topographic characteristics are not totally consistent or regular; rather, certain areas along the perimeter of a lake are usually non developable due to wetlands, steep topography, unstable slopes, stream courses, etc. These categories of undevelopable land are therefore excluded from the value impact opinions expressed herein for obvious reasons; i.e., the lake drawdown does not impact its market desirability or developability.

In the final analysis, the following discussion of highest and best use is provided to further define the characteristics of the properties that are identified as impacted within the delineated impact area. And principally, they solely include developed or feasibly developable homesites with a filtered view (or better) of the lake along the perimeter at or below elevation 2,280' asl.

In the following paragraphs, the four tests of highest and best use are applied, plus consideration of market demand, and preceded by a brief discussion of the concept of Larger Parcel, pursuant to UASFLA requirements. Highest and best use usually explores a range of uses and concludes highest and best use as the most profitable; i.e., that use developing the highest land value. The nature of this assignment, as defined within the prior stated Scope of Work, focuses more so on the characteristics of the impacted properties as a class within a delineated area; i.e., a stratification of the property class that is identified as impacted.

Obviously, residential lots with necessary utility availability and/or other means to support a recreational / permanent residence or vacation home represent the use most profitable, notwithstanding that such properties could actually be used for campsites, timber reproduction, or wildlife habitat. However, such uses do not represent the most profitable uses, as defined by market activity. Thus, the value diminution opinion expressed within this report applies to the value of the properties within the delineated impact area that can be identified as having a developed or feasibly developable homesite, and generally reflecting the range of typical uses for the area.

Larger Parcel:

The client has requested, to the extent possible for this report to be compliant with UASFLA. Thus, a brief Larger Parcel discussion is appropriate, and essentially, as to why a Larger Parcel discussion is not particularly consistent with the Scope of Work as stated heretofore. The *Larger Parcel*, also referred to as the "parent tract", references properties that meets the tests of unity of ownership (title), unity of use, and contiguity. The purpose of this Value Impacts Study is to develop an opinion of the diminution in market value resulting from the KDRPP project and relative to Lake Kachess. Thus, there is no particular single property being valued. Additionally, the opinions developed and reported herein relate to a class of properties identified within a delineated impact area. Since the concept of a Larger Parcel is more so applicable to a partial or total taking in an eminent domain context, it lacks applicability herein. The foregoing consideration is consistent with the intended use of this value impacts study; i.e., to become a part of the greater compendium of information, facts and studies relating to the KDRPP Project for consideration by appropriate State (SEPA) and Federal (NEPA) agencies charged with the responsibility of issuing a final RECORD OF DECISION regarding such project.

Physically Possible:

In terms of the properties identified as subject to the value diminution opinion expressed herein, the physically possible elements relevant to and in support of a residential development highest and best use include access, topography, utility availability, filtered view or better, and developability (or currently existing as a developed parcel). The size/quality range of residential improvements is from small rustic fishing cabins to upscale residences. While the east side of Lake Kachess has certain "off the grid" characteristics, certain portions of the west side of the lake are used for year around residences or vacation homes. Development on most portions of the west side of the lake is supported by power availability. So the east and west shores of the Lake Kachess reflect somewhat different use characteristics; however, the properties within each area, in terms of physical characteristics, include those with access typical to that of competitive properties, utility availability typical to that of competitive properties, and physical characteristics that allow for feasible residential development - along with, of course, a filtered (or better) lake view.

Legally Permissible:

Essentially, there are three different zoning designations associated with the relevant properties along the Lake Kachess perimeter. Generally located on the east shore of the lake, the zoning is for forestry lots with an 80 acre tract size

minimum. However, certain lots exist and appear to be legally developed or developable due to having been segregated prior to this zoning being effective. On the west side of the lake shore, certain tract sizes are at the same 80 acre minimum, but there are also smaller minimum tract sizes (around 20 acre and five acre minimums) and there is a cluster subdivision option associated with these zones as well. So greater flexibility exists on the west shore of the lake. And of course, legally developable lots also exist on the west shore perimeter of the lake by having been configured / segregated prior to the current zoning size minimums.

It is also important to understand that private ownerships do not extend into the lake and/or to the physical shoreline of the lake. Rather, when the Bureau of Reclamation (BoR) developed Kachess irrigation dam, and the rights to flood, typically to a certain elevation, the shoreline ownership was secured in favor the USA. Thus, and unlike frontage on a natural lake, the operation of the irrigation reservoir is managed for the benefit of agricultural irrigation and other factors (in stream flow, etc). There are no particular legal rights possessed by the surrounding private property owners relevant to the lake level being maintained to maximize the recreation benefits of such surrounding private property owners. While tethered docks, boat launches, and other types of facilities for watercraft are routinely found along the lake perimeter, it is reported that virtually none have been "permitted" in terms of a process by which permission for such facilities would be granted. Having said that, this situation tends to describe the "norm", and is thus a market expectation. However, the vast majority of such private boating facilities are already routinely inoperable, or challenging to use, during the current seasonal drawdown levels of Lake Kachess.

So in terms of legally permissible uses, the east and west shores of the Lake Kachess reflect somewhat different characteristics, not unlike the discussion about physically possible uses; however, the properties within each area, in terms of legally permissible characteristics, include those similar to that of competitive properties at the various locations around the lake. Obviously, in the final analysis, a property to be considered legally developed or developable must meet the applicable legally permissible criteria in order to be within the identified properties subject to the Lake Kachess KDRPP project value impacts opinions developed and reported herein.

Market Demand Analysis:

Lake Kachess represents a locale that combines the amenity of Lake Kachess, a dryer Eastern Washington climate, proximity to year around recreation activities, with convenient proximity by way of an Interstate Freeway (I-90) to the Western Washington population centers of Puget Sound. The improvements found around the lake perimeter range from rustic "off the grid" fishing cabins to upscale residences. Occupancies range from summertime or weekend getaways to full time residency and/or vacation residences. Except for the recent recession, the market for Lake Kachess properties is robust. Typically, it is a sellers market; i.e., demand exceeds supply of available properties.

The area is served by real estate agents both local to the nearby Kittitas County communities Cle Elum, Easton, Roslyn, and Ronald, but from the Puget Sound area as well. The active agents from the Puget Sound region underscores the fact that a sizeable part of the market is associated, either by buyer / seller or both, from the Puget Sound area.

As noted in the Regional and Neighborhood Descriptions report sections, there are three significant lakes in the area; i.e., Lake Kachess, Lake Cle Elum, and Lake Keechelus. Based on transaction price levels, size/quality of residences, proximity to alpine skiing at Snoqualmie Pass as well all the other forms of year round recreation, Lake Kachess appears present the more desirable location overall. Lake Keechelus is the least developed of the lakes and produces comparatively minimal sales activity.

The fundamental location superiority of Lake Kachess over Lake Cle Elum is one of the important elements associated with the development of the opinions in this Value Impacts Study. And while this Value Impacts Study presents a specific paired sales analysis that directly supports the foregoing, nonetheless, the following market demand analysis further fortifies the location preference conclusions developed herein.

On the following page, a summary of comparative statistics are presented demonstrating the performance of this real estate market, and comparison between Lake Kachess and Lake Cle Elum. While this is a summary, the full context of market data examined is included in the addenda of this report.

Lake/Reservoir Proximate Property Sales 2002 - 2015 (October)					
Improved Sales					
	No. Improved Sales	Average Sale Price	Avg sq.ft.	Avg Year Built	Avg. CDOM
Lake Kachess	22	$664,616	2,532	1989	227
Lake Cle Elum	25	$539,514	2,041	1975	265
Vacant Lot Sales					
	Number of Lot Sales	Average Sale Price	Avg Acres	Avg. CDOM	
Vacant Lot Sales Under 1.00 acre					
Lake Kachess	9	$338,167	0.29	196	
Lake Cle Elum	2	$117,500	0.45	430	
Vacant Lot Sales 1.00 acre to 6.10 acres					
Lake Kachess	0	n/a	n/a	n/a	
Lake Cle Elum	24	$283,388	1.29	n/a	

Note: "CDOM" = Continuous days on Market

While a detailed analysis is presented within the addenda, as noted, the above summary provides important insight into this market. And essentially, it provides additional support relating to the comparative superiority of Lake Kachess over Lake Cle Elum. Lake Kachess properties typically sell for more than otherwise similar Lake Cle Elum properties. Lake Kachess properties typically sell quicker than otherwise similar Lake Cle Elum properties. And finally, Lake Kachess properties, on average, are newer and reflect larger structures than the competitive peer group of properties at Lake Cle Elum. Thus, the market data examined supports the existence of a comparatively more robust market at Lake Kachess, and clearly a location preference.

Based on the foregoing, the relevant characteristics of the Lake Kachess market are reasonably positive. The other two lakes; i.e., Lake Cle Elum and Lake Keechelus already experience more severe drawdowns during late summer / early fall and especially when drought conditions exist. Lake Kachess, by measure of typical residence size and quality, is the more desirable locale. Based on an analysis of the area's competitive market demand, the lake drawdown contemplated by the KDRPP project will not subordinate the comparative desirability of Lake Kachess to the other two lakes. Rather, the lake level operations will become more similar. And, a significant portion of the existing inventory of developed properties at Lake Kachess will continue to represent comparatively larger, better quality structures, and thus, the

location desirability perceptions will remain similar to the pre-project conditions.

Financially Feasible and Maximally Productive Uses, & Highest and Best Use Conclusions:

Clearly, the financially feasible and maximally productive uses to which the Lake Kachess perimeter real estate can be adapted focuses on residential uses, and with a recreational component as well. The range of existing and/or developable uses is that which is reflected by the inventory of existing developed properties or developable building sites; i.e., seasonal use rustic fishing cabins to upscale residences intended for year around occupancy. Examination of sales of property along the lake perimeter clearly support the notion that these types of uses represent maximally productive uses. In this connection, the foregoing represents the highest and best use conclusion for the properties within the delineated area identified as impacted by the KDRPP project.

And in final summary, and for purposes of restatement of the properties to which these highest and best use and value impacts opinions herein apply, such opinions solely apply to the lake perimeter properties within the delineated area and identified as developable or feasibly developed, at or below elevation 2,280'asl, and having, as a minimum, a filtered view of the lake. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. Essentially, these properties reflect the characteristics of highest and best use, and benefit from the market demand analysis as discussed in the foregoing. Such value impacts opinions do not, however, apply to lake proximate properties that lack a view, or lake proximate properties that maintain a distant view.

In the following report section, the Value Impacts Study description, analyses and conclusions are presented.

A-14. STUDY DESCRIPTION, ANALYSES & CONCLUSIONS

Methodology and Scope:

The objective of this Value Impacts Study is to develop an opinion relative to market value impacts on privately owned real estate in the Lake Kachess area, and resulting from the KDRPP project. As stated elsewhere in this report, the responsive Scope of Work developed herein involves (1) identifying probable limits of project impacts, and; (2) developing and analyzing market data that would quantify probable impacts.

Identification of the probable limits of the project impacts involved a multiple step process, including: field inspection of the Lake Kachess perimeter; review of land and improved property transactions; studying ownership and land development patterns along the lake perimeter through Kittitas County GIS; considering listing information derived from NWMLS and particularly in terms of the manner in which the lake amenity is marketed; examination of topographic and aerial maps, as well as; comparison with other competitive lake oriented properties. This process, as described elsewhere in this report, led to the conclusion that certain properties within the direct and proximate value influence of the lake were the most likely to be impacted by the KDRPP project. This land area is identified on maps included within the prior Description of Impacted Area report section. Such properties are generally delineated as that land area lakeward and below elevation 2,280' asl. Such impact considerations are further limited to properties identified as being in private ownership, having at least a filtered view of the lake, as well as having a feasibly developable or developed homesite. This incorporates approximately 102 properties of which around 85 have frontage on the Lake Kachess irrigation reservoir boundary.

Expanding on the reasoning leading to this conclusion, it is noted that at virtually all locations on the lake perimeter, the land is forested. This condition exists not only on the privately owned land that extends lakeward to the reservoir perimeter project boundary, but at certain locations, there are somewhat dense concentrations of trees on the publically owned land inside the irrigation reservoir boundary and extending toward the physical shore of the lake. In this connection, opportunities for the lake to present a view amenity to the surrounding privately owned properties rapidly diminish within a short distance from the lake; i.e., simply, the view is obscured by trees. Therefore, lake views are typically more impaired and/or non existent above elevation 2,280' asl. Accordingly, the value

impacts were considered limited to those properties that were at or below such elevation, developable and/or having been developed, and having some form of lake view. In connection with properties at higher elevations to which the lake presents a view, these were considered in the context of the reported maximum KDRPP project reduction in lake surface at 14%. Accordingly, such view properties existing at higher elevations, and with a more distant view, will still be presented with a substantial lake view. As such, they are not considered impacted in terms of a measurable negative influence on market value.

With reference to developing and analyzing market data that would quantify the KDRPP project impacts, and in the following parts of this report section, market data (and analysis thereof) is presented that supports the value impacts opinions developed herein. Both an analysis methodology and geographic search area were necessarily identified. Several areas along the easterly slope of the Cascade Mountain Range (in Washington State) were investigated relative to market data. In the final analysis, the Cle Elum, Easton, Roslyn & Ronald areas were determined to provide the best available market evidence to support this study. This selection was made due to the unique combination of desirable attributes within the area of Lake Kachess, Lake Keechelus, and Lake Cle Elum, including diverse year around recreational opportunities coupled with year around interstate freeway access convenient to the population centers in the Puget Sound area of nearby Western Washington.

Moreover, since Lake Cle Elum has a past history of more severe drawdowns than Lake Kachess, market data derived from the Lake Cle Elum area presented an opportunity for comparison with Lake Kachess market data. Such comparison, after adjustment for basic location differences between Cle Elum / Ronald and Easton / Lake Kachess, produced a rather consistent difference of 5% to 10% isolated to the more severe lake drawdown associated with Lake Cle Elum. Therefore, this value diminution was projected to the Lake Kachess location relative to the After Condition (i.e., after the KDRPP project is complete and operational).

The methodology applied involves the study of market data for comparison with the objective of isolating the market price differential for a single difference between pairs of otherwise similar sold properties. In this case, that single difference is the value impacts resulting from the increased lake drawdown. In a textbook example of this process, these pairs of sales with a single difference are generally referred to as "matched pairs".

Ideally, market data for such purpose would be abundant, and that the similarities between the sales would be close to identical and/or extremely consistent. In reality, a real estate market, and the sold properties that comprise the real property rights being transferred therein, are rarely that ideally consistent. Thus, multiple paired sales must be developed and analyzed in terms of not only their more significant primary difference (i.e., lake drawdown impacts) but the less significant secondary differences as well. While this process as described could appear to be imprecise, it is nonetheless the most reliable manner in which real estate value impacts attributable to a single influence can be isolated.

In order to develop these market data comparisons, more than 100 sales of properties in the Lake Kachess and Lake Cle Elum areas were studied to various degrees. In this process, buyers, sellers and brokers of these types of real estate were interviewed. The manner in which such properties are marketed in terms of their amenity packages was also reviewed, and particularly through NWMLS. These market overview analyses let to the conclusion that, all things being equal, the location of Easton / Lake Kachess properties is considered more desirable than otherwise similar properties near Ronald / Lake Cle Elum.

While both the Easton / Lake Kachess as well as Ronald / Cle Elum areas are located in Kittitas County, and near irrigation reservoirs, as noted in the prior Market Demand Analysis, the general location of the Easton / Lake Kachess area is considered superior to that of the Ronald / Cle Elum area; i.e., higher prices are prevalent in the Easton / Lake Kachess area. The reasons for the comparatively higher Lake Kachess prices are varied; however, the Easton / Lake Kachess area is clearly more proximate to alpine skiing at Snoqualmie Pass, and encompasses an equivalent or better range of additional year around forms of land and lake based recreation as compared with Lake Cle Elum.

Additionally, Puget Sound residents make up a significant part of the active participants in the Lake Kachess / Lake Cle Elum markets. From downtown Seattle, the driving distance is around 65 miles to Lake Kachess. It is around 90 miles to Lake Cle Elum. This is a significant difference to the time conscious, commute weary, Puget Sound resident seeking rest, recreation, solitude and re-invigoration in the mountains of eastern Washington. So clearly, the comparative location attributes of Lake Kachess to Lake Cle Elum account for a significant amount of the price differences between the two locations.

Taking into consideration that there is a more extreme lake drawdown at Lake Cle Elum, it is apparent that there are two fundamental differences between the Easton / Lake Kachess area and the Ronald / Lake Cle Elum area. And those would be (1) perceived quality of location, and; (2) the comparative more severe lake drawdown at Lake Cle Elum. Since the objective of this Value Impacts Study is to solely develop impacts from a more extreme lake drawdown (i.e., the KDRPP Project), the structure of the analysis methodology must be configured to isolate this single difference amongst the paired market data studied for this purpose.

First, the relevance of the market data was considered. Properties on Lake Cle Elum have been historically subject to more severe lake drawdowns than Lake Kachess. To market data from Lake Cle Elum will incorporate this negative influence. While the Lake Kachess KDRPP project has been under consideration for the past few/several years, local real estate brokers indicate they have not observed any negative project influence relative to price levels of Lake Kachess properties. Simply, they did not report someone selling property that is in the direct and proximate influence of Lake Kachess lowering the price due to the project, or a buyer securing a significant price reduction due to the future impacts of the project. In this connection, it is concluded that sale property transactions occurring proximate to Lake Kachess do not yet reflect any negative influence from the future KDRPP project. Therefore, such sales represent viable benchmarks for purposes of analysis in connection with the Lake Kachess "pre project" condition; i.e., aka Before Condition.

Therefore, a paired sales analysis between Lake Cle Elum and Lake Kachess will incorporate the negative influence of the comparative more severe lake drawdown at Lake Cle Elum. However, such paired sales analysis will also capture the comparative location superiority of Lake Kachess over Lake Cle Elum. Thus, the structure of the paired sales analysis methodology must be configured to solely isolate the negative influence from the more severe lake drawdown. After quantification of this element of comparison, it can be projected to the Lake Kachess location as representative of the Lake Kachess After Condition; i.e., after the KDRPP project is constructed and operational.

This Value Impacts Study found that the negative lake drawdown influence was limited to properties in close proximity to the lake. Therefore, enlisting sale properties for purposes of paired sales analysis from these two locations, but that were NOT lake proximate, was considered a sound basis to isolate

the general location difference between Easton / Lake Kachess and Ronald / Lake Cle Elum. This was done, and is presented in the forthcoming report section. Essentially, five sets of such paired sales were developed for this purpose.

The same process was again applied with another four sets of paired sales, again contrasting the Easton / Lake Kachess area with that of the Ronald / Lake Cle Elum area. However, in this second analysis, such paired sales were instead *lake proximate* sale properties. Therefore, there were two fundamental differences between this second set of paired sales; i.e., they were subject to both a general location differential as well as a difference due to the more extreme lake drawdown at Lake Cle Elum. This process is likewise presented in the forthcoming report section.

Using the information developed from these two sets of paired sales analyses, the location influence developed from the first set of paired sales can be abstracted from the property value difference developed from the second set of paired sales thereby resulting in discrete indication reflecting the negative influence on property value due to a more severe lake drawdown. Simply, the first set of (non lake oriented) paired sales quantified a percentage amount relating to the two different locations. The second set of (lake oriented) paired sales quantified a percentage amount relating to two influences; i.e., it included the same location differential, but also the negative value impacts resulting from the more severe lake drawdown at Lake Cle Elum. Therefore, the influence of location can be removed from the percentage difference yielded by the second set of paired sales by simply subtracting the discrete location percentage developed from the first set of paired sales.

As noted, to accomplish this process, more than 100 property sales were considered between the two locations. To the extent possible, paired sales were developed that were as similar to one another as possible, with the exception of location and/or location - lake drawdown differences of course. However, reflecting the reality of real estate, and that no two properties are exactly the same, further analyses of such paired sales was applied relative to any secondary (less significant) differences that might exist between the individual paired sales.

This was done to determine to what extent, if any, such secondary differences would either exaggerate, minimize, or be essentially offsetting in connection with the total difference indicated between a particular pair of sales being studied.

Accordingly, the five paired sales relied upon for a general location adjustment, as well as the four paired sales relative to combined general location as well as comparative lake level value influences, were further studied relative to these less significant secondary elements of comparison. Making these secondary, more qualitative, considerations resulted in a more informed reconciliation of the final conclusions developed herein. Such secondary considerations are presented along with the two sets of paired sales analysis in the forthcoming report section.

Briefly though, after making such qualitative secondary considerations relative to the five (general) location paired sales, they were reconciled to a conclusion in which the non lake influenced Ronald / Lake Cle Elum area properties, in terms of general location attributes, were considered *10% to 15%* inferior to that of the non lake influenced Easton / Lake Kachess area, all other things being reasonably equal. Applying this same process to the lake oriented paired sales, the range of differences was reconciled at *15% to 25%*. And, that range included the *combined* value influences between the paired sales for (1) General location, as well as; (2) the more severe lake level operation at Lake Cle Elum.

Therefore, a combined location and lake drawdown differential favoring Lake Kachess by 15% to 25% can be adjusted to solely that reflecting the more severe lake drawdown at Lake Cle Elum as follows:

Combined Differences, Location & More Severe Lake Drawdown;	15% to 25%
Location Difference:	10% to 15%
Net Difference attributable to More Severe Lake Drawdown:	5% to 10%

Essentially, the total difference of 15% to 25% that applies to the combined value influences of general location as well as the more severe lake drawdown at Lake Cle Elum is adjusted, as shown in the prior table, by the single general location element of comparison (i.e., 10% to 15%). Such process in turn yields a value influence reasonably isolated to the negative value impacts of the more severe Lake Cle Elum lake level operation, and at -5% to -10%. And, this amount can be projected to Lake Kachess in the After Condition; i.e., after the KDRPP Project is constructed and is operational.

In the development of the range of percentage amounts for location and lake drawdown, care was exercised in relation to the application of the final percentage amount. Since the results of this Value Impacts Study is intended to reflect the percentage value diminution for Lake Kachess properties resulting from the KDRPP project, the percentage amounts were consistently developed and applied in contemplation of the Lake Kachess value benchmarks being the mathematical base.

In the following report section, the two paired sales processes are presented within the context of the processes noted in the foregoing.

General Location Comparison Paired Sales

Difference	Sale Number Parcel #	Grantor> Grantee Location	Sale Date	Adjusted Sale Price	Building Sq.ft.		Year Built	Land	Comments
100.00%	*L-1* Parcel # 48865	Near Lake Kachess Gamin > Ringoen 4330 Kachess Lake Rd Easton	Nov '11	$300,000 $204.92	1,464 416	Finished living area shed plumbed	1993	5.68 ac	2 bed/1 bath fair quality 1.5-sty cabin plus a fair quality shed with plumbing. Located on a wooded lot.
84.08% $/sq.ft. overall	*L-1a* Parcel # 699134	Near Lake Cle Elum Castillo > Cryderman 691 Goat Peak Ranch Rd Cle Elum	Mar '12	$255,000 $172.30	1,480	Finished living area	1992	5.00 ac	2 bed/1 bath fair to average quality 1.5-sty cabin with a wooded lot.
100.00%	*L-2* Parcel # 20490	Near Lake Kachess Staley > Wray 3260 Kachess Lake Rd Easton	May '12	$549,000 $180.18	3,047 709	Finished living area built in garage	2008	3.47 ac	4 bed/3.5 bath good quality 2.5 sty house on semi-sloping wooded lot. House features varnished wood facade & interior trim.
90.70% $/sq.ft. overall	*L-2a* Parcel # 14867	Near Lake Cle Elum Cashmere Bank > Cross 9200 SR-903 Ronald	Aug '13	$495,000 $163.42	3,029 1,080	Finished living area detached garage partially fin. attic	2009	3.94 ac	3 bed/2.25 bath good quality 1.5-sty house with detached garage with part finished attic. Located on wooded lot with shared access easement.

General Location Comparison Paired Sales - continued

Difference	Sale Number / Parcel #	Grantor> Grantee / Location	Sale Date	Adjusted Sale Price	Building Sq.ft.		Year Built	Land	Comments
		Near Lake Kachess							
100.00%	*L-3*	Vertefeuille > Johnston	Nov '10	$432,500	1,772	Fin. living area	2002	0.50 ac	3 bed/2.5 bath average to good quality 2-sty house on flat wooded lot. House features 2-sty vaulted ceilings & window wall in great room with extensive varnished wood inside & out.
		190 Kachess River Rd		$244.07	308	built in garage			
	Parcel #	Easton			1,200	detached garage w/ finished attic			
	562236								
84.01% $/sq.ft. overall		**Near Lake Cle Elum**							
	L-3a	McVoy > 4 Seas. Cabin	July '12	$350,000	1,707	Fin. living area	2002	0.50 ac	2 bed/2.5 bath average to good quality 1.5-sty house on flat wooded lot. House features 2-sty vaulted ceilings & window wall in great room with extensive varnished wood inside & out.
		80 Patrick Park Dr		$205.04	1,144	attached garage w/ finished attic			
	Parcel #	Ronald							
	15615								
		Land Near Lake Kachess							
100.00%	*L-4*	Lodge Ck. Land > Graza	May '15	$140,000	n/a	undeveloped lot		3.65 ac	Flat to moderate sloping wooded lot located on private gravel road, 500' from a paved public road.
	Parcel #	S side Lodge Creek Estates Rd							
	951449	500' E of Kachess Lake Rd, Easton							
89.29% $/sq.ft. overall		**Land Near Lake Cle Elum**							
	L-4a	Waite > Smith	July '14	$125,000	n/a	undeveloped lot		3.02 ac	Flat wooded lot fronting on a paved private road 0.75 mi. from a paved public road.
	Parcel #	1200 Banti Creek Rd							
	445634	Cle Elum							
		Land Near Lake Kachess							
100.00%	*L-5*	Smail > Satterhwaite	Aug '05	$80,000	n/a	undeveloped lot		0.50 ac	Flat wooded lot in a subdivision located on a paved road, 48' from an arterial road.
	Parcel #	Kachess River Rd; Lot 36							
	402236	Easton							
81.25% $/sq.ft. overall		**Land Near Lake Cle Elum**							
	L-5a	McLain > Frey	Sep '05	$65,000	n/a	undeveloped lot		0.50 ac	Wooded lot has flat topography & fronts on a paved arterial road.
	Parcel #	13651 Salmon La Sac Rd							
	216935								

Comparative Analyses, General Location Sale Transactions:

In this report section, the paired sales that tend to quantify the general location differential between Easton / Lake Kachess and Ronald / Lake Cle Elum are described, analyzed, and the location differences abstracted therefrom. As noted, non lake oriented paired sales have been intentionally selected for the purpose of isolating a general location differential between the two locales. While the primary difference between each of the paired sales is the element of comparison "location", less significant secondary considerations are also qualitatively discussed in the following in order to more comprehensively consider and reconcile such paired sales to a final range of percentage difference. Located on the two facing pages are tabular summaries of the five sets of paired sales considered. On such following tables, "acre" is abbreviated as "ac", "Finished" living area is abbreviated as "Fin", and "detached" garage is abbreviated as "det" due to limited space in the tabular format. In the addenda of this report are detailed descriptions of such sale properties, arranged in their corresponding pairs, as well as maps illustrating the location relationships between such sales.

As appearing on the table on the facing page, for otherwise generally similar properties, and with Easton / Lake Kachess (non lake influenced) sales representing a 100% location quotient, the Ronald / Lake Cle Elum (non lake influenced) sales indicating a corresponding less desirable location range of quotients from 90.70% to 81.25%. Or stated otherwise, the general location differential between Lake Kachess and Lake Cle Elum ranges between 9.3% to 18.75%. After qualitative consideration of the less significant secondary differences between these sale pairs, it was concluded as reasonable, and supported by this market evidence, to conclude a general location differential of 10% to 15% between the Easton / Lake Kachess area and the Ronald / Lake Cle Elum area. These comparative analyses are presented in the following.

Location Sale L-1 is located in the general Easton / Lake Kachess area. Location Sale L-1a is located in the general Cle Elum area. As noted on the facing exhibit, L-1a sold for around 84% of the price of L-1, when analyzed on an overall sales price per square foot of living area. The primary difference between these two properties is one is located in the Easton / Lake Kachess area, and the other is located in the Cle Elum area. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, the Easton / Lake Kachess property is considered to reflect comparatively less appealing architecture,

lacks a vaulted ceiling that is included with Sale L-1a, and lacks a deck that is included with Sale L-1a. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale L-1 having an enclosed sun porch not included with Sale L-1a, and Sale L-1 also has an old (small) cabin on site; a property component not included with Sale L-1a. Overall, and in consideration of the secondary elements that differ between these two sales, the sun porch and small cabin of L-1 are considered to influence the price differential more than the vaulted ceiling, architecture and deck of L-1a. Thus, the 84% indication of these paired sales; i.e., around a 16% location differential, is considered slightly exaggerated and thus a slight upper limit indicator.

Location Sale L-2 is also located in the general Easton / Lake Kachess area. Location Sale L-2a is located in the general Ronald / Lake Cle Elum area. As noted on the facing exhibit, L-2a sold for around 91% of the price of L-2, when analyzed on an overall sales price per square foot of living area. The primary difference between these two properties is one is located in the Easton / Lake Kachess area, and the other is located in the Ronald / Lake Cle Elum area. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, the Easton / Lake Kachess property has a slightly smaller lot in comparison to Sale L-2a, as well as slightly smaller garage. Additionally, the L-2 sale occurred a little more than a year prior to L-2a, and the market was marginally improving at that time. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale L-2 has an extra bedroom as compared with L-2a, and in vacation homes, the capacity of sleeping accommodations are particularly relevant. Additionally, L-2 has a small creek on the site. Overall, and in consideration of the secondary elements that differ between these two sales, the secondary differences between these two sales are considered to be essentially offsetting. Thus, the 91% indication of these paired sales; i.e., around a 9% location differential, is considered a reasonable indicator for the element of comparison, location.

Location Sale L-3 is also located in the general Easton / Lake Kachess area. Location Sale L-3a is located in the general Ronald / Lake Cle Elum area. As noted on the facing exhibit, L-3a sold for around 84% of the price of L-3, when analyzed on an overall sales price per square foot of living area. The primary difference between these two properties is one is located in the Easton / Lake Kachess area, and the other is

located in the Ronald / Lake Cle Elum area. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, include L-3a including a hot tub not included with L-3, and L-3 occurred in 2010 whereas L-3a occurred in 2012. The market was considered to be marginally improving during that time interval. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include L-3 having an extra bedroom and larger garage area. Overall, and in consideration of the secondary elements that differ between these two sales, most of the secondary elements are considered generally offsetting; however, with L-3 being a slightly older sale, the overall difference between these two sales is considered to be slightly minimized. Thus, the 84% indication of these paired sales; i.e., around a 16% location differential, can be considered a slight lower limit indicator for the element of comparison, location.

Location Sale L-4 is also located in the general Easton / Lake Kachess area. Location Sale L-4a is located in the general Cle Elum area. These two sales are both vacant building lots. They have been analyzed on the basis of sales price per site. As noted on the facing exhibit, L-4a sold for around 89% of the price of L-4. The primary difference between these two properties is one is located in the Easton / Lake Kachess area, and the other is located in the Cle Elum area. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, include L-4a having frontage on a year around creek and the site purchase included plans for a cabin. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include L-4 being a slightly larger lot and a comparatively more recent sale; i.e., the L-4 transaction occurred around 1+ years later than L-4a and during this interval, the market was improving. Additionally, L-4 is closer to a paved road. Overall, and in consideration of the secondary elements that differ between these two sales, the secondary differences between these two sales are considered to be essentially offsetting. Thus, the 89% indication of these paired sales; i.e., around an 11% location differential, is considered a reasonable indicator for the element of comparison, location.

Location Sale L-5 is also located in the general Easton / Lake Kachess area. Location Sale L-5a is located in the general Ronald / Lake Cle Elum area. These two sales are both vacant building lots. They have been analyzed on the basis of sales price per site. As noted on the facing exhibit, L-5a sold

for around 81% of the price of L-5. The primary difference between these two properties is one is located in the Easton / Lake Kachess area, and the other is located in the Ronald / Lake Cle Elum area. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, include L-5 being subject to some limited highway noise from I-90. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include L-5 reflecting a lot configuration superior to that of L-5a. However, L-5a is located on a well traveled arterial. Overall, and in consideration of the secondary elements that differ between these two sales, the secondary differences between these two sales, the arterial frontage v. I-90 traffic noise are considered offsetting; however, the better configuration of L-5 tends to slightly exaggerate the overall difference between these paired sales. Thus, the 81% indication of these paired sales; i.e., around a 19% location differential, is considered slightly exaggerated and thus a slight upper limit indicator.

The results of the foregoing analyses appear on the following table:

	Percentage Difference	Overall Offsetting or Equal	Slightly Exaggerated	Slightly Minimized
Sales L-1 & L-1a	16%		XX	
Sales L-2 & L-2a	9%	XX		
Sales L-3 & L-3a	16%			XX
Sales L-4 & L-4a	11%	XX		
Sales L-5 & L-5a	19%		XX	

Consideration of the foregoing leads to the conclusion it is reasonable, based on these paired sales, that there is a general location differential between the Easton / Lake Kachess area and the Ronald / Lake Cle Elum area in the amount of 10% to 15%. The maximum indicator (L-5) at 19% is considered to be slightly exaggerated by virtue of secondary value influences. The two 16% indicators are juxtaposed; i.e., with L-3 being considered slightly minimized by secondary value influences and L-1 being considered slightly exaggerated by secondary value influences. However, this is not unusual in connection with the analysis of real estate markets. A real estate market does not have any structure within that provides the level of price consistency of other types of markets, like a stock or bond market. Rather, it is an aggregation of multiple transactions transferring assets (real property) that do not have

uniform characteristics. The two indicators that are considered to reflect offsetting or equal secondary value influences were L-2 and L-4 and indicated 9% and 11% respectively. They tend to represent a reasonably sound indication, and one that would reflect the notion that a general location adjustment would not be less than 10% between the two locations being tested. L-5 is an upper limit at 19%, thus a reasonable corresponding upper end of a range would be less than 19%. In connection with L-1 and L-3 at 16%, L-1 reflected less secondary influences and thus, its characterization of reflecting a slightly exaggerated indication at 16% is considered an upper limit indicator. Therefore, in the final analysis, a range of 10% to 15% is considered appropriately derived from these data, and in connection with a general location differential between the non lake influenced property at the Easton / Lake Kachess versus the Ronald / Lake Cle Elum location.

In this connection, such range will be employed to remove the location influence from the following paired sales study, which includes lake oriented property at Lake Kachess and Lake Cle Elum, and reflects value influences from differences attributed to both "Location" as well as the comparatively more "Severe Lake Drawdown" at Lake Cle Elum.

Close Water View / Location Paired Sales

Difference	Sale No. / Parcel #	Grantor> Grantee / Location	Sale Date	Sale Price	Building Sq.ft.	Year Built	Reservoir Bndry. Frontage	Land	Comments
		On Lake Kachess							
100.00%	*W-1*	Vermillion > Wenstrup	Jan '15	$850,000	3,931 Finished living area	1996	85'	0.25 ac	5 bed/3 bth good quality 3-sty house + 2nd floor guest quarters over garage (attached with a covered breezeway) on a relatively flat wooded lot.
		60 Mtn. View Ln		$216.23	3,194 Main house		low		
	Parcel#	Easton			737 Guest quarters	1991	bank		
	436835				737 det. garage	1991			
					264 dock & gangway				
		On Lake Cle Elum							
87.76%									4 bed/3 bth good quality 1-sty with daylight basement that was fully finished with most of the bed-rooms, bathrooms, & family room. The wooded lot has sloping terrain with medium bank access to the lake.
$/sq.ft.	*W-1a*	Rusch > Kelly	Jan '15	$700,000	3,689 Finished living area	1966	106'	0.76 ac	
overall		310 Sandelin Lane		$189.75	2,063 Upper floor	remodeled	moderate		
	Parcel #	Ronald			1,626 Daylight basem't	in	bank		
	126935				1,320 det. garage/shop	1996			
					528 det. garage	1998			
						1996			
		On Lake Kachess							
100.00%	*W-2*	McKinzie > Aiken	Aug '14	$525,000	2,110 Finished living area	1979	100'	0.41 ac	2-sty 3 bed/2 bth avg. quality 1970's contemporary cabin. Property is in average to good condition but has not been updated. Guest quarters are in daylight basement of garage & include a kitchenette, bath & sauna plus living area & bedroom. Terraced sloping lot with low bank access to the lake.
		2360 Via Kachess Rd		$248.82	1,524 House		low		
	Parcel #	Easton			586 Guest quarters		bank		
	506835				624 Det. garage	1990			
					228 dock & gangway				
		On Lake Cle Elum							
76.42%									1970's contemporary 1&2-sty 3 bed/2 bth avg. quality cabin home. Interior features an open floor plan, vaulted ceilings, extensive T & G wood work throughout. Property was in average to good condition but has not been updated. Lot is relatively flat with low bank access to the lake.
$/sq.ft.	*W-2a*	Beirek > Schubring	Oct '14	$425,000	2,235 Finished living area	1977	150'	1.07 ac	
overall		12301 SR-903		$190.16	2,235 House		low		
	Parcel #	Ronald			240 Att. garage	1985	bank		
	291934				660 Det. garage	1985			

Close Water View / Location Paired Sales - continued

Difference	Sale No. / Parcel #	Grantor> Grantee / Location	Sale Date	Sale Price	Building Sq.ft.	Year Built	Reservoir Bndry. Frontage	Land	Comments
		On Lake Kachess							
100.00%	*W-3*	Blair > Ryyanen 42 Mtn View Lane Parcel # Easton 456835	Aug '14	$505,000 $462.45	1,092 Finished living area 1,092 Cabin	1979	74' low bank	0.24 ac	1 bed/1 bath fair to average quality 1-sty cabin with loft. Lot is relatively flat and has low bank access to the lake. Cabin has not been updated but was in good condition. Recorded sale price of $506,500 included a used 17,500 watt generator ($1,500) reflecting a $505,000 sale price for real property.
		On Lake Cle Elum							
76.21% $/sq.ft. overall	*W-3a*	Degrosellier > McClinton 200 Sandelin Lane Parcel # Ronald 266935	Sep '14	$394,000 $352.42	1,118 Finished living area 1,118 Cabin	1965	96' low bank	0.42 ac	2 bed/2 bath fair to average quality 1.5-sty cabin. Lot is relatively flat and has low bank access to the lake. Cabin has not been updated but was in good condition. Located on a paved private road 2 lots from a public road.
		Close View of Lake Kachess							
100.00%	*W-4*	Beaman > Faye 1680 Via Kachess Rd Parcel # Easton 696635	Oct '14	$880,000 $281.87	3,122 Finished living area 2,520 Upper floors 602 Daylight Bsmt (finished) 726 Built-in garage 318 Att. garage	2005	near, with view	5.37 ac	Lodge style with extensive wood 3 bed/3 bth very good quality 2-sty house plus finished partial daylight basement. Sloping wooded lot has a filtered view of the lake with 200' of forest service land between lot & vegetated edge of lakeshore.
		Close View of Lake Cle Elum							
78.62% $/sq.ft. overall	*W-4a*	Cap One NA> Schreuder 580 Domerie Bay Rd Parcel # Ronald 15492	Sep '13	$775,000 $221.62	3,497 Finished living area 3,497 Upper floors 1,320 Det. garage	2006	near, with view	1.04 ac	Lodge style/Craftsman style 3 bed/3 bth very good quality 1 & 1½-sty house. Semi wooded gradually sloping lot with 75' of semi-wooded private land between lot and vegetated edge of lakeshore

Comparative Analyses,
Close Water View / Location
Transactions:

In this report section, lake oriented paired sales that tend to capture the *COMBINED* general (1) location and (2) lake drawdown primary differences between Lake Kachess and Lake Cle Elum are described and analyzed. Since Lake Kachess, in comparison with Lake Cle Elum, reflects a more desirable location, part of the abstracted percentage sale price (primary) difference is due to location, which was quantified by the analysis presented in the prior report section. The balance of the difference is considered attributable to the comparatively more severe lake drawdown that has historically occurred at Lake Cle Elum. In this analysis, lake oriented paired sales; i.e., properties with a "close water view", at each location, have been intentionally selected for the purpose of isolating such combined primary differences of location and the comparative negative influence associated with Lake Cle Elum due to the more severe lake drawdown.

Appearing on the two facing pages are tabular summaries of the four sets of paired sales considered. In the addenda of the report are detailed descriptions of such sale properties, arranged in their corresponding pairs, as well as maps illustrating the location relationships between such sales. Essentially, these paired sales reflect, for otherwise generally similar properties, recently sold Lake Kachess properties that represent a 100% quotient, and which are compared with the Lake Cle Elum sales that in turn indicate a corresponding less desirable quotient of 87.76% to 76.21%. Or as otherwise stated, a range of percentage differences of around 12% to slightly less than 24%. And as noted, this range of differences primarily captures the two primary differences between Lake Kachess and Lake Cle Elum; i.e., Lake Kachess has a superior location, and Lake Kachess is superior to Lake Cle Elum since it historically experiences a less severe seasonal lake level drawdown. These four sets of paired sales are analyzed in the following report section in a manner similar to that which was presented in the prior report section; i.e., in a narrative comparative analysis.

While the primary differences between each of these paired sales are the elements of comparison "location" and "lake drawdown", less significant secondary considerations are also qualitatively discussed in the following comparative analyses as well. This was done to determine to what extent, if any, such secondary differences would either exaggerate, minimize, or be essentially offsetting in connection with the total difference indicated between a particular pair of sales being studied. After qualitative consideration of the less significant

secondary differences between these sale pairs, it was considered reasonable, and supported by this market evidence, to reconcile and conclude a combined location / lake drawdown differential of 15% to 25%; i.e., for the combined primary differences between the Lake Kachess area and the Lake Cle Elum area. The comparative analyses are presented in the following.

Close Water View / Location Sale W-1 is located in the Lake Kachess area. Close Water View / Location Sale W-1a is located in the Lake Cle Elum area. Both are lake oriented property sales. As noted on the facing exhibit, W-1a sold for around 88% of the price of W-1, when analyzed on an overall sales price per square foot of living area. Since they are both lake oriented properties, the combined primary differences in unit price are relative to location as well as the comparatively more severe lake drawdown that has historically occurred at Lake Cle Elum. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, include Sale W-1 being a comparatively larger structure and thus the unit price would be slightly less due to the larger size. Additionally, Sale W-1a reflects a larger lot and larger garage. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale W-1 having one more bedroom than Sale W-1a. Additionally, Sale W-1a has an older effective age, having been reportedly constructed in 1966, though remodeled near the same time Sale W-1 was constructed. And finally, Sale W-1 has a boat dock which is not included with Sale W-1a. This latter factor is, however, not emphasized as a secondary difference since the Lake Kachess lake levels are more amenable to the use and enjoyment of a boat dock and thus any value influence from the boat dock is appropriately incorporated into the unit price difference to isolate this advantage of Lake Kachess over Lake Cle Elum in this respect. Overall, and in consideration of the secondary elements that differ between these two sales, the larger lot, larger garage of W-1a are considered to influence the price differential more than the extra bedroom and slightly older effective age of W-1. Thus, the 88% indication of these paired sales; i.e., around a 12% combined location / more severe lake drawdown differential, is considered slightly minimized and thus a slight lower limit indicator for these combined primary differences.

Close Water View / Location Sale W-2 is located in the Lake Kachess area. Close Water View / Location Sale W-2a is located in the Lake Cle Elum area. Both are lake oriented property sales. As noted on the facing exhibit, W-2a sold for

around 76% of the price of W-2, when analyzed on an overall sales price per square foot of living area. Since they are both lake oriented properties, the combined primary differences in unit price are relative to location as well as the comparatively more severe lake drawdown that has historically occurred at Lake Cle Elum. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, Sale W-2a reflects a larger lot and larger garage. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale W-2 having a larger deck than W-2a and a kitchenette with an extra bedroom not included with W-2a. And finally, Sale W-2 has a boat dock which is not included with Sale W-2a. This latter factor is, however, not emphasized as a secondary difference since the Lake Kachess lake levels are more amenable to the use and enjoyment of a boat dock and thus any value influence from the boat dock is appropriately incorporated into the unit price difference to isolate this advantage of Lake Kachess over Lake Cle Elum in this respect. Overall, and in consideration of the secondary elements that differ between these two sales, the secondary differences between these two sales are considered to be essentially offsetting. Thus, the 76% indication of these paired sales; i.e., around a 24% combined location / more severe lake drawdown differential, is considered a reasonable indicator for these combined primary differences.

Close Water View / Location Sale W-3 is located in the Lake Kachess area. Close Water View / Location Sale W-3a is located in the Lake Cle Elum area. Both are lake oriented property sales. As noted on the facing exhibit, W-3a sold for around 76% of the price of W-3, when analyzed on an overall sales price per square foot of living area. Since they are both lake oriented properties, the combined primary differences in unit price are relative to location as well as the comparatively more severe lake drawdown that has historically occurred at Lake Cle Elum. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, Sale W-3a reflects a larger lot and one more bedroom than Sale W-3. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale W-3s having a slightly older effective age. Overall, and in consideration of the secondary elements that differ between these two sales, the secondary differences between these two sales are considered to be essentially offsetting. Thus, the 76% indication of these paired sales; i.e., around a 24% combined location / more severe lake drawdown differential, is considered a reasonable indicator for these combined primary differences.

Close Water View / Location Sale W-4 is located in the Lake Kachess area. Close Water View / Location Sale W-4a is located in the Lake Cle Elum area. Both are lake oriented property sales. As noted on the facing exhibit, W-4a sold for around 79% of the price of W-4, when analyzed on an overall sales price per square foot of living area. Since they are both lake oriented properties, the combined primary differences in unit price are relative to location as well as the comparatively more severe lake drawdown that has historically occurred at Lake Cle Elum. In terms of secondary elements, or differences between these properties, and that would tend to minimize the overall difference, Sale W-4a reflects comparatively more desirable topography than Sale W-4 plus the Sale W-4a garage areas are comparatively larger as well. However, secondary elements, or differences between these two properties that would in turn tend to exaggerate the difference include Sale W-4 having a comparatively smaller gross living area which, in turn, would influence the unit price upward thus slightly exaggerating the unit price differential. Additionally, Sale W-4 is a comparatively larger lot, though reflecting more irregular topography than Sale W-4a, plus Sale W-4 occurred later than Sale W-4a, thus tending to slightly exaggerate the unit price differential. Overall, and in consideration of the secondary elements that differ between these two sales, the larger lot and later sale date of Sale W-4 are considered to influence the price differential more than the comparatively more desirable topography and larger garage area of Sale W-4a. Thus, the 79% indication of these paired sales; i.e., around a 21% combined location / more severe lake drawdown differential, is considered slightly exaggerated and thus a slight upper limit indicator for these combined primary differences.

The results of the foregoing analyses appear on the following table:

	Percentage Difference	Overall Offsetting or Equal	Slightly Exaggerated	Slightly Minimized
Sales W-1 & W-1a	12%			XX
Sales W-2 & W-2a	24%	XX		
Sales W-3 & W-3a	24%	XX		
Sales W-4 & W-4a	21%		XX	

Consideration of the foregoing leads to the conclusion it is reasonable, based on these paired sales, that there is a combined more severe lake drawdown / location differential between the Easton / Lake Kachess area and the Ronald / Lake Cle Elum area in the amount of 15% to 25%. The

maximum indicators (W-2 & W-3) at 24% are considered to be effective paired sales with reasonably nominal secondary differences that are essentially offsetting. The lower limit, and being the W-1 pair, is considered slightly minimized, so the lower limit of the final selected range for these combined primary elements of comparison should be slightly above 12%. The 21% indicator of W-4 is juxtaposed with W-2 and W-3. It is considered a slightly exaggerated pair and thus an upper limit indicator; however, it is less than the more solid upper limit indicators provided by the W-2 and W3 sale pairs. This is not unusual in connection with the analysis of real estate markets. A real estate market does not have any structure within that provides the level of price consistency of other types of markets, like a stock or bond market. Rather, it is an aggregation of multiple transactions transferring assets (real property) that do not have uniform characteristics. In the final analysis, the lower limit at 12%, which is considered a slightly minimized indicator, is considered to support a 15% lower end of the range; i.e., above the 12% but less than that indicated by pairs W-2, W-3 and W4. Least reliance is placed on pair W-4 since it included the most secondary differences. At the upper end of the range, the indicators of the W-2 and W-3 pairs are rounded to 25%. In this connection, and in connection with the combined *location* and *more severe lake drawdown* differences isolated by the foregoing analyses, a range of 15% to 25% is considered appropriately derived from these data and represents the final conclusion of these paired sales analyses.

Therefore, in the foregoing, a 15% to 25% value differential was developed by comparison of Lake Kachess market data with Lake Cle Elum market data. Such value differential conclusion reflects the combined primary elements of comparison, and being, a LOCATION advantage of Lake Kachess over Lake Cle Elum, as well as, the negative influence of the MORE EXTREME LAKE DRAWDOWN at Lake Cle Elum. And whereas this report section served to isolate the differential of these *combined* advantages of Lake Kachess over Lake Cle Elum, the prior report section solely isolated the location differential relying on a different set of paired sales. Thus, the combination of these two analyses can serve to abstract the sole value influence of the more extreme lake drawdown, and as developed in the following report section.

Summary and Conclusions, Value Impacts Study:

In the first of the two foregoing report sections, a location differential between the general Easton / Lake Kachess area and Ronald / Lake Cle Elum area was developed by paired sales analyses, and in a range between 10% and 15%; i.e., the Easton / Lake Kachess area is considered superior in location to that of the Ronald / Lake Cle Elum area. In the second of the two foregoing report sections, the combined advantage of Lake Kachess over Lake Cle Elum was developed from lake oriented market data at 15% to 25%. This range includes two primary elements of comparison; i.e., the location advantage of Lake Kachess over Lake Cle Elum due to LOCATION, as well as the advantage of Lake Kachess over Lake Cle Elum due to the comparatively more severe lake drawdowns that occur at Lake Cle Elum. Thus, the value influence of "location" can be removed by simple abstraction and thereby solely indicating the value impacts due to the more severe lake drawdowns at Lake Cle Elum; i.e, resulting in a final Value Impacts Conclusion of **-5%** to **-10%.**

Essentially, the abstraction is portrayed in the following table:

Location/Lake Drawdown Range Differential:	-15% to -25%
Location Range Differential:	-10% to -15%
Net Differential attributable to Lake Drawdown:	**-5% to -10%**

Therefore, based on the foregoing, such net amount attributable to the more severe lake drawdown can be projected to Lake Kachess as the Value Impact of the proposed Lake Kachess KDRPP Project. Accordingly, it represents the final overall Value Impacts opinion of this Value Impacts Study. However, a discussion of further stratification of its applicability appears in the following paragraphs.

The -5% to -10% value impacts conclusion developed within this study report is considered to apply to the properties at or below elevation 2,280' asl around the lake perimeter, and having a full or at least a filtered view of the lake, and representing a developed homesite or a feasibly developable homesite. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. As noted, a lake view is somewhat of a threshold criterion. Thus it would follow that Lake Kachess properties with frontage on the irrigation reservoir boundary would generally experience more lake benefits than those within the impacted area, but without direct frontage on the irrigation reservoir boundary. In fact, the paired sales tend to support

this notion. In this connection, and as a further stratification of the impacted property class, the value impacts concluded herein would be applicable at the upper limit (i.e., -10%) relative to those properties on the irrigation reservoir boundary, and at the lower limit (i.e., -5%) if within the delineated area but otherwise qualifying as a developable / developed lot with at least a filtered view, but not fronting on the irrigation reservoir boundary.

A-15. Correlation and Final Conclusion

In the foregoing, a Scope of Work was detailed in which it was structured to describe, develop and conclude an opinion relative to the value impacts that would result on Lake Kachess property due to the Lake Kachess KDRPP project. That Scope of Work involved delineating a geographic area that could be impacted, and then identifying properties within such area that would likely be adversely impacted by the KDRPP project. The general limits of the geographic area included those properties surrounding the lake that exists at or below elevation 2,280 asl, were considered developed or developable to a residential highest and best use, and included, at a minimum, a filtered lake view or better. This incorporates approximately 102 properties of which around 85 have frontage on the irrigation reservoir boundary. The Scope of Work further developed a methodology by which such value impacts could be developed from real estate market evidence. That methodology, while including consideration of market data from an extensive geographic area along the east slope of the Cascade Mountain Range, ultimately led to the conclusion the most reliable market data evidence was a paired sales analysis between Lake Cle Elum and Lake Kachess.

Having executed that Scope of Work, and based on the geographic limits of our study, as well as the methodology applied, it is our opinion that, as of the 20th day of November 2015, and subject to the assumptions and limiting conditions, extraordinary assumptions and hypothetical conditions contained herein, the market value impacts resulting from the KDRPP Project, as defined geographically and by property characteristics, were in a percentage range between:

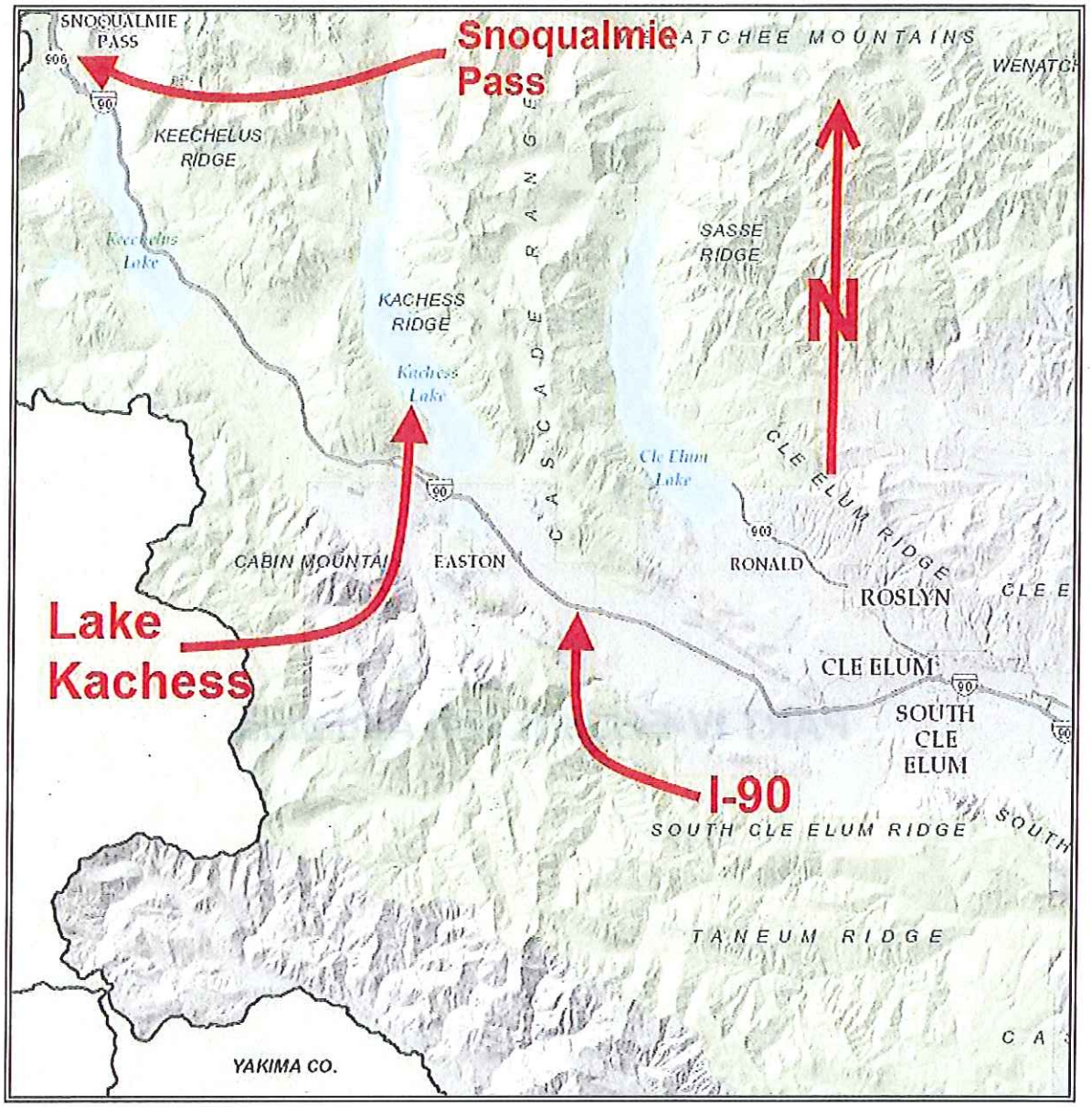
Five Percent and Ten Percent (Negative)
❖❖ - 5% and - 10% ❖❖

Respectfully Submitted,

Dean Potter, FRICS, MAI
General Appraisal Certification
1100151 (WA) C0000153 (OR)

PART IV-Exhibits and Addenda

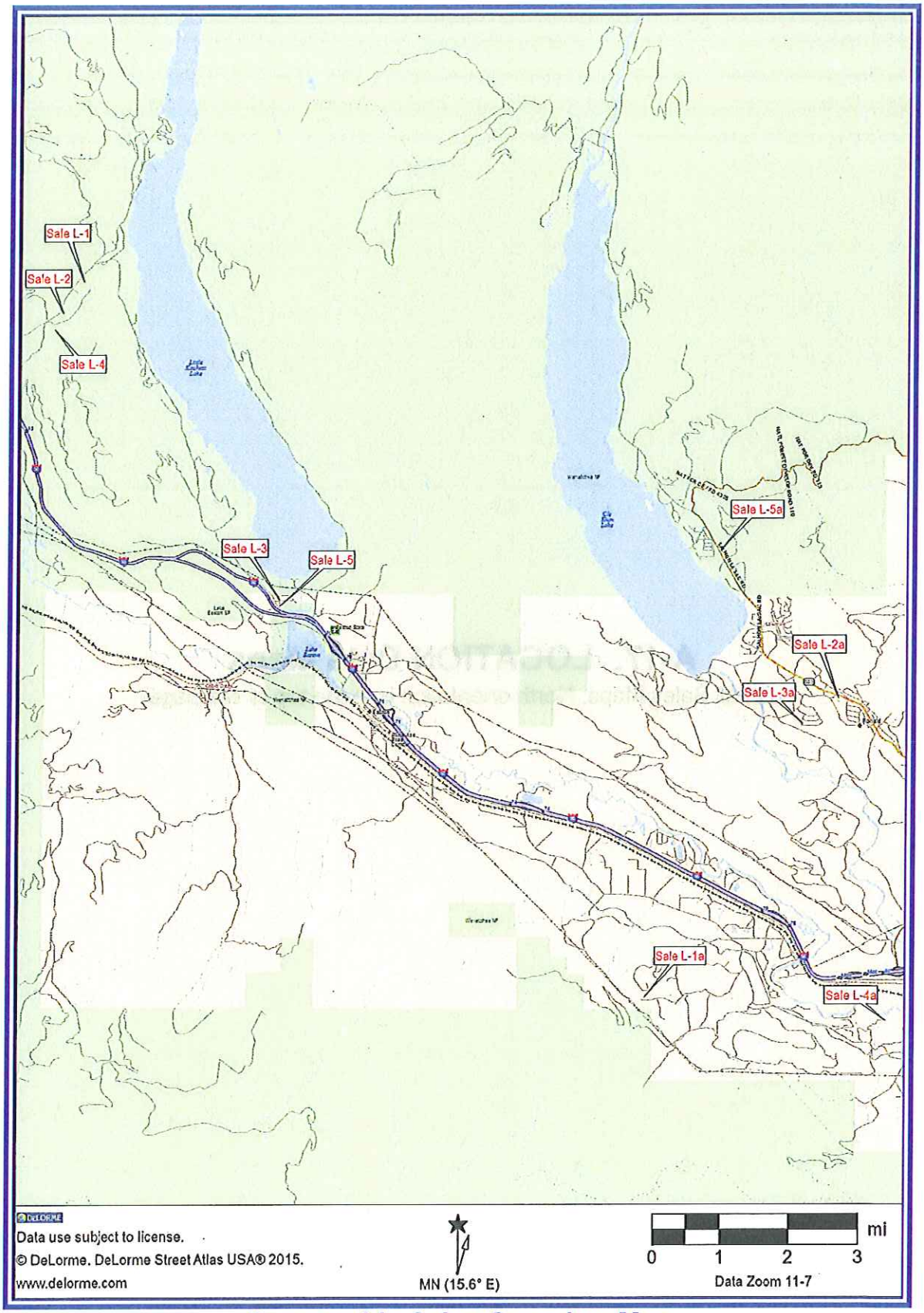
A-16. Location Map



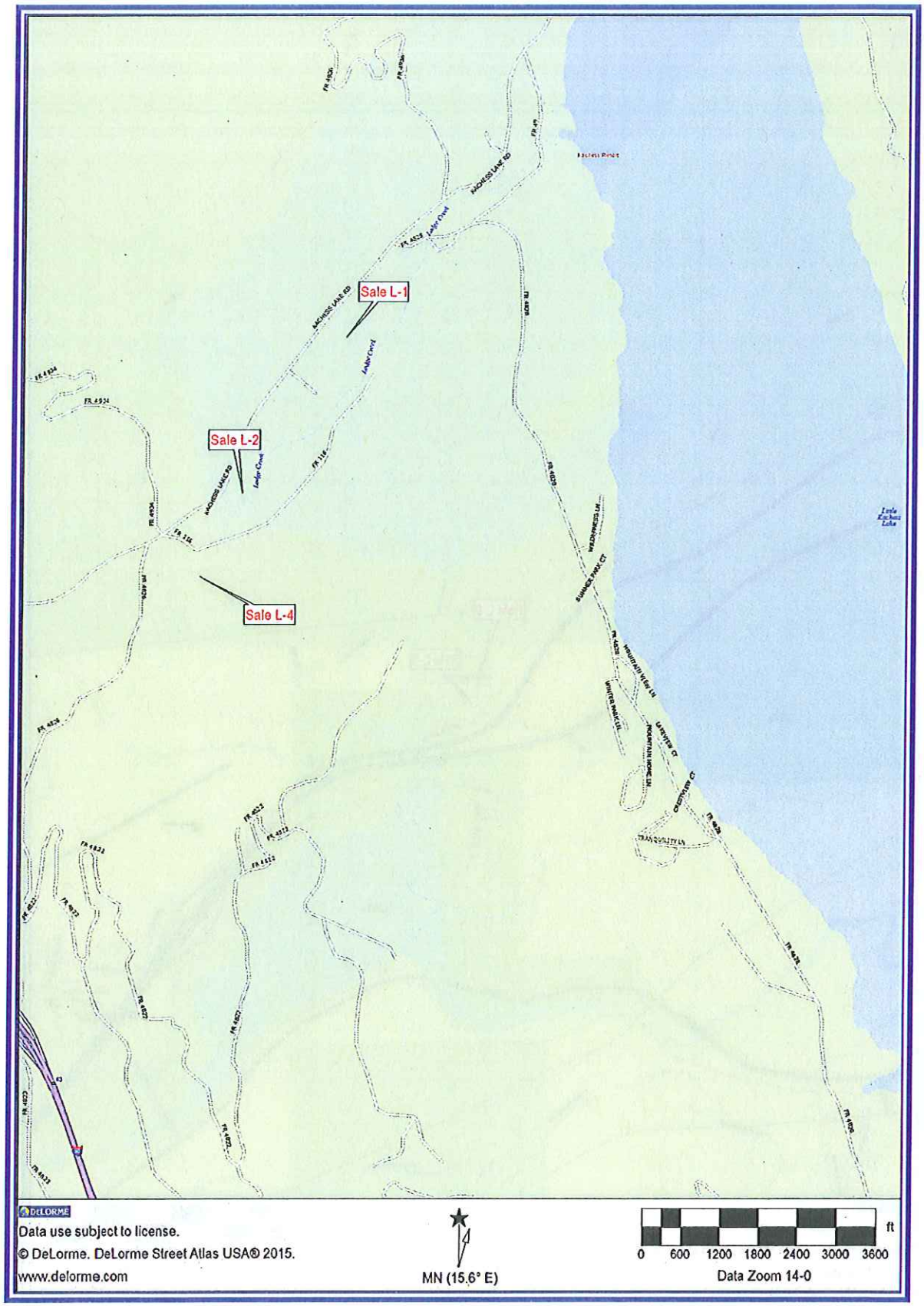
NOTE: Kachess Lake is located northerly of I-90, proximate to Snoqualmie Pass and Cle Elum, on the I-90 corridor and convenient by interstate freeway from the Puget Sound area of Western Washington. Historically, Lake Kachess water reservoir has experienced the least late summer / fall drawdown of the three lakes; i.e., Keechelus Lake, Cle Elum Lake and Kachess Lake. The KDRPP project will increase the drawdown during drought conditions.

A-17. LOCATION Data Maps

(On all Sales Maps, North orientation is to the top of the page)



Comparable Sales Overview Map


Sale L-1
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Sale L-4
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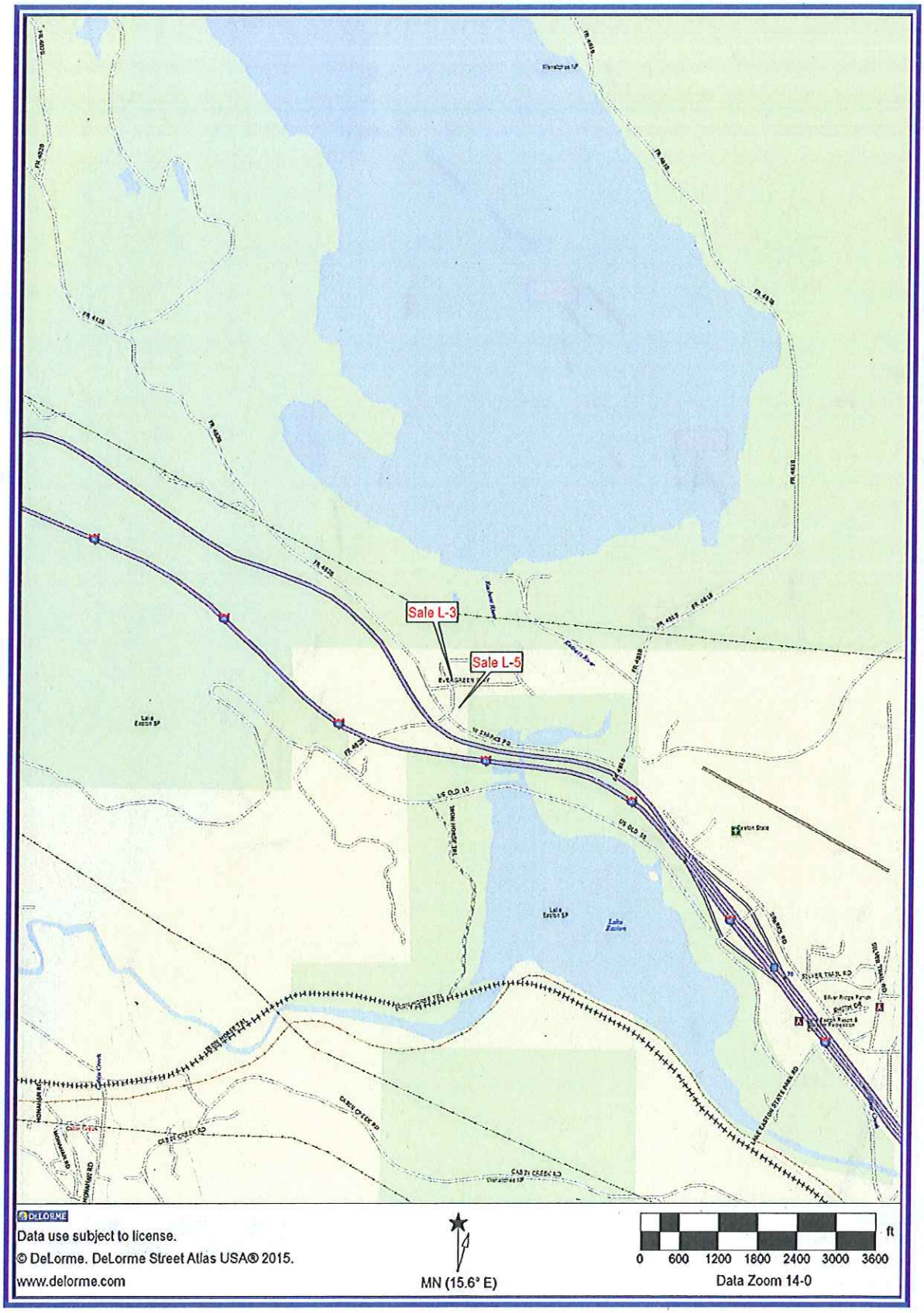
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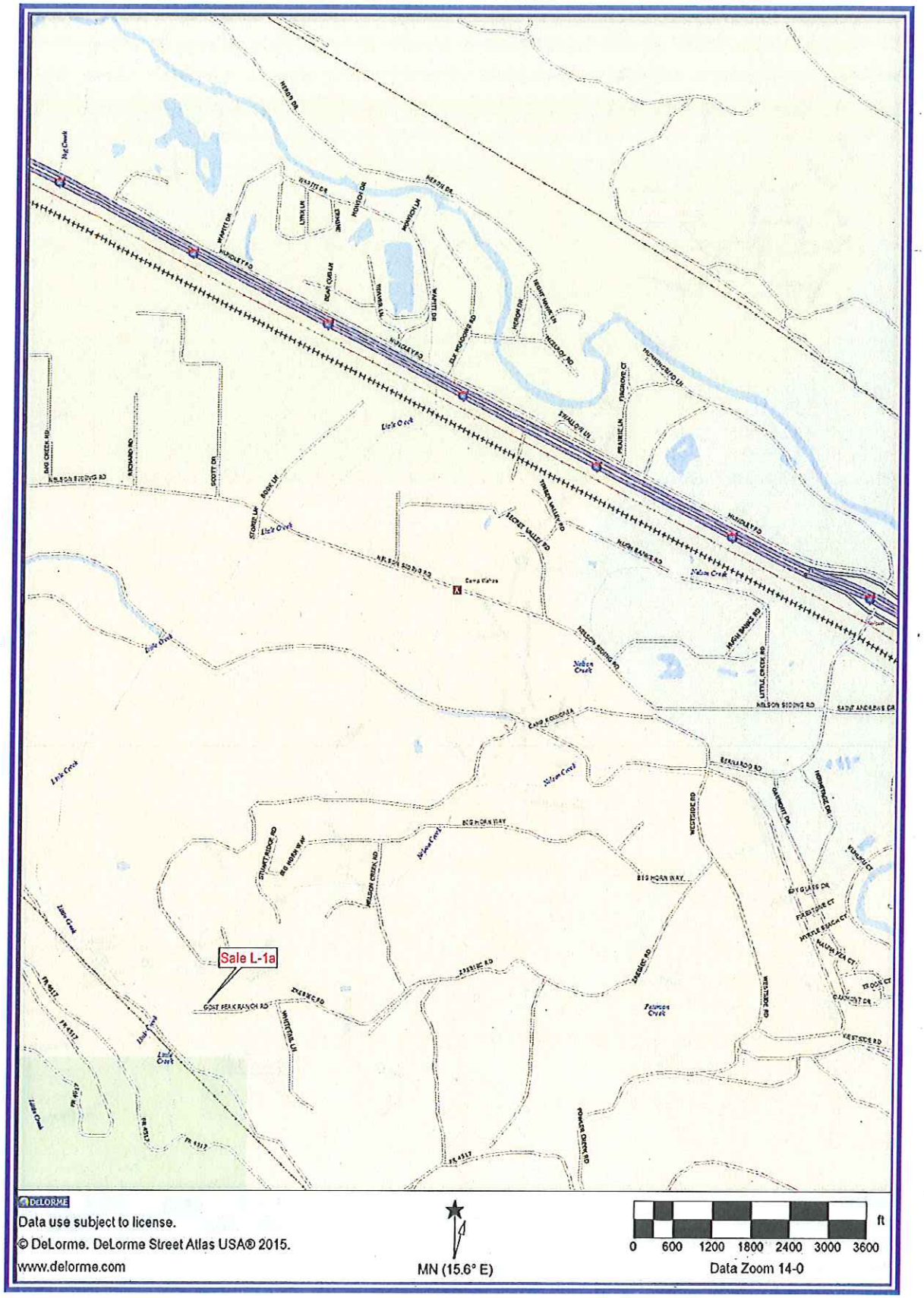
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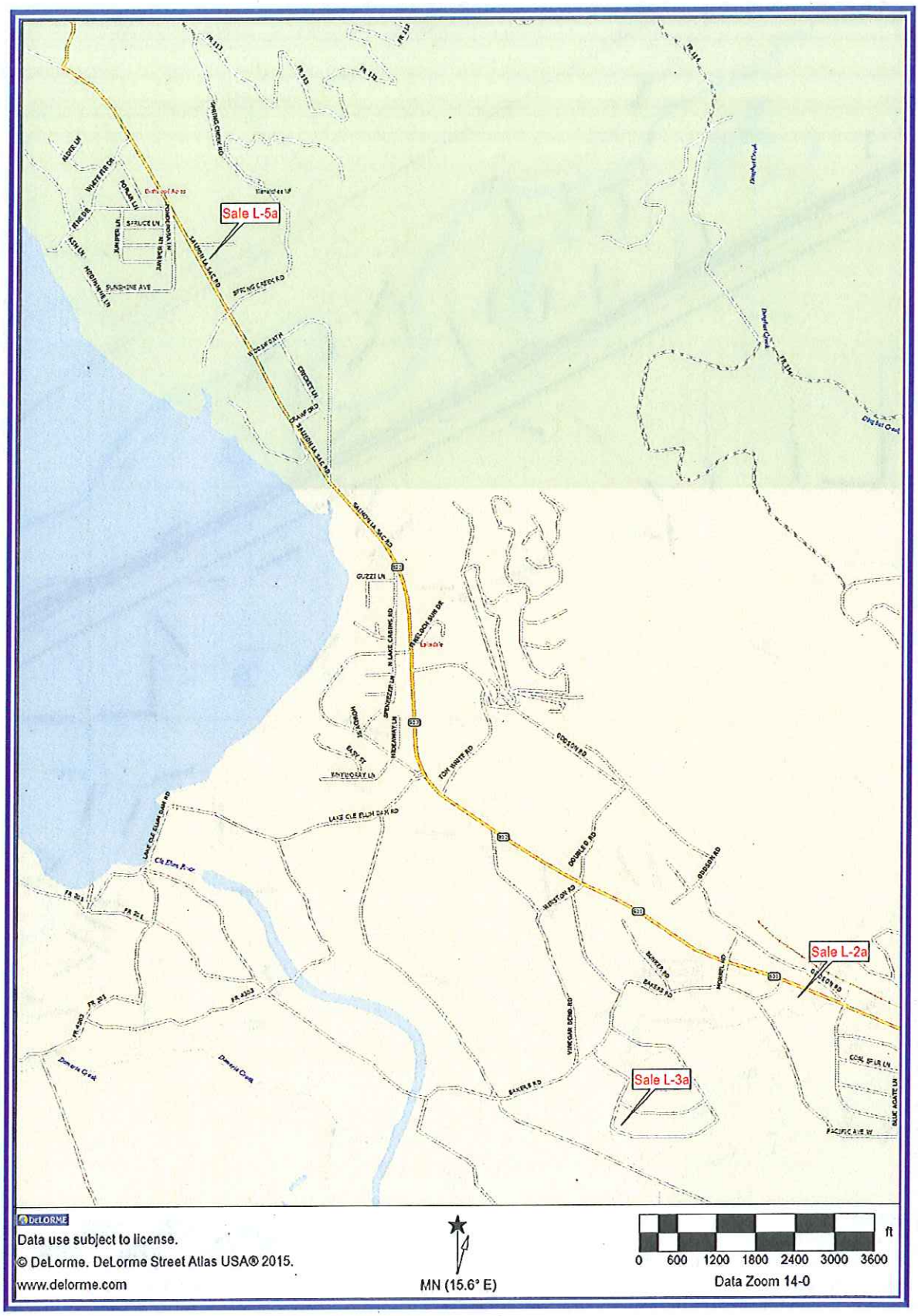
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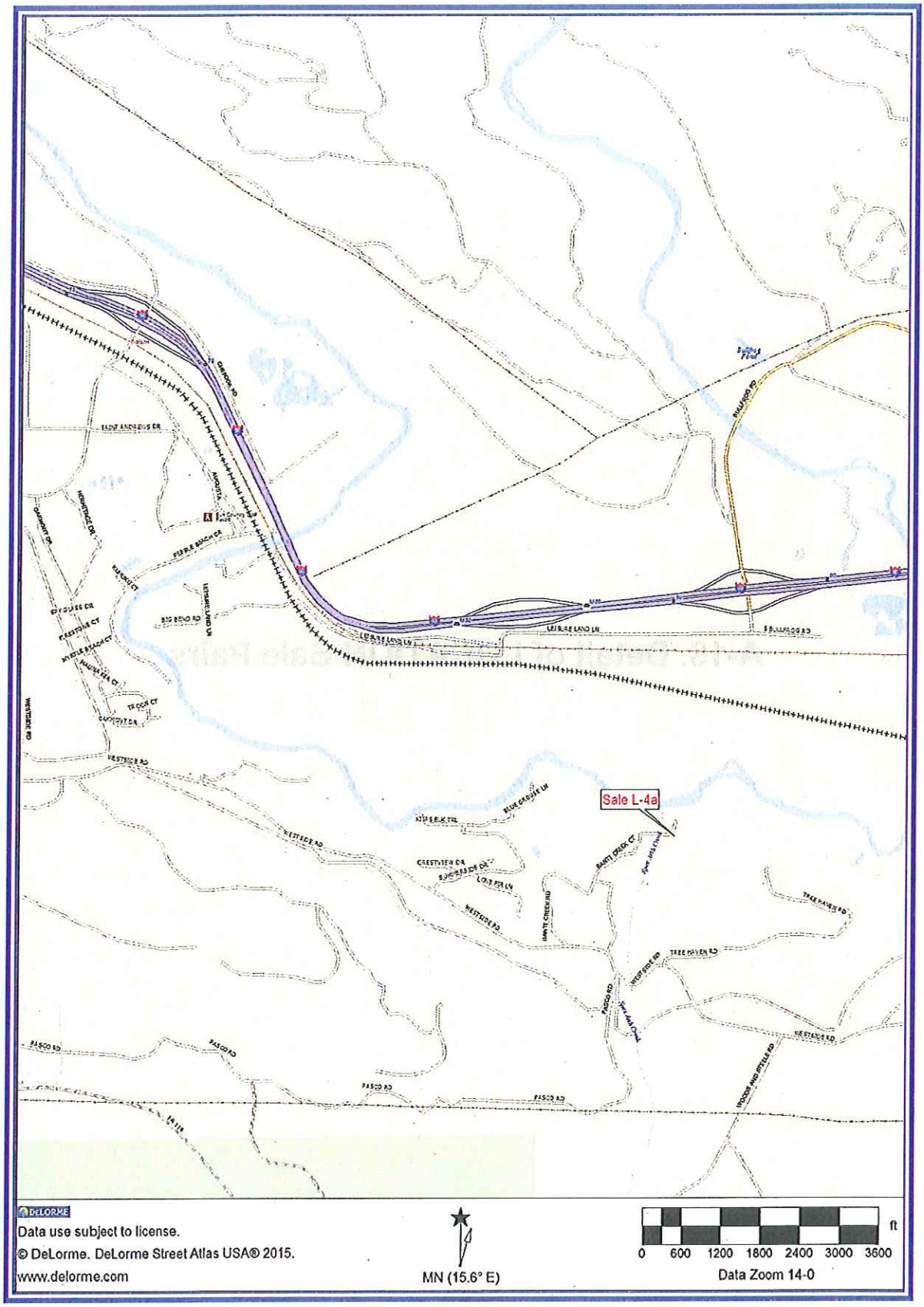
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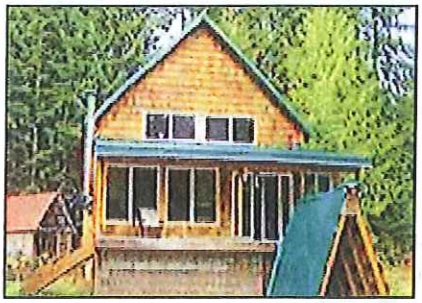
A-18. Detail of LOCATION Sale Pairs

Location Comparison Sale No. L- 1 Lake Kachess Area



Address:	4330 Kachess Lake Rd, Easton, WA
Sale Date:	November 2011
Sale Price:	$300,000 **Price/sq.ft.:** $204.92
Recording Data:	11300035; Excise #2011-1810
Grantor:	Jerry Gamin
Grantee:	Howard & Kathy Ringoen
Condition of Sale:	Arms length **Financing:** Conventional
Confirmation:	NWMLS & Public Record
Parcel Number:	48865 **Zoning:** R-5
Gross Site Area:	5.68 ac
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** Territorial
Utilities:	Electricity, septic system, well
Street Access:	Paved public road with year round access
Surrounding uses:	Year round homes on acreage
Legal Description:	Kachess Ridge lot 9 in Sec 7, T21N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,464 sq.ft.	**Style:**	Cabin
Year built:	1993	**Stories:**	1.5-story
Quality & Condition:	Fair/ Average	**Beds/Baths:**	2 bed / 1 bath
Garage, detached:	416 sq.ft.		

Comments: Open floor plan with standard kitchen, tile floor, wood accents.

Location Comparison Sale No. L- 1a Lake Cle Elum Area

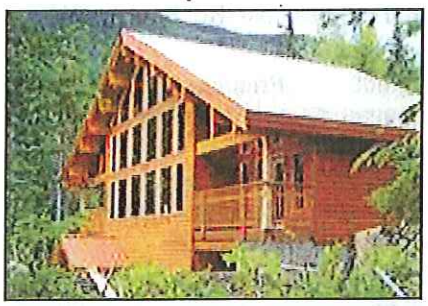
Address:	691 Goat Peak Ranch Rd, Cle Elum, WA
Sale Date:	March 2012
Sale Price:	$255,000 **Price/sq.ft.:** $172.30
Recording Data:	3300003; Excise #2012-0383
Grantor:	Edward Castillo
Grantee:	Gregg & Barbara Cryderman
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	Loretta Sweigard; buyer's broker
Parcel Number:	699134 **Zoning:** R-5
Gross Site Area:	5.00 ac
Topography:	Somewhat sloping
Vegetation:	Wooded **View:** territorial
Utilities:	Electricity, septic system, shared well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round homes on acreage
Legal Description:	Goat Pk. Ranch III lot 8 in Sec 33, T20N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,480 sq.ft.	**Style:**	Cabin
Year built:	1992	**Stories:**	1.5-story
Quality & Condition:	Fair / Average	**Beds/Baths:**	2 bed / 1 bath
Garage	none		

Comments: Open floor plan with standard kitchen, tile floor, wood accents..

Location Comparison Sale No. L- 2 Lake Kachess Area



Address: 3260 Kachess Lake Rd, Easton, WA
Sale Date: May 2012
Sale Price: $549,000 **Price/sq.ft.:** $180.18
Recording Data: 5290029; Excise #2012-0699
Grantor: Jonathan Staley
Grantee: Stephen & Nancy Wray
Condition of Sale: Arms length **Financing:** Conventional
Confirmation: Stephanie Moore; seller's broker
Parcel Number: 20490 **Zoning:** R-5
Gross Site Area: 3.47 ac
Topography: Flat to somewhat sloping
Vegetation: Wooded **View:** territorial, mtn.s
Utilities: Electricity, septic system, well
Street Access: Paved public road with year round access
Surrounding uses: Year round vacation homes on small lots
Legal Description: Lodge Ck. Estates Lot 3A in Sec 13, T21N, R12E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area: 3,047 sq.ft.
Year built: 2008
Quality & Condition: Good / Average
Garage, built-in 709 sq.ft.
Style: Lodge style
Stories: 2.5-story
Beds/Baths: 4 bed / 3.5 bath

Comments: Features vaulted ceiling & window wall in great-room; gourmet kitchen, extensive knotty pine woodwork inside, and cedar exterior.

Location Comparison Sale No. L- 2a Lake Cle Elum Area

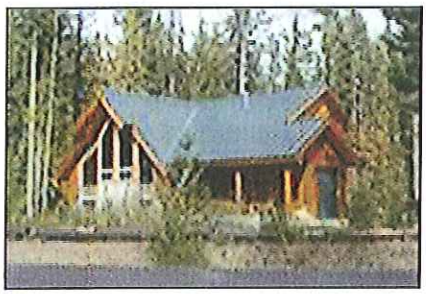
Address: 9200 SR-903, Ronald, WA
Sale Date: August 2013
Sale Price: $495,000 **Price/sq.ft.:** $163.42
Recording Data: 08160006; Excise #2013-1389
Grantor: Cashmere Bank
Grantee: Lorrie S. Cross
Condition of Sale: Arms length **Financing:** Cash to seller
Confirmation: Steve Vradenburg; buyer's representative
Parcel Number: 14867 **Zoning:** Rural Recreation
Gross Site Area: 3.94 ac
Topography: Flat to slightly sloping
Vegetation: Wooded **View:** territorial
Utilities: Electricity, septic system, community well
Street Access: Paved public road with year round access
Surrounding uses: Year round vacation homes on small lots
Legal Description: Grant SP2 97-33 Lot 4 in Sec 12, T20N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area: 3,029 sq.ft.
Year built: 2009
Quality & Condition: Good / Average
Garage, detached: 1,080 sq.ft.
Style: Craftsman / Lodge
Stories: 1.5-story
Beds/Baths: 3 bed/ 2.25 bath

Comments: House features vaulted ceiling in great-room plus with timber and stone accents & open gourmet kitchen. Garage includes is a partially finished attic and an RV leant-to. Property is set back from the highway along a shared driveway. Although this was a bank sale, the sale price was reported to have been a full price offer based upon a recent appraisal of the property.

Location Comparison Sale No. L- 3 Lake Kachess Area



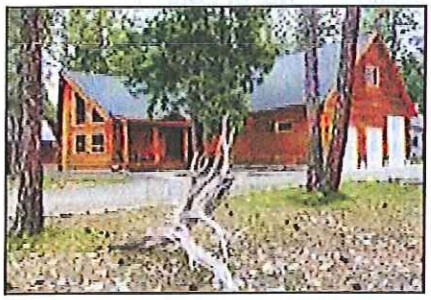
Address:	190 Kachess River Rd, Easton, WA
Sale Date:	November 2010
Sale Price:	$432,500 **Price/sq.ft.:** $244.07
Recording Data:	11010004; Excise #2010-1578
Grantor:	Joel Vertifeuille
Grantee:	Richard A Johnston
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	Jill Gunderson; seller's broker
Parcel Number:	562236 **Zoning:** Forest & Range
Gross Site Area:	0.50 ac
Topography:	Flat to slightly sloping
Vegetation:	Wooded **View:** trees
Utilities:	Electricity, septic system, shared well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Lake Easton Estates lot 52 in Sec 3, T20N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,772 sq.ft.	**Style:**	Traditional/cabin
Year built:	2002	**Stories:**	2-story
Quality & Condition:	Avg. / Avg.	**Beds/Baths:**	3 bed / 2.5 bath
Garage, detached:	1,200 sq.ft.	**Garage Attached:**	308 sq.ft.

Comments: Features vaulted ceiling & window wall in great-room; T & G woodwork, standard kitchen. House was well maintained. Detached garage includes a finished attic bonus room.

Location Comparison Sale No. L- 3a Lake Cle Elum Area



Address:	80 Patrick's Park Ct, Ronald, WA
Sale Date:	July 2012
Sale Price:	$350,000 **Price/sq.ft.:** $205.04
Recording Data:	7260004; Excise #2012-1028
Grantor:	Robert McEvoy
Grantee:	4 Seasons Cabin LLC (Stacy Smythe)
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	Lois Schneider; seller's broker
Parcel Number:	15615 **Zoning:** Residential
Gross Site Area:	0.50 ac
Topography:	Flat to slightly sloping
Vegetation:	Wooded **View:** trees
Utilities:	Electricity, septic system, community water
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Cle Elum River Trails 2 lot 2 in Sec 12, T20N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,707 sq.ft.	**Style:**	Traditional/cabin
Year built:	2002	**Stories:**	1.5-story
Quality & Condition:	Avg/ Avg	**Beds/Baths:**	2 bed / 2.5 bath
Garage, Attached	1,144 sq.ft.		

Comments: Features vaulted ceiling & window wall in great-room; extensive T & G woodwork with stone accents, standard kitchen. House was well maintained. Attached garage includes a finished attic bonus room.

Location Comparison Land Sale No. 4 - Lake Kachess Area

Address:	S side Lodge Creek Estates Rd 500' E of Kachess Lake Rd, Easton, WA
Sale Date:	May 2015
Sale Price:	$140,000 **No. of Lots** 1
Recording Data:	5290029; Excise #2015-870
Grantor:	Lodge Creek Land Co LLC
Grantee:	Reynaldo & Ashley Graza
Condition of Sale:	Arms length **Financing:** Cash equiv.REC
Confirmation:	Jan Wanechek; seller's broker
Parcel Number:	951449 **Zoning:** R-5
Gross Site Area:	3.65 ac
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** territorial, trees
Utilities:	Electricity, septic system, shared well
Street Access:	Private gravel road 500' from public road
Surrounding uses:	Year round vacation homes on acreage
Legal Description:	Lodge Ck. Estates 2 Lot C1 in Sec 13, T21N, R12E, WM, Kittitas County, WA

Comments: Wooded lot with flat to moderately sloping topography. Public road is 500' from the site. property includes CC&Rs.

Location Comparison Sale No. 4a - Lake Cle Elum Area

Address:	1200 Banti Creek Road, Cle Elum, WA
Sale Date:	July 2014
Sale Price:	$125,000 **No. of Lots** 1
Recording Data:	7150018; Excise #2014-1236
Grantor:	Michael Waite
Grantee:	Smith Family Banti Creek LLC
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	NWMLS & Public Record
Parcel Number:	445634 **Zoning:** Rural Recreation
Gross Site Area:	3.02 ac
Topography:	Flat to slightly sloping
Vegetation:	Trees, grass **View:** territorial, trees
Utilities:	Electricity, septic system, well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	N½W½NE¼NW¼ less N 534.28' in Sec 6, T129N, R15E, WM, Kittitas County, WA

Comments: Wooded lot with relatively flat terrain. Electricity & phone are to the site. Public road is 0.75 miles from property.

Location Comparison Land Sale No. 5 - Lake Kachess Area

Address:	E side Kachess River Rd 48' N of W Sparks Rd, Easton, WA
Sale Date:	August 2005
Sale Price:	$80,000 **No. of Lots** 1
Recording Data:	08240024; Excise #2005-2229
Grantor:	Derek Smail & Erin Tyson
Grantee:	Curtis Satterhwaite & Kai Maulding
Condition of Sale:	Arms length **Financing:** Cash to seller
Confirmation:	NWMLS & Public Record
Parcel Number:	402236 **Zoning:** Forest & Range
Gross Site Area:	0.50 ac
Topography:	Flat to slightly sloping
Vegetation:	Wooded **View:** trees
Utilities:	Electricity, septic system, shared well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Lake Easton Estates lot 36 in Sec 3, T20N, R13E, WM, Kittitas County, WA

Comments: Relatively flat wooded lot in a subdivision with CC&Rs located near a public arterial route.

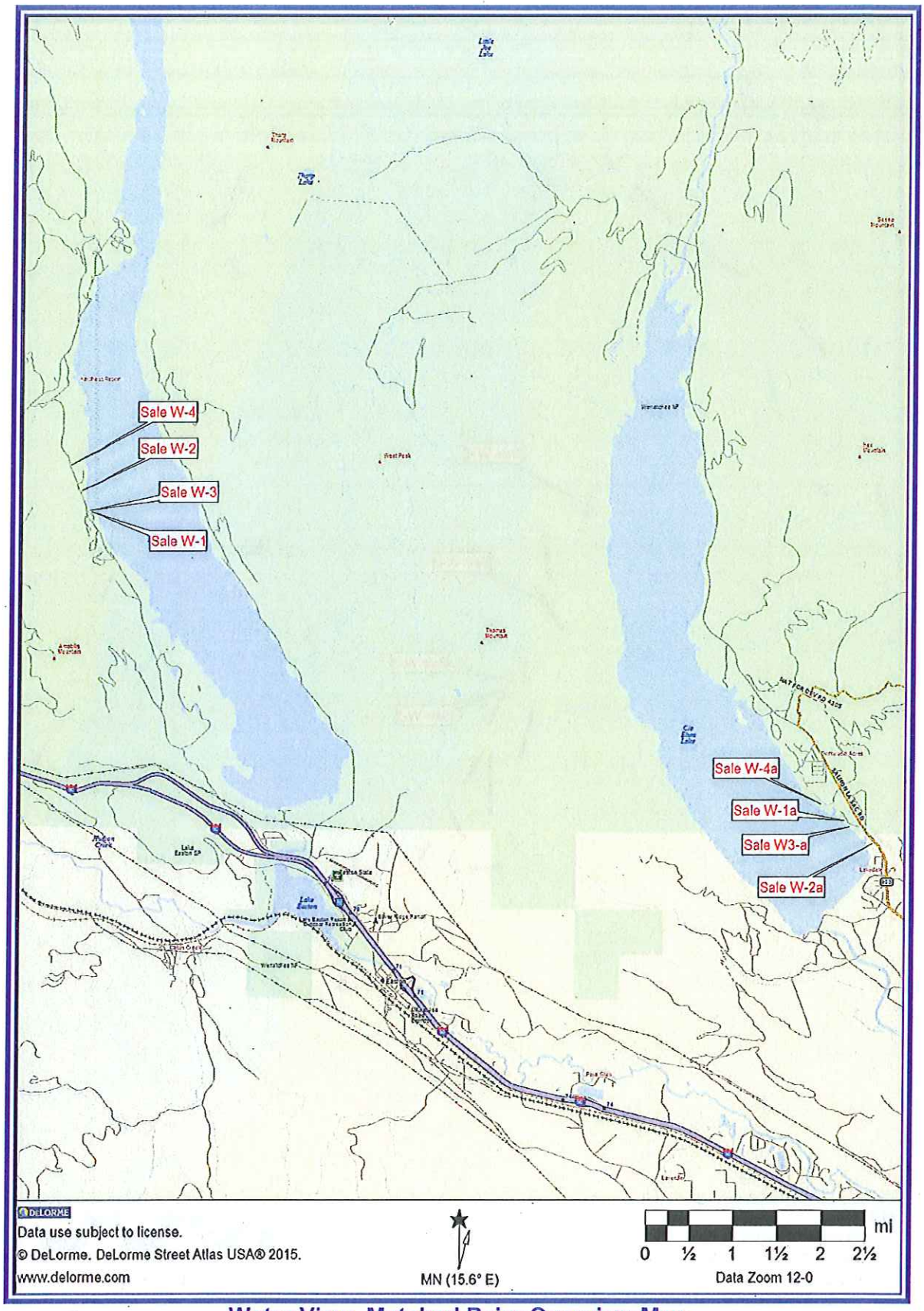
Location Comparison Sale No. 5a - Lake Cle Elum Area

Address:	13651 Salmon La Sac, Ronald, WA
Sale Date:	September 2005
Sale Price:	$65,000 **No. of Lots** 1
Recording Data:	9140038; Excise #2005-2475
Grantor:	James & Sandra McLain
Grantee:	Donald & Teresa Frey
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	NWMLS & Public Record
Parcel Number:	216935 **Zoning:** R-3
Gross Site Area:	0.50 ac
Topography:	Flat to slightly sloping
Vegetation:	Wooded **View:** trees
Utilities:	Electricity, septic system, well
Street Access:	Paved public road with year round access
Surrounding uses:	Year round homes on small lots
Legal Description:	CD. 6001-2-1 in SE¼NE¼ of Sec 34, T21N, R14E, WM, Kittitas County, WA

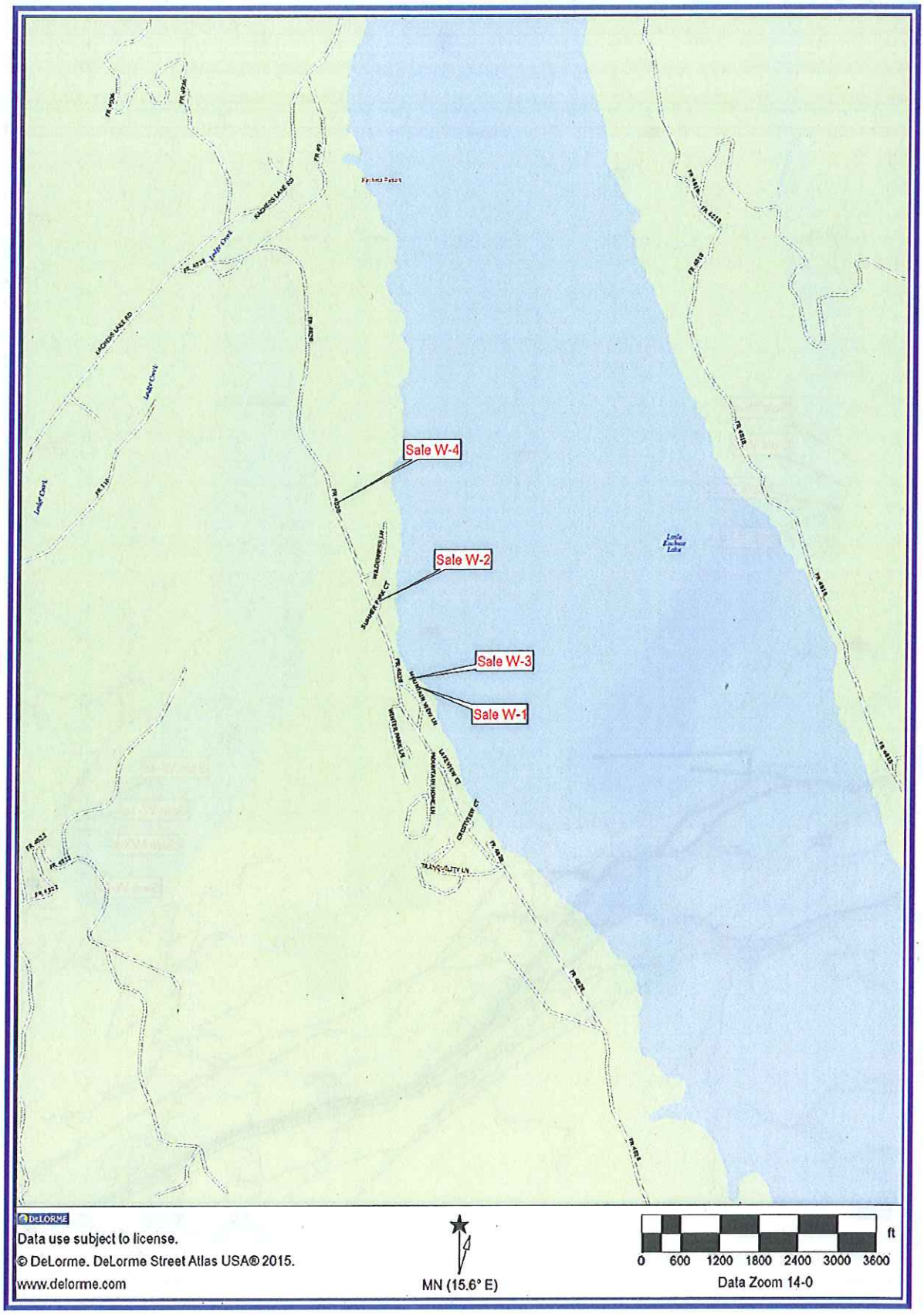
Comments: Relatively flat wooded lot bought to construct an owner occupied 1,908 sq.ft. house. Property fronts on a public arterial.

A-19. Close Water View Comparable Data Maps

(On all Sales Maps, North orientation is to the top of the page)



Water View Matched Pairs Overview Map


Sale W-4
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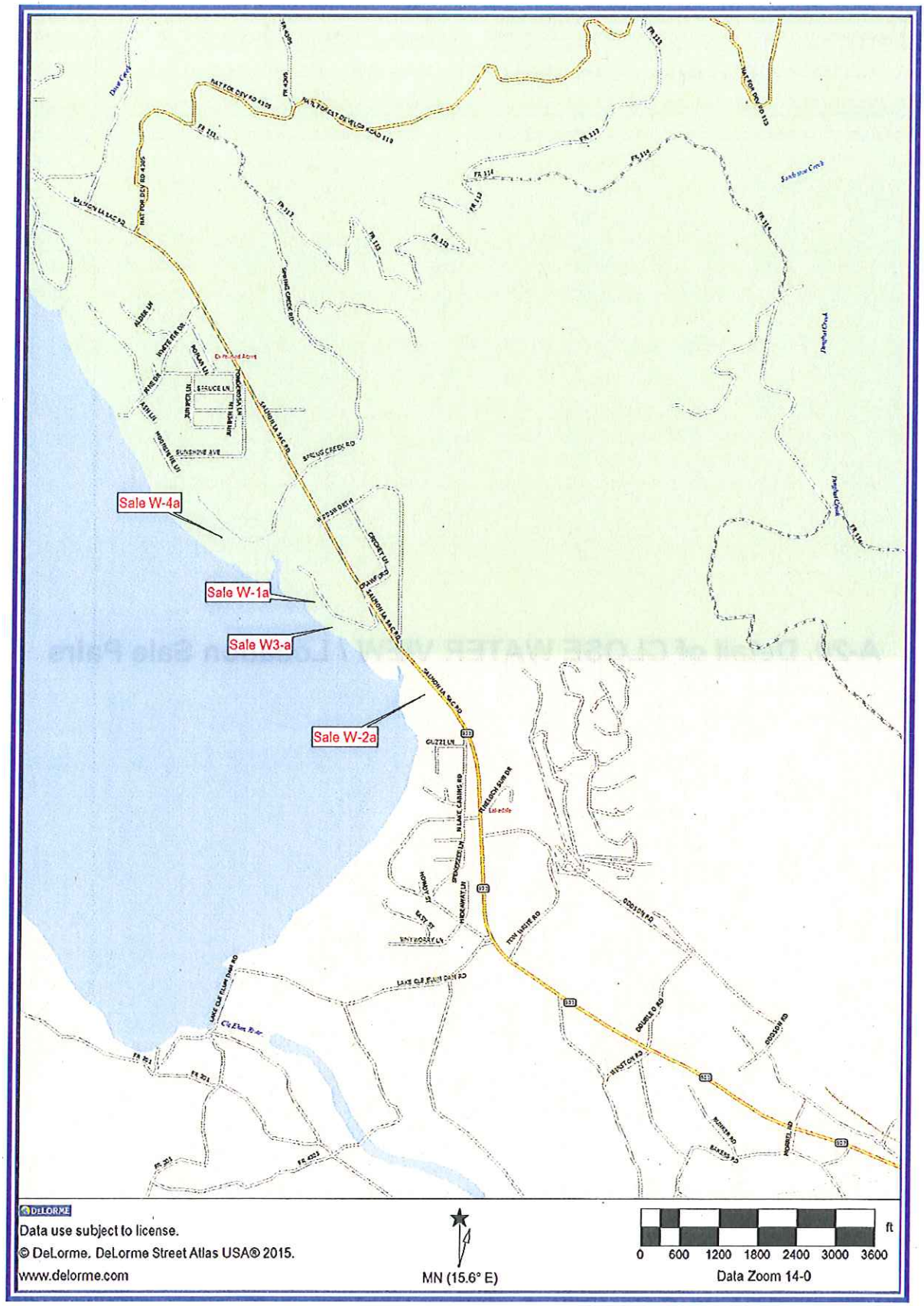
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Sale W-2a
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A-20. Detail of CLOSE WATER VIEW / Location Sale Pairs

Improved Sale No. W1 - Lake Kachess; close water view

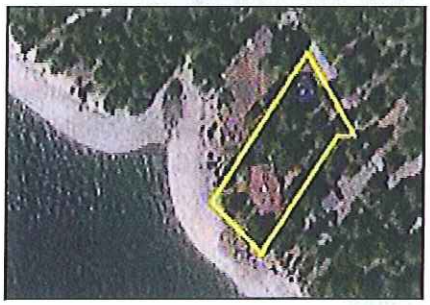
Address: 60 Mtn. View Ln, Easton, WA
Sale Date: January 2015
Sale Price: $850,000 **Price/sq.ft.:** $216.23
Recording Data: 1290025; Excise #2015-112
Grantor: Katherine Vermillion
Grantee: John & Alexis Wenstrup
Condition of Sale: Arms length **Financing:** Conventional
Confirmation: Ken Everaert, buyer's broker
Parcel Number: 436835 **Zoning:** Forest & Range
Gross Site Area: 0.25 ac **Reservoir Bndry. frontage:** 85'
Topography: Flat to somewhat sloping
Vegetation: Wooded **View:** Lake, mountains
Utilities: Electricity, septic system, community well
Street Access: Paved private road with year round access
Surrounding uses: Year round vacation homes on small lots
Legal Description: Kachess 2 lot 17 in Sec 17, T21N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area: 3,931 sq.ft. **Style:** Traditional - contemporary
Year built: 1996 **Stories:** 3-story + separate guest quarters
Quality & Condition: Good/ Average **Beds/Baths:** 5 bed/3 bath
Garage, detached: 737 sq.ft. **Boat dock:** 264 sq.ft. floating with gangway to shore

Comments: Vaulted ceiling & window wall in great-room; gourmet kitchen. Guest quarters over garage are connected to main house with a covered breezeway. House had been maintained but not updated. Though sale included furnishings, these were somewhat worn & considered non-contributory to the overall sale price.

Improved Sale No. W1a - Lake Cle Elum; close water view



Address: 310 Sandelin Lane, Ronald, WA
Sale Date: January 2015
Sale Price: $700,000 **Price/sq.ft.:** $189.75
Recording Data: 1140020; Excise #2015-48
Grantor: Sharon Rusch Trust
Grantee: Gavin & Jennifer Kelly
Condition of Sale: Arms length **Financing:** Conventional
Confirmation: Beth Traverso; buyer's broker
Parcel Number: 126935 **Zoning:** Rural Recreation
Gross Site Area: 0.76 ac **Reservoir Bndry. frontage:** 106'
Topography: Flat to somewhat sloping
Vegetation: Wooded **View:** Lake, mountains
Utilities: Electricity, septic system, shared well
Street Access: Paved private road with year round access
Surrounding uses: Year round vacation homes on small lots
Legal Description: Sunshine Estates lot 9 & ptn lot 8; in Sec 34, T21N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area: 3,689 sq.ft. **Style:** Traditional - contemporary
Year built: 1966, remodeled **Stories:** 1-story + finished daylight basement
Quality & Condition: Good/ Average **Beds/Baths:** 4 bed/3 bath
Garage, detached: 1,848 sq.ft. **Boat dock:** none

Comments: Vaulted ceiling and window wall in great-room plus extensive T & G woodwork & open gourmet kitchen. House was last updated in 1996 & has been maintained. Although sale included furnishings, these were somewhat worn and considered non-contributory to the overall sale price.

Improved Sale No. W2 - Lake Kachess; close water view

Address:	2360 Via Kachess Rd, Easton, WA
Sale Date:	August 2014
Sale Price:	$525,000 **Price/sq.ft.:** $248.82
Recording Data:	8070010; Excise #2014-1394
Grantor:	David McKenzie
Grantee:	Michael & Shannon Aiken
Condition of Sale:	Arms length **Financing:** Conventional
Confirmation:	Kitty Wallace, seller's broker
Parcel Number:	506835 **Zoning:** Forest & Range
Gross Site Area:	0.41 ac **Reservoir Bndry. frontage:** 100'
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, community well
Street Access:	Paved public road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Kachess 2 lot 24 in Sec 17, T21N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	2,110 sq.ft.	**Style:**	1970s Contemporary
Year built:	1979	**Stories:**	2-story + separate guest quarters
Quality & Condition:	Avg./ Avg.	**Beds/Baths:**	3 bed / 2 bath
Garage, detached:	624 sq.ft.	**Boat dock:**	228 sq.ft. floating with gangway to shore

Comments: Open floor plan, vaulted ceiling & picture windows in great-room; standard kitchen; extensive T & G woodwork. Guest quarters includes a kitchenette. House had been maintained but not updated.

Improved Sale No. W2a - Lake Cle Elum; close water view

Address:	12301 SR-903, Ronald, WA
Sale Date:	October 2014
Sale Price:	$425,000 **Price/sq.ft.:** $190.16
Recording Data:	10240021; Excise #2014-1889
Grantor:	Dieter Bierek
Grantee:	Shawn & Kirsten Schubring
Condition of Sale:	Arms length **Financing:** Cash equivalent
Confirmation:	Larry Scholl; buyer's broker
Parcel Number:	291934 **Zoning:** Rural Recreation
Gross Site Area:	1.07 ac **Reservoir Bndry. frontage:** 150'
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, private well
Street Access:	Paved public road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Lot 7 of E½ NW¼ in Sec 2, T20N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	2,235 sq.ft.	**Style:**	1970s Contemporary
Year built:	1977	**Stories:**	1 & 2-story
Quality & Condition:	Avg./ Avg.	**Beds/Baths:**	3 bed / 2 bath
Garage, att'd & det'd:	900 sq.ft.	**Boat dock:**	none

Comments: Open floor plan. Vaulted ceiling & picture windows in great-room plus clerestory windows, standard kitchen; extensive T & G woodwork. House had been maintained but not updated. Terms were 30% cash with balance seller financed. There was no adjustment to the agreed upon sale price & overall the transaction was considered cash equivalent.

Improved Sale No. W3 - Lake Kachess; close water view

Address:	42 Mtn View Lane, Easton, WA
Sale Date:	August 2014
Sale Price:	$505,000 **Price/sq.ft.:** $462.45
Recording Data:	8040002; Excise #2014-1365
Grantor:	Wayne Blair
Grantee:	Daniel & Cynthia Ryynanen
Condition of Sale:	Arms length **Financing:** Cash
Confirmation:	Kerry Jo Horn, seller's broker
Parcel Number:	456835 **Zoning:** Forest & Range
Gross Site Area:	0.24 ac **Reservoir Bndry. frontage:** 74'
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, community well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	Kachess 2 lot 19 in Sec 17, T21N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,092 sq.ft.	**Style:**	Cabin
Year built:	1979	**Stories:**	1.5-story
Quality & Condition:	Fair-Avg. / Avg.	**Beds/Baths:**	1 bed + loft /1 bath
Garage:	none	**Boat dock:**	none

Comments: Open floor plan. Vaulted ceiling & window wall in great-room; standard kitchen. Knotty Pine interior throughout. House had been maintained but not updated. Recorded sale price of $506,500 included a 17,500 watt, used generator attributed $1,500 reflecting a sale price of $505,000 for real property.

Improved Sale No. W3a - Lake Cle Elum; close water view

Address:	200 Sandelin Lane, Ronald, WA
Sale Date:	September 2014
Sale Price:	$394,000 **Price/sq.ft.:** $352.42
Recording Data:	9120043; Excise #2014-1623
Grantor:	Katherine Degrosellier
Grantee:	Carrie & Paul McClinton
Condition of Sale:	Arms length **Financing:** Conventional
Confirmation:	Ken Everaert; seller & buyer's broker
Parcel Number:	266935 **Zoning:** Rural Recreation
Gross Site Area:	0.42 ac **Reservoir Bndry. frontage:** 96'
Topography:	Flat to somewhat sloping
Vegetation:	Wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, community well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on small lots
Legal Description:	W½ Lot 5 Sunshine Estates in Sec 34, T21N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	1,118 sq.ft.	**Style:**	Cabin / "A" frame
Year built:	1965	**Stories:**	1.5-story
Quality & Condition:	Fair-Avg./ Avg.	**Beds/Baths:**	2 bed / 2 bath
Garage:	none	**Boat dock:**	none

Comments: Open floor plan. Vaulted ceiling & picture windows in great-room; standard kitchen. Knotty Pine interior throughout most of cabin. House had been maintained but not updated.

Improved Sale No. W4 - Lake Kachess, close water view

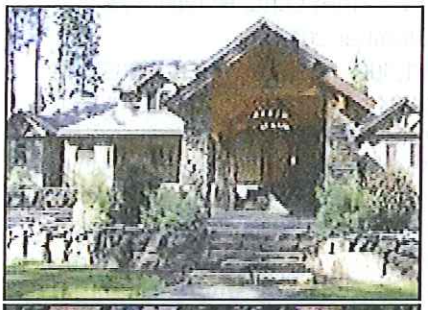
Address:	1680 Via Kachess, Easton, WA
Sale Date:	October 2014
Sale Price:	$880,000 **Price/sq.ft.:** $281.87
Recording Data:	10160036; Excise #2014-1841
Grantor:	Brian Beaman
Grantee:	Robert Faye
Condition of Sale:	Arms length **Financing:** Conventional
Confirmation:	Anne Evereart seller's broker
Parcel Number:	696635 **Zoning:** R-5
Gross Site Area:	5.37 ac **Reservoir Bndry. frontage:** n/a
Topography:	Flat to sloping; somewhat steep
Vegetation:	Wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, community well
Street Access:	Paved public road with year round access
Surrounding uses:	Year round vacation homes on acreage
Legal Description:	Kachess Ridge lot 24 in Sec 7, T21N, R13E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	3,122 sq.ft.	**Style:**	Lodge
Year built:	2005	**Stories:**	2-story + finished daylight basement
Quality & Condition:	very good/avg.	**Beds/Baths:**	3 bed / 3 bath
Garage, blt. in & det'd:	1,044 sq.ft.	**Boat dock:**	None

Comments: Vaulted ceiling & window wall in great-room, extensive T & G woodwork; gourmet kitchen. House had been well maintained. A narrow strip of Forest Service land lies between property & lakeshore. Property has a filtered lake view between trees.

Improved Sale No. W4a - Lake Cle Elum, close water view



Address:	800 Domerie Bay, Ronald, WA
Sale Date:	September 2013
Sale Price:	$775,000 **Price/sq.ft.:** $221.62
Recording Data:	9110048; Excise #2013-1600
Grantor:	Capital One N.A.
Grantee:	John & Jeanne Schreuder
Condition of Sale:	Arms length **Financing:** Conventional
Confirmation:	Kitty Wallace; seller's broker
Parcel Number:	15492 **Zoning:** Rural Recreation
Gross Site Area:	1.04 ac **Reservoir Bndry. frontage:** n/a
Topography:	Flat to somewhat sloping
Vegetation:	Lightly wooded **View:** Lake, mountains
Utilities:	Electricity, septic system, community well
Street Access:	Paved private road with year round access
Surrounding uses:	Year round vacation homes on acreage
Legal Description:	Domerie Bay lot 6, Sec 34, T21N, R14E, WM, Kittitas County, WA

IMPROVEMENTS:

Finished Living area:	3,497 sq.ft.	**Style:**	Lodge
Year built:	2006	**Stories:**	1 & 1½-story
Quality & Condition:	Very good/ Avg.	**Beds/Baths:**	3 bed / 3 bath
Garage, detached:	1,320 sq.ft.	**Boat dock:**	none

Comments: Features vaulted ceilings, window wall in great-room, stone & woodwork; gourmet kitchen. House had been well maintained. A narrow strip of privately owned land lies between the site & the reservoir boundary with a lightly filtered lake view between trees. Although this was a bank sale, the transaction reflected a fair market price with property on the market several months before receiving this near full price offer.

A-21. Executive Summary
DRAFT EIS (January 2015)

EXECUTIVE SUMMARY

Introduction

The U.S. Department of the Interior Bureau of Reclamation and the Washington State Department of Ecology have prepared this Draft Environmental Impact Statement (DEIS) to evaluate the potential environmental effects of implementing two similar and closely related projects in the Yakima River basin in central Washington State:

- Kachess Drought Relief Pumping Plant (KDRPP)
- Keechelus Reservoir-to-Kachess Reservoir Conveyance (KKC)

Reclamation and Ecology are proposing these two projects as well as enhancements to improve the abundance and resiliency of bull trout populations in the basin as part of implementation of the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan) (Reclamation and Ecology, 2011h). The Integrated Plan is a comprehensive program of solutions developed to restore ecological functions in the Yakima River system and to provide more reliable and sustainable water resources for the health of the riverine environment and for agricultural, municipal, and domestic needs.

As joint lead agencies, Reclamation and Ecology have prepared this DEIS to meet requirements of both the National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA). The Yakama Nation, U.S. Fish and Wildlife Service (Service), U.S. Forest Service (USFS), and Bonneville Power Administrative (BPA) are cooperating agencies in preparation of the DEIS in accordance with 40 CFR Section 1508.5. Under NEPA, a cooperating agency is any Federal agency, other than the lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in an action requiring an environmental impact statement. In addition, a State or local agency of similar qualifications or an Indian Tribe may by agreement with the lead agency become a cooperating agency.

Background of the Proposed Action

Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Ecology's mission is to protect, preserve and enhance the State of Washington's environment for current and future generations. Consistent with its mission, Ecology is has been directed by the State legislature to implement actions that provide concurrent benefits for instream and out-of stream uses for the Yakima River basin.

In June 2009, Ecology and Reclamation brought representatives from the Yakama Nation, irrigation districts, environmental organizations, and Federal, State, county, and city

governments together to form the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup to help develop a consensus-based solution to the basin's water problems. Over the next 18 months, the group developed the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan) (Reclamation and Ecology, 2011h)[1].

The Plan includes the following seven elements:

- Reservoir Fish Passage
- Structural and Operational Changes
- Surface Water Storage
- Groundwater Storage
- Habitat/Watershed Protection and Enhancement
- Enhanced Water Conservation
- Market Reallocation

Reclamation and Ecology prepared the program-level *Yakima River Basin Integrated Water Resource Management Plan Programmatic EIS* (Integrated Plan PEIS) to determine the effects of implementing the Integrated Plan (Reclamation and Ecology, 2012)[2]. The Integrated Plan PEIS supports the conclusion that the current water resources infrastructure, programs, and policies in the Yakima River basin are not capable of consistently meeting the demands for fish and wildlife, irrigation, and municipal water supply (Reclamation and Ecology, 2012).

The Selected Alternative identified in Reclamation's Integrated Plan PEIS Record of Decision (Integrated Plan ROD) includes seven elements, each containing distinct actions, that collectively provide a comprehensive approach to water management in the Yakima River basin and meet the need to restore ecological functions and provide more reliable and sustainable water resources for the health of the riverine environment and for agricultural, municipal, and domestic needs (Reclamation, 2013). The KDRPP and KKC, along with enhancements for bull trout populations in the basin, are identified in the Integrated Plan ROD as necessary components of the Integrated Plan that contribute to achieving the Plan's overall goals.

[1] The following websites contain information about implementation of the Integrated Plan:
- http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html
- http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html.

[2] Available online at http://www.usbr.gov/pn/programs/yrbwep/reports/FPEIS/fpeis.pdf

Proposed Action

Reclamation's Proposed Action is to construct, operate, and maintain one or both of two closely related water resource projects in the upper Yakima River basin pending congressional authorization. Reclamation and Ecology are considering how these two parts of the Proposed Action, alone or in combination, contribute to restoring ecological functions and providing more reliable and sustainable water resources for the health of the riverine environment and for agricultural, municipal, and domestic needs. The two projects are so closely related in overlapping geography, concurrent timing, interrelated operations, cumulative impacts, and interdependence through the Integrated Plan ROD to be considered interconnected parts of a single course of action that should be evaluated in a single EIS (40 CFR 1502.4 and 40 CFR 1508.25). These relationships are detailed in Section 1.5 and Chapter 2 of this DEIS. The two projects being considered under the Proposed Action are described briefly below as:

- Kachess Reservoir Drought Relief Pumping Plant (KDRPP). Deliver up to an additional 200,000 acre-feet of water from Kachess Reservoir during drought years by installing a new deeper outlet works and pumping system to access existing stored water that cannot currently be accessed. Implement an integrated package of aquatic habitat enhancements and assessments focused on improving the abundance and resiliency of bull trout populations in the Yakima River basin.
- Keechelus Reservoir-to-Kachess Reservoir Conveyance (KKC). Augment flows into Kachess Reservoir and reduce flows in the Yakima River downstream from Keechelus Reservoir to Lake Easton[3] by transferring water from Keechelus Reservoir to Kachess Reservoir via a new tunnel. Implement an integrated package of aquatic habitat enhancements and assessments focused on improving the abundance and resiliency of bull trout populations in the Yakima River basin.

Purpose and Need for the Action

The purpose of the Proposed Action is to fulfill elements of the Integrated Plan ROD signed by Reclamation on July 9, 2013 to help restore ecological functions and provide more reliable and sustainable water resources for the health of the riverine environment and for agricultural, municipal, and domestic needs. The two projects being considered under the Proposed Action respond to specific conditions in the Yakima River basin that adversely affect and are affected by Reclamation's facilities and operations. Those conditions are identified here as the need associated with each of the two projects.

[3] Lake Easton is a reservoir on the Yakima River created by the Easton Diversion Dam, which supplies the Kittitas Reclamation District. The Yakima River flows into Lake Easton from the southwest and the Kachess River from the northwest.

Needs related to KDRPP:

- Demand for irrigation water by existing users in the Yakima River basin exceeds supply in drought years, which can lead to substantial prorationing of water deliveries and economic losses to farmers[4].
- The productivity and function of aquatic habitat conditions for bull trout in tributaries above Keechelus and Kachess reservoirs, as well as throughout the Yakima River basin, is not of consistent quality, and in areas is substantially degraded. In addition, passage within these tributaries is in some cases impaired or blocked.

Needs related to KKC:

- Runoff from the Keechelus watershed in a typical year is greater than can be contained in the reservoir for release when most needed for instream, agricultural, municipal, and domestic uses.
- Current operations at Keechelus Dam result in high flows in the upper Yakima River during the irrigation season that impair rearing habitat for steelhead and spring Chinook upstream of Lake Easton.
- The productivity and function of aquatic habitat conditions for bull trout in tributaries above Keechelus and Kachess reservoirs, as well as throughout the Yakima River basin, is not of consistent quality, and in areas is substantially degraded. In addition, passage within these tributaries is in some cases impaired or blocked.

The objectives of each of the two projects are identified below followed by a discussion of the conditions that give rise to the identified needs and objectives.

The objectives of KDRPP are to:

- Access stored water in Kachess Reservoir that is currently unavailable in order to improve water supply during periods of drought, with a goal of approaching not less than 70 percent of proratable water rights whenever feasible[5].
- Implement the Bull Trout Enhancement (BTE) package of aquatic habitat enhancements, and accomplish assessments of current conditions and limiting factors for bull trout populations in the Yakima River basin to improve the effectiveness of future enhancement actions.

[4] Concerns regarding economic loss are discussed in the Integrated Plan FEIS in Section 1.3, Purpose and Need for the Action, on pages 1-5 and 1-6.

[5] The basis for this threshold for prorationing is discussed in the Integrated Plan FEIS in Section 1.3, Purpose and Need for the Action, on pages 1-5 and 1-6.

A substantial portion of the water stored in Kachess Reservoir is below the existing reservoir outlet. Thus, this stored water is not accessible under existing conditions due to the physical configuration of the dam. If made accessible, this water could be utilized to increase water supply during periods of drought and provide greater flexibility to deliver water to meet Reclamation's contractual obligations.

Regarding bull trout, the Service listed the Columbia River Basin Distinct Population Segment (DPS) of bull trout as threatened under the Endangered Species Act (ESA) in June 1998. The Service identified 12 subpopulations of bull trout in the Yakima River basin and designated critical habitat in a number of reaches of the Yakima River and tributaries (Reclamation and Ecology, 2014b). As an outcome of the Integrated Plan, consensus has emerged among the Yakama Nation and resource agencies with jurisdictions around an integrated package of aquatic habitat enhancements and assessments focused on improving the abundance and resiliency of bull trout populations in the Yakima River basin. The package of enhancements and assessments is referred to as Bull Trout Enhancement (BTE). The existing conditions in the basin that contributed to the listing of bull trout and the uncertainties of climate change have created an imperative for implementing affirmative steps as identified in the BTE. These conditions related to bull trout and the BTE are the same for KDRPP and KKC.

The objectives of KKC are to:

- Capture excess runoff from the Keechelus watershed
- Improve capabilities for refilling Kachess Reservoir during and following dry and drought years
- Reduce high flows from Keechelus Dam in the upper Yakima River during irrigation season to improve rearing habitat for steelhead and spring Chinook upstream of Lake Easton
- Implement the BTE package of aquatic habitat enhancements, and accomplish assessments of current conditions and limiting factors for bull trout populations in the Yakima River basin to improve the effectiveness of future enhancement actions.

The storage capacity of Kachess Reservoir is greater than the runoff in the Kachess watershed. Because of this, Kachess Reservoir does not refill in some years, especially after droughts, creating a need for additional inflow to the reservoir. On the other hand, total available runoff in the Keechelus watershed is greater than the storage capacity of Keechelus Reservoir. Consequently, this water is released down-river during the spring runoff period and is not utilized for total water supply available (TWSA) or targeted for fish benefits.

TWSA is defined as:

> *That amount of water available in any year from natural flow of the Yakima River, and its tributaries, from storage in the various Government reservoirs on the Yakima River watershed and from other sources, to supply the contract obligations of the United States to the Yakima River and its tributaries* (Civil Action No. 21 (1945 Consent Decree) Article 4, 1st Para.).

During the irrigation season, releases of stored water from Keechelus Reservoir create undesirably high flows in the Keechelus reach of the Yakima River that affect rearing habitat for steelhead and spring Chinook. As part of Reclamation's operation of the Yakima Project, these releases are necessary to meet contractual obligations to various water users. An alternative means to convey water stored in Keechelus Reservoir to points of diversion farther down the system would enable Reclamation to reduce high flows in the Yakima River and improve fish habitat while meeting contractual obligations.

Reclamation's Federal actions would be to construct, operate, and maintain one of the alternatives evaluated in this EIS. These Federal actions that require review under NEPA, and are the focus of this EIS. Reclamation's decisions that will rely upon the analysis presented in this EIS and supporting documents are:

- Determination that the feasibility of alternatives to provide additional water for irrigation needs and improve habitat below Keechelus Dam and evaluation of those alternatives under NEPA is complete.
- Determination that Reclamation will or will not pursue a recommendation for congressional action to authorize or fund the implementation of an alternative or combination of alternatives.
- If Reclamation decides to pursue a recommendation for congressional action for authorization or funding, which alternative or combination of alternatives will be recommended.

Ecology's State actions will be to participate financially, issue permits as required, and issue water rights as necessary for one of the alternatives evaluated in this EIS. These State actions require review under SEPA in this EIS.

Alternatives

Alternative 1 – No Action

The No Action Alternative represents the most likely future in the absence of implementing any of the proposals that are part of the Proposed Action. The No Action Alternative forms the baseline for comparison of potential impacts of the Proposed Action and its alternatives. Under *Alternative 1 – No Action*, Reclamation and Ecology would not implement the Proposed Action. Reclamation would continue to manage water supply provided by Kachess and Keechelus reservoirs consistent with current operational practices and constraints. The current operations served as the basis for analyzing impacts of the Proposed Action.

For the purpose of this DEIS, Reclamation and Ecology consider the *Alternative 1 – No Action* to include the following:

- Planned and designed projects
- Authorized projects that have identified funding for implementation
- Projects scheduled for implementation

The following projects meet the criteria for No Action.

YRBWEP Phase II

The Yakima River Basin Water Enhancement Project Act of 1994, commonly referred to as YRBWEP Phase II, provides for a water conservation program with joint Federal and State funding coupled with local matches. The program provides economic incentives to implement structural and nonstructural water conservation measures. As required by YRBWEP Phase II, a Conservation Advisory Group and Reclamation completed a *Basin Conservation Plan* in 1998, and implementation of conservation measures identified in the plan is ongoing (Yakima River Basin Conservation Advisory Group, 1998). *Alternative 1 – No Action* includes those conservation measures currently being implemented. The *Basin Conservation Plan* also includes limited provisions to acquire land and water rights on a permanent and temporary basis to improve instream flows.

On-going YRBWEP Phase II projects that fit the criteria in Section 2.3.2 are:

- Roza Irrigation District Reregulation Reservoir which will conserve 8,584 acre-feet annually when construction is completed and it is operational in 2016.
- Sunnyside Division Board of Control Phase IIB Enclosed Lateral Improvement Projects which will conserve 6,461 acre-feet annually when construction is completed and it is operational in 2032.

WSDOT I-90 Snoqualmie Pass East Phase 2A

Another project that meets the no action criteria is the Washington State Department of Transportation's (WSDOT) I-90 - Snoqualmie Pass East Phase 2A - Keechelus Dam Vicinity

to the Stampede Pass Interchange project. As part of this project, WSDOT and the Federal Highway Administration (FHWA) will replace a 2.1-mile section (milepost 59.9 to 62.0) of existing interstate highway with a new six-lane highway, add a new chain-up area, stabilize rock slopes, remove and reclaim the Price Noble Creek Rest Area and sno park, and construct a wildlife over-crossing near Price Noble Creek. Construction is scheduled to begin in spring 2015 with completion planned for fall 2019. WSDOT evaluated the impacts of this project in the *I-90 - Snoqualmie Pass East Final EIS and Section 4(f) Evaluation* (WSDOT, 2008).

Alternative 2A – KDRPP East Shore Pumping Plant

KDRPP East Shore Pumping Plant Facilities

KDRPP consists of a series of facilities to pump water from Kachess Reservoir and convey it to the Kachess River, which discharges to the Yakima River at Lake Easton. KDRPP would allow the reservoir to be drawn down to about elevation 2,110, approximately 80 feet lower than the current outlet and 152 feet below full pool by using a pumping plant. This would allow access to up to an additional 200,000 acre-feet of water that is currently stored in the reservoir below the elevation of the existing outlet (elevation 2,192.75).

The pumping plant would be used to deliver up to 200,000 acre-feet of water during drought years to downstream Yakima Project irrigation districts, including Kittitas Reclamation District (KRD), Roza Irrigation District (RID), and the Wapato Irrigation Project (WIP)[6]. Reclamation and Ecology define a drought year as a year when water supply falls below 70 percent of proratable water rights. KDRPP would enable delivery of enough water to contribute to increasing prorationing up to 70 percent. As described in Section 1.3 of the Integrated Plan PEIS, 70 percent would provide a water supply sufficient to prevent severe economic losses to proratable water rights users (Reclamation and Ecology, 2012).

Reclamation would use the pumping plant during drought years and could possibly use it in following years as the reservoir is refilling to a level above the existing gravity outlet. This would result in the reservoir being drawn down to the gravity outlet level (elevation 2,110) by about August in drought years. KDRPP would deliver water stored in Kachess Reservoir throughout the remainder of the water year and until the reservoir refills above the gravity outlet level. At the proposed rate of 1,000 cfs, it would take about 101 days to pump the entire 200,000 acre-feet of stored water that is below the elevation of the existing outlet. Section 4.3 includes information about expected reservoir levels under operation of KDRPP.

Alternative 2A – KDRPP East Shore Pumping Plant includes a mostly underground pumping plant located on the east shore of Kachess Reservoir (Figure ES-1). The pumping plant would receive water via a tunnel from an intake located on the floor of the reservoir.

[6] Kennewick Irrigation District is also considering participating in the KDRPP proposal.

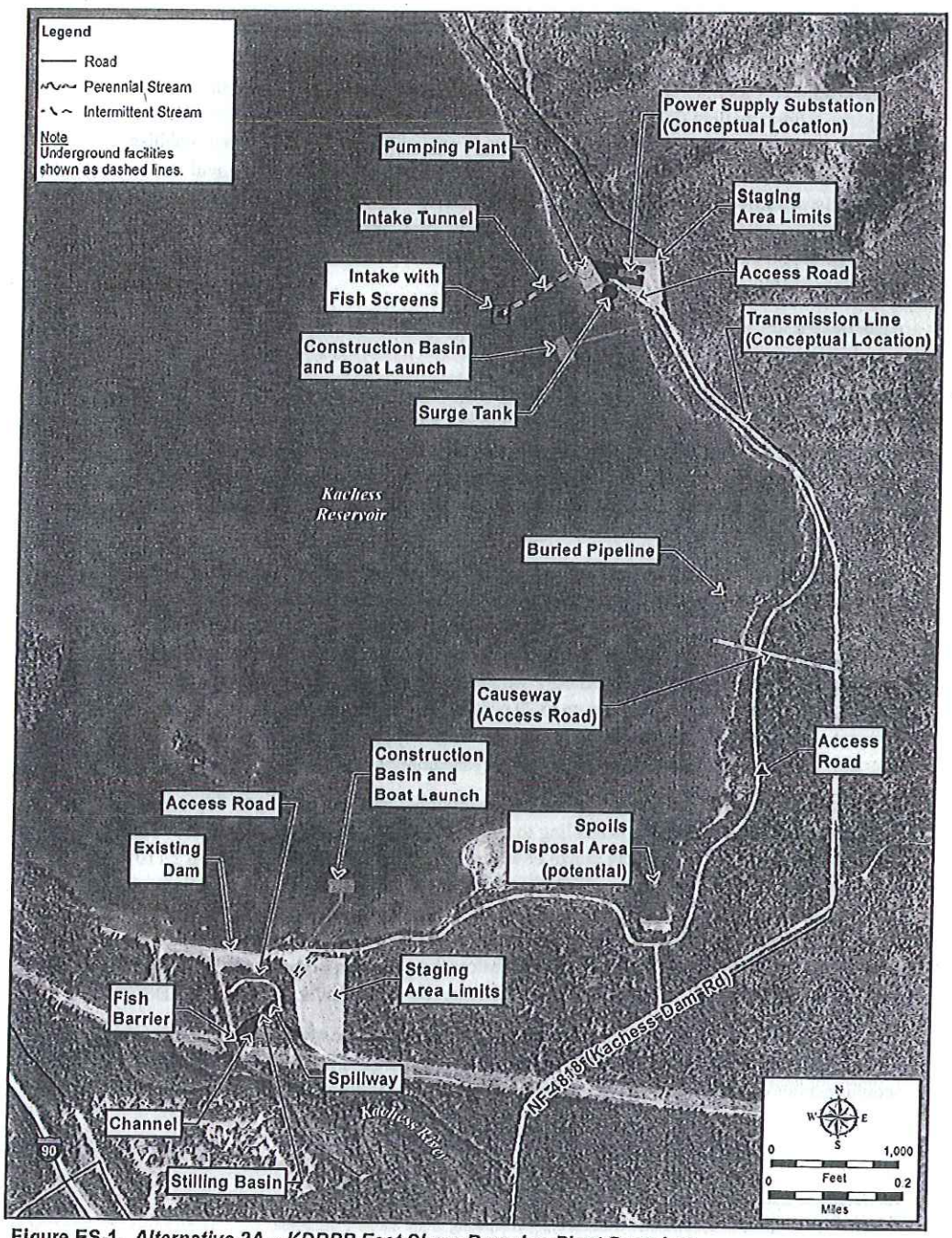


Figure ES-1. ***Alternative 2A – KDRPP East Shore Pumping Plant*** **Overview**

A pipeline located on the reservoir bed would convey water from the pumping plant to a spillway and discharge structure located just downstream from the existing Kachess Dam outlet channel, where it would be released to the Kachess River. The pumping plant would require power which would be supplied via a connection with an existing Puget Sound Energy substation in Easton.

Bull Trout Enhancement

Reclamation and Ecology are developing a Memorandum of Understanding (MOU) with the Service, National Marine Fisheries Service (NMFS), USFS, Washington Department of Fish and Wildlife (WDFW), and the Yakama Nation to implement bull trout enhancement (BTE) to enhance the resiliency of bull trout populations in the Yakima River basin. The BTE is included as a component of all the action alternatives evaluated in this DEIS. The BTE includes actions to enhance bull trout habitat as well as assessments of future efforts to enhance bull trout populations. This DEIS evaluates proposed stream channel and floodplain restoration at Gold Creek and stream passage improvement at Cold Creek. Both creeks are tributaries of Keechelus Reservoir.

The BTE includes habitat restoration and enhancement actions at Gold Creek and Cold Creek, studies of improved bull trout passage for Kachess Reservoir tributaries (Kachess River and Box Canyon Creek), studies of fish passage improvements on the South Fork Tieton River, and assessments of bull trout population enhancements and nutrient enhancement in Kachess and Keechelus reservoirs. This DEIS evaluates the impacts of the actions proposed at Gold and Cold creeks (Figure ES-2). If the studies and assessments of the other BTE actions recommend implementation of specific actions, Reclamation and Ecology would undertake additional NEPA and SEPA analysis and obtain regulatory approvals, including ESA consultation.

Habitat restoration and enhancement to address dewatering of Gold Creek include:

- Improving the stream channel
- Reconfiguring Gold Creek Pond and regarding berms surrounding the pond to reduce stream dewatering
- Filling Heli's Pond and its outlet channel

Reclamation and Ecology would partner with the USFS to replace the bridge on USFS Road NF-4832 to restore the Gold Creek floodplain, a project for which the USFS has already prepared a NEPA Environmental Assessment (EA) and Finding of No Significant Impact (USFS, 2011a and 2011d). The new Gold Creek USFS Bridge would span the floodplain of Gold Creek (approximately 725 feet wide) and would provide the following benefits: improved hydrologic connectivity, lower stream velocities, improved channel migration, floodplain restoration, restored capacity for sediment transport, reduced sediment and temperature, and improved groundwater flow.

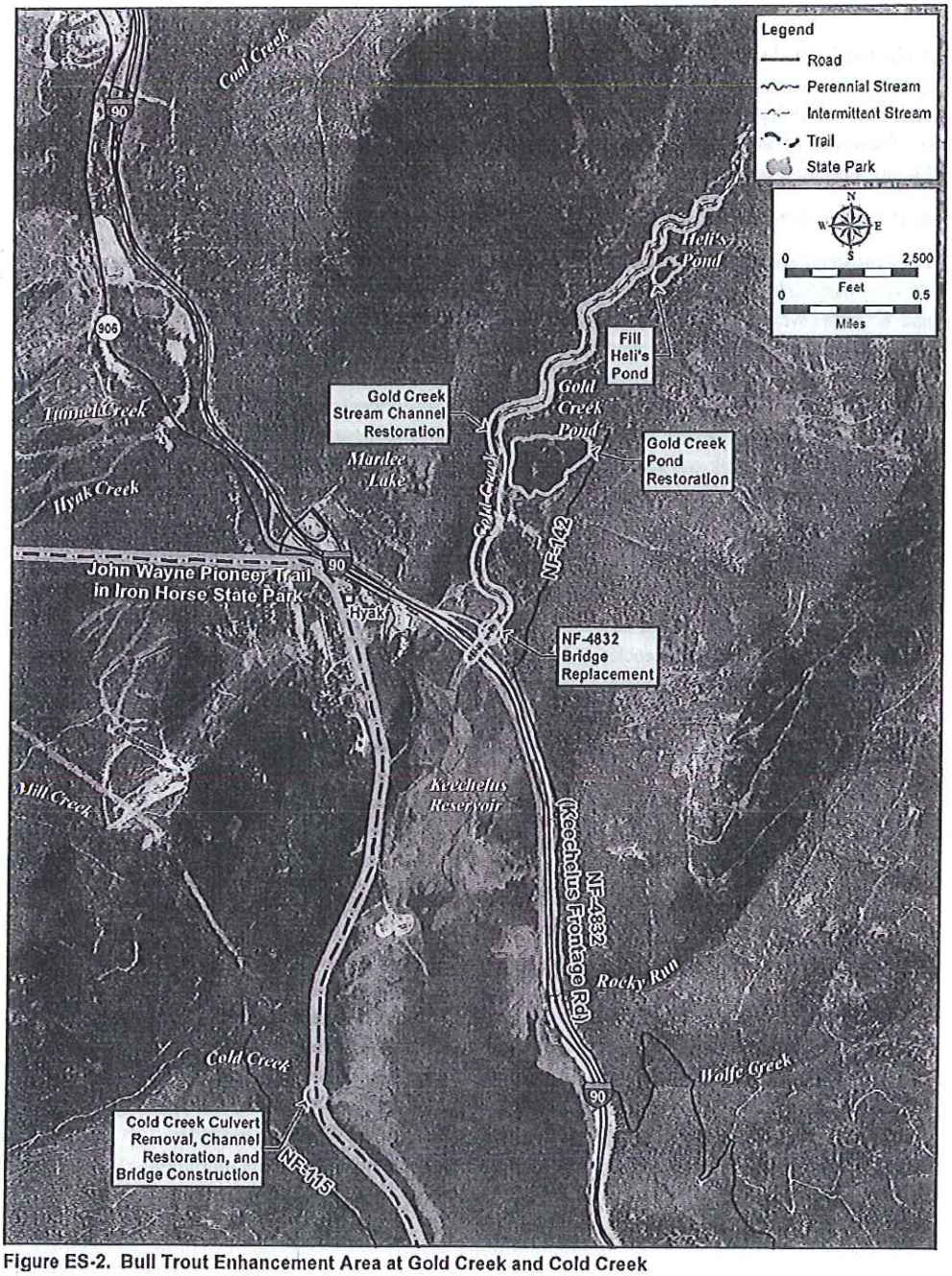


Figure ES-2. Bull Trout Enhancement Area at Gold Creek and Cold Creek

At Cold Creek, Reclamation and Ecology would remove the existing passage barrier at the mouth of the creek to allow bull trout access to the stream. The project would include excavating the John Way Pioneer Trail to remove the existing concrete culvert and building a new bridge to accommodate the trail. The project would include regrading the stream and habitat restoration.

Mitigation

Reclamation and Ecology would provide mitigation for impacts associated with *Alternative 2A – KDRPP East Shore Pumping Plant.* Specific mitigation measures are described in Chapter 4 at the end of each resource section. Reclamation and Ecology would also comply with the environmental commitments for the Proposed Action as described below.

Alternative 2B – KDRPP South Pumping Plant

KDRPP South Pumping Plant Facilities

Alternative 2B – KDRPP South Pumping Plant Alternative is similar to *Alternative 2A* except that the intake and pumping plant would be located at the south end of the reservoir downstream from Kachess Dam and adjacent to the Kachess River (Figure ES-3). The proposed south pumping plant would be adjacent to the existing outlet works discharge pool, just downstream from the existing Kachess Dam outlet channel, where the water would be released to the Kachess River. Thus a pipeline between the pumping plant and outlet works would not be needed.

Bull Trout Enhancement

The BTE projects would be the same as described for *Alternative 2A – KDRPP East Shore Pumping Plant.*

Mitigation

Reclamation and Ecology would provide mitigation for impacts associated with *Alternative 2B – KDRPP South Pumping Plant.* Specific mitigation measures are described in Chapter 4 at the end of each resource section. Reclamation and Ecology would also comply with the environmental commitments for the Proposed Action as described below.

Alternative 3A – KKC North Tunnel Alignment

KKC North Tunnel Alignment Facilities

KKC consists of an underground tunnel to convey water from Keechelus Reservoir to Kachess Reservoir. This would allow Reclamation to reduce flows in the upper Yakima River, thereby improving rearing habitat for steelhead and spring Chinook, and improving the ability to refill Kachess Reservoir following drought years. The proposed conveyance extends east from the Keechelus Dam outlet and discharges on the west shore of Kachess Reservoir.

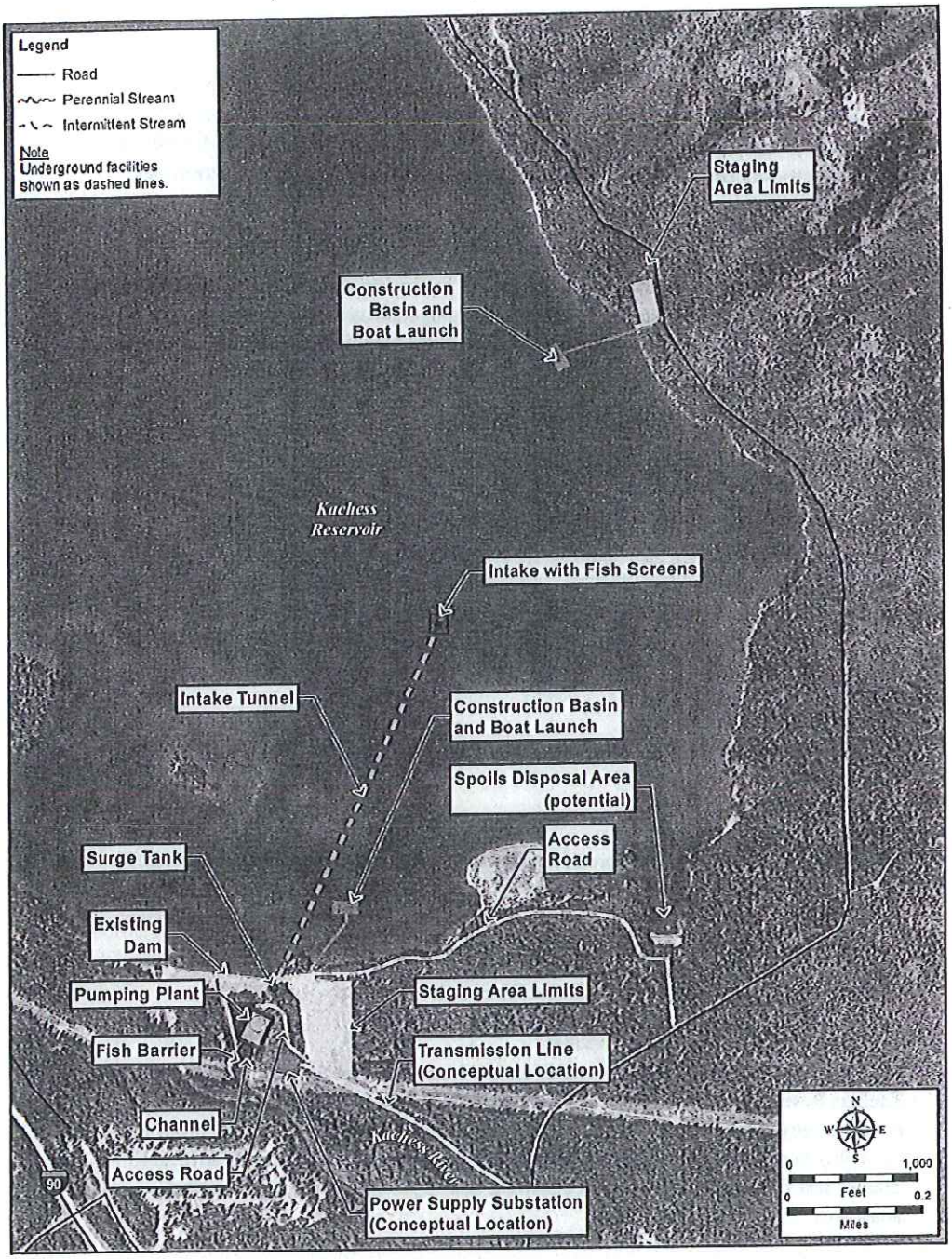


Figure ES-3. ***Alternative 2B – KDRPP South Pumping Plant*** **Overview**

Reclamation would operate KKC by diverting water by gravity flow from the Yakima River downstream of Keechelus Reservoir to the Kachess Reservoir. Reclamation would transfer flows in all years when Keechelus Reservoir is above its target pool elevation and Kachess Reservoir is below target pool elevation. Under existing conditions, flows released from Keechelus Reservoir are too high in summer months to provide habitat for anadromous fish. This proposal would reduce flows in July and August and provide a more gradual reduction in flows until September.

This DEIS evaluates two alternatives for KKC: *Alternative 3A – KKC North Tunnel Alignment* and *Alternative 3B – KKC South Tunnel Alignment*. The alternatives primarily differ in how the tunnel and portals are configured. Reclamation would operate KKC the same, regardless of the location of the facilities.

The *Alternative 3A – KKC North Tunnel Alignment* extends east from the Keechelus Dam area to an outlet on the west shore of Kachess Reservoir (Figure ES-4). The tunnel is a single segment tunnel that would be excavated upgradient from a portal at Kachess Reservoir. The tunnel design evaluated in this DEIS curves slightly to the south to avoid a rock formation that would require deep excavation to install the tunnel. Additional geotechnical information (expected spring 2015) would be considered in selecting the tunnel route. This DEIS assumes the curved tunnel alignment because it represents a worst-case scenario for environmental analysis. All of the facilities would be same regardless of whether the curved or straight tunnel alignment is selected.

Bull Trout Enhancement
The BTE projects would be the same as described for *Alternative 2A – KDRPP East Shore Pumping Plant.*

Mitigation
Reclamation and Ecology would provide mitigation for impacts associated with *Alternative 3A – KKC North Tunnel Alignment.* Specific mitigation measures are described in Chapter 4 at the end of each resource section. Reclamation and Ecology would also comply with the environmental commitments for the Proposed Action as described below.

Alternative 3B – KKC South Tunnel Alignment

KKC South Tunnel Alignment Facilities
Alternative 3B – KKC South Tunnel Alignment is similar to *Alternative 3A – KKC North Tunnel Alignment.* All of the facilities located in the Keechelus Dam area would be the same as proposed for *Alternative 3A – KKC North Tunnel Alignment* (Sections 2.6.1.1 through 2.6.1.4). The tunnel would start at the Keechelus Reservoir portal, but would be located further south than for *Alternative 3A*, discharging into Kachess Reservoir at the Kachess Reservoir portal just to the south of the portal proposed for *Alternative 3A* (Figure ES-5). In order to reduce truck traffic on Kachess Lake Road and eliminate the need to relocate that road, the access portal for construction would be located near the I-90 Exit 62 Stampede Pass interchange. Construction from this portal would be done in two segments, one extending northwest to the Keechelus portal and one extending northeast to the Kachess Reservoir outlet. *Alternative 3B* also includes the BTE activities identified in *Alternative 2A*, Section 2.4.5.

Figure ES-4. *Alternative 3A – KKC North Tunnel Alignment* Overview

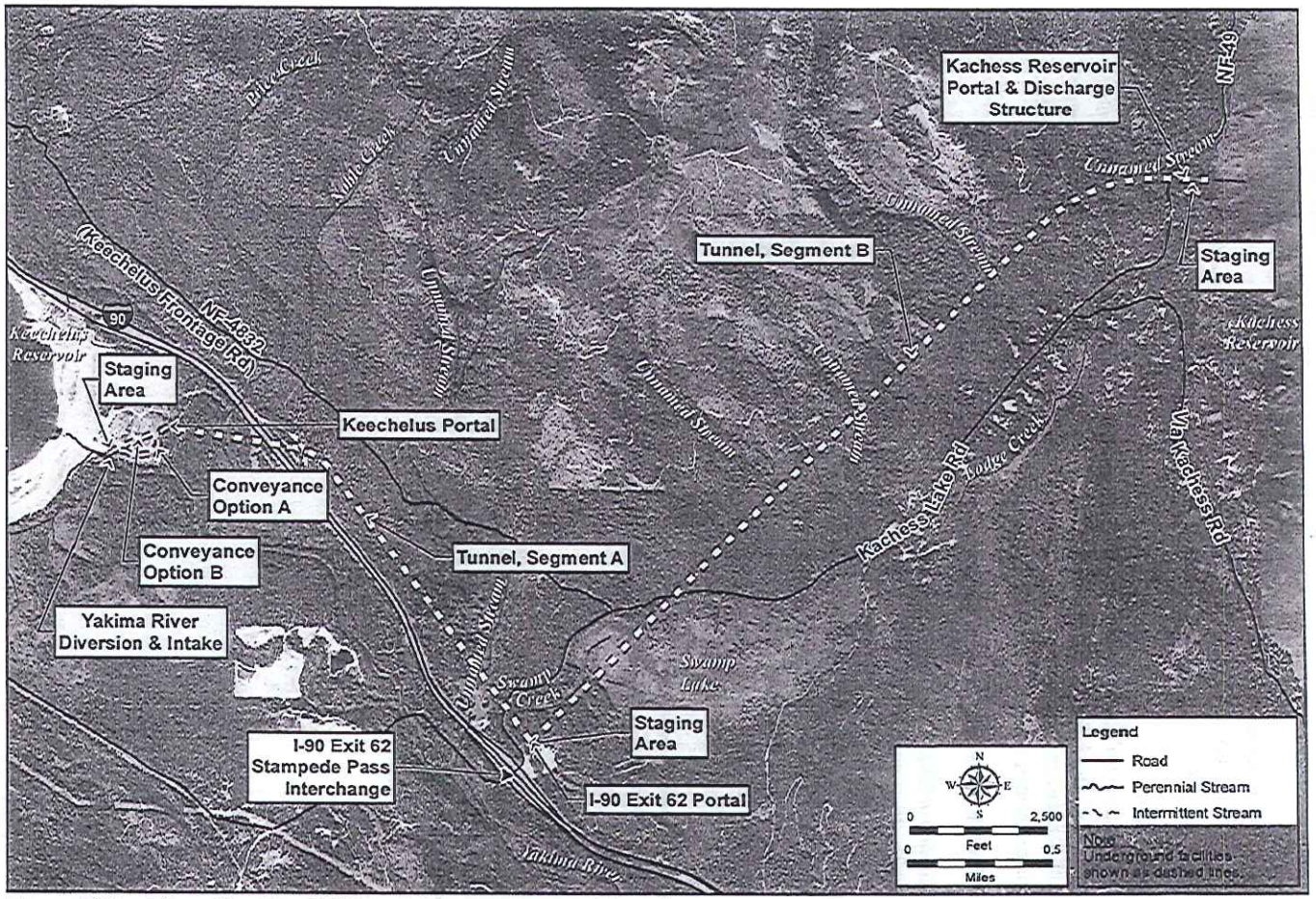


Figure ES-5. ***Alternative 3B – KKC South Tunnel Alignment*** **Overview**

Bull Trout Enhancement

The BTE projects would be the same as described for *Alternative 2A – KDRPP East Shore Pumping Plant.*

Mitigation

Reclamation and Ecology would provide mitigation for impacts associated with *Alternative 3B – KKC South Tunnel Alignment.* Specific mitigation measures are described in Chapter 4 at the end of each resource section. Reclamation and Ecology would also comply with the environmental commitments for the Proposed Action as described below.

Alternative 4 – Combined KDRPP and KKC

Combined KDRPP and KKC Facilities

Under *Alternative 4 – Combined KDRPP and KKC,* Reclamation and Ecology would implement the KDRPP and KKC together to provide more flexible water management. In addition to allowing Reclamation to reduce artificially high flows in the Keechelus Reach, combined operation of KDRPP and KKC would speed up refill of Kachess Reservoir after it has been drawn down in drought years under KDRPP. The facilities and construction processes for each component would be the same as described for *Alternatives 2A* or *3B* and *Alternatives 3A* or *3B* and Reclamation and Ecology.

Bull Trout Enhancement

The BTE projects would be the same as described for *Alternative 2A – KDRPP East Shore Pumping Plant.*

Mitigation

Reclamation and Ecology would provide mitigation for impacts associated with *Alternative 4 –Combined KDRPP and KKC.* Specific mitigation measures are described in Chapter 4 at the end of each resource section. Reclamation and Ecology would also comply with the environmental commitments for the Proposed Action as described below.

Summary of Environmental Consequences

Chapter 4 of the DEIS describes the environmental consequences of the alternatives, including the No Action Alternative as well as mitigation measures for potential impacts. Table ES-1 provides a summary of impacts and benefits associated with the No Action and four action alternatives.

All of the action alternatives include major construction impacts including increased dust, vehicle emissions, noise, and traffic on local roadways and I-90. Construction, including removal of vegetation, would temporarily disrupt fish and wildlife, including Endangered Species Act listed bull trout and northern spotted owl. Construction at Kachess Reservoir and Gold and Cold creeks would temporarily disrupt the usability and quality of recreation. Construction could also damage or alter identified National Register of Historic Places sites.

KDRPP (*Alternatives 2A* and *2B*) would increase water supply to proratable irrigation districts from 19 to 23 percent and bring the supply close to the 70 percent of entitlements goal. KDRPP would lower the level of Kachess Reservoir by up to 80 feet, which would impact fish access to reservoir tributaries and the upper Kachess basin. Lower reservoir levels would increase slope stability risks on the reservoir rim and could impact water quality by increasing water temperature and decreasing dissolved oxygen. Lower reservoir levels could also cause lower groundwater levels, negatively impacting water supply for residents. The reservoir drawdown would negatively impact visual quality and recreation by exposing a large area of reservoir bed and making the existing boat launches unusable. Stream restoration at Gold and Cold creeks would alter the character or recreation at Gold Creek Pond and the Cold Creek segment of the John Wayne Pioneer Trail.

KKC (*Alternatives 3A* and *3B*) would reduce artificially high flows in the Keechelus Reach of the Yakima River, improving habitat for anadromous fish. KKC would cause a minimal increase in water supply for proratable irrigation districts. Fluctuations in water levels in Kachess Reservoir would reduce connectivity between the reservoir and tributary habitats. Transferring water from Keechelus Reservoir to Kachess Reservoir could introduce contaminants such as PCBs to Kachess Reservoir.

Combined operation of KDRPP and KKC (*Alternative 4*) would have the same impacts as the individual projects, but would provide a greater benefit to proratable water supply than KDRPP alone and KKC would help refill Kachess Reservoir more rapidly following operation of KDRPP.

Under all action alternatives, the BTE would improve habitat for bull trout, other fish, and wildlife in the Gold and Cold creek areas. Improvements would increase streamflows, improve fish passage, and provide a surface water connection between the creeks and Keechelus Reservoir.

Table ES-1. Summary Comparison of Impacts

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Earth					
Shoreline erosion, if any and seismic hazards would continue as under existing conditions.	Construction: Erosion during construction and seismic and slope stability risks not significant impacts. Operation: Increased risk of slope stability on the reservoir rim. Long-term erosion not significant.	Same as *Alternative 2A*.	Construction: Erosion during construction and seismic and slope stability risks not significant impacts. Operation: Long-term erosion not significant.	Same as *Alternative 3A*.	Same as *Alternatives 2A* and *3A*.
Surface Water Resources					
There would be a continued inadequacy of water supply for proratable irrigators in drought years. Summer streamflows in the Keechelus Reach would remain artificially high. When Keechelus Reservoir level falls below elevation 2,466, tributary access for bull trout would be adversely impacted for approximately 115 days in 81 percent of years. This would be a significant impact to fish passage. The pool elevation would remain within the current operating range of the reservoir.	Construction: Construction would not affect water resources. Operation: Water supply to proratable water users would be improved significantly by 19 to 23 percent in drought years, raising the proration to about 64 percent of entitlement. In multiple drought years, the improvement would be less. Keechelus Reservoir would be operated to help Kachess Reservoir refill following a drought. This would result in a slightly lower mean Keechelus Reservoir pool level, with a maximum reservoir drawdown of 15 feet in late summer. When Keechelus Reservoir level falls below elevation 2,466, bull trout access to tributaries is adversely impacted. This would at the same frequency as the No Action, but for a longer duration. However, the pool elevation would remain within the current operating range of the reservoir and would not significantly affect Keechelus Reservoir operations. Kachess Reservoir would be drawn down by as much as 80 feet below existing low pool conditions and take 2 to 5 years following a drought to refill. The drawdown of Kachess Reservoir would increase the occurrence and duration of reservoir pool levels below elevation 2,220. Below that elevation, fish cannot pass between the Kachess and Little Kachess basins, significantly impacting fish passage. Relative to *Alternative 1*, this would occur 5 percent more often and the duration would increase by 56 days during those years. The drawdown of Kachess Reservoir would increase the duration of reservoir levels below elevation 2,226—the level at which access for bull trout to tributary streams is significantly impacted. Frequency would be the same as *Alternative 1*, but duration would increase by 44 days (from means of 109 to 153) during those years.	Same as *Alternative 2A*.	Construction: There would be no impacts from construction. Operation: *Alternative 3A* would yield a minimal improvement in water supply to proratable users in drought years, but not enough to be significant. During post-drought years, Keechelus Reservoir maximum pool elevations would be lower and minimum elevations higher. Keechelus Reservoir levels would fall below 2,466 in 10 percent fewer years than *Alternative 1* and for 15 fewer days during those years. This would be a significant benefit to fish passage. The pool elevation would remain within the current operating range of the reservoir, and would not significantly affect Keechelus Reservoir operations. Summer streamflows in the Keechelus Reach would be reduced by 400 cfs, greatly improving fish habitat conditions. Streamflow changes in other Yakima River reaches would not have significant effects because flow would remain within current operating ranges. Streamflow in the Kachess River would change, but would fall within current operating ranges; thus no significant effect would result. The BTE would improve streamflow in Gold and Cold creeks during late summer and fall, when Keechelus Reservoir water levels are at their lowest. The BTE would provide a surface water connection from the streams to the reservoir pools, providing better seasonal passage conditions for bull trout and significantly benefiting fish passage.	Same as *Alternative 3A*.	Construction: Construction would not affect water resources. Operation: Proratable water supply would be increase to about 66 percent of entitlement during single drought years. In multiple drought years, the improvement would be less. Keechelus Reservoir would be operated to help Kachess Reservoir refill following a drought. This would result in a slightly lower mean Keechelus Reservoir pool level, with a maximum reservoir drawdown of 15 feet in late summer. Keechelus Reservoir level would fall below elevation 2,466 approximately 130 days in 74 percent of years, significantly adversely impacting tributary access for bull trout. The pool elevation would remain within the current operating range of the reservoir and would not significantly affect Keechelus Reservoir operations. Kachess Reservoir would be drawn down by as much as 80 feet below existing low pool conditions. It would take 2 to 5 years following a drought for Kachess Reservoir to refill to normal operating levels. The drawdown of Kachess Reservoir would increase the occurrence and duration of reservoir pool levels below elevation 2,220. Below that elevation, fish cannot pass between the Kachess and Little Kachess basins, significantly impacting fish passage. Relative to *Alternative 1*, this would occur 5 percent more often and the duration would increase by 56 days during those years. The drawdown of Kachess Reservoir would increase the duration of reservoir levels below elevation 2,226—the level at which access for bull trout to tributary streams is significantly impacted. Frequency would be the same as *Alternative 1*, but duration would increase by 44 days during those years.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
	Streamflow changes in Yakima River reaches would not have significant effects because flow would remain within current operating ranges. Streamflow in the Kachess River would change, but would be within current ranges; thus would not be significant. The BTE would improve streamflow in Gold and Cold creeks during late summer and fall, when Keechelus Reservoir water levels are at their lowest. The BTE would provide a surface water connection from the streams to the reservoir pools, providing better seasonal passage conditions for bull trout and significantly benefiting fish passage.				Summer streamflows in the Keechelus Reach would be reduced by 400 cfs, significantly improving habitat conditions for fish. Streamflow changes in other Yakima River reaches and the Kachess River would be within current operating ranges.
Surface Water Quality					
No changes would occur to current reservoir operations, reservoir levels, or streamflows that would affect water quality. If a severe long-term drought occurs, or conditions worsen because of climate change, water levels in reservoirs could significantly drop and, with warmer air temperatures, affect long-term water quality conditions for such parameters as DO and water temperature.	Construction: During construction, oil, grease, total petroleum hydrocarbons, suspended sediment, nutrients, and construction wastewater could enter receiving water. With BMPs the potential for contamination would be minimized. Operation: Lower reservoir pool levels during drought and post-drought recovery periods could cause turbidity, temperature, and DO in the Kachess Reservoir to be out of compliance with State surface water quality standards. No long-term significant impacts would be expected because suspended material would be localized and settle out as the reservoir bed stabilizes. After a drought and its recovery, the potential for water heating and depressed DO concentrations would diminish. If a severe long-term drought occurs or conditions worsen because of climate change, water levels in the reservoir could drop significantly, affecting DO and water temperatures resulting in potentially significant impacts. Exceedance of the State standard for temperature and turbidity may occur at the outlet to Kachess River during extended drought and drought recovery. No long-term water quality impacts are expected from the BTE. Stream restoration may help to lower peak water temperatures and improve DO conditions by improving the depth and flow conditions in Gold Creek.	Same as *Alternative 2A*.	Construction: Same as *Alternative 2A*. Operation: Operations would not cause an increase in sedimentation, turbidity, temperature, nutrients, fecal coliform bacteria, or TDG, or a decrease in DO. If a severe long-term drought occurs or conditions worsen because of climate change, water levels in the reservoirs could drop, affecting long-term water quality conditions in Kachess Reservoir for DO and temperature. Water quality in Kachess Reservoir could be modified by the introduction of contaminants from Keechelus Reservoir inflow. No long-term water quality impacts are expected from operation of the BTE following construction. Stream restoration may help to lower peak water temperatures and improve DO conditions by improving the depth and flow conditions in Gold Creek.	Same as *Alternative 3A*.	Construction: Same as *Alternatives 2A and 3A*. Operation: During nondrought conditions, water quality impacts would be similar to those described for *Alternative 3A*. During drought and drought recovery years, water quality impacts on Kachess Reservoir and Kachess River due to lower Kachess Reservoir pool levels would be similar to those described for *Alternative 2A*. Water quality impacts on the Keechelus Reach of the Yakima River would be similar to those described for *Alternative 3A*. During drought recovery, Keechelus Reservoir pool elevations may be lower than existing conditions, potentially resulting in more surface heating during the summer months as the reservoir pool level recovers. No long-term water quality impacts are expected from operation of the BTE following construction. Stream restoration may help to lower peak water temperatures and improve DO conditions by improving the depth and flow conditions in Gold Creek.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Groundwater					
Impacts to groundwater would be the same as under existing conditions.	Construction: Groundwater levels and wells would not be impacted. Inadvertent spills may affect groundwater quality but would be minimized by utilizing BMPs. Operation: Operation may result in decreased groundwater levels in aquifers adjacent to the reservoirs, potentially decreasing the water supply to wetlands, springs, streams, or wells.	Same as *Alternative 2A*.	Construction: There may be temporary impacts to groundwater levels or wells from dewatering. Inadvertent spills may affect groundwater quality but would be minimized by utilizing BMPs. Operation: Operation would not impact groundwater contributions to streams, springs, wetlands or wells.	Same as *Alternative 3A*.	Same as *Alternative 2A* and *3A*.
Fish					
Existing passage problems in the reservoirs would continue. Artificially high streamflows in the Keechelus Reach would continue to provide unsuitable habitat for anadromous fish. Climate change may influence prey availability, decrease habitat complexity and connectivity, increase river and reservoir temperatures, and may lead to less operational flexibility to meet instream flow requirements.	Construction: Construction would reduce shoreline vegetation adjacent to Kachess Reservoir. Temporary increases in turbidity would occur during construction. During construction, increased noise levels may disturb fish. Blasting may be required, thus noise levels could be significant. Operation: *Water temperature* – Reduction in Kachess Reservoir minimum pool elevation may increase water temperatures in Kachess Reservoir. *Turbidity* - Reduction in Kachess Reservoir minimum pool elevation would expose the lower reservoir bed to wave action and increase turbidity. *Food based prey* - Available prey would be reduced in both reservoirs. *Habitat complexity* - Reduction in Kachess Reservoir minimum elevation and lower Keechelus Reservoir levels after drought years would reduce shoreline vegetation and habitat complexity. Lower reservoir levels after drought years would reduce shoreline vegetation and habitat complexity within Keechelus Reservoir. *Habitat connectivity* - Reduction in Kachess Reservoir minimum pool elevation would reduce connectivity between reservoir habitats as well as between reservoir and tributary habitats. Lower Keechelus Reservoir levels after drought years would reduce connectivity between reservoir and tributary habitats. The BTE would increase habitat connectivity between reservoir and tributary habitat in Keechelus Reservoir. *Entrainment* - Increased risk of entraining resident fishes with small larval stages in the new intake in Kachess Reservoir.	Construction: Same as *Alternative 2A*, but noise disturbance would be less than *Alternative 2A*. Operation: Impacts to temperature, food based prey, habitat connectivity, and entrainment would be the same as *Alternative 2A*. *Habitat complexity* – Impacts the same as *Alternative 2A*, but the footprint of *Alternative 2B* is smaller.	Construction: During construction increased noise levels and turbidity may disturb fish. Operation: *Food based prey* - Available prey would be reduced in Kachess Reservoir, but would increase within Keechelus Reservoir. *Habitat complexity* - Greater fluctuations in Kachess Reservoir level would reduce shoreline vegetation and habitat complexity. Smaller fluctuations in Keechelus Reservoir level would increase shoreline vegetation and habitat complexity. *Habitat connectivity* - Lower reservoir levels would reduce connectivity between reservoir and tributary habitats in Kachess Reservoir. Reduced frequency and duration of passage impediments would increase connectivity between reservoir and tributary habitats in Keechelus Reservoir. The BTE would increase habitat connectivity between reservoir and tributary habitat in Keechelus Reservoir. *River flow* - Summer instream flows in the Yakima River would meet targets in most years and increase salmon production and resident fish habitat in the Keechelus Reach. *Transmission of disease or invasive species* - The conveyance of water would increase the risk of transmitting diseases and exotic species to Kachess Reservoir.	Same as *Alternative 3A*.	Construction: Same as *Alternatives 2A* and *3A*. Operation: *Temperature* – Reduction in Kachess Reservoir minimum pool elevation may increase water temperatures in Kachess Reservoir. Following drought years, reductions in Keechelus Reservoir pool elevation may increase water temperatures in Keechelus Reservoir. *Turbidity* – Reduction in Kachess Reservoir minimum pool elevation would expose the lower reservoir bed to wave action and increase turbidity. *Food based prey* - Available prey would be reduced in Kachess Reservoir but only available zooplankton prey would be reduced within Keechelus Reservoir. Impacts to habitat complexity, connectivity and entrainment would be the same as *Alternative 2A*. Impacts to nutrients and river flow, as well as impacts from transmission of disease or invasive species would be the same as *Alternative 3A*.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Vegetation and Wetlands					
There would result in a net benefit to wetlands and vegetation in the extended study area, associated with proposed mitigation for the I-90 Phase 2A project.	Construction: Temporary loss of riparian and upland vegetation would not be significant. Operation: Prolonged drawdown of Kachess Reservoir may result in establishment of invasive species and changes to wetland hydrology and vegetation communities during drought years. This would not be significant with the implementation of invasive species control and wetland mitigation. There would be a permanent loss of less than 1 acre of wetland, which would be mitigated to ensure no net loss. Permanent loss of riparian and upland vegetation would not be significant. The BTE would benefit up to 30 acres of wetlands in the Gold Creek drainage.	Same as *Alternative 2A*.	Construction: Temporary loss of riparian and upland vegetation would not be significant. There may be temporary impacts to wetlands from dewatering. Operation: No net loss of wetlands. Permanent loss of riparian and upland vegetation would not be significant. The BTE would have a beneficial impact on up to 30 acres of wetlands in the Gold Creek drainage.	Construction: Same as *Alternative 2A*. Operation: Same as *Alternative 3A*.	Same as *Alternatives 2A and 3A*.
Wildlife					
Wildlife conditions would remain similar to existing conditions, but wildlife would benefit from the ongoing wildlife connectivity improvements of the I-90 Phase 2A project.	Construction: Impacts to habitat are significant for localized species with small home ranges and not significant for transient species that occupy the larger watershed. Permanent habitat loss would be 18 acres. Disturbances to wildlife from construction activities or noise are considered significant. Impacts from the BTE would be positive or negative depending on the species. Operation: Disturbance from noise, light or human activities are not significant.	Construction: Same as *Alternative 2A*, except habitat loss would be 8 acres. Operation: Same as *Alternative 2A*.	Construction: Same as *Alternative 2A*, except habitat loss would be 4 acres. Operation: Same as *Alternative 2A*.	Construction: Same as *Alternative 2A*, except habitat loss would be 1.5 acres. Operation: Same as *Alternative 2A*.	Construction: Same as *Alternative 2A* and 3A, except habitat loss would be 8 to 22 acres, depending on which combination of KDRPP and KCC is chosen. Operation: Same as *Alternative 2A*.
Threatened and Endangered Species					
Habitat conditions would be similar to existing conditions. Climate change could exacerbate existing negative bull trout habitat conditions as well as limit Reclamation's flexibility to meet instream flow requirements for bull trout and MCR steelhead. Habitat connectivity improvements associated with the I-90 Phase 2A project would improve conditions for bull trout and northern spotted owl.	Construction: There would be significant loss of habitat that supports the northern spotted owl. *Alternative 2A* would have the largest area of vegetation removal. Increased noise is not expected to result in harm or injury to northern spotted owl; however, it may cause disturbance behaviors. Turbidity from construction may negatively impact bull trout and MCR steelhead. Operation: The BTE would improve habitat for bull trout. There would be no other operational impacts on threatened and endangered species.	Same as *Alternative 2A*, except vegetation loss and noise impacts would be less.	Same as *Alternative 2A*, except vegetation loss and noise impacts would be less than *Alternatives 2A and 2B*.	Same as *Alternative 2A*, except vegetation loss and noise impacts would be less than *Alternatives 2A, 2B, and 3A*.	Same as *Alternative 2A and 3A*.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Visual Quality					
There would be no changes to visual quality.	Construction: There would be no significant impacts from construction. Operation: Kachess Reservoir drawdowns during drought years would have significant impacts due to changes in overall landscape character and desirability from a recreation perspective. The drawdown would potentially conflict with scenic integrity and visual quality objectives. The east shore pumping plant would have a significant impact because it would substantially contrast with and interrupt the visual character and integrity of the landscape.	Construction: There would be no impacts from construction. Operation: Kachess Reservoir drawdowns during drought years would have significant impacts due to changes in overall landscape character and desirability for recreation. The drawdown would potentially conflict with scenic integrity and visual quality objectives. New facilities would not contrast with or interrupt the visual character and integrity of the landscape.	Construction: There would be no significant impacts from construction. Operation: New facilities would not contrast with or interrupt the visual character and integrity of the landscape.	Same as *Alternative 3A*.	Same as *Alternative 2A, 2B, 3A, or 3B* depending on which combination of KDRPP and KKC is chosen.
Air Quality					
Impacts to air quality would not increase over existing conditions.	Construction: Construction would result in increased emissions and fugitive dust throughout construction, but would not be significant. Operation: Emissions and fugitive dust would not have a significant impact on sensitive receptors.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternatives 2A and 3A*.
Climate Change					
There would be no significant production of GHGs. Climate change could adversely impact operation of the reservoirs because of changes in runoff timing and volume.	Construction: There would be no significant production of GHGs. Operation: There would be no significant production of GHGs. Climate change predictions indicate that Reclamation would need to increase operation of KDRPP. This is not considered a significant impact because KDRPP would still contribute to increasing water supply. The effects of climate change would decrease winter, spring, and fall attainment of instream flow targets. Summer attainment of instream flow targets in the Keechelus Reach of the Yakima River would be improved by the effects of climate change. These impacts are not considered significant. Climate change effects could offset some of the potential benefits of the BTE, but also increase the need for the BTE.	Same as *Alternative 2A*.	Construction: There would be no significant production of GHGs. Operation: Same as *Alternative 2A*, except summer attainment of instream flow targets would be unchanged.	Same as *Alternative 3A*.	Same as *Alternatives 2A and 3A*.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Noise					
There would be no increase in noise over existing conditions.	Construction: Construction would result in increased noise throughout the construction period. Impacts are not considered significant because noise would remain below Class A noise levels at existing noise sensitive receptors. Ground-borne vibration could be an occasional nuisance during construction hours, but would not be significant. Operation: There would be no noise impacts from operation.	Same as *Alternative 2A*.	Construction: Construction would result in increased noise throughout the construction period. Noise levels could potentially exceed maximum permissible levels, but noise would be intermittent and well below the pain threshold levels that affect human health. Ground-borne vibration could be an occasional nuisance during construction hours, but impacts would not be significant. Operation: No noise impacts are anticipated.	Same as *Alternative 2A*.	Same as *Alternatives 2A* and *3A*.
Recreation					
Similar to existing conditions. Continued increased demand, boat launches would remain inaccessible at certain times of the year and climate change may negatively affect opportunities. Construction of I-90 Phase 2A would temporarily impact recreation.	Construction: Construction would impact usability and quality of recreation at adjacent undeveloped recreation sites, but the impacts would be minor as the majority of the reservoir shore would remain available. Construction for the BTE would impact recreation at the Gold Creek Pond Picnic Area and John Wayne Pioneer Trail. Operation: Impacts from reservoir drawdown would be significant because the boat launch at Kachess Campground would be inaccessible more often than with *Alternative 1*. Loss of fishing opportunities would also be significant due to loss of boating access and impacts on fish species. The drawdown of Kachess and Keechelus reservoirs would significantly impact usability and quality of recreation during drought years and as the reservoir refills because of the extent and slope of the exposed reservoir bed. Recreational use would be restored following construction of the BTE actions, but the character of recreation at these sites would change.	Same as *Alternative 2A*.	Construction: Construction could disrupt quality of recreation, but the impact would not be significant. Operation: There would be no significant impact. Recreational use would be restored following construction of the BTE, but the character of recreation at these sites would change.	Same as *Alternative 3A*.	Same as *Alternative 2A* and *3A*.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Land and Shoreline Use					
Current trends would continue and there would be an increased potential for the prorationing of irrigation water due to climate change. Long-term negative changes in land use could potentially result from these indirect impacts on water reliability.	Construction: There would be temporary disruption of land use. Operation: Some property easements or acquisitions would be necessary for the pumping plant site and possibly for the transmission line, and the BTE. Improved reliability of proratable water supply would be provided.	Construction: Same as *Alternative 2A.* Operation: Some property easements or acquisitions may be necessary for the transmission line and the BTE. There would be improved reliability of proratable water supply.	Construction: Same as *Alternative 2A.* Operation: Some property easements or acquisitions may be required for KKC facilities and the BTE.	Same as *Alternative 3A.*	Same as *Alternatives 2A and 3A.*
Utilities					
There would be no impacts to utilities.	Construction: Interruption of services is not anticipated. Operation: There would be no impacts to electricity, wastewater, or telecommunications.	Same as *Alternative 2A.*	Same as *Alternative 2A.*	Same as *Alternative 2A.*	Same as *Alternative 2A.*
Transportation					
Similar to existing conditions, except construction traffic on I-90 and there would be long-term beneficial effects resulting from the I-90 Phase 2A project.	Construction: Construction would result in a more-than-moderate increase in vehicle traffic time and is considered significant. The increase would not affect the ability of emergency personnel to respond to an incident or interrupt school bus routes, because the delays would be intermittent and of short-term duration. No road closures are planned. No changes are anticipated to existing access for pedestrians, snowmobiles, or bicycles along local roadways. There is no anticipated impact to existing parking areas. Safety risks and deterioration of roads are not considered significant. Operation: Impacts would not be significant because there would be minimal increases in traffic delays; no interruption to other means of transportation; no interruption to emergency vehicle response time; no parking impacts; and no deterioration of roads.	Same as *Alternative 2A.*	Same as *Alternative 2A.*	Same as *Alternative 2A.*	Same as *Alternative 2A.*

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Cultural Resources					
Similar to existing conditions.	Construction: Construction at Kachess Reservoir could damage or alter the identified NRHP-eligible site and potential additional sites that have not yet been identified. The Cold Creek passage improvements would permanently change the John Wayne Pioneer Trail, but trail use would continue. Operation: The additional 80-foot drawdown of Kachess Reservoir would expose large portions of shoreline, potentially exposing cultural resources to degradation, looting, or vandalism.	Same as *Alternative 2A*.	Construction: Construction at Keechelus Reservoir could damage or alter the identified NRHP-eligible site and potential additional sites that have not yet been identified. The Cold Creek improvements would change the John Wayne Pioneer Trail, but trail use would continue. Operation: The additional 15-foot drawdown of Keechelus Reservoirwould expose large portions of shoreline, potentially exposing cultural resources to degradation, looting, or vandalism.	Same as *Alternative 3A*.	Same as *Alternative 2A* and *3A*.
Indian Sacred Sites					
There would be no impacts.	To date, Reclamation has identified no Indian sacred sites in the study area. No impacts are anticipated.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternative 2A*.
Indian Trust Assets					
There would be no impacts.	To date, Reclamation has identified no Indian trust assets in the study area. No impacts are anticipated.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternative 2A*.	Same as *Alternative 2A*
Socioeconomics					
No impacts are anticipated and existing trends would continue.	Construction: Direct impacts on income and employment would be generally positive, but not significant. Workers may displace customary recreational visitors during summer, but would offset lost recreation related business. Operation: As a result of improved water supply, agricultural output during drought years would be significantly higher.	Same as *Alternative 2A*.	Construction: Impacts would be the same as *Alternative 2A*, but to a lesser degree. Operation: Direct impacts on income, employment, lodging, would be generally positive, but not significant. There would be no impact on agricultural output.	Same as *Alternative 3A*.	Construction: Impacts would be the same as *Alternative 2A*, but to a greater degree. Operation: Direct impacts on income, employment, lodging, would be generally positive, but not significant. As a result of improved water supply, agricultural output during drought years would be significantly higher relative to *Alternative 1* and more than KDRPP alone.
Environmental Justice					
No impacts are anticipated.	Construction: No significant impacts. Operation: No disproportionate impacts to minority or low-income populations. Impacts to fish species in Kachess Reservoir could cause a significant impact to subsistence living.	Same as *Alternative 2A*.	Construction: No significant impacts. Operation: No disproportionate impacts to minority or low-income populations.	Same as *Alternative 3A*.	Same as *Alternatives 2A* and *3A*.

No Action Alternative	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 3B	Alternative 4
Environmental Health and Safety					
There would be no increase in environmental health and safety risks over existing conditions.	Construction: There would be no impacts from hazardous sites or construction traffic. Operation: Full drawdown would expose areas with steep slopes around Kachess Reservoir which would increase the risk from falling.	Same as *Alternative 2A*.	Construction: There would be no impacts from hazardous sites or construction traffic. Operation: No impacts are anticipated.	Same as *Alternative 3A*.	Same as *Alternatives 2A and 3A*.

Cumulative Impacts

Cumulative impacts are the effects that may result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Section 4.25 of this DEIS evaluates cumulative impacts. The various environmental element sections in Chapters 3 and 4 of the DEIS also examine many of the cumulative impacts. Those analyses discuss the effects of past processes and trends that have cumulatively influenced or led to the resource conditions that exist today.

In addition, Reclamation considers two projects to be a reasonably foreseeable future projects—the Cle Elum Pool Raise Project and ongoing construction on Interstate-90 (I-90). The Cle Elum Pool Raise Project would provide benefits to fish and streamflow conditions that would be beneficial at a basin-wide level when implemented with other proposed projects. The Cle Elum Pool Raise Project could also cumulatively contribute to regional trends toward reduced habitat, impacts to historic and cultural resources, and construction impacts in the region. Construction traffic for all projects would travel on I-90. Dust, noise, and overall traffic would be additive, although these impacts would be limited to the period of construction. While the impacts on traffic of the individual projects would not be significant, the impacts, combined with the ongoing construction on the I-90 Snoqualmie Pass East Project, would cause additive impacts. These cumulative impacts would create a nuisance for people traveling on I-90 as well as residents and recreationists in the Proposed Action areas and on the I-90 corridor.

Environmental Commitments

Environmental commitments are measures or practices adopted by a project proponent to reduce or avoid adverse effects that could result from project operations. Chapter 4 describes specific mitigation measures for project impacts on each resource. The following list summarizes major environmental commitments for the KDRPP and KKC proposals. Reclamation and Ecology share the responsibility to ensure obligations to protect natural resources are fulfilled.

- Obtain all applicable Federal, State and local permits.
- Prior to construction, conduct site-specific geotechnical studies to identify subsurface issues, unstable slopes, and other local factors that could contribute to slope instability and increase erosion potential.
- Conduct continued monitoring of site conditions and erosion potential.

- Develop a surface water quality monitoring program in cooperation with Ecology to monitor changes in water quality associated with the project.
- Monitor wells near Kachess Reservoir to determine if the additional reservoir drawdown lowers groundwater levels. Develop appropriate mitigation strategies if water levels are impacted.
- Enter into a Memorandum of Understanding (MOU) (Appendix A) with Ecology, the Yakama Nation, Service, and WDFW. The MOU provides a framework in which to coordinate and facilitate cooperation among the parties to develop and implement improvements to bull trout habitat within the Yakima River basin as described in the Bull Trout Enhancement Report in Appendix C and consistent with environmental commitments in this section.
- Support a study to examine reservoir productivity and food web impacts from future use of Kachess Reservoir inactive storage.
- Provide bull trout passage between Box Canyon Creek and Kachess Reservoir and between the Little Kachess and Kachess basins to offset impacts of additional draw down at Kachess Reservoir. Conduct general passage improvement activities within Kachess and Keechelus reservoirs.
- Prior to construction, conduct wetland surveys using current wetland delineation methodology. Design projects to avoid wetland impacts. If wetland impacts occur, comply with mitigation measures established in permit conditions to ensure no net loss.
- Prior to construction, coordinate with USFS to determine the presence of any Sensitive or Survey and Manage species and take steps to minimize impacts to those species.
- Monitor for infestations of invasive plant species associated with project ground disturbances and periods of prolonged drawdown of the reservoirs and implement suppression strategies to control invasive plant populations.
- If feasible, extend boat ramps at Kachess Reservoir when the reservoir is drawn down during drought years.
- Implement a public communication strategy to prepare recreation users for the significant impacts on recreation at Kachess Reservoir.
- Implement a construction traffic management plan with specific traffic management measures and procedures for construction contractors.
- Prior to construction, conduct cultural resource studies of all areas that would be disturbed by construction.
- In consultation with DAHP and affected Indian Tribes, develop a treatment plan for all cultural resources directly impacted by the project.

- Develop a Cultural Resource Management Plan to address ongoing and future operational and land management implications of the proposed project.
- Prior to construction, survey utilities in construction areas and take appropriate measures to minimize conflicts with any identified utilities.
- Install signage and post notices to ensure that the general public understands potential safety issues associated with steep slopes along the reservoir.

Reclamation would implement current BMPs when appropriate, to enhance resource protection and avoid additional potential affects to surface and groundwater quality, earth resources, fish, wildlife, and their habitats.

- Haul oils or chemicals to an approved site for disposal and use vegetable-based lubricants in machinery when working in or near water to prevent petroleum products from entering surface or groundwater.
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) per Ecology's rules and regulations. The plan would include erosion control methods, stockpiling, site containment, shoreline protection methods, equipment storage, fueling, maintenance, washing, and methods to secure a construction site under circumstances of an unexpected high water or rain event.
- Equip all construction equipment with environmental spill kits to contain petroleum products in the event of a leak.
- Require all contractors to have a Spill Prevention Plan and a Toxics Containment and Storage Plan.
- Develop and implement a spill plan to implement containment of construction materials such as treated woods, contaminated soils, concrete, concrete leachate, grout, and other substances that may be deleterious or toxic to fish and other aquatic organisms.
- Develop a plan for safe handling and storage of potentially toxic construction materials, fuels, and solvents for staging sites in close proximity to receiving waters and riparian areas.
- Place stockpiles of earthen materials to minimize runoff into nearby receiving waters.
- Require all contractors to inventory noxious weed populations by marking with temporary fencing to avoid spreading weeds to other areas in accordance with Federal, State and local weed control requirements.
- Continue with ongoing weed control efforts on disturbed lands following construction and revegetation in accordance with Federal, State and local requirements.

Public Involvement

Reclamation and Ecology initiated the public scoping process for this DEIS in October 2013. Reclamation and Ecology held two public scoping meetings in Yakima, Washington on November 20, 2013 and two scoping meetings in Cle Elum, Washington on November 21, 2013. At the meetings, Reclamation described the Proposed Action and gave attendees the opportunity to comment on the project, the scope of the EIS, the EIS process, and resources evaluated in the EIS.

The scoping period began October 30, 2013, and concluded December 16, 2013. During this period 39 comment documents and telephone calls were received. The comments covered a wide range of environmental effects. One of the major concerns was the effect of the additional drawdown of Kachess Reservoir and its ability to refill following the drawdown. Comments expressed concerns about the effects of the drawdown on fish, recreation access, groundwater wells, aesthetics, and property values. Concerns about the KKC proposal related to whether the project could benefit flows and fish in the upper Yakima River and the impacts on aquatic species from the transfer of water from one reservoir to another. Other concerns included impacts of a tunnel on groundwater flow and transportation corridors, coordination of the project with other projects in the area such as the I-90 Snoqualmie East Project, and construction impacts.

Reclamation and Ecology prepared a Scoping Summary Report that summarizes the comments received (Reclamation and Ecology, 2014i). Reclamation will provide the report to readers upon request, or a reader can access the report from the Yakima River Basin Water Enhancement Project (YRBWEP) 2011 Integrated Plan website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Consultation and Coordination

Reclamation will consult with the U.S. Fish and Wildlife Service (Service) and NMFS under the Endangered Species Act (ESA) and has begun initial conversations about the consultation. Reclamation has completed consultation with the Service under the Fish and Wildlife Coordination Act. Reclamation has initiated consultation with the Washington Department of Archaeology and Historic Preservation under Section 106 of the National Historic Preservation Act. Government-to-Government consultation with the Confederated Tribes of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Confederated Tribes of the Colville Reservation is ongoing. Reclamation has contacted the Bureau of Indian Affairs (BIA) Yakima Office and the BIA Colville Tribes Office regarding Indian Trust Assets or trust lands in the project area.

Reclamation and Ecology are committed to ongoing coordination with the Tribes and resource agencies. Reclamation will complete ESA coordination with the Service and NMFS. Reclamation will complete cultural resource surveys and will continue coordination with the DAHP on impacts to cultural resources. Reclamation and Ecology will continue to consult with the Yakama Nation, CTUIR, and Colville Confederated Tribes.

What Comes Next?

Public Review of the DEIS

Reclamation and Ecology announced the release of this DEIS on their websites and in local and regional newspapers. These announcements included the timeframe for public review and dates, times, and locations of public meetings. The public will have 60 days to review and provide comments on the DEIS.

Two public hearings will be held during the public review period, as described on the Fact Sheet. Participants will be encouraged to provide comments through several mechanisms, including written comment cards, letters, e-mails, and oral comments at the meeting.

Reclamation and Ecology will give equal consideration to all comments received on the DEIS, regardless of how submitted, and will post the comments on the KDRPP and KKC websites at: http://www.usbr.gov/pn/programs/eis/kdrpp/index.html and http://www.usbr.gov/pn/programs/eis/kkc/index.html.

Preparation of the Final EIS

Reclamation and Ecology will carefully consider all comments received on the DEIS and will consider adjusting alternatives, supplementing or improving the analysis, or making factual corrections in response to substantive comments. Reclamation and Ecology will begin preparing the Final EIS in spring 2015.

Record of Decision

Reclamation will conclude the NEPA process by issuing a Record of Decision no sooner than 30 days after the FEIS is completed. The Record of Decision will identify Reclamation's decision on the Proposed Action, and will describe the basis for that decision.

A-22 Market Demand Analysis

Market Analysis Statistics:

Off Grid with Seasonal Access: Lake Kachess Summer Homes has 28 residential lots at or below the ±2,280'asl contour with full or filtered views of the nearby lakeshore.

Sale Date	Address	Sale Price	$/sq/ft.	Dwelling area sq.ft.	Year built	Lot Acres
Improved Sales						
9/2015	5910 E Kachess Rd	$350,000	$428.92	816	1985	0.69
6/2015	6350 E Kachess Rd	$355,000	$284.46	1,248	1989	0.55
7/2014	6280 E Kachess Rd	$290,000	$215.77	1,344	1972	0.59
7/2008	10 Kachess Ln	$542,600	$414.83	1,308	1973	0.90
Vacant Lot Sales						
11/2013	Lot 94, Kachess Ln	$125,000	n/a	n/a	n/a	0.29
4/2010	Lot 102, Kachess Ln	$85,000	n/a	n/a	n/a	0.20
5/2006	Lot 102, Kachess Ln	$80,000	n/a	n/a	n/a	0.20

Although this is a very small data set, the vacant lot sales exhibit an upward trend in sale prices over the years. In addition, one sale was located abutting the Lake Cle Elum reservoir boundary with a view of the lake that is very similar to the *5910 E Kachess Rd* improved sale. It is not considered directly comparable because the Cle Elum sale has year round access and electricity. While these attributes are consider superior characteristics, the Lake Cle Elum property nevertheless sold for significantly less than the Kachess property; i.e., almost 18% less.

Date	Address	Price	$/sq.ft.	Sq.ft.	Yr.blt.	Acre
9/2014	60 Guzzie Ln, Ronald	$302,000	$352.80	856	1971	0.37

The price per square foot difference between these two sales would also suggest a strong preference to Lake Kachess vs. Lake Cle Elum despite a lack of electricity and seasonal access.

Similarly, one sale of an off grid improved property with seasonal vehicle access was located in very close proximity to the Lake Keechelus reservoir boundary with a partial lake view that is very similar to the *10 Kachess Rd* sale:

Date	Address	Price	$/sq.ft.	Sq.ft.	Yr.blt.	Acre
10/2008	321 Rail Spur Rd, Easton	$300,000	$240.38	1,248	1994	0.48

Included in the Keechelus sale price was a Sno-Cat® for potential winter access. Nevertheless, the property sold for 42% less per square foot that the Lake Kachess Summer Homes property. The difference between these two sales would also suggest a strong market preference to Lake Kachess vs. Lake Keechelus.

Although Lake Kachess has several other small off grid enclaves of vacation homes, none are known to have been marketed for sale (per NWMLS) and have not had any recorded arms length transactions for a number of years (per the Kittitas County Assessor office).

Year Round Access; on Grid: These appraisers located a total of 51 lots on or proximate to Lake Kachess that fall within this category and, lie within the ±2,280' asl and, have a proximate view of the lake. Forty-five of these lots are located within Kachess Village area; the other 3 are in the Kachess Ridge portion of the delineated impact area. Research of the NWMLS and the Kittitas County Assessors records indicate that between 2002 and October 2015, there have been 22 home sales and 9 sales of vacant lots with close up lake shore views on Lake Kachess and 25 improved sales plus 25 competing vacant lot sales on Lake Cle Elum during this same period. With respect to the 22 sales on Lake Kachess, the houses were somewhat newer, somewhat larger on average and, sold for an a higher overall average sale price. In addition of the properties listed on the NWMLS, they also had a somewhat shorter marketing period on average. There is also a smaller inventory on Lake Kachess with a total of 48 lots vs.103 competing lots on Lake Cle Elum. Overall the market data is summarized as follows:

Lake Kachess Sales

	Sale Date	Address	Sale Price	$/sq.ft	Dwelling sq.ft.	Year Built	Acres	CDOM*
	Improved Sales							
1	Jan '15	60 Mountain View Ln	$850,000	$216.23	3,931	1996	0.25	626
2	Nov '14	131 Wilderness Ln	$329,000	$338.48	972	1993	0.19	18
3	Oct '14	140 Mountain View Ln	$470,000	$155.42	3,024	1990	0.25	112
4	Aug '14	3220 Via Kachess Rd	$665,000	$283.70	2,344	1987	0.32	236
5	Aug '14	2360 Via Kachess Rd	$525,000	$248.82	2,110	1979	0.41	28
6	Aug '14	42 Mountain View Ln	$505,000	$462.45	1,092	1979	0.24	11
7	Nov '13	160 Wilderness Ln	$638,500	$239.32	2,668	1991	0.31	446
8	Oct '13	3160 Via Kachess Rd	$370,000	$342.91	1,079	1982	0.22	n/a
9	Nov '12	234 Mountain View Ln	$725,000	$268.52	2,700	1995	0.32	175
10	Dec '10	41 Lakeview Ct	$1,325,000	$236.86	5,594	2008	0.26	388
11	Sept '08	11 Lakeview Ct	$925,000	$333.21	2,776	1999	0.24	n/a
12	July '07	20 Crestview Ct	$873,000	$391.83	2,228	1977	0.18	n/a
13	Mar '07	3110 Via Kachess Rd	$950,000	$434.98	2,184	1985	0.23	n/a
14	Dec '06	131 Wilderness Ln	$400,000	$411.52	972	1993	0.19	n/a
15	July '05	222 Mountain View Ln	$735,000	$269.23	2,730	1992	0.30	n/a
16	Sept '04	130 Mountain View Ln	$570,000	$169.64	3,360	1979	0.32	n/a
17	July '04	280 Wilderness Ln	$1,280,000	$308.06	4,155	2002	0.29	n/a
18	Dec '03	3220 Via Kachess Rd	$550,000	$234.64	2,344	1987	0.32	n/a
19	Sept '03	232 Mountain View Ln	$456,000	$250.27	1,822	1988	0.23	n/a
20	Sept '03	20 Crestview Ct	$450,000	$201.97	2,228	1977	0.18	n/a
21	Jan '03	222 Mountain View Ln	$549,000	$201.10	2,730	1992	0.30	n/a
22	Dec '02	160 Wilderness Ln	$481,050	$180.30	2,668	1991	0.31	n/a
	Vacant Lot Sales							
1	May '15	36 lot Wilderness Ln	$250,000	n/a	n/a	n/a	0.38	279
2	Dec '08	Lot1 of Ph#2 Via Kachess Rd	$435,000	n/a	n/a	n/a	0.21	n/a
3	July '08	3500 Via Kachess Rd	$298,500	n/a	n/a	n/a	0.41	12
4	June '07	Lot1 of Ph#2 Via Kachess Rd	$330,000	n/a	n/a	n/a	0.21	n/a
5	May '07	40 Crestview Ct	$400,000	n/a	n/a	n/a	0.25	n/a
6	Apl '07	41 Lakeview Ct	$485,000	n/a	n/a	n/a	0.26	n/a
7	Dec '05	40 Crestview Ct	$400,000	n/a	n/a	n/a	0.25	n/a
8	June '05	10 Crestview Ct	$317,000	n/a	n/a	n/a	0.24	n/a
9	Feb '04	3500 Via Kachess Rd	$128,000	n/a	n/a	n/a	0.41	n/a

*Continuous Days On Market

Lake Cle Elum Sales

	Sale Date	Address	Sale Price	$/sq.ft	Dwelling sq.ft.	Year Built	Acres	CDOM
	Improved Sales							
1	Jan '15	310 Sandelin Lane	$700,000	$189.75	3,689	1966	0.41	440
2	Mar '14	210 Sandelin Ln	$560,000	$179.54	3,119	1964	0.60	240
3	Feb '14	500 Sandelin Ln	$850,000	$368.28	2,308	1994	4.41	279
4	Oct '14	12301 SR-903	$425,000	$190.16	2,235	1977	1.07	n/a
5	Sept '14	200 Sandelin Lane	$394,000	$352.42	1,118	1965	0.42	152
6	Sept '14	60 Guzzie Lane	$302,000	$352.80	856	1971	0.37	n/a
7	Sept '13	601 White Fir Dr	$375,000	$438.08	856	1971	0.29	57
8	Sept '13	580 Domerie Bay	$775,000	$221.62	3,497	2006	1.04	845
9	Aug '12	12351 SR-903	$669,900	$314.51	2,130	1992	1.07	116
10	Sept '11	181 Beechwood	$460,000	$288.58	1,594	1970	0.42	30
11	May '10	451 Beechwood	$399,000	$206.52	1,932	1971	0.44	61
12	Nov '10	670 Domerie Bay	$1,090,000	$200.07	5,448	2001	1.04	514
13	Nov '09	421 Beechwood	$336,000	$291.67	1,152	1968	0.42	n/a
14	June '09	12351 SR-903	$689,950	$323.92	2,130	1992	1.07	n/a
15	Feb '07	110 Sandelin Ln	$750,000	$240.46	3,119	1964	0.60	n/a
16	Oct '06	3 Moonshine Ln	$575,000	$499.13	1,152	1965	0.69	n/a
17	Oct '06	151 Shadow Ln	$427,000	$491.94	868	1936	0.47	n/a
18	Mar '05	111 Moonshine	$290,000	$201.39	1,440	1969	0.31	n/a
19	Jan '05	290 Sandelin Lane	$759,000	$429.30	1,768	1996	0.62	n/a
20	Oct '04	121 Beechwood	$183,000	$134.56	1,360	1971	0.44	n/a
21	Sept '04	451 Beechwood	$395,000	$204.45	1,932	1971	0.44	n/a
22	Nov '04	30 Guzzie Ln	$750,000	$371.29	2,020	1999	1.50	n/a
23	Dec '04	210 Sandelin Lane	$668,000	$214.17	3,119	1964	0.60	n/a
24	Nov '03	3 Moonshine Ln	$375,000	$325.52	1,152	1965	0.69	n/a
25	Mar '03	110 Guzzie Ln	$290,000	$278.85	1,040	1970	0.33	n/a
	Vacant Lot Sales							
1	June '15	18501 Salmon La Sac	$440,000	n/a	n/a	n/a	3.01	637
2	July '15	343 Morgan Ck Rd	$123,000	n/a	n/a	n/a	3.11	63
3	Oct '14	Lot 3 Timber Cove	$175,000	n/a	n/a	n/a	1.00	20
4	June '14	Lot 7 Domerie Bay	$245,000	n/a	n/a	n/a	1.08	501
5	July '14	Lot 8 Domerie Bay	$235,000	n/a	n/a	n/a	1.10	n/a
6	May '14	Lot 2 Domerie Bay	$325,000	n/a	n/a	n/a	5.00	n/a
7	Mar '14	Lot 5 Timber Cove	$256,300	n/a	n/a	n/a	1.00	66
8	Feb '14	Lot 1 Domerie Bay	$297,000	n/a	n/a	n/a	5.27	n/a
9	Mar '13	771 Timber Cove	$217,500	n/a	n/a	n/a	1.00	n/a
10	Mar '13	Lot 3 Timber Cove	$220,000	n/a	n/a	n/a	1.00	1325
11	Aug '12	Lot 3 Domerie Bay	$290,000	n/a	n/a	n/a	5.00	67
12	June '12	581 Timber Cove	$235,000	n/a	n/a	n/a	1.00	n/a
13	Apl '12	741 Timber Cove	$194,000	n/a	n/a	n/a	1.00	944
14	Feb '12	571 Timber Cove	$250,000	n/a	n/a	n/a	1.00	n/a
15	Dec '11	460 Domerie Bay	$200,000	n/a	n/a	n/a	1.04	185
16	May '11	260 Easy St	$80,000	n/a	n/a	n/a	0.61	n/a
17	Mar '11	821 Timber Cove	$425,000	n/a	n/a	n/a	1.75	n/a
18	Nov '09	Lot 14 Timber Cove	$403,900	n/a	n/a	n/a	6.10	n/a
19	July '08	Lot 8 Timber Cove	$399,900	n/a	n/a	n/a	1.00	293
20	Apl '08	Lot 8 Timber Cove	$369,900	n/a	n/a	n/a	1.00	n/a
21	Apl '08	Lot 4 Timber Cove	$391,000	n/a	n/a	n/a	1.00	n/a
22	Mar '08	681 Timber Cove	$379,900	n/a	n/a	n/a	1.00	n/a
23	Mar '08	691 Timber Cove	$374,000	n/a	n/a	n/a	1.00	n/a
24	Mar '08	Lot 11 Timber Cove	$389,900	n/a	n/a	n/a	1.00	n/a
25	Mar '08	Lot 5 Timber Cove	$405,000	n/a	n/a	n/a	1.00	n/a
26	May '03	140 Guzzie Ln	$155,000	n/a	n/a	n/a	0.29	n/a

Overall, the data is summarized in the following tables:

Lake/Reservoir Proximate Property Sales 2002 - 2015 (October)

Improved Sales					
	No. Improved Sales	Average Sale Price	Avg sq.ft.	Avg Year Built	Avg. CDOM
Lake Kachess	22	$664,616	2,532	1989	227
Lake Cle Elum	25	$539,514	2,041	1975	265

Vacant Lot Sales				
	Number of Lot Sales	Average Sale Price	Avg Acres	Avg. CDOM
Vacant Lot Sales Under 1.00 acre				
Lake Kachess	9	$338,167	0.29	196
Lake Cle Elum	2	$117,500	0.45	430
Vacant Lot Sales 1.00 acre to 6.10 acres				
Lake Kachess	0	n/a	n/a	n/a
Lake Cle Elum	24	$283,388	1.29	n/a

Conclusion: Analysis of closed, improved sales in close proximity to the Lake Kachess reservoir boundary, when compared to similar properties on Lake Cle Elum, indicates that water oriented properties on Lake Kachess homes were slightly larger and slightly newer. They were also with very few exceptions, located on smaller lots and overall, where continuous days on market data is available, sold quicker. In terms of vacant lots, the contrast is even greater. While sales of vacant lots on Lake Kachess were of lots that averaged 0.29 aces in size as compared to vacant lots on Lake Cle Elum which were typically between 1.00 acre in size and 6.10 acres (1.29 acres average) the lots sold for -16% less on average. When compared to the two lots on Cle Elum that were under 1.00 acre (0.45 acre average), the contrast is far greater with these lots selling for -65% less than the average lot price on Lake Kachess over the period studied. Although the data is somewhat limited, whether on or off grid, the market data clearly indicates that lake/reservoir proximate properties on Lake Kachess have, to date, on average, been the preferred property within the delineated impact area market area.

A-23. USPAP Q&A, Scope of Work Issues Impact on Values of Surrounding Properties

USPAP Q&A

2014-15 USPAP Q&A **Issue Date: July 16, 2015**

The Appraisal Standards Board (ASB) of The Appraisal Foundation develops, interprets, and amends the Uniform Standards of Professional Appraisal Practice (USPAP) on behalf of appraisers and users of appraisal services. The USPAP Q&A is a form of guidance issued by the ASB to respond to questions raised by appraisers, enforcement officials, users of appraisal services and the public to illustrate the applicability of USPAP in specific situations and to offer advice from the ASB for the resolution of appraisal issues and problems. The USPAP Q&A may not represent the only possible solution to the issues discussed nor may the advice provided be applied equally to seemingly similar situations. USPAP Q&A does not establish new standards or interpret existing standards. USPAP Q&A is not part of USPAP and is approved by the ASB without public exposure and comment.

2015-10: APPRAISAL DEVELOPMENT – SCOPE OF WORK ISSUES
Impact on Values of Surrounding Properties

Question:
My state requires that when property owners seek an exception to a zoning requirement they demonstrate that the exception will not diminish the value of surrounding properties. I am occasionally engaged to render an opinion in these matters. Is the service that I am providing an appraisal?

Response:
Yes. USPAP defines *appraisal*, in part, as "the act or process of developing an opinion of value." The Comment to this definition goes on to explain that the opinion of value does not necessarily have to be a number; it can be a relationship (i.e., equal to, more than, not less than) to a numerical benchmark (e.g., market value, assessed value, collateral value). In this example, the question could be restated as: Will the market value of the surrounding properties be less than their current market value if the exception is granted? Therefore, the resulting response is an appraisal.

A-24. Professional Appraisal Qualifications of Dean Potter, FRICS, MAI

PROFESSIONAL QUALIFICATIONS OF DEAN POTTER, FRICS, MAI
REAL ESTATE APPRAISER AND CONSULTANT

Office Location: 408 West Ninth Street, Suite 200, Vancouver, WA
Mailing Address: P. O. Box 61428, Vancouver, WA 98666-1428
1-360-693-4482 or 1-503-243-5036
www.deanpotter.com or e-mail: dean@deanpotter.com

CURRENT/FORMER BUSINESS ASSOCIATIONS:

President, Dean Potter and Associates, Inc, 1976-Present
Associate Appraiser, Eaton and Associates, 1974-1976
Staff Appraiser, Washington State Highway Department, 1970-1974
Real Estate Development, Self-employed, 1966-1970
Staff Title Locator, Land Title Company of Clark County, 1965-1966

GENERAL AND SPECIAL EDUCATION:

* Clark College, Vancouver, Washington, 1963-1965;
* Evergreen State College, Olympia, Washington, earned Bachelor of Arts Degree;
* American Institute of Real Estate Appraisers Courses & Seminars:

  Real Estate Appraisal I (Fundamentals) Seattle, WA 1970; Real Estate Appraisal(Capitalization, Theory and Techniques), 1974; Real Estate Appraisal II (Urban Properties) Seattle, WA, 1971; Real Estate Appraisal IV (Investment Analysis Seattle, WA 1974; Standards of Professional Practice Course, Portland, OR, 1984; Money Market Seminar; Portland, Oregon, 1980; Feasibility and Market Analysis Seminar, San Diego, CA, 1980; Federal Income Tax and Real Estate Seminar, Ashland, OR 1982; Introduction to Hotel/Motel Valuation Seminar, Bend, OR 1983; R41-b Seminar, New Orleans, LA 1985; Standards of Professional Practice Update, Chicago, IL 1986; Sales Comparison Approach Seminar, Chicago, IL 1986; R41-c Seminar, Portland, Oregon, 1987; Feasibility Analysis and Highest and Best Use, San Francisco, CA, 1989; Analyzing Cash Flows Seminar, Eugene, Oregon, 1989; Subdivision Analysis, Little Rock, Arkansas, 1990;
* Appraisal Institute Courses and Seminars:

  Condemnation Appraising: Basic Principles & Applications, Portland, OR, 1999; Condemnation Appraising: Advanced Topics and Applications, Portland, OR, 1999; Standards of Professional Practice, Part "C", 2001; Separating Real and Personal Property from Intangible Business Assets, 2002; Appraisal Consulting: A Solutions Approach for Professionals, 2003; Analyzing Operating Statements, Online Education, 2003; National USPAP Course Update, 2003, 2006, 2008, 2009, 2012, 2014; Special Purpose Properties, 2003; Business Practices and Ethics, 2003, 2009, 2015; Internet Search Strategies, Online Education, 2004; Introduction to GIS Applications for Real Estate Appraisal, Online Education, 2004; Small Hotel/Motel Valuation, Online Education, 2006; Using Your HP-12c Financial Calculator, Online Education, 2006; Online Valuation of Detrimental Conditions in Real Estate, Online Education, 2006; Appraisal Curriculum Review, 2009; Uniform Appraisal Standards for Federal Land Acquisitions, 2009. Market Value and Fair Value, 2009; Online Site Use & Valuation Analysis, 2012; Online: Appraising Convenience Stores, 2012; Data Verification Methods, 2013; Forecasting Revenue, 2013; Comparative Analysis, 2013; Appraisal Review Theory-General, 2014; Litigation Appraising-Specialized Topics and Applications, 2014;
* Satisfaction of Continuing Education Credits for the Appraisal Institute through 12/22
* Federal Home Loan Bank Board R41-c Seminar, Vancouver, WA 1986;
* FIRREA Seminar, Office of Thrift Supervision, Portland, Oregon, 1990.
* IAAO Standards of Professional Practice, 1990, Ellensburg, WA
* American Society of Farm Managers and Rural Appraisers Courses

  Course A-20, Rural Appraisal Principles, Fresno, CA, 1992; Fundamentals of Rural Appraisal, Course A-30, Billings MT, 1993; Eminent Domain Appraisal Course A-25, Billings, MT, 1993; Report Writing, Memphis, TN, 1994; Highest and Best Use, Salem, OR, 1995; Income Capitalization Unleveraged Course A-27, Hendersonville, NC, 1997; Advanced Resource Appraisal, A-34, Denver, CO, 1999; Valuation of Conservation Easements, Billings, MT, 2008; Appraisal Review Under UASFLA (Course A-380), 2010;

IRWA Seminars:

Issues for Appraisers and Intended Users of Yellow Book Appraisals, 2013

PROFESSIONAL AND CIVIC ORGANIZATIONS:

*** Royal Institution of Charter Surveyors, Fellowship (FRICS)**

*** Appraisal Institute Professional Designations, MAI, SRA & AI-GRS**

*** General Appraisal Certification, States of Washington & Oregon**

*** Member of the Washington Real Estate Appraiser Commission, 2001 to date; Vice Chair, 2001-2002, 2014; Chair, 2003-2005, 2015 to date**

*** Member of Washington Real Estate Appraiser Advisory Committee, 1996-2000, Vice Chair and Chair, 1996-2000.**

* Appraisal Institute Service:

Member of Greater Oregon Chapter Education Committee, 7/74 to 12/84
Member of Greater Oregon Chapter Admissions Committee, 3/76 to 12/79; Chair, 1977.
Member of Greater Oregon Chapter Ethics Committee, 6/79 to 12/81.
Member of Single Family Demonstration Report Grading Sub-committee of the National Admissions Committee, 1975
Member of RM Required Examinations Subcommittee of the National Admissions Committee 1/76 to 1/78
Member of Course VIII Subcommittee of National Education Committee, 1/76 to 1/78
Member of Greater Oregon Chapter Board of Directors, 1/77 to 12/83; Chapter Treasurer, 1979; Chapter Secretary, 1980; Chapter Vice President, 1981; Chapter President, 1982; Received Professional Recognition Award, A.I.R.E.A, 1978; Received Oregon Chapter Appraiser of the Year Award, 1984
Member of Special Education Seminars Subcommittee of the National Education Committee, 1/79 to 12/81
Member of the Division of Conferences and Conventions Committee of the National Professional Advancement and Member Services Committee, 1/79 to 1/81
Member of the Division of Curriculum of the National Education Committee, 1/81 to 12/82
Member of the Division of Course Administration Committee of the National Education Committee, 1/83 to 1/84
Vice Chairman, National Review and Counseling Committee of the National Professional Standards Committee 1/85 to 11/88
Member of the Governing Council of the AIREA, 1988 to 1990
Member of the Division of Screening Policy of the National Ethics and Counseling Committee, 11/88 to 11/92.
Member of the National Education Committee-Residential, The Appraisal Institute, 11/90 to 11/91.
Chairman, Greater Oregon Chapter Bylaws Committee, 1991 to 1997.
Member of the Curriculum Division-General, The Appraisal Institute, 3/91 to 3/93.
Member of the Appraisal Standards Council of The Appraisal Institute, 1/93 to 1996.
Member of the Appellate Division of Ethics and Counseling Committee of The Appraisal Institute, 11/94 to 12/11.
Member of the Appraisal Institute Professional Practice Compliance and Enforcement Committee, 12/11 to date.

APPRAISAL EDUCATION SERVICE:

INSTRUCTOR, APPRAISAL INSTITUTE & AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS

Residential Valuation Course:

Portland, Oregon, 1975;
Eugene, Oregon, 1976;
Athens, Georgia, 1977;
New Orleans, Louisiana, 1979;
Bloomington, Indiana, 1980;
Albuquerque, New Mexico, 1984;
Boise, Idaho, 1987;
Fort Worth, Texas, 1987;
Boulder, Colorado, 1988;
Tallahassee, FL, 1990;
Seattle, WA, 1990;
Bloomington, IN, 1991;
Indianapolis, IN, 1992.
Chicago, Illinois, 1976;
Boise, Idaho, 1977;
Tampa, Florida, 1978;
Portland, Oregon, 1979;
Memphis, Tennessee, 1980;
San Diego, California, 1986;
Portland, Oregon, 1987;
Berkeley, CA, 1988;
Berkeley, CA, 1990;
Austin, TX, 1990;
Berkeley, CA, 1991;
Orlando, FL, 1991;

Basic Principles Course:

Portland, Oregon, 1977;
Rochester, New York, 1981;
Portland, Oregon, 1983,
Hanover, New Hampshire, 1987;
Austin, TX, 1990;
San Jose, CA, 1991;
Berkeley, CA, 1992;
Hershey, PA, 1993;
Seattle, WA, 1993;
Berkeley, CA, 1994;
Seattle, WA, 1995.
Memphis, Tennessee, 1980;
Portland, Oregon, 1982;
Gainsville, Florida, 1984;
Boulder, Colorado, 1988;
Bloomington, IN, 1991;
Orlando, FL, 1991;
Berkeley, CA, 1993;
Portland, OR, 1993;
Seattle, WA, 1994;
Providence, R.I., 1994;

Basic Valuation Procedures Course:

Rochester, New York, 1981;
Portland, Oregon, 1983;
Gainsville, Florida, 1984;
Sacramento, CA, 1992;
Seattle, WA, 1994;
Portland, Oregon, 1993;
Portland, Oregon, 1982;
Seattle, Washington, 1983;
Hanover, New Hampshire, 1988;
Berkeley, CA, 1993;
Seattle, WA, 1994;
Providence, R.I., 1994.

Standards of Professional Practice Course:

Bellevue, Washington 1985;
Boise, Idaho, 1986;
Bellevue, Washington, 1986;
Kirkland, Washington, 1987;
Phoenix, Arizona, 1988;
Seattle, WA, 1989;
Seattle, WA, 1990;
Seattle, WA, 1992;
Eugene, OR, 1993;
Boise, Idaho, 1994;
Bellevue, Washington, 1986;
Asheville, North Carolina, 1986;
Boise, Idaho, 1986;
Memphis, Tennessee, 1988;
Boise, Idaho, 1988;
Boulder, Colorado, 1990;
Seattle, WA, 1991 (2);
Seattle, WA 1993;
Seattle, WA, 1994 (2);
Lake Oswego, OR, 1995.

Instructor, University of Minnesota, Minneapolis Campus, Appraisal Principles and Procedures, 1983
Instructor, Society of Real Estate Appraisers Course 101, Portland, OR, 1990
Instructor, Portland State University, Portland, Oregon, Principles of Real Estate Appraisal, 1979
Instructor, Lower Columbia College, Longview, Washington, Principles of Real Estate Appraisal, 1976

EXPERT TESTIMONY EXPERIENCE:

State of Washington, Superior Court, Counties of Clark, Walla Walla, Klickitat, Lewis, Pacific and Cowlitz

State of Idaho, District Court, Counties of Ada and Twin Falls

State of Oregon, District Court, Clackamas County

U.S. Bankruptcy Court, Central Division, Utah District

U.S. District Court, Portland, Oregon, Tacoma and Seattle, WA

U.S. Bankruptcy Court, Portland Division, Oregon District

State of Oregon Tax Appeals Court

GEOGRAPHIC AREAS OF EXPERIENCE:

State of Washington, Counties of:

Clark, Cowlitz, Lewis, Pacific, Skamania, Klickitat, Grant, Kitsap, Grays Harbor,Skagit, Whatcom, Mason, Wahkiakum, Kittitas, Benton, Franklin, Adams, King, Spokane, Yakima, Columbia, Douglas, Walla Walla, Whitman, Chelan, Okanogan, Thurston, Clallam, Garfield, Kittitas, Mason, Snohomish, Jefferson, Island, Asotin & Pierce

State of Oregon, Counties of:

Multnomah, Clackamas, Washington, Yamhill, Lincoln, Douglas, Clatsop, Umatilla, Deschutes, Curry, Malheur, Morrow, Columbia, Coos, Hood River, Jackson, Josephine, Kalamath, Marion, Tillamook, Umatilla, Union, Wallowa, Sherman, Gilliam, Wasco, & Lane

State of Idaho, Counties of:

Ada, Fremont, Lake, Twin Falls, Owyhee, Elmore, Gem, Canyon, Jerome, Lincoln, Gooding, Washington & Bannock

State of Arizona, County of Maricopa

State of Texas, County of Tarrant

TYPICAL CLIENTELE:

FEDERAL AND STATE:

Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers
Northwest District
Washington State Department of
Transportation
Washington State Parks
Washington Attorney General
Washington State General Services
Admin.; Div. of Savings & Loan
US Department of Energy, Bonn.
Power Administration
Federal Deposit Insurance Corp.
Federal Home Loan Bank Board
U.S. Attorney, District of Oregon
Federal Savings & Loan Insurance Corp.
Housing and Urban Development
Washington Department of Fish and Wildlife
US Post Office
US Department of Justice
US Dept of Housing and Urban Development
Oregon Department of Veterans Affairs
Washington State Parks and
Recreation Commission
Idaho Bureau of Licenses

COUNTY AND CITY:

Clark County Dept of
Public Works
Clark County Office
of Purchasing
Ada County Hwy. District
City of Longview
City of Goldendale
City of Battle Ground
City of Connell
Clark County PUD #1
METRO
City of Olympia
Clark County Fire Distr.#6
C-Tran
City of Vancouver
Cowlitz County
Port of Longview
Vancouver School District
Clark County Parks
Cowlitz Prosecutors Office
Port of Vancouver
Cowlitz PUD
Pacific County PUD
Port of Kalama
Port of Ilwaco
Port of Camas-Washougal
City of Kelso
Klickitat County
Thurston County
City of Ridgefield
City of Camas
Camas School District
Clark College
Port of Portland
City of Washougal
Port of Woodland
East Klickitat County
Conservation District
Green Mountain School
District

LENDING INSTITUTIONS:

Peoples National Bank
Seattle First National Bank
Pacific First National Bank
Western Heritage Savings
Washington Mutual Savings Bank
Community First Federal Saving
Lomas and Nettleton, Inc.
First Federal Savings, Phil.
Idaho Bank and Trust
Securities Intermountain, Inc.
Vancouver Federal Savings
Old National Bank
Riverview Community Bank
First Federal Northwest
Far West Federal
Columbia National Bank
Cowlitz Bank
Liberty Federal Savings Bank
Chrysler Financial Services
Bank of Hong Kong
Northrim Bank
Bank of Clark County
Columbia River Bank
Regent's Bank
Northwest National Bank
The Oregon Bank
Rainier Bank
US National Bank of Oregon
Pacific First Federal
Texas Commerce Bank
First Independent Bank
Bank of California
U.S. Bancorp
Benj. Franklin Savings
Frontier Federal
First Interstate Bank
Security Pacific Bank
Great American Bank
Essex Mortgage
Wells Fargo Bank
Western Savings Bank
Continental Savings Bank
Centennial Bank
Key Bank
Today's Bank
First Security Bank

INSTITUTIONS AND CORPORATIONS:

Western Electric
Mortgage Guaranty Insurance
Equitable Relocation Services
Allstate Insurance Corporation
Ticor Relocation Management
Crown Zellerbach
Continental Mortgage Insurance
PMI Mortgage Insurance
Lower Columbia College
International Paper
Transamerican Relocation Services
Kaiser Foundation
Chevron USA, Inc.
Pythian Home
Pacific Power & Light
SW Washington Hospitals
Winthrop Financial
Edwards Industries
Exxon Corporation
Employee Transfer Corporation
Alcoa Aluminum
Intel Corporation
Burlington Northern
Safeco Title Insurance Co.
Stauffer Chemical
Telephone Utilities
Old National Financial Services
AIRCO Industrial Gases
The Trust for Public Lands
American Honda Motor Company
Al Angelo Construction Company
Lumbermans
Northwest Public Power Assn.
Canica International
Peter Kiewit Company
Syndyne Corporation
Bear Valley Minerals, Inc.
Melvin Simon Corp.
O'Ryan Industries
Boise Cascade Corporation
TICOR Title
EQ Services
Ziggy's Lumber
The Beverly Group
Mobil Oil Company
Vancouver Sanitary Service
Pacific Rock Products, Inc.
Les Schwab Tires, Inc.

Grange Insurance Corp.
Mutual of Enumclaw
Nendel's Inns & Motels
Crown-Camas Credit Union
Relocation Realty Services
Hosts of America, Inc.
Hill Haven, Inc.
Weyerhaeuser
Reynolds Metals
Aetna Life & Casualty
Tidland Corporation
Fred Meyer, Inc.
Gates Rubber Company
Clark College
Diamond Shamrock Corp.
ICI Americas
National Semiconductor
Flintcote Cement & Lime
Jantzen, Inc.
Church of Jesus Christ of Latter Day Saints
Pioneer National Title
Pacific Northwest Bell
Alpenrose Dairy
Pacific NW Life Insurance
Chicago Title
U.S. Creditcorp
Plum Creek Timber
Christensen Group
Keil's Food Stores
Western Oregon Marine
Gilbert Pacific
International Air Academy
Columbia Cable
PMSI
WTD Industries, Inc.
Kegley, Deines, & White
Underwriters Laboratories
Chrysler Credit
Association of Retarded Citizens
Vancouver Clinic
Hambleton Brothers
H. D. Fowler Company
Rail Car America
NALCO Chemical
SEH America
Fred Meyer, Inc.

INSTITUTIONS AND CORPORATIONS continued.....:

Tidewater Barge Lines, Inc.
Habitat for Humanity
Yakama Indian Nation
TNT Fireworks
Office MAX
Fidelity Title Insurance Company
Mercer Ranches
Fazio Brothers Sand Company
Northwest Packing
Schofield Brothers
Northwest Packing

Minit Mart Corporation
Caffal Brothers
YK Fish Recovery Project
Columbia Land Trust
Chicago Title Company
Erickson Farms
Great Western Malting
First American Title
SEH America
Wasser & Winters
Pacific Coast Shredding

A-25. Professional Appraisal Qualifications of Sheryl Knittel

SHERYL MUSICA KNITTEL

EDUCATION:

Virginia Polytechnic Inst. & State University
Bachelor of Science degree, 1976-1979
Fields of study: Horticulture, Agri-Business, Real Estate

Michigan State University; 1975-1976
Fields of study: Horticulture, Biology

National Association of Realtors Residential Appraisal Program:
Basics of Appraisal; 15 hrs. passed
Real Estate Analysis; 15 hrs. passed
Sales Comparison Approach; 15 hrs. passed
Cost and Income Approach; 15 hrs. passed
Appraisal Standards and Ethics; 15 hrs. passed
Report Writing; 30 hrs. passed

Appraisal Institute:
Appraisal Principles #110; 0 hrs. Challenged and passed
Appraisal Procedures #120; 0 hrs. Challenged and passed
Basic Income Capitalization #310; 36 hrs. passed
Standards and Professional Practices, Part A #410; 16 hrs. passed
Standards and Professional Practices, Part B #420; 11 hrs. passed
Advanced Income Capitalization #510; 40 hrs. passed
Highest and Best Use & Market Analysis #520; 40 hrs. passed
Advanced Sales Comparison & Cost Approach #530, 40 hrs. passed
Report Writing and Valuation Analysis #540; 40 hrs. passed
Advanced Applications #550, 40 hrs, passed

Mycut Institute:
Real Estate Law; 30 hrs. passed
Income Property Valuation- What's It Worth; 30 hrs. passed

LICENSES: Washington State General Real Estate Appraiser License - 1100966
Washington State Realtors Salesperson License - (inactive)
Washington State Notary Public
California Dept. of Agriculture Inspector Biologist Licenses (inactive):
Nursery and Seed Regulation — Plant and Pest Management
Vertebrate Pest Management — Apiary Regulations
Fruit, Vegetable, and Egg Control

WORK EXPERIENCE:

Dean Potter and Associates, Inc.
Vancouver, WA
9/1993 - Present
General Licensed Appraiser and Right-of-Way Negotiator

Washington State Dept. of Transportation
Real Estate Services, Vancouver, WA
4/16/93 - 6/30/93
Right of Way Agent 1 - Temporary

Continuing Education:
Current through September 2016