



City of Tacoma, WA

CITY OF TACOMA
TACOMA PUBLIC UTILITIES / WATER DIVISION
REQUEST FOR PROPOSAL
SPECIFICATION NO. TW23-0011F
TACOMA WATER FOREST INVENTORY



City of Tacoma
Tacoma Public Utilities / Water Division
REQUEST FOR PROPOSALS TW23-0011F

Tacoma Water Forest Inventory

Submittal Deadline: 11:00 a.m., Pacific Time, Tuesday, April 18, 2023

Submittals must be received by the City's Procurement and Payables Division prior to 11:00 a.m. Pacific Time.

For electronic submittals, the City of Tacoma will designate the time of receipt recorded by our email, bids@cityoftacoma.org, as the official time of receipt. This clock will be used as the official time of receipt of all parts of electronic bid submittals.

Submittal Delivery: Sealed submittals will be received as follows:

By Email:

bids@cityoftacoma.org

Maximum file size: 35 MB. Multiple emails may be sent for each submittal.

Bid Opening: Held virtually each Tuesday at 11AM. Attend [via this link](#) or call 1 (253) 215 8782. Submittals in response to a RFP will be recorded as received. As soon as possible, after 1:00 PM, on the day of submittal deadline, preliminary results will be posted to www.TacomaPurchasing.org.

Solicitation Documents: An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at www.TacomaPurchasing.org.

- [Register for the Bid Holders List](#) to receive notices of addenda, questions and answers and related updates.
- Click here to see a [list of vendors registered for this solicitation](#).

Pre-Proposal Meeting: A pre-proposal meeting will not be held.

Project Scope: The purpose of this Request for Proposals is to retain the services of a qualified consultant firm for timber cruising, inventory development, inventory management, and harvest scheduling for selected city owned timbered lands within the Green River Watershed. The consultant firm would be responsible to complete a cruise of merchantable stands, develop a forest inventory, populate the City of Tacoma's GIS database, develop and run a harvest scheduling model to support forest management planning.

Estimate: \$250,000.00

Paid Sick Leave: The City of Tacoma requires all employers to provide paid sick leave as set forth in Title 18 of the Tacoma Municipal Code. For more information, visit [our Minimum Employment Standards Paid Sick Leave webpage](#).

Americans with Disabilities Act (ADA Information: The City of Tacoma, in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Specification materials can be made available in an alternate format by emailing Gail Himes at ghimes@cityoftacoma.org, or by calling her collect at 253-591-5785.

Title VI Information:

"The City of Tacoma" in accordance with provisions of Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 U.S.C. sections 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration of award.

Additional Information: Requests for information regarding the specifications may be obtained by contacting Tisha Rico, Senior Buyer by email to trico@cityoftacoma.org

Protest Policy: City of Tacoma [protest policy](#), located at www.tacomapurchasing.org, specifies procedures for protests submitted prior to and after submittal deadline.



Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.


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SUBMITTAL CHECK LIST

This checklist identifies items to be included with your submittal. Any submittal received without these required items may be deemed non-responsive and not be considered for award.

Submittals must be received by the City of Tacoma Purchasing Division by the date and time specified in the Request for Proposal page.

The following items make up your submittal package:	
One electronic copy (PDF file) of your complete response to this submittal package, multiple emails may be sent for this submittal	
Signature Page (Appendix B)	
Watershed Signature Page (Appendix B)	
After award, the following documents will be executed:	
Services Contract	
Certificate of Insurance and related endorsements (See Insurance Requirements in Appendix C)	

1. BACKGROUND

The City of Tacoma, Tacoma Public Utilities / Water Division is seeking to retain the services of a qualified consultant firm for timber cruising, inventory development, inventory management, and harvest scheduling for selected city owned timbered lands within the Green River Watershed located at 36932 Green River Headworks Road, SE, Ravensdale, WA 98051.

This document includes a list of requirements for inclusion in a Request for Proposals. It also provides cruise specifications for cruise data collection, and vicinity maps showing plot locations based on our recommended cruise design, see Appendix A: Tacoma Water Cruise Specifications.

To learn more about the City of Tacoma, visit www.cityoftacoma.org.

The City anticipates awarding a contract to the lowest responsive and responsible consultant firm based on price, product quality, and availability. These services are estimated at \$250,000 exculding taxes and the anticipated completion date is approximately May 5, 2025.

Submittals submitted and/or the selected Consultant may be used for projects of similar type and scope, at the sole discretion of the City for the contract term including any contract extensions, for the rates provided in the consultants proposal.

2. MINIMUM REQUIREMENTS

Consultants firm must have completed a minimum of two similar proposals with the majority of the same team members that will be working on this proposal.

3. SCOPE OF SERVICES AND DELIVERABLES

It is the City's intent to select a consultant based on qualifications and abilities of the firm and key project individuals. The consultant firm would be responsible to complete a cruise of merchantable stands, develop a forest inventory, populate the City of Tacoma's GIS database, develop and run a harvest scheduling model to support forest management planning on selected City of Tacoma owned lands within the watershed.

4. CONTRACT TERM

The contract will be for a two-year period with the option to renew the contract for one additional year if needed to complete project. The City reserves the right to cancel the contract for any reason, by written notice, as stipulated in the contract.

5. CALENDAR OF EVENTS

This is a tentative schedule only and may be altered at the sole discretion of the City.

The anticipated schedule of events concerning this RFP is as follows:

Publish and issue RFP:	3/2/2023
Pre-Submittal Questions:	3/23/2023
Response to Questions:	4/3/2023
Submittal Due Date:	4/18/2023
Submittal Evaluated:	TBD
Interviews/presentations, on or about:	TBD
Award Recommendation:	May 2023
Public Utility Board/City Council Approval:	TBD

6. INQUIRIES

- 6.1** Questions should be submitted to Tisha Rico via email to trico@cityoftacoma.org Subject line to read:

TW23-0011F – Tacoma Water Forest Inventory – (*CONSULTANT FIRM NAME*)

- 6.1** Questions are due by 3 pm on the date included in the *Calendar of Events* section,
- 6.2** Questions marked confidential will not be answered or included.
- 6.3** The City reserves the discretion to group similar questions to provide a single answer or not to respond when the requested information is confidential.
- 6.4** The answers are not typically considered an addendum.
- 6.5** The City will not be responsible for unsuccessful submittal of questions.
- 6.6** Written answers to questions will be posted alongside the specifications at www.tacomapurchasing.org

7. PRE-PROPOSAL MEETING

- 7.1** No pre-proposal meeting will be held; however, questions and request for clarifications of the specifications may be submitted as stated in the [inquiries](#) section.

8. DISCLAIMER

The City is not liable for any costs incurred by the Respondent for the preparation of materials or a submittal submitted in response to this RFP, for conducting any presentations to the City, or

any other activities related to responding to this RFP, or to any subsequent requirements of the contract negotiation process.

9. EVALUATION CRITERIA

A Selection Advisory Committee (SAC) will review and evaluate submittals. After the evaluation, the SAC may conduct interviews of the most qualified Respondents before final selection.

9.1 The SAC may use references to clarify information in the submittals and interviews, if conducted, which may affect the rating. The City reserves the right to contact references other than those included in the submittal.

9.2 A significant deficiency in any one criteria is grounds for rejection of the submittal as a whole.

10. CONTENT TO BE SUBMITTED – This section represents 100% of the possible scoring criteria.

Our evaluation will include an assessment of the history of your company, your experience as it relates to the requirements within this RFP, evidence of past performance, quality and relevance of past work, references and related items.

Overall approach and strategy described/outlined in the proposal and firm capacity to perform the project within the specified timeframe. Effective and efficient delivery of quality services is demonstrated.

The City reserves the right to request clarification of any aspect of a firm's submittal, or request additional information that might be required to properly evaluate the submittal. A firm's failure to respond to such a request may result in rejection of the firm's submittal. Firms are required to provide responses to any request clarification within three (3) business days.

Respondents are to provide complete and detailed responses to all items below.

The relative weight of each scoring criteria is indicated in the table below.

Criteria	Max Points
Qualifications/Experience of Firm	25
Examples of Projects	5
Reporting Capabilities	15
Client References	10
Fees and Charges / Method of Billing / Hourly Rates	20
Qualifications / Experience of Key Personnel	20
Sustainability	5
Contract Exceptions	0
Total	100

10.1 Qualifications/Experience of Firm - 25

Describe your Firm's experience and qualifications for this proposal. Describe your team's approach to the project. Break project into tasks, include a brief estimated hours for each task, how your team will be organized and a time frame for project and task completion.

10.2 Examples of Projects – 5 points

Describe two projects similar in scope and complexity to this project's scope of work that your firm has successfully completed.

10.3 Reporting Capabilities – 15 points

Describe your approach to data gathering and inventory development, conducting and completing phases and model reporting capabilities, outputs. Describe or provide an example of the end results.

10.4 Client References – 10 points

Provide two client references able to verify the firm's overall expertise for this type of work. The references must have worked with the firm within the last five years. Provide complete information such as name of company, contact person, address, phone number, and email address.

10.5 Fees and Charges / Hourly Rates – 20 points

Provide the total cost to the City of Tacoma, schedule of billing milestones with an estimated cost for each milestone and hourly rates for each team member.

10.6 Qualifications / Experience of Key Personnel – 20 points

List key personnel that will handle the project. The personnel listed must be committed to this project for the expected term of the agreement. Include a brief bio or resume outlining the experience of the key personnel that will be involved.

10.7 Sustainability – 5 points

Provide information on your company's commitment to the environment. Include your sustainability statement and current practices. For more information, see our [Respondents Guide](#).

A. Does the Respondent have an organizational sustainability plan and/or policy?

☐ Yes ☐ No

Provide additional information if checked "Yes," including whether it is made publicly available (provide link) and how it is communicated to employees.

B. Does the Respondent have:

- | | |
|--|--|
| • Greenhouse gas emission reduction targets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| • Energy and water conservation targets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| • Waste reduction targets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| • Toxics use reduction targets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| • Pollution reduction targets? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| • Measure progress regularly and publicly? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

C. How will the Respondent, through service delivery and/or their own operations during the contract period:

- Minimize greenhouse gas emissions?
- Minimize polluted stormwater runoff in Tacoma?
- Minimize waste generation?
- Minimize toxic use and/or generation?
- Minimize air pollution in Tacoma?
- Minimize resource extraction?

Demonstrate industry leadership across these areas? Is the Respondent an EnviroStars recognized business? Provide any relevant certifications and/or verified results.

10.8 Contract Exceptions – 0 points

Do you take exceptions to any of the City of Tacoma's Standard Terms and Conditions?

11. INTERVIEWS / ORAL PRESENTATIONS

An invitation to interview may be extended to Respondents based on SAC review of the written submittals. The SAC reserves the right to adjust scoring based on additional information and/or clarifications provided during interviews. The SAC may determine additional scoring criteria for the interviews following evaluation of written submittals.

The City reserves all rights to begin contract negotiations without conducting interviews.

Respondents must be available to interview within five business days' notice.

If interviews are conducted, the SAC will schedule the interviews with the person provided in the Signature Page, unless a contact person is specified in the content to be submitted. Additional interview information will be provided at the time of invitation. At this time, it is anticipated that the main objective of the interview will be for the SAC to meet the project manager and key personnel that will have direct involvement with the project and hear about their relevant experience and expertise. The City does not intend to meet with firm officials unless they are to be directly involved with the project.

Following interviews, submittals will be rescored using the same criteria as in Section 12 below.

12. RESPONSIVENESS

Respondents agree their submittal is valid until a contract has been executed.

All submittals will be reviewed by the City to determine compliance with the requirements and instructions specified in this RFP. The Respondent is specifically notified that failure to comply with any part of this RFP may result in rejection of the submittal as non-responsive. The City reserves the right, in its sole discretion, to waive irregularities deemed immaterial.

The final selection, if any, will be that submittal which, after review of submissions and potential interviews, in the sole judgement of the City, best meets the requirements set forth in this RFP.

13. ACCEPTANCE / REJECTION OF SUBMITTALS

Respondents are advised that the City reserves the right to cancel award of this Contract at any time before execution of the Contract by both parties if cancellation is deemed to be in the City's best interest. In submitting a Submittal, Respondents agree that the City is not liable for any costs or damages for the cancellation of an award.

The City reserves the right and holds at its discretion the following rights and options:

- To waive any or all informalities
- To award one or more contracts
- To not award a contract
- To issue subsequent solicitation

14. ACCEPTANCE OF SUBMITTAL CONTENTS

The Submittal contents of the successful Respondent will become contractual obligations if a contract ensues.

15. CONTRACT OBLIGATION

The selected Respondent(s) will be expected to execute a contract with the City. As part of the negotiation process, Respondents may propose amendments to the contract, but the City, at its sole option, will decide whether to open discussion on each proposed amendment and determine the final contract to be used. At a minimum, any contract will incorporate the terms and conditions contained herein.

16. STANDARD TERMS AND CONDITIONS

City of Tacoma [Standard Terms and Conditions](#) apply, see Appendix C.

17. INSURANCE REQUIREMENTS

Successful proposer will provide proof of and maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements contained in this solicitation. Please see Appendix C.

18. PAID LEAVE

Effective February 1, 2016, the City of Tacoma requires all employers to provide Paid Leave and Minimum Wage, as set forth in Title 18 of the Tacoma Municipal Code. For more information visit <http://www.cityoftacoma.org/employmentstandards>.

19. PARTNERSHIPS

The City will allow firms to partner in order to respond to this RFP. Respondents may team under a Prime Respondent's submittal in order to provide responses to all sections in a single submission; however, each Respondent's participation must be clearly delineated by section. The Prime Respondent will be considered the responding vendor and the responsible party at contract award. All contract negotiations will be conducted only with the Prime Respondent. All contract payments will be made only to the Prime Respondent. Any agreements between the Prime Respondent and other companies will not be a part of the agreement between the City and the Prime Respondent. The City reserves the right to select more than one Prime Respondent.

20. COMMITMENT OF FIRM KEY PERSONNEL

The Respondent agrees that key personnel identified in its submittal or during contract negotiations as committed to this project will, in fact, be the key personnel to perform during the life of this contract. Should key personnel become unavailable for any reason, the selected Respondent shall provide suitable replacement personnel, subject to the approval of the City. Substantial organizational or personnel changes within the agency are expected to be communicated immediately. Failure to do so could result in cancellation of the Contract.

21. AWARD

After the Respondent(s) is selected by the SAC and prior to award, all other Respondents will be notified via email by the Purchasing Division.

Once a finalist (or finalists) has been selected by the Selection Advisory Committee, contract negotiations with that finalist will begin, and if a contract is successfully negotiated, it will, if required, be submitted for final approval by the Public Utility Board and/or City Council.

22. ENVIRONMENTALLY PREFERABLE PROCUREMENT

In accordance with the [City's Sustainable Procurement Policy](#) and [Climate Action Plan](#), it is the policy of the City of Tacoma to encourage the use of products or services that help to minimize the environmental and human health impacts of City Operations. Respondents are encouraged to incorporate environmentally preferable products or services that have a lesser or reduced

effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, products, manufacturing, packaging, distribution reuse, operation, maintenance or disposal of the product or service.

The City of Tacoma encourages the use of sustainability practices and desires any awarded contractor(s) to assist in efforts to address such factors when feasible for:

- Durability, reusability, or refillable;
- Pollutant releases, especially persistent bioaccumulative toxins (PBTs), low volatile organic compounds (VOCs), and air quality and stormwater impacts;
- Toxicity of products used;
- Greenhouse gas emissions, including transportation of products and services, and embodied carbon
- Recycled content;
- Energy and water resource efficiency;

23. PROPRIETARY OR CONFIDENTIAL INFORMATION

The Washington State Public Disclosure Act ([RCW 42.56 et seq.](#)) requires public agencies in Washington make public records available for inspection and copying unless they fall within the specified exemptions contained in the Act, or are otherwise privileged. Documents submitted under this RFP shall be considered public records and, with limited exceptions, will be made available for inspection and copying by the public.

Information that is confidential or proprietary must be clearly marked. Further, an index must be provided indicating the affected page number(s) and location(s) of all such identified material. Information not included in said index will not be reviewed for confidentiality or as proprietary before release.

24. ADDENDUMS

In the event it becomes necessary to revise any part of this RFP, an addendum will be posted alongside specifications at www.tacomapurchasing.org. Failure to acknowledge addendum(s) on the required Signature Page may result in a submittal being deemed non-responsive by the City.

APPENDIX A

Tacoma Water Timber Cruise Specifications

Project Overview

Cruise Plot Vivinity Maps

Edge Plot Procedures

DBH Measurements

Measuring Total Height

Live Crown Ratio

Basal Area Factors

Tacoma Water Timber Cruise Specifications

Project Overview

The objective of this project is to complete a cruise of merchantable stands, develop a forest inventory, and develop and run a harvest scheduling model to support forest management planning in the City of Tacoma Green River Watershed.

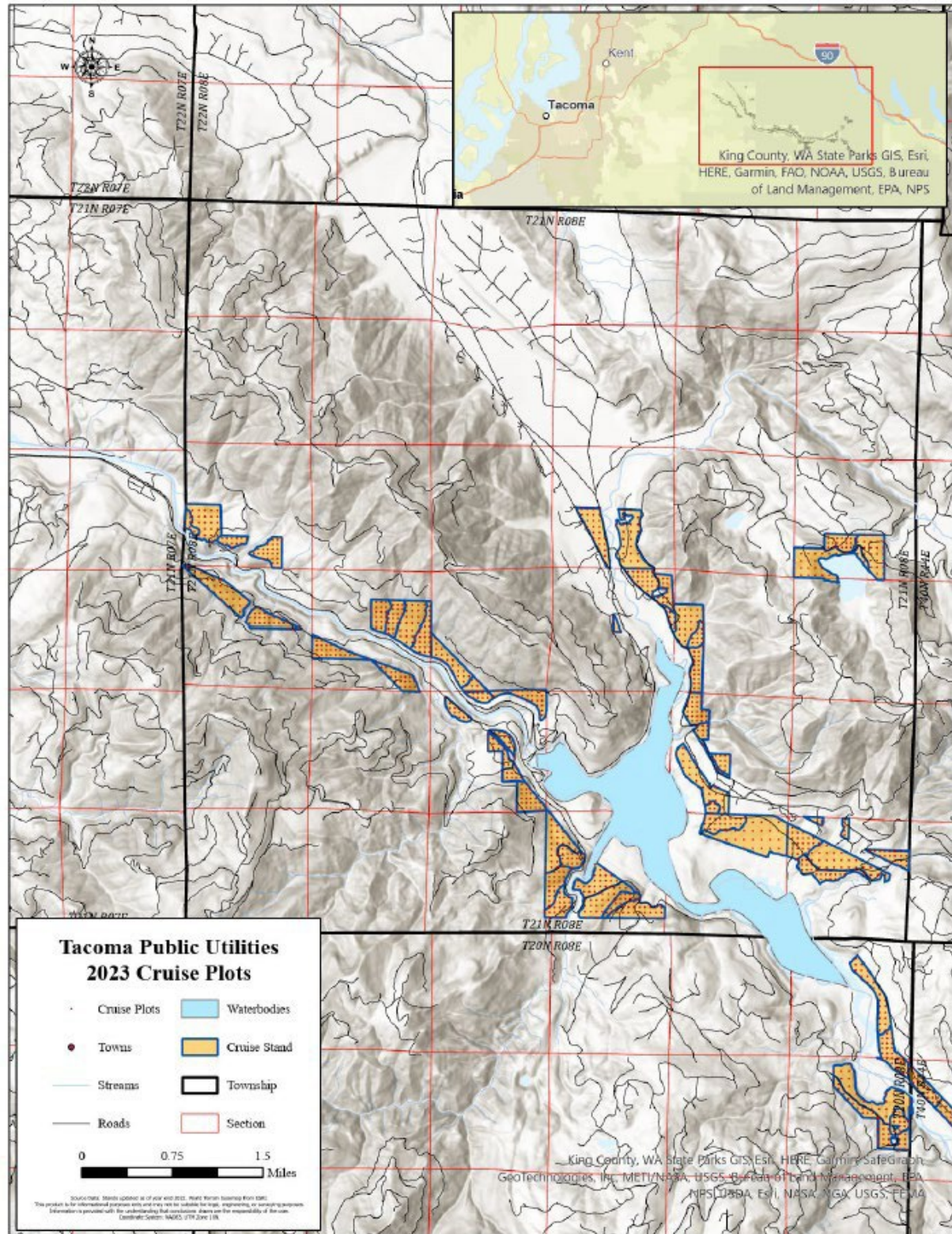
The City of Tacoma expects to meet a Project completion date of May, 2025

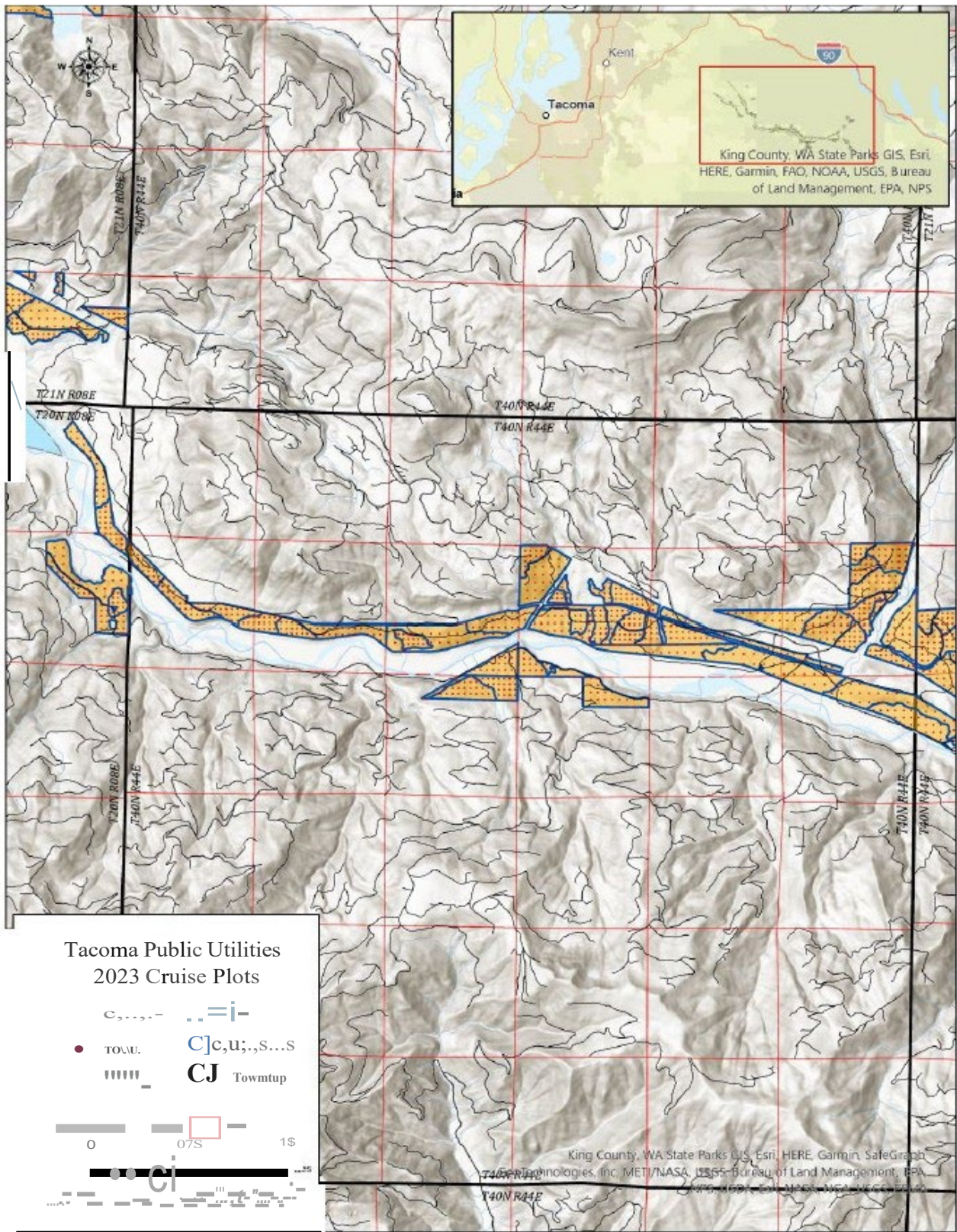
- 1) The Consultant will cruise all selected merchantable stands.
 - a. Merchantable stands are forested stands regenerated prior to 2000 located within the City of Tacoma's Commercial Forest Zone or Conservation Forest Zone located within the watershed.
 - b. These stands contain approximately 4,200 plots (see Appendix A Cruise Plot Vicinity Maps), distributed as follows:
 - i. Five plots in stand <5 acres
 - ii. One plot per acre in stands 5 – 25 acres
 - iii. Twenty-five plots in stands 25-100 acres
 - iv. One plot per four acres in stands >100 acres
 - c. Cruise data should be collected consistent with standards in Appendix A.
- 2) At least 4% of the cruise plots must be check cruised as described in Appendix A.
 - a. Check cruising must be completed by a different cruiser than performed the initial cruise or can be subcontracted to a third-party.
- 3) Inventory management over the duration of the contract.
 - a. Develop and maintain a cruise database to hold all cruise data collected
 - b. Populate the City of Tacoma's inventory GIS database and associated stand shape file with stand-level inventory data including, but not limited to:
 - i. Date
 - ii. Land use
 - iii. Species
 - iv. Stand BA
 - v. Stand height
 - vi. Dominant and secondary species
 - vii. Volume/ac
 - viii. Live TPA
 - ix. Standing dead TPA
 - x. Stand origin year
 - xi. Stand site class
 - c. Maintain the City of Tacoma's inventory for the duration of the contact including
 - i. Year-end updates accounting for
 1. Harvest activities
 2. New cruises, planting and silviculture (such as PCT) activities
 3. Road building and decommissioning
 4. Acquisitions or dispositions
 5. Stream locations, stream typing, buffers

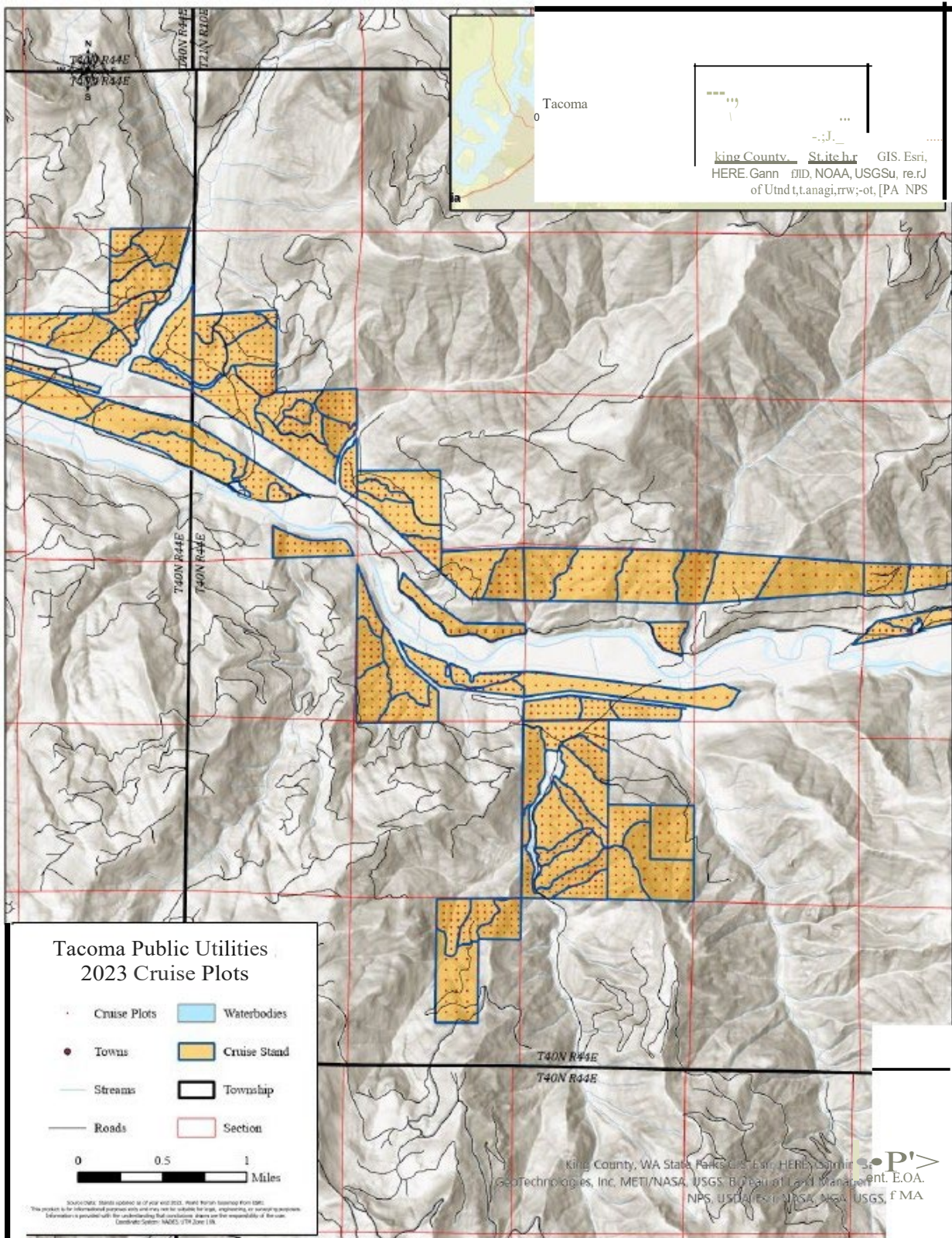
6. Annual growth
 7. Other spatial updates as needed
- 4) The Consultant will develop a harvest scheduling model to optimize landscape-level forest management in the City of Tacoma's watershed for inventoried stands including meeting watershed Habitat Conservation Plan objectives, complying with applicable Forest Practices regulations and meeting city financial objectives.
- a. The harvest schedule will have a duration of 100 years, with 5 or 10-year time-steps.
 - b. The harvest scheduling model will use inventory data collected and developed as part of this RFP.
 - c. The consultant will develop yields based on the inventory data using a growth model such as Forest Vegetation Simulator.
 - d. The City of Tacoma will request analysis of several scenarios, with a maximum of 12, which may differ based on economic assumptions, harvest flow requirements, activity type, thinning options, or other factors yet to be determined. The model must be capable of modeling multiple harvest strategies, including PCT, Thinning, Uneven aged and Even Aged scenarios.
 - e. A summary report for each scenario will contain stand-level information for harvest model results including:
 - i. Period of harvest
 - ii. Harvest age
 - iii. Harvest acres
 - iv. Harvest total mbf
 - v. Type of harvest

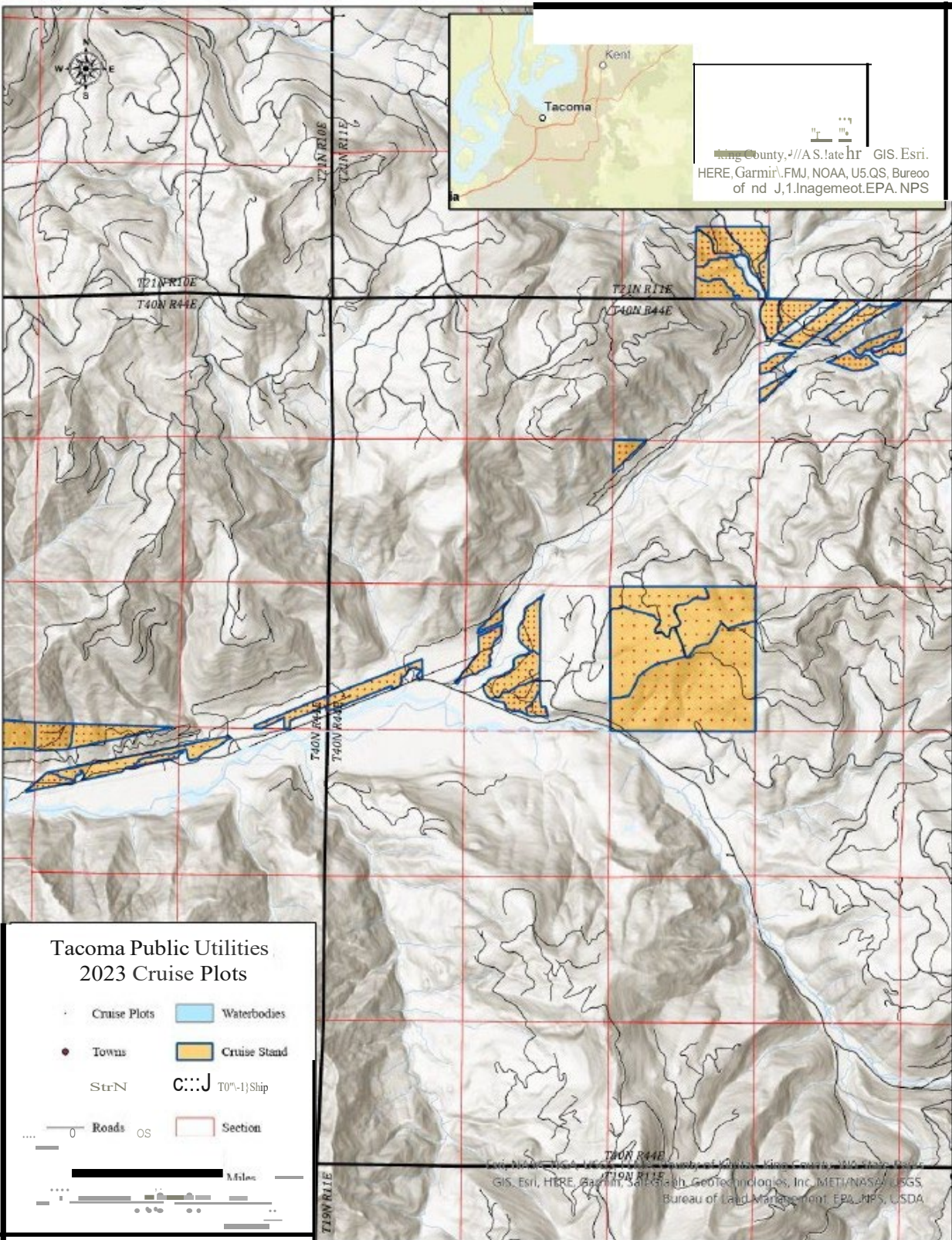
Tacoma Water Timber Cruise Specifications

Cruise Plot Vicinity Maps









Tacoma Water Timber Cruise Specifications

Cruise Design

Each cruise plot will consist of a single variable radius plot. A Basal Area Factor (BAF) will be selected for each individual stand and used for every plot in that stand. All trees with DBH ≥ 4.6 " will be included in this cruise.

Plot Location

Predetermined plot locations should be loaded into a handheld GPS unit. The cruiser will navigate to the GPS location with the handheld GPS until within 30 feet of the plot location. Once within 30 feet, the cruiser should stop and let the GPS gain a more precise location. If the direction and azimuth changes, the cruiser should follow the new direction and azimuth using compass and pacing rather than the GPS navigation, as the GPS direction and distance will vacillate quickly once close to the plot (within 30 feet).

In the event of a weak satellite signal or loss of battery power in the GPS unit, the plots should be located as close to the mapped location as possible using a compass and pacing or other means of measurement and referring to the stand map.

Plot Establishment Under Special Circumstances

The objective of any cruise is to install the number of plots needed to achieve the desired accuracy and precision in sample estimates. Therefore, avoid dropping plots to the greatest possible extent by following the following procedures:

Plots on stand/harvest unit edges or property boundaries:

The cruisers will use best judgment based on available photos and maps to determine whether the plot is on the edge of a stand line. The cruiser should *not* take steps to *avoid* sampling on or near the edge. Moving a plot location back along the line of travel to avoid the edge is *not* an acceptable practice.

If it is determined that the point center for the plot is outside of the cruise stand, the plot will not be included, and the cruise map should be clearly annotated to reflect the reason for dropping the plot.

If the plot center is near the edge of the cruise stand, the walkthrough method should be used to determine the appropriate tree count of each tree on the plot. (Appendix A Edge Plot Procedures).

If the GPS unit directs the cruiser outside of the mapped stand area for a plot location, yet the plot is clearly within the stand boundary on the reference map, the cruiser should establish the plot according to the map specifications, as GPS accuracy may be negatively impacted by steep terrain or dense canopy cover.

Plots on or near a road or power lines

Cruise plots should not be dropped for falling on or near roads and/or power lines.

If the cruiser navigates to a plot location and finds it to be on a mapped road, they should use the cruise map to determine if the GPS location matches the planned plot location. If GPS accuracy is poor, the cruiser should locate the planned plot location according to the map using a compass and pacing. If the mapped road appears to be in the wrong location, the plot should be installed in a location relative to the actual road that matches what was originally intended. Once again, the cruise map should be annotated to reflect the issue encountered.

If the cruiser navigates to a plot location and finds it to be on an unmapped road, the plot should be taken where it falls, and a comment recorded indicating that it fell on an unmapped road.

Plots falling near the edge of a mapped road or power line should be treated as a plot that falls near the edge of a stand boundary, and the walkthrough method should be used to determine whether or not any trees will be double-tallied (plots falling near the edge of an unmapped road will be cruised as any other plot).

Other than noted exceptions, **plots should not be dropped, unless the safety of the cruiser is in question**. If a plot must be dropped, indicate the location of the dropped plot on the map, and provide notes explaining why the plot was dropped.

Moving Plots

Cruise plots will be moved only under very rare circumstances, however if a plot is moved or offset from its intended location, a GPS point will be taken at plot center. The cruise map should then be annotated with the coordinates and projection system used, as well as the reason for moving the plot. The latter should be noted in the plot level comments of the field data recorder.

Plot Monumentation

After navigating to the plot center location, the cruiser will monument the plot by firmly shoving a stick into the ground at plot center. Appropriate color flagging should be secured to this stick and the following information should be written on the flagging:

- Stand #
- Plot #
- Cruiser Initials
- Date

Two long pieces of flagging should be tied to a tree, or branch, at or above eye level on opposite sides of plot center. If no trees, branches, or suitable brush can be found near plot center, the cruiser should hang flagging as close to the plot as possible. If plot center is not clearly visible from where flagging is hung, the cruise should indicate the distance and azimuth to plot center on this flagging, in addition to the other required items listed above.

Variable Radius Plots and Basal Area Factors

Each variable radius plot will be a full circle sweep, sighting trees at DBH. The “prism sweep” should proceed from due north in a clockwise manner and all “IN” trees will be recorded in the order they are encountered. Every tree 4.6” DBH and larger will be tallied.

The cruiser should select a BAF for the stand such that an average of 6 to 8 trees will be tallied per plot. The choice of the appropriate BAF can be found by taking the expected basal area per acre for the stand and dividing it by 7 (desired average per plot tree count). For example, if the expected basal area in the stand is 240 ft², an appropriate BAF would be 240/7, or approximately 34.3. Tools for conducting variable radius cruising will usually have a 33.61 BAF as an option, which would be close enough. For a complete list of acceptable BAFs, see Appendix A Basal Area Factors.

Note that the “6 to 8 trees per plot” rule is to be used as a guideline, and not a hard rule. In some situations, the appropriate BAF may result in fewer trees per plot on average, due to stand openings, poorly stocked areas, rock outcrops, or other factors that could be more challenging to plan for when selecting a BAF. It is assumed that cruisers will make their best effort to achieve the 6-8 trees per plot target, and that any stands falling significantly short of this will have well-documented explanation of stand conditions.

The same BAF is to be used for all plots in a stand. If the cruiser selects a BAF, tries it on a few plots and then decides to change the BAF, the first few plots must be redone with the new BAF.

Slope Correction

Slope correction on variable radius plots will happen automatically if commonly used cruising instruments such as the Relaskop are used properly. When cruising plots on steep slopes it is important however, to carefully check trees located up- or down- slope from plot center.

Borderline Trees

If a tree is not obviously in or out of a plot, the cruiser will measure *horizontal* distance from plot center to the face, or estimated center (pith) of the tree. The limiting distance should be calculated using the correct plot radius factors (PRF, face, or center), corresponding to the BAF being used. (Multiply the PRF by DBH to calculate the limiting distance. If the calculated limiting distance is greater than or equal to the distance from plot center to the center of the tree, then the tree is considered an “in” tree. Refer to Appendix A Basal Area Factors for a list of BAFs and associated PRFs.

Stand, Plot, and Tree Level Data Records

Stand Level Data

Items listed in Table 3.1, below, will be collected at the Stand level.

Table 3.1 Summary of data to be collected at stand level

Item	Brief Description
Stand ID	Unique stand identifier
Cruiser	Cruiser initials
BAF	Universal field for plot size or BAF
Comments	Cruiser comments for entire stand

Stand ID

Record the Stand ID, as indicated on the cruise map.

BAF

Record the BAF that will be used to cruise the stand.

Comments

Provide comments regarding any significant issues which a forester should be aware of in the stand.

Plot Level Data

Items listed in Table 3.2 are collected at the Plot level. Descriptions of unique items follow the table.

Table 3.2 Summary table of data to be collected at the plot level

Item	Brief Description
Stand ID	Unique stand identifier
Plot ID	Unique plot identifier
Date	Date plot was cruised
Comments	Cruiser comment for individual plot

Plot Number

Plots will be numbered 1-X, where X is the total number of plots in the project. Plot numbers should be assigned on the cruise map and the GPS unit prior to heading out to the woods. Enter the number of the plot being cruised, as it appears on the map.

Cruise Date

Enter the date the plot was cruised.

Comments

Provide comments regarding any significant issues which a forester should be aware of on the plot. For dropped plots, use this field to give a brief explanation of why the plot was dropped.

Tree Level Data

Items listed in Table 3.3 are collected at the Tree level. A description of unique items follows the table.

Table 3.3 Summary of data to be collected at the tree level

Item	Brief Description
Stand ID	Unique stand identifier
Plot ID	Unique Plot Number within a Stand
Tree Number	Sequential numbering of each tree record
Live/Standing dead	Tree is alive or is standing dead
Species	Tree species identifier
Count	Number of trees associated with record
DBH	Tree diameter at breast height
Total Height	Total tree height
Crown Ratio	Ratio of live crown length to total height
Age	Breast height age
Comments	Cruiser comments on individual trees

Tree number

In general, work clockwise from azimuth 0° to 359°, and work outwards from plot center to plot perimeter. Numbers should be consecutive and start with 1. If a tree needs to be added or deleted, ensure that the numbers are continuous (no repeats or skips) upon finishing the plot. The field data collection application should automatically assign the correct number.

Tree Groups

Tree group codes are used to indicate any sub-population of trees the tree record should be associated with (e.g., live, cull, broken top, site index).

Live/Standing dead

Indicate live for all living trees. Standing dead trees equal to or greater than 20 feet tall and equal to or greater than 12 inches in DBH are recorded as standing dead.

Diameter at Breast Height

Record DBH to the nearest *0.1 inch* for all trees observed as “IN” the measure plots. Unless a bulge or other deformity/abnormality exists at DBH, measure DBH at 4.5 feet above the ground line on the uphill side of the tree. When measuring 4.5 feet above the ground, it is not necessary to remove litter, except in cases of excessive accumulation. DBH measurements should be recorded while standing below any large woody debris (e.g., down logs or branches) that may beat the base of the tree. See Appendix A DBH Measurements for explanation of proper use of diameter tapes and points of measurement for DBH.

Total Tree Height

Measure total height on the first and third tree, per species, on every plot. These trees should represent the full range of diameters and species in the stand. See Appendix A Measuring Total Height for further details on height measurements.

Live Crown Ratio

Measure crown ratio on all trees. Visually balance the live crown and estimate the percent of the total tree height that has a crown:

$$\text{Length of crown/total tree height} \times 100 = \text{Live Crown ratio}$$

Estimate this value to the nearest 5%. If a tree has a broken top, estimate the crown ratio to the top of the existing bole. See Appendix A Live Crown Ratios for instructions and illustrations on estimating Live Crown Ratio.

Tree Cores/Breast height age

Collect tree cores on five Site Index trees. Breast height age should be determined by counting the total number of growth rings observed by coring the tree with an increment borer at approximately breast height on the uphill side of the tree. Breast height age is used to determine origin year. Record an estimated number of years to reach breast height age. The default estimate is 5 years.

Comments

Provide comments related to any significant issues which a check cruiser or inventory analyst should be aware of.

Site Index Tree Selection and Measurement

Collect five site trees per stand. Site trees should be free from defect and disease and be dominant or co-dominant trees located in the main canopy. Target Douglas-fir first and Western Hemlock second in conifer stands. If a stand is dominated by hardwoods, target Red Alder. Shade tolerant species must have at least 40% live crown and shade intolerant species must have at least 50% live crown. **All site trees in a stand should be the same species** and be within a similar age (5 to 10 years) of each other.

Off-plot site trees are allowed but discouraged. If off-plot site trees are measured, it is required that the tree is within sight of the most direct path to the next plot measured, and that flagging is wrapped completely around the tree at DBH. A Tree Count of 0 should be entered and a comment inserted in the Tree level "Notes" field that it is an off-plot site tree. Off-plot site trees should only be used as a last resort and must be within the stand.

Every effort must be made to distribute site trees across the stand in order to accurately represent any site variability within the stand.

Tree Defect Data

Defect data is not collected for every tree; it is reserved for trees with defect or damage that needs to be accounted for in the final volume compilation. Tree defect data is collected on each 1/3 of the tree stem.

Log Deduction

Record defect deductions for each tallied segment in 5-percent (%) volume increments from 0 – 100%.

Comments

This field can be used to record any comments related to the observed defect that might be considered useful to the check cruiser or inventory analyst.

Check Cruising Procedures

Table 3.4 Check cruise tolerances

Measurement	Plot/Tree	Tolerance (+/-)	Point Deduction
Plot Location	Plot	+/- 50'	5 points
Plot Monumentation	Plot	None	5 points
Plot Status	Plot	None	2 points
Missed/Added Tree *	Tree	None	5 points
Tree Species	Tree	None	3 points
Tree Group	Tree	None	2 points
DBH	Tree	+/- 0.2"	3 points
Crown Ratio	Tree	+/- 10 %	1 point
Total tree height	Tree	Conifers: +/- 10% on trees < 60' tall and +/- 7% on trees >=60' tall; Hardwoods: +/- 10%	2 points
% Defect	Tree	+/- 10%	1 point
Tree age at breast height	Tree	+/- 5 years on trees less than 50 years old and +/- 7 years on trees greater than or equal to 50 years old	2 points

* A missed or added tree will have a maximum deduction of 5 points; the penalty for all other measurements will not apply.

Tacoma Water Timber Cruise Specifications

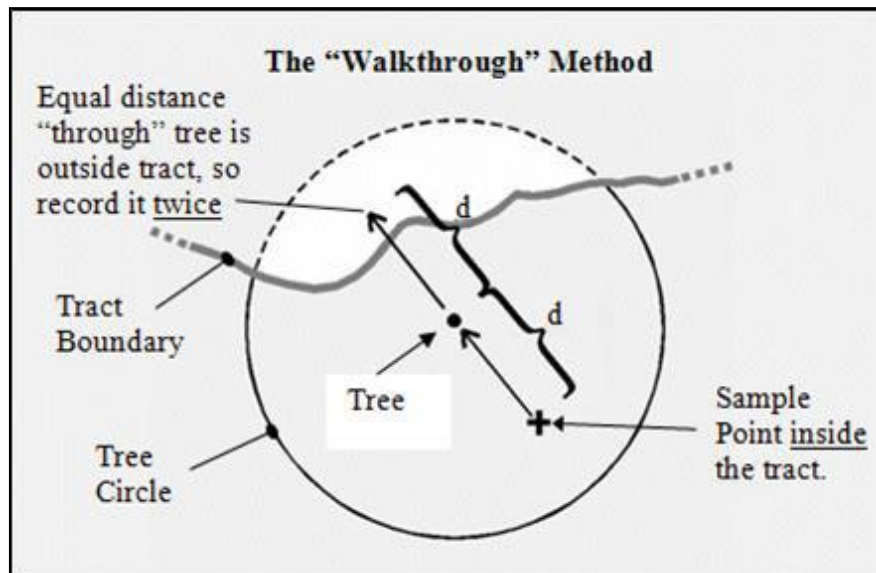
Edge Plot Procedures

The Walkthrough Method

Establish the plot exactly where the plot center falls and measure and record all trees falling in the plot that are inside the stand boundary.

For any “in” tree, measure the distance (“d” in Figure 1 below) from the sample point to the tree. Duplicate the distance, “d”, on the other side of the tree towards the stand boundary.

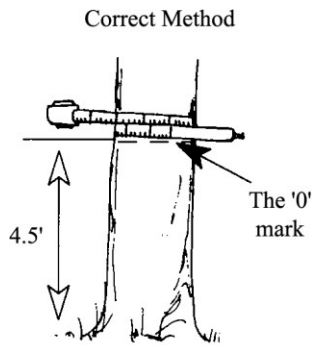
If you are outside the stand boundary at the end of this duplicated distance, record the tree twice. If you are inside the stand boundary at the end of this duplicated distance, record the tree once.



Tacoma Water Timber Cruise Specifications

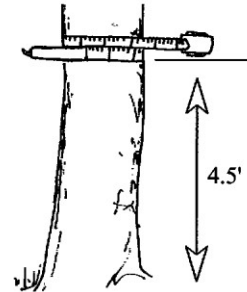
DBH Measurements

Proper Use of a Diameter Tape



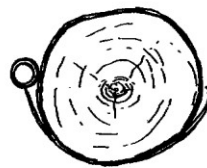
End of tape (with the '0' mark or hook) crossed under.

Optional method if left handed



End of tape crossed under.
(Be careful - reading will be made from upside down d-tape marks.)

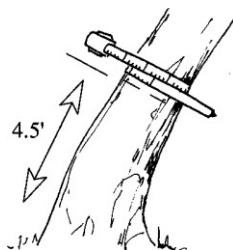
Press the tape firmly against the tree. Do not pull it out at a tangent to the tree at the point of measurement.



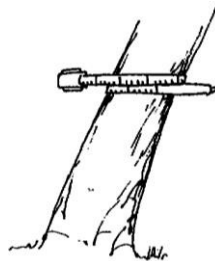
Correct



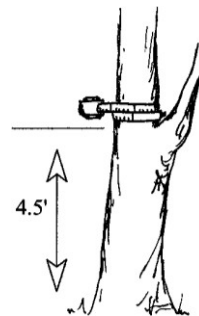
Incorrect



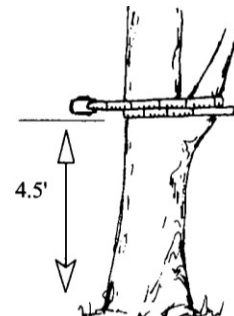
Correct



Incorrect



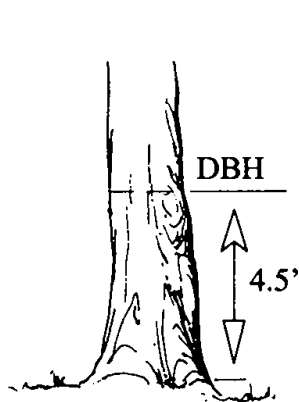
Correct



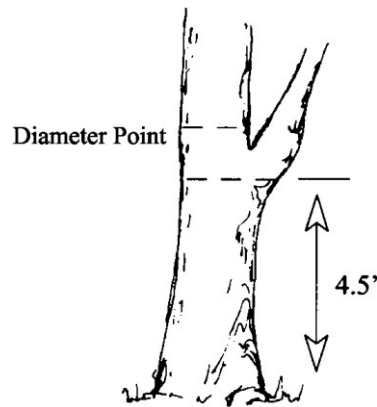
Incorrect

Tape must be at right angles to lean of tree. Do not place tape at abnormal location on bole of tree.

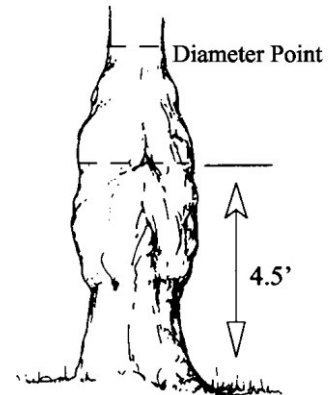
Point of Measurement for DBH



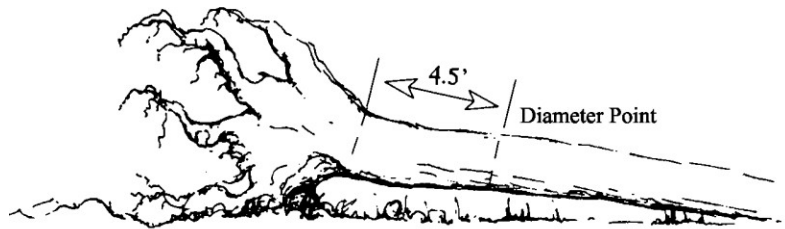
Tree on level ground



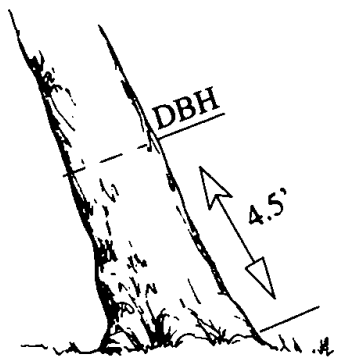
Tree with branch
at 4.5 feet



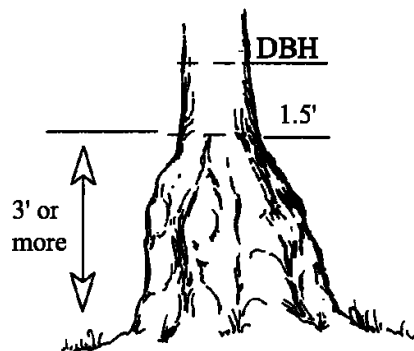
Tree deformed at DBH by
swelling or crook. Take
DBH above deformation.



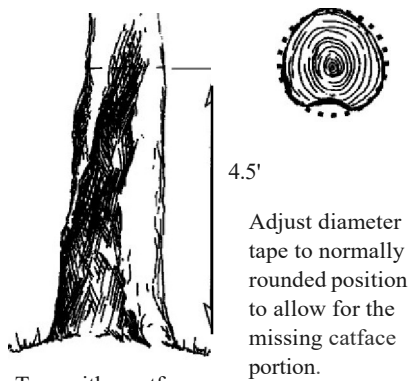
Windthrown tree



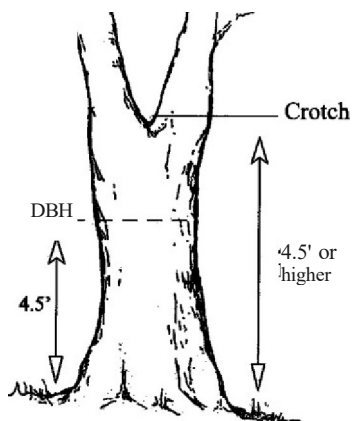
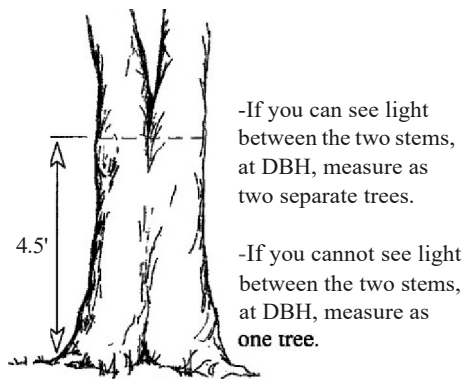
Leaning tree



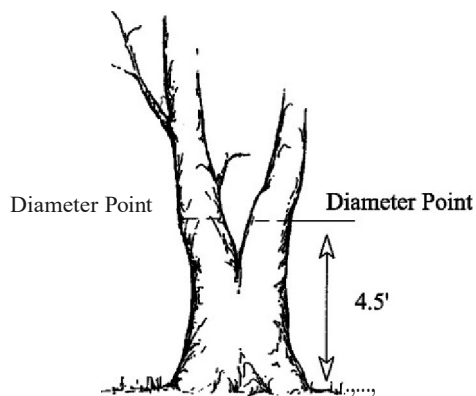
Bottleneck tree



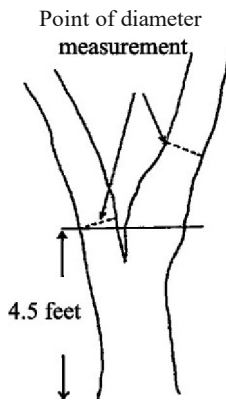
Tree with a catface



Tree forked at 4.5 feet or higher. Record as one tree and consider only the main fork. Take DBH below the swell of the fork.

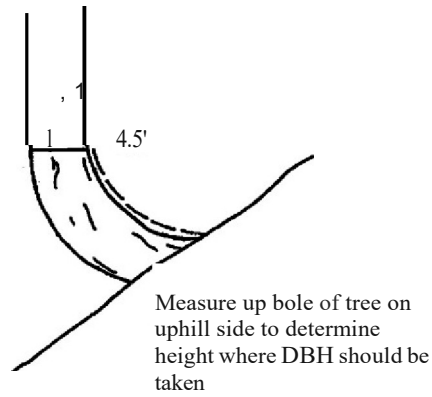


Tree forked below 4.5 feet. Record each fork that is "in" as a separate tree. Measure diameter at 4.5 feet.

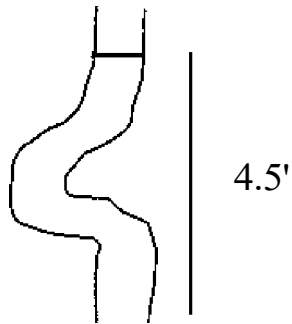


Measuring abnormal diameters on forked trees

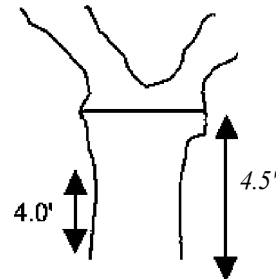
Diameter on abnormal fork



Diameter on pistol butt tree



DBH measurement for a pistol butt shaped tree



Tree forked at DBH. Unable to get a DBH tape through crotch. Take DBH below the swell of the fork.

Tacoma Water Timber Cruise Specifications

Measuring Total Height

Total tree height can be measured using several different angle measurement devices but is normally done with a Relaskop, Clinometer, or a laser while cruising. A simplified field procedure is outlined as follows:

1. Tape away from the center of the tree until the percent scale registers less than 100 when sighted at the top of the tree.
2. Determine the horizontal distance to the tree. If only the slope distance is known, horizontal distance can be calculated as follows:

Find the slope angle by shooting at eye level on the tree with the Clinometer or Relaskop. Multiply the cosine of the angle (often on the back of a Clinometer) by the slope distance to get the horizontal distance. For example, if the taped slope distance is 83.5' the slope angle is 26°,

$$\begin{aligned}\text{Horizontal distance} &= 83.5 * \cos 26^\circ \\ &= 83.5 * 0.90 \\ &= 75'\end{aligned}$$

Horizontal distance calculation is available with the handheld data recorder.

3. Determine readings to the top of the tree and at the base and add the absolute value of each of the readings if they are opposite in sign; subtract them if they are both the same sign.
4. Determine total height by dividing the horizontal distance from the tree by 100 and multiplying the quotient by the sum of the readings for the tree. The same process is employed when using the chain scale except the horizontal distance from the tree is divided by 66, and then multiplied by the sum of the readings (chain scale readings.) Height calculations based on slope distance, slope, and height readings are available with the data recorders.

For example, if

Horizontal distance to the tree = 75', and

Sum of the readings (chain scale) to the base and top of the tree = 82,
then Total tree height = $75/66 * 82 = 93.18 = 93'$

An obvious advantage can be realized by taking the readings at 100' or 50' (horizontal distance) when using a percent scale and at 66' or 33' (horizontal distance) when using a chain scale angle measurement.

Readings to the top of a leaning tree should be made, to the best of the cruiser's judgment, to a point where the top of the tree would be if it was a straight standing tree. Also, care should be taken when shooting the top measurement on the tree. Focusing on an outside branch tip instead of the top leader will give an inaccurate height measurement.

Multiple topped trees should have an estimated top recorded as if the top had not become multiple topped or bole broken.

Total Tree Height - To determine total tree height, measure from the base of the tree on the highground side to the tip of the tree leader. Measure the height from a point uphill or on the same contour line as the tree. Record the total tree height to the nearest foot.

Height for Leaning Trees - Trees leaning 25% (about 15°) or more from vertical require the following special height measuring technique.



Procedure: Locate point on ground directly under tip of leaning tree. Measure height **A B**. Measure horizontal distance **B C**. Determine actual tree height (**A C**) using either the Pythagorean theory for right triangles where:

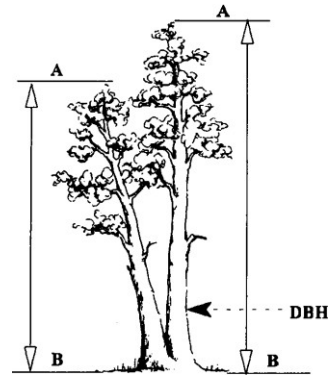
$$\text{Tree Height} = \sqrt{AB^2 + BC^2}$$

Example: Measured height (AB) = 120'
Horizontal distance (BC) = 40'

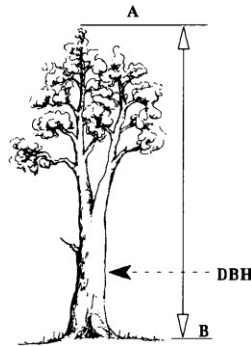
$$\text{Corrected tree height} = \sqrt{120^2 + 40^2} = 126.49 \text{ feet}$$

Height for Trees with Forked Tops

If tree forks below DBH, treat as two trees and measure height of each stem from base of tree to tip of tree.



If the fork crotch occurs at or above 4.5 feet on high ground side, the tree is treated as a single tree. Measure height of the tallest fork.



Tacoma Water Timber Cruise Specifications

Live Crown Ratio

Live crown ratio, in percent, is the length of the live crown divided by tree height. Live crown length is assessed from the uppermost live leader or branch to the lowest live branch. Visually adjust large openings in the crown or lopsided crowns by transferring lower branches to fill in the holes. Compressing the live crown length because the crown appears "sparse" or contains "unhealthy" foliage is not appropriate. Crown ratio is the portion of the tree bole supporting live, healthy foliage and is expressed as a percent of the actual tree height. The distance between A and B is the existing crown length.

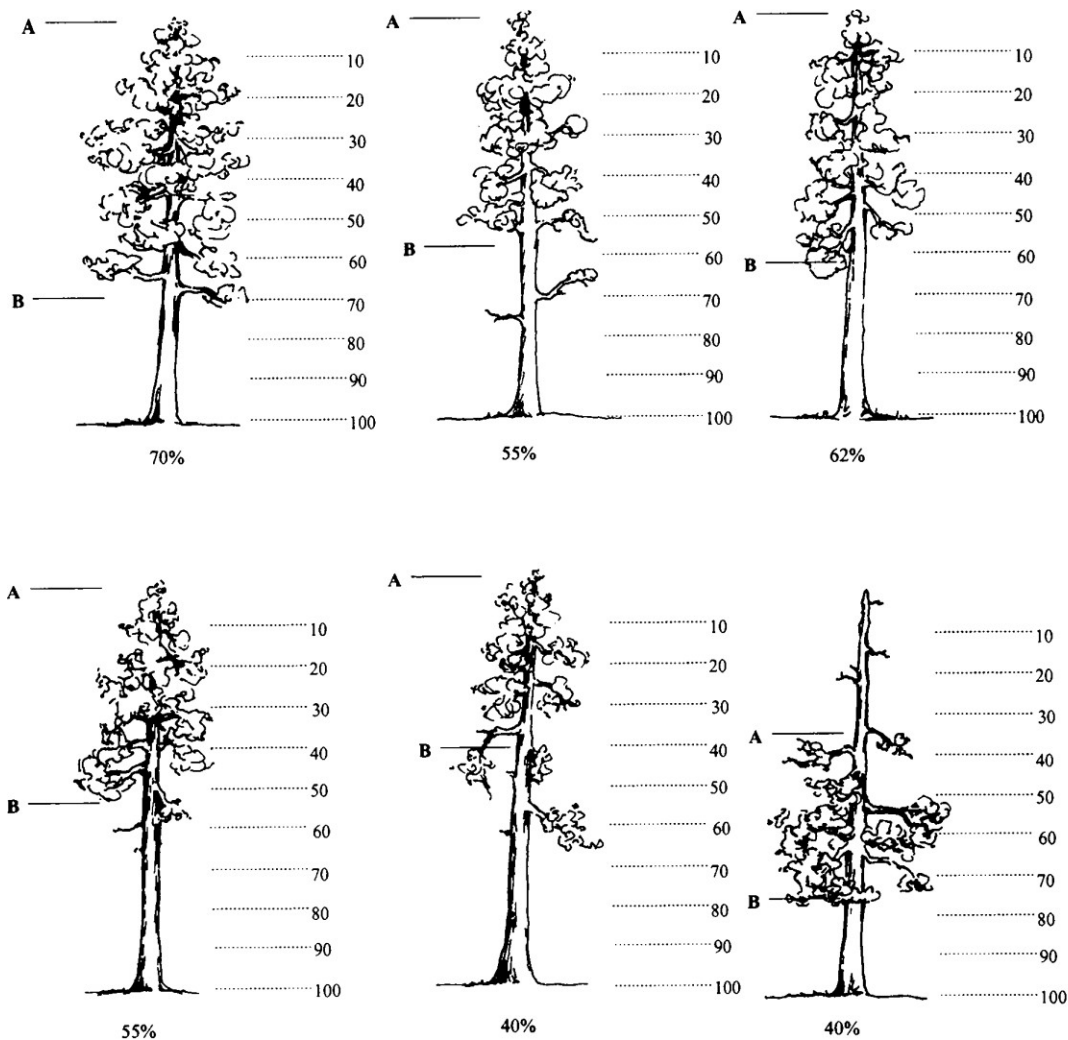


Figure C.1 Illustrative example of crown ratio estimates

Tacoma Water Timber Cruise Specifications

Basal Area Factors

Table E.1 Common BAFs and associated Plot Radius Factors

Common BAFs and Associated Plot Radius Factors		
<i>BAF</i>	<i>PRF- pith</i>	<i>PRF- face</i>
10.00	2.750	2.708
13.61	2.357	2.316
16.72	2.127	2.085
17.78	2.063	2.021
20.00	1.945	1.903
22.50	1.833	1.792
25.15	1.734	1.693
27.78	1.650	1.608
33.61	1.500	1.458
40.00	1.375	1.333
46.94	1.269	1.228
54.44	1.179	1.137

APPENDIX B

City of Tacoma Signature Page

Watershed Signature Page

Requirements for the protection of the Water Supply in the Green River Watershed

SIGNATURE PAGE
CITY OF TACOMA
TACOMA WATER DEPARTMENT

All submittals must be in ink or typewritten, executed by a duly authorized officer or representative of the bidding/proposing entity, and received and time stamped as directed in the **Request for Bids page near the beginning of the specification**. If the bidder/proposer is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

REQUEST FOR PROPOSALS SPECIFICATION NO. TW23-0011F
TACOMA WATER FOREST INVENTORY

The undersigned bidder/proposer hereby agrees to execute the proposed contract and furnish all materials, labor, tools, equipment and all other facilities and services in accordance with these specifications.

The bidder/proposer agrees, by submitting a bid/proposal under these specifications, that in the event any litigation should arise concerning the submission of bids/proposals or the award of contract under this specification, Request for Bids, Request for Proposals or Request for Qualifications, the venue of such action or litigation shall be in the Superior Court of the State of Washington, in and for the County of Pierce.

Non-Collusion Declaration

The undersigned bidder/proposer hereby certifies under penalty of perjury that this bid/proposal is genuine and not a sham or collusive bid/proposal, or made in the interests or on behalf of any person or entity not herein named; and that said bidder/proposer has not directly or indirectly induced or solicited any contractor or supplier on the above work to put in a sham bid/proposal or any person or entity to refrain from submitting a bid/proposal; and that said bidder/proposer has not, in any manner, sought by collusion to secure to itself an advantage over any other contractor(s) or person(s).

Bidder/Proposer's Registered Name

Signature of Person Authorized to Enter Date
into Contracts for Bidder/Proposer

Address

Printed Name and Title

City, State, Zip

(Area Code) Telephone Number / Fax Number

E-Mail Address

State Business License Number
in WA, also known as UBI (Unified Business Identifier) Number

E.I.No. / Federal Social Security Number Used on Quarterly
Federal Tax Return, U.S. Treasury Dept. Form 941

State Contractor's License Number
(See Ch. 18.27, R.C.W.)

Addendum acknowledgement #1_____ #2_____ #3_____ #4_____ #5_____

THIS PAGE MUST BE SIGNED AND RETURNED WITH SUBMITTAL.

WATERSHED SIGNATURE PAGE

REQUIREMENTS FOR PROTECTION OF WATER SUPPLY IN THE GREEN RIVER

Contractors working for the City of Tacoma inside the Green River Watershed are required to follow rules regarding the protection of the drinking water supply. The document 'REQUIREMENTS FOR PROTECTION OF WATER SUPPLY IN THE GREEN RIVER WATERSHED' outlines the responsibilities of personnel working inside the closed portion of the watershed.

Contractors working on Tacoma Water property are required to meet terrestrial invasive species requirements as outlined in the document. If in water work is required, additional cleaning and decontamination are required prior to entering the watershed to meet aquatic invasive species protection requirements.

The responsive bidder must be able to comply with all requirements listed in the 'REQUIREMENTS FOR PROTECTION OF WATER SUPPLY IN THE GREEN RIVER WATERSHED', which includes having an off-site area suitable of meeting decontamination requirements as well as the necessary equipment to perform the cleaning.

I understand the requirements outlined in the attached document titled 'REQUIREMENTS FOR PROTECTION OF WATER SUPPLY IN THE GREEN RIVER WATERSHED' (Appendix B) and our company and any subcontractors have the ability to comply with these requirements.

Name_____ Signature_____

Title_____ Company_____

Date_____

**TACOMA PUBLIC UTILITIES
TACOMA WATER**

**REQUIREMENTS FOR PROTECTION
OF WATER SUPPLY IN THE
GREEN RIVER WATERSHED**

Jackie Flowers
Director of Utilities

Scott Dewhirst
Superintendent – Tacoma Water

UTILITIES ADMINISTRATION BUILDING
Tacoma, Washington 98409

EMERGENCY NUMBERS

Gate Guard (24 Hours)	(253) 502-8697
Gate Guard (24 Hours) alternate	(360) 886-1601
Green River Filtration Facility (24 Hours)	(253) 502-8346

FOREWORD

The principal source of Tacoma Water's municipal drinking water supply is the Green River, which flows west from the Cascade Mountains. Green River water is diverted at a point approximately 30 miles east of the City of Tacoma. To protect public health and ensure a safe drinking water supply, it is necessary that the water be maintained at its source in a state of the highest natural quality. Therefore, it is the goal of Tacoma Water to control those activities within the Green River Watershed that are not compatible with maintaining high quality water.

The Washington State Department of Health has enacted drinking water regulations requiring water purveyors to develop and implement an approved watershed control program. The purveyor must exercise surveillance over conditions and activities in the watershed affecting source water quality (WAC 246-290-668). The Washington State Department of Health's approval of Tacoma Water's Green River Filtration Facility was based on the expectation that watershed control practices would remain at similar levels as an unfiltered surface water supply. State law RCW 35.88.010 also provides Tacoma Water with authority over its sources of water supply.

The purpose of this document is to identify requirements for water supply protection that all landowners, their agents, and other visitors to the Green River Watershed must follow. The first publication of this manual was in 1952. It has been revised over time to reflect changes to Tacoma Water policies and procedures, regulatory revisions, and changes within the watershed area. This document has been incorporated into the overall Water System Plan for Tacoma Water. The following requirements have been adopted by the City of Tacoma's Public Utility Board to afford maximum compatible multiple use of the watershed area without jeopardizing the health and safety of Tacoma Water customers.

Revised - January 11, 1966

Revised - May 4, 1967

Revised - September 2, 1970

Revised - January 20, 1971

Revised - March 17, 1976

Revised and Approved by Public Utility Board – January 23, 1980

Revised and Approved by Public Utility Board – August 25, 1993

Revised and Approved by Public Utility Board – August 13, 2008

Revised and Approved by Public Utility Board – March 27, 2019

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CONTROL OF THE WATERSHED AREA

Background

The Green River Watershed encompasses a total of 231 square miles approximately 30 miles east of the City of Tacoma in the central Cascade Mountain Range. The Green River is the primary source of Tacoma Water's drinking water supply. The water supply is treated at the Green River Filtration Facility; however, watershed control remains a critical component to maintaining water quality. To protect public health and ensure a safe drinking water supply, it is necessary that source water quality within the watershed be protected from degradation and contamination. Since 1906 when the City of Tacoma first declared its intention of using the Green River as its source of municipal water supply, Tacoma Water has had a continuous program for sanitary control of the area.

In accordance with the laws of the State of Washington, and as required by the rules and regulations of the Washington State Department of Health, the Tacoma City Council has defined by Ordinance No. 11441 (Appendix A) the property and territory constituting the Green River Watershed over which Tacoma Water exercises certain authority and jurisdiction by virtue of ownership and cooperative agreements with landowners.

The requirements included in this document are intended to protect water quality in the watershed and complement requirements imposed by existing State and Federal regulations. Tacoma Water may amend these requirements from time to time to conform to changes in watershed practices or technologies.

Regulatory Considerations

Public water systems in Washington are required to comply with WAC 246-290, the Washington State Department of Health drinking water regulations. These regulations set forth specific treatment requirements for surface water supplies such as Tacoma's Green River supply and require suppliers to exercise surveillance over conditions and activities in the watershed that may affect drinking water quality. Tacoma Water is required to have a watershed control program in place to protect source water from contamination.

The Washington State Forest Practices Rules also provide important regulatory considerations; activities conducted in the watershed must meet the requirements outlined in the Forest Practices Rules (Title 222 WAC).

Activities on watershed lands owned by Tacoma Water are regulated by the Green River Habitat Conservation Plan in order to protect sensitive species and those listed under the Endangered Species Act. Habitat Conservation Measure 3-04V covers sightings of species covered under the plan and states: "Tacoma will notify the USFWS in a timely manner of any reported sighting of a spotted owl, marbled murrelet, grizzly bear, gray wolf, Pacific fisher, California wolverine, or Canada lynx in the Upper HCP Area." Tacoma Water asks that all sightings of any of these species on Tacoma Water lands be reported to the Watershed Manager. Please report date and time of sighting, location of sighting and observed behavior of the particular species."

General Access Control

All roads entering the critical areas of the watershed are controlled by locked gates. Tacoma Water has jurisdiction over all access in the lower portion of the basin between the Headworks Gate and Massey Gates on the west and the gate at Friday Creek on the east. Tacoma Water provides surveillance over all land in the watershed.

Persons authorized in the area include workers for the various forest land and logging operations in the basin, the Bonneville Power Administration, the US Geological Survey, the US Forest Service, Burlington Northern Santa Fe Railroad, State and Federal fish and wildlife agencies, the US Army Corps of Engineers, Puget Sound Energy, and other landowners. Hunters are also authorized during the annual special permit hunts. Activities of all persons while in the watershed are carefully controlled to preclude contamination. Portable toilets are provided and maintained by Tacoma Water at convenient locations within the watershed. Failure to use them as required may result in termination of access privileges.

Tacoma Water employees are on duty every day and closely monitor watershed access and enforcement of these requirements. State trespass laws are used to control access.

ACCESS

Through cooperative agreements, Tacoma Water is authorized to limit Green River Watershed access to landowners and their agents. Other activities are controlled through a permit process. Tacoma Water maintains a number of locked gates on the roads leading into the watershed. Entrance through these gates into the watershed area is granted on a permit basis. Tacoma Water's right to issue the permits is based on ownership of the roadway or by cooperative agreement with landowners. Access permits may be issued for those activities that are compatible with watershed management and Washington State Department of Health policies. This permit process is detailed in Appendix B: Road Use Permit Form for Green River Watershed.

Westerly Access into the Green River Watershed

Road 5500

Road 5500 enters the watershed through the automatic, controlled gate at Tacoma Water's Green River Filtration Facility, continuing through the watershed to Lester. Road 5500 follows a route on the north side of the Green River.

Tacoma Water controls access on Road 5500 between the Headworks Gate on the west and the gate at Friday Creek on the east. The roadway is controlled through landowner agreements, US Army Corps of Engineers license, and by ownership of portions of the roadway.

Access for all landowner agents, contractors, or other visitors requires an access permit (Appendix B). After receipt of a permit and explanation of these watershed requirements, the driver will be responsible for any passengers and is required to inform them that they are entering a domestic water supply area. Any violations of the *Requirements for Protection of Water Supply in the Green River Watershed* will be grounds for issuing a Trespass / Incident Report (Appendix C) and denial of further access into the controlled areas of the Green River Watershed.

In addition to the access permit, supplemental requirements are in place for contractors. These special instructions for contractors are included in Chapter V. If a contractor desires access to other roadways that branch off of Road 5500, Tacoma Water must be contacted for any special requirements such as hauling permits, keys, or insurance.

Tacoma Water issues all commercial hauling permits on Road 5500.

Tacoma Water does not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to Road 5500 will be denied for any vehicle that does not have adequate insurance.

Green River Truck Road

Access on the Green River Truck Road (Road 3703) is controlled through landowner agreements and partial ownership by Tacoma Water from the Massey Gates located east of Cumberland. The roadway continues along the south side of the river. The Green River Truck Road is a private roadway. Access permits for use of the Green River Truck Road are issued by Tacoma Water.

Tacoma Water and the other road owners do not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to the Green River Truck Road will be denied for any vehicle that is not adequately insured.

Gate Keys

Gate keys are issued by Tacoma Water (Appendix F: Green River Watershed Gate Policy and Key Permit) or watershed landowners to permit holders who require access into the Green River Watershed during off hours. Keys shall not be duplicated or loaned to anyone else.

Key holders shall promptly return all keys when their official business has concluded, or when requested by Tacoma Water or the issuing landowner. A receipt will be issued for keys returned to Tacoma Water. Failure to return a key when asked by Tacoma Water will result in the key being considered as lost or stolen, and the key holder will be responsible for paying the penalty under Section 7.3 of the Policy found in Appendix F: Green River Watershed Gate Policy and Key Permit.

Access into the Green River Watershed via All Other Routes

Access to eastern portion of the watershed (east of the gate at Friday Creek) over any road system from the east does not presently require the issuance of a permit. Landowner agents and other visitors cannot enter the gate at Friday Creek without a valid permit.

Access to contractors from the east via any road system does not require the issuance of an access permit unless the contractor wishes to work west of the gate at Friday Creek.

Access by air for contractors to work within the watershed will not be allowed without a valid permit.

Insurance Requirements

Property owners, seeking to access City of Tacoma property to access their own property, contractors retained by them and permit holders, shall have and maintain adequate general liability and automobile liability insurance coverage, and shall provide verification upon the request to City of Tacoma officials, that adequate insurance coverage has been obtained and is in effect.

Contractors performing services for the City of Tacoma at their own expense shall procure and maintain in effect during the entire term of their contracts the specific insurance requirements specified therein, including:

- A) Commercial Automobile coverage, providing coverage for bodily injury and property damage, with policy limits of no less than \$1,000,000 combined single limit of liability. The City of Tacoma shall be named as an additional insured. Coverage shall apply to owned, non-owned and hired vehicles.

Property owners shall be responsible for verifying that their contractors and permit holders have adequate insurance.

OVERNIGHT STAYS

Temporary Residence

There are some cases where Tacoma Water determines it is in the best interest of watershed management to provide short-term temporary housing within certain areas of the watershed. This housing may be provided and/or allowed at the discretion of Tacoma Water. Any person staying within the watershed will be responsible to abide by these watershed requirements and notify their personnel that they are in a domestic water supply area. Any person observed violating these requirements or participating in any non-job-related activity west of the gate at Friday Creek will be subject to issuance of a Trespass / Incident Report and termination of access privileges.

Overnight lodging for fire surveillance or other special purposes may be authorized with prior approval of Tacoma Water.

RULES AND REGULATIONS FOR MULTIPLE-USE FACILITIES AND OPERATIONS

As provided through ownership and cooperative agreements with landowners, it is the responsibility of Tacoma Water to ensure that contractors, corporations, and governmental agencies satisfy water quality protection requirements in the Green River Watershed. The applicable rules and regulations of the Washington State Department of Health (WAC 246-290), the Forest Practices Act, and the applicable laws of the State of Washington and its subdivisions apply to any activities in the watershed and are incorporated by this reference into these requirements.

The Washington State Forest Practices Rules provide detailed specifications for forest practices and are followed by Tacoma Water to ensure that the maintenance and operation of compatible multiple-use facilities within the Green River Watershed do not degrade water quality. For Tacoma Water-owned lands, Tacoma Water ensures that logging practices, road building, and maintenance activities meet current Federal and State logging standards. For lands owned by other landowners, Tacoma Water reviews proposed activity plans and monitors the conduct of these activities. Tacoma Water attempts to resolve any identified problems in the field, but will report violations of the Forest Practices Act to the proper authorities if necessary.

In addition to the Forest Practices Rules and other existing rules and regulations, Tacoma Water implements additional requirements for the protection of water quality in the watershed. Special attention shall be paid to the following requirements for those visiting or working in the watershed:

1. Notification

Tacoma Water shall be notified by landowners and contractors one week prior to the actual starting of any project within the watershed requiring a Forest Practice Application.

2. Toilet Facilities

Tacoma Water shall be responsible for determining where toilet facilities shall be required and providing the required units. The contractor shall be responsible for providing a location to place the required units and encouraging their use.

3. Garbage

All trash and rubbish shall be collected in leak-proof containers and removed from the watershed. Trash and rubbish shall not be allowed to accumulate on the ground or in any water course. Such material shall not be disposed of by being deposited within the watershed area. All log landings and construction areas shall be kept clean of food waste, sandwich wrappers, etc. All vehicles shall have litterbags. Tacoma Water may provide garbage cans at the Headworks Gate and Massey Gates. Persons observed littering the roadways will be subject to citation and termination of access privileges.

4. Communicable Diseases

It shall be the duty of any person knowing or suspecting the presence of a communicable disease in an employee of his/her own to report these conditions immediately to the local health officer [King County Health Department hotline (206) 296-4774] and inform Tacoma Water [Gate Guard (360) 886-1601].

5. Rodent Control

The use of any disease-producing organism, such as the so-called “rat viruses”, or any other bacteria for the purpose of rodent extermination, is prohibited.

6. Boating, Wading, and Equipment Use

No boating, wading, or equipment use — except as required in construction or operations — shall be authorized in the Green River, Eagle Gorge Reservoir, or in any stream, lake, or pond tributary to the same. In those instances in which such activities are unavoidable, Tacoma Water’s decontamination procedures shall be followed (Appendix D).

7. Petroleum Products and Petroleum Product Spills

- a. Tankers, railroad tank cars, tank trucks, or other facilities used for the loading, unloading, and transportation of petroleum products shall be equipped for the collection of drips from the hose or other connections with the excess petroleum products contained in hose and pipelines.
- b. Wherever petroleum products are temporarily being stored within the watershed, provisions shall be made for catching accidental spills. These facilities shall be of such a capacity as to hold the maximum quantity of petroleum products possible from any one spill.
- c. If petroleum products or other hazardous materials are accidentally spilled into the Green River or its tributaries, or has the potential to reach the water supply immediate notification shall be given to Tacoma Water (at the emergency phone numbers provided) so the polluted water can be diverted before entering the water distribution system. Tacoma Water maintains oil spill equipment at the Green River Headworks and at most bridge crossings. The contractor shall be liable for any damage from such river pollution.
- d. **Emergency Phone Numbers**

Gate Guard (24 Hours):	(253) 502-8697
Gate Guard (24 Hours) alternate:	(360) 886-1601
Green River Filtration Facility (24 Hours):	(253) 502-8346
- e. Any equipment leaking excess amounts of oil shall be repaired prior to continuation of its use within the watershed.

8. Turbidity Control

- a. Tacoma Water may require a project to be shut down within the Green River Watershed if it causes turbidity levels above 5.0 NTUs (Nephelometric Turbidity Units) at the water supply intake. The affected project shall be delayed until turbidity from the project can be reduced by sedimentation basin construction or until conditions allow for well water blending or replacement of the turbid river water.
- b. Where required, temporary sedimentation basins shall be provided of sufficient capacity to detain the runoff long enough to permit the water to significantly improve before being discharged into the main river or any tributary thereto.

Sedimentation basins shall meet Washington State Department of Ecology Stormwater Management Manual standards.

9. Spraying Herbicides, Insecticides, or Fertilizers

- a. The use and amounts of herbicides, insecticides, or fertilizers shall be limited to compounds and procedures as approved by Tacoma Water and the landowners and in accordance with the applicable rules and regulations of the Washington State Department of Health and the Forest Practice Rules (WAC 222-38). The list of approved chemicals includes the following:
 - Glyphosate
 - Triclopyr
 - Aminopyralid

Additional chemicals may also be acceptable but must be approved prior to use.

- b. Oil-based insecticides or herbicides shall not be used without prior approval of Tacoma Water.
- c. Two weeks' prior notice must be provided to Tacoma Water by contractors or landowners who are planning on applying herbicides, insecticides, or fertilizers. This advance notice is required for the following reasons:
 - To screen all chemicals and application methods to determine potential impact on the water supply area.
 - To locate water sampling sites which best represent any potential contamination of the river.
 - To collect water samples to be tested for one or more of the chemicals applied; samples must be collected prior to chemical application, immediately after chemical application, and after the next rain event (Appendix E).
 - To make arrangements for Tacoma Water staff to ride with or be available to the herbicide applicator during the application process.

10. Bridge Maintenance

Debris and material from bridge maintenance, such as rust, scale, paint, or dirt, shall be kept from dropping into the water. All work shall be carried out over a shield designed to catch such material so that they may be disposed of on land. When cleaning solvents are used, care must be taken to see that such solvents do not drop into the water.

11. Bridge Sanitation Requirements

All railroad bridges and other bridges that are to be upgraded shall be constructed to the maximum extent possible to prevent contamination of the water. Drainage from bridges should be carried onto the land on either end and disposed of in such a manner that it cannot be directly discharged or washed into the main channel.

12. Dust Control

Petroleum products shall not be used within the Green River Watershed for dust control.

CHAPTER V

SPECIAL INSTRUCTIONS TO CONTRACTORS WORKING IN THE GREEN RIVER WATERSHED

All contractor personnel must be fully instructed as to the nature of the land upon which they are to work and shall exercise proper restraint to prevent any possible contamination of the water supply. It is the express duty of the foremen and supervisors to prevent sanitary infractions and inform their workers of the danger arising from carelessness.

All permits for contractor access are issued for work purposes in a designated area only. Access is limited to a designated route to and from the work site. Failure to comply will subject the person to issuance of a trespass incident report and termination of access privileges.

No person shall be taken in or allowed to enter the watershed with a contractor unless that person is under the employment of the company receiving the access permit. **NO UNAUTHORIZED RIDERS ARE ALLOWED.** Each contractor working in the watershed shall provide Tacoma Water with a list of employees. This list must be kept current.

CHAPTER VI

RECREATION WITHIN THE GREEN RIVER WATERSHED

Unrestricted outdoor recreation in the watershed is not considered a compatible multipurpose use. Therefore fishing, swimming, hunting, and other recreational activities (other than special permit hunting and other limited recreational activities supervised by Tacoma Water) are not allowed within the borders of the Green River Watershed west of the gate at Friday Creek. Tacoma Water reserves the right to restrict access to its owned and controlled lands east of Friday Creek.

Any person apprehended accessing the controlled areas of the Green River Watershed for recreational purposes by land, water, or air will be issued a Watershed Trespass Incident Report and will be subject to being issued a King County Trespass Citation.

Tacoma Water, the Washington Department of Fish and Wildlife, and the Muckleshoot Indian Tribe jointly sponsor annual special permit hunts in the watershed in cooperation with the other landowners. Access and hunt activities are strictly controlled; all hunters must check in with staff at the Headworks Gate or Massey Gates and must obtain a “Road Use and Access Permit for Hunters” (in addition to their special hunting permit) to enter the watershed. No other recreational hunting is allowed in the watershed.

CHAPTER VII

TERMINATION OF ACCESS PRIVILEGES

Any violations of these requirements or of other applicable laws or regulations will subject the violating party and his/her employer's access permit to termination. Termination of access privileges will be initiated by a Tacoma Water letter to the individual involved as well as to the permit holder.

APPENDIX A

CITY OF TACOMA ORDINANCE NO. 11441

ORDINANCE NO. 1441

BY 11A.VISSON:

An ordinance defining the property and territory constituting the Green River ~~Water~~ Shed over which the City ~~OF~~ Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection With the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River **side** of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range **8 East W.M.**

That portion of Sections 1, 24, 25 and 36 lying on the Green River side ~~OF~~ the divide, Township 21 North, Range **7 East W. M.**

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range **8 East W. M.**

All of Sections 17, 18, 19, 20, 21 and 25 to 35 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side ~~OF~~ the divide, Township 21 North, Range 9 East W. M.

all of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. K.

Allot Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. L.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

Allot Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the **Green River side** of the divide, Township 20 North, **Range 8 East** M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East J. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 16 lying on the Green River side of the divide, Township 20 North, Range 11 East M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W. M.

Allot Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East M.

All of Sections: 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 **E at** W. M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

citizens or the City OF Tacoma and shall take effect immediately.
after publication.

Passed IIG 4 -)Qgl


Mayor

Attest If
ty clerk

APPENDIX B

ROAD USE PERMIT FORM FOR THE GREEN RIVER WATERSHED



Permit No. _____

ROAD USE PERMIT FORM FOR THE GREEN RIVER WATERSHED

Permit Issue Date: _____ Permit Expiration Date: _____

Printed Name: _____ Office Phone No. : _____

Address: _____

Employer: _____

Vehicle Plate No.: _____ Make: _____ Model: _____ Color: _____ Year: _____

Purpose of Access: _____ Job Location: _____

The Green River Watershed serves as the municipal fresh water supply for the City of Tacoma and many communities in Pierce and King Counties. Road use and area access are limited and controlled to protect public health. Access is *only* for the purpose stated above and limited to the segments of roadway owned or controlled by the City of Tacoma. Additional road use permits may be required. **Special requirements are detailed on the reverse side of this permit.**

Property owners, seeking to access City of Tacoma property to access their own property, contractors retained by them and permit holders, shall have and maintain adequate general liability and automobile liability insurance coverage, and shall provide verification upon the request to City of Tacoma officials, that adequate insurance coverage has been obtained and is in effect.

Contractors performing services for the City of Tacoma at their own expense shall procure and maintain in effect during the entire term of their contracts the specific insurance requirements specified therein, including:

- A) Commercial Automobile coverage, providing coverage for bodily injury and property damage, with policy limits of no less than \$1,000,000 combined single limit of liability. The City of Tacoma shall be named as an additional insured. Coverage shall apply to owned, non-owned and hired vehicles.

Property owners shall be responsible for verifying that their contractors and permit holders have adequate insurance.

Violations of the City's Watershed regulations as stated in the "Requirements for the Protection of Water Supply in the Green River Watershed" or any of the terms, conditions or requirements of this permit (as listed on the reverse side of this form) shall be cause for revocation of this permit and initiation of access termination procedures. Permittee(s) shall be subject to arrest and prosecution and/or impoundment of the above-listed vehicle.

Permittee signature: _____

SPECIAL REQUIREMENTS

1. Permittee(s) acknowledge that the Watershed roads are rough and appropriate driving precautions must be taken. Permittee(s) agree to hold harmless and indemnify the City of Tacoma, its officers, employees and other road owners and easement holders from all claims for monetary damages, litigation and judgments arising from or related to the use of the Watershed roads and other access privileges.
2. The City does not warrant the condition of the road, and permittee(s) use the roadway at their own risk.
3. Permittee is required to follow all safety guidelines on City of Tacoma roads including: following posted maximum speeds and other road-use instructions and calling out all mile and half mile markers using a CB radio. Headlights must remain on while driving.
4. All permittee(s) and work crews granted access to the Green River Watershed over City-owned or controlled roadways are required to comply with the City of Tacoma regulations as stated in the "Requirements for the Protection of Water Supply in the Green River Watershed." Copies are available upon request at the Headworks Operations Building.
5. Permittee(s) shall not stop on City of Tacoma roadways, except in case of vehicle mechanical failure or unsafe road conditions.
6. The permit holder must notify City of Tacoma staff immediately if a hazardous material spill occurs. Hazardous materials include but are not limited to: fuels, oils, coolants, pesticides, or any other substance that could pose a hazard to, or is known to have adverse effects on drinking water.
7. People in charge of operations shall instruct all those who enter the Watershed on their behalf about the nature of the Watershed and the serious consequences arising from failure to comply with the City's regulations regarding protection of its water supply.
8. No personal shall be taken in or allowed to enter the Watershed with a permittee unless that person is in the employ of the permittee. **No unauthorized riders are allowed.**
9. This permit is not transferrable and any assignment of it shall be cause for revocation.
10. The permittee(s) shall not trespass on the property right of the City of Tacoma or other landowners in the Watershed and shall not commit any act that may affect the quality of water. Permittees found in any body of water for anything other than specific assigned job requirements will have their access privileges revoked.
11. Except for a limited permit hunt, recreation of any type is not allowed within the controlled area of the Watershed. **This permit provides access to and from the job location only.**

Permittee initials: _____

APPENDIX C

TRESPASS/INCIDENT REPORT FORM

REPORT NUMBER -000316		CITY OF TACOMA GREEN RIVER WATERSHED TRESPASS REPORT				CASE NUMBER	
NAME: LAST		FIRST		INITIAL		VEHICLE LICENSE NO.	
ADDRESS						VEH. YR.	MAKE
CITY		STATE	ZIPCODE	EMPLOYER		COLOR	EXPIRES
SEX	RACE	DATE OF BIRTH	HEIGHT	WEIGHT	EYES	HAIR	
DRIVER'S LICENSE NO.		STATE	EXPIRES	RESIDENCE PHONE NO.		OWNER IF OTHER THAN DRIVER	
DATE: IMO.		IDAY	YR.	TIME:		CITY	STATE
LOCATION: SECTION		TOWNSHIP	RANGE	PROPERTY OWNER		REPORT FILED BY:	
SHERIFF CALLED		YES	NO	NAME OF OFFICER			
				BADGE NO.			

APPENDIX D

DECONTAMINATION OF EQUIPMENT AND SUPPLIES

Decontamination of Equipment and Supplies

All equipment, machinery, and supplies to be used within the restricted access portion of the Green River Watershed that could be exposed to waters upstream of the Tacoma Water Intake, must be cleaned and disinfected at a location outside the watershed.

The terms “machinery” and “equipment” include, but are not limited to, the following: boats, barges, trailers, cables on heavy equipment, scientific equipment, drilling rigs, excavators, silt curtains, hoses, pumps, shovels, waders, nets, scuba equipment, and any other personal equipment that could be exposed to the water. Materials include all temporary or permanent construction materials including but not limited to the following: lumber, concrete, metal, plastics, pipes, hardware, cables, ropes, valves or other items used for projects that could be exposed to the water.

Equipment disinfection and cleaning must be done in the presence of a representative of Tacoma Water. Contact the Watershed Supervisor or Environmental Technician to schedule cleaning and to have the work witnessed and documented.

Decontamination requires the following items:

1. Pressure washer/steam cleaner capable of producing 2000 psi and water temperature of 140 degrees Fahrenheit with working gauges to indicate pressure and temperature. If steam cleaner has capability to entrain bleach into the spray, then Item 2 can be eliminated.
2. Pressurized tank sprayer or spray bottle suitable for bleach application.
3. Chlorine bleach, normal household strength.
4. Biodegradable soap (for equipment or material that would be damaged by bleach).
5. Personal protective equipment to prevent injury or exposure for worker performing the cleaning.

Procedures for Decontamination of Equipment and Materials

1. Overview of Procedures

The decontamination requirement covers all aquatic vessels, machinery, equipment, and materials that have been previously used outside the Green River Watershed and will be exposed to the waters of the river, its tributaries or the reservoir. The decontamination has three steps:

- a. Visual inspection and physical removal and disposal of plant fragments, soils and mussel shells.
- b. Pressure wash at 140 degrees F with chlorine bleach entrained in the spray to remove all oil, grease, dirt and debris.

- c. Final inspection by Tacoma Water representative.

2. Detailed Procedures for Inspection by Tacoma Water Personnel

Examine all parts of equipment and vessels looking for dirt, plant fragments, mollusk shells or foreign matter. Pay special attention to the following areas:

- a. Storage wells, bait tanks, and under floorboards of boats.
- b. Motor, propeller and motor well.
- c. Trailer hitch and bumper area.
- d. Trailer frame inside and out including pads for boat bottom.
- e. Vehicle and trailer axles and fender wells.
- f. Gears, tracks, shovels, and axles on mechanized equipment and areas behind cover plates.

3. Directions for Pressure Washing Surfaces and Flushing Internal Cooling Surfaces on Equipment and Engines

- a. **Pressure washer will have working temperature and pressure gauges.**
- b. Direct the pressure washer stream at all surfaces with special attention to the areas listed in Section 2. Surfaces should have a minimum of 30 seconds contact time with water heated to 140 degrees F at 2000 psi. The nozzle type, spray distance and application rate shall be adjusted to thoroughly remove all foreign substances without damaging the equipment being cleaned.
- c. Boat motors, pumps and other equipment with internal wetted surfaces will be flushed with a minimum three volumes of 140-degree F water with bleach added at the required ratio.
- d. For materials that could be damaged by bleach or pressure washing, an alternative of storing the equipment dry in a facility for 10 days may be acceptable based on the inspection. Such equipment will still be inspected and required to be cleaned before storage with biodegradable soap and brushes.

4. Directions for Cleaning Outboard Engines and Machinery with Internal Surfaces that Contact Water Upstream of Tacoma Water's Intake

Experience has shown that both plants and mollusks inhabit the wetted surfaces that are exposed to contact with other waters. The following is a list of parts that need to be disassembled in order to be inspected, cleaned, and decontaminated:

- a. Drive shaft housing cover
- b. Drive shaft housing and wetted cavity

- c. Clamp bracket assembly
- d. Swivel bracket assembly
- e. Propeller shaft and seals.

In addition to the cleaning and inspection, the water-cooled surfaces will be flushed with three cycles of 140-degree water bleach solution.

5. Chlorine Washing for Equipment that Cannot be Pressure Washed

- a. Pressure-sensitive materials can be decontaminated with a chlorine solution applied with a pressurized tank sprayer or spray bottle. Concentrate spray especially toward tight spaces and crannies where plant pieces or shells might collect. Allow bleach solution to remain on the equipment for a minimum of 10 minutes or until it has dried. Do not rinse.
- b. For equipment that can be damaged by bleach, scrubbing with biodegradable soap is the acceptable alternative. This is acceptable for personal equipment like rubber boots, wet suits, and waders without felt soles. **Felt soles must be soaked in a bleach water solution!**
- c. Chlorine solution is not stable and must be made up daily. It readily decomposes to salt and water when exposed to sunlight. An effective chlorine solution must contain 200 mg/l free available chlorine. The concentration can be obtained by diluting fresh household bleach according to the following table:

Household Bleach	Water
1 tablespoon	1 gallon
1 cup	16 gallons
3 ¼ cups	50 gallons

- d. Personal safety precautions shall be taken at all times when handling and applying chlorine solution.

6. Discharge and Neutralization of Bleach

The contractor will be responsible to find a site outside the watershed suitable for cleaning and the application of the bleach solution. The residual solution will be allowed to puddle allowing time for the photo-decomposition process. Spent chlorine solution in dip tanks or wastewater holding tanks shall not be discharged on site until solution is neutralized. Information on using sodium ascorbate to neutralize chlorine is available.

7. Final Inspection and Approval

Final inspection and approval of vessels, machinery, and equipment must be conducted by Tacoma Water personnel and documented in an equipment decontamination log.

Addendum

Cleaning of Equipment for Terrestrial Invasive Species

It is understood that heavy equipment, trucks and work vehicles are the primary vector for the introduction of invasive species in the Green River Watershed. The following are guidelines for contractors entering the Green River Watershed for work on Tacoma Water property.

Soils, plant material and seed on tires, tracks and digging implements are the main source for introducing invasive species and noxious weeds.

Inspection by Tacoma Water personnel will identify all deficiencies in the cleanliness of the equipment. They will look for all soils and plant material stuck in tracks as well as hydraulic fittings and hoses in poor condition.

As stated in Appendix D, it is the contractor's responsibility to find a site outside the Watershed for steam cleaning the equipment.

- The steam cleaner must have functioning gauges to show pressure of 2000 psi. Cleaning will remove all foreign material from the equipment.
- Tracked equipment will rotate track so all surfaces can be cleaned and inspected.
- Bucket, claws and shovels will be opened and closed so all surfaces can be cleaned and inspected.
- Trailers hauling equipment will have clean decks and ramps prior to loading equipment.

The final step in decontamination is the wash of all surfaces with the bleach water solution referenced earlier in Appendix D. Bleach either entrained in the spray of the pressure washer or in a pressurized pump tank is acceptable.

APPENDIX E

SAMPLE COLLECTION PROCEDURE DURING HERBICIDE SPRAYING

SAMPLE COLLECTING PROCEDURE DURING HERBICIDE SPRAYING

SAMPLE SIZE = 1 Liter

**Short term spray projects using a single sample point below the treatment area.
One sample container for each chemical being tested is required.**

<u>Sample No.</u>	<u>Sample Time</u>
1.	Control sample (before spraying)
2.	After unit completed
3.	After rain event

ALL SAMPLES SHALL BE TAGGED TO PROVIDE THE FOLLOWING INFORMATION

- 1. Container No.**
- 2. Sample collection point (location – name of river or stream, section, township, and range)**
- 3. Date and time of sample collection**
- 4. Name of sample collector**
- 5. Herbicide being sprayed**

APPENDIX F

GREEN RIVER WATERSHED GATE POLICY AND KEY PERMIT

City of Tacoma Green River Watershed Gate Policy and Key Permit

(Adopted by Water Superintendent on 06/30/2014)

1. PURPOSE

The purpose of this Policy is to assist in providing security for persons and City property through the control of City gates in the Green River Watershed and issuance of gate keys.

2. POLICY

In effort to improve physical security for the City of Tacoma Green River Watershed facilities, a Gate and Key Permit Policy (Policy) has been established to control gate access and issuing and managing watershed gate keys. These practices have been adopted to heighten awareness in areas of the watershed that need limited access due to concerns for security or high valued items. Acceptance of keys from the City obligates the person to follow this Policy.

3. SCOPE

This Policy will cover the procedures for requesting, returning, and reporting of lost or stolen keys belonging to the City as well as the responsibilities of all key holders.

4. GENERAL RESPONSIBILITIES

4.1 A key shall only be issued to individuals who have a legitimate and official requirement for a key. A requirement for access alone, when access can be accomplished by other means such as request for entry accompanied by a City employee, shall not be considered an entitlement to a key.

4.2 All keys are issued by City of Tacoma, Department of Public Utilities, Water Division (doing business as "Tacoma Water") and shall remain the property of Tacoma Water.

4.3 Any exemptions, changes or special provisions to this Policy shall be made only with the approval of the Tacoma Water Superintendent, Deputy Superintendent, or Green River Watershed Manager.

5. KEY REQUESTS AND ISSUANCE

5.1 All requests for keys must be submitted to Tacoma Water on a KEY REQUEST FORM ("KR Form").

5.2 The KR Form must be filled out in its entirety and then signed by the appropriate authorizing individual(s). Individuals eligible to hold a key cannot authorize their own keys.

5.3 Only the key holder can pick up their key and must show a picture ID when picking up their key.

5.4 At least semi-annually Tacoma Water shall conduct an audit of keys issued.

5.5 Tacoma Water Green River Watershed Manager shall be responsible for the issuance of keys.

6. KEY HOLDER RESPONSIBILITIES

6.1 All exterior access gates must remain closed and locked at all times.

6.2 All interior gates must be left as found.

6.3 Keys must not be used for any purpose other than official business.

6.4 Keys must not be duplicated.

6.5 Keys must not be loaned out or transferred to another person.

6.6 The City of Tacoma retains the right to revoke keys at any time, for any reason.

6.7 Possession of a key does not mean unrestricted access; the key holder must have a valid and current permit and be conducting official business.

6.8 Do not hide keys; keys found hidden will be revoked and the key holder will be subject to the lost key rule.

6.9 Lost keys must be reported to the Tacoma Water Green River Headwork's office within 48 hours.

7. LOST, STOLEN AND BROKEN KEYS

The holder of a City key assumes responsibility for the safekeeping of the key and its use. *It is understood that the key shall not be loaned, issued to, or made available by any other means to unauthorized persons.*

7.1 Lost or stolen keys shall be reported immediately to the Tacoma Water Green River Watershed Manager at phone 253-502-8808.

7.2 If a key is broken or otherwise damaged, the pieces must be returned to Tacoma Water. If a key is broken off in a lock, it must be reported immediately to the Tacoma Water Green River Watershed Manager at phone 253-502-8808.

7.3 The penalty (e.g. cost of re-coring the lock) for a lost or stolen key is one thousand dollars (\$1,000.00). The penalty may be deducted from the contractor's retention or paid directly to the City of Tacoma.

8. RETURN OF KEYS

All key holders shall promptly return all keys when their official business has concluded or Tacoma Water has asked for return of the keys. A receipt will be issued for the keys returned. Failure to return a key when asked will be considered a lost or stolen, and the key holder will be responsible for pay the penalty under section 7.3 of the Policy.

KEY REQUEST FORM (KR form)

CITY OF TACOMA GREEN RIVER WATERSHED

Name _____

Company _____

Address _____

Office Phone _____

Cell Phone _____

Driver's License _____

Permit Number _____

KEY ISSUE AGREEMENT – SIGNED BY KEY HOLDER UPON RECEIPT OF KEY

In return for the use of this key, I agree that I have read and understand City of Tacoma Green River Watershed Gate Policy and Key Permit and furthermore I agree, 1) not to give or loan the key to others; 2) not to make or attempt to copy, alter, duplicate or reproduce the key; 3) to use the key for authorized purposes only; 4) to safeguard the key; 5) to immediately report any lost or stolen keys; 6) to produce or surrender the key upon request. I also agree that if the key is lost, stolen or not surrendered when requested, I will be required to pay Tacoma Water one thousand dollars (\$1,000.00), which reflects the cost of replace the lock core that is affected.

Signed _____ Date _____

OFFICIAL DO NOT WRITE BELOW

Date Issued _____

Issued By _____

Key # _____ Date returned _____ Received By _____

Key # _____ Date returned _____ Received By _____

Key # _____ Date returned _____ Received By _____

Key#_____Not Returned Reason: __Lost __Stolen __Broken __Other

Explain the circumstances for key not returned:

APPENDIX C

Standard Terms and Conditions

Sample Contract

Insurance Requirements

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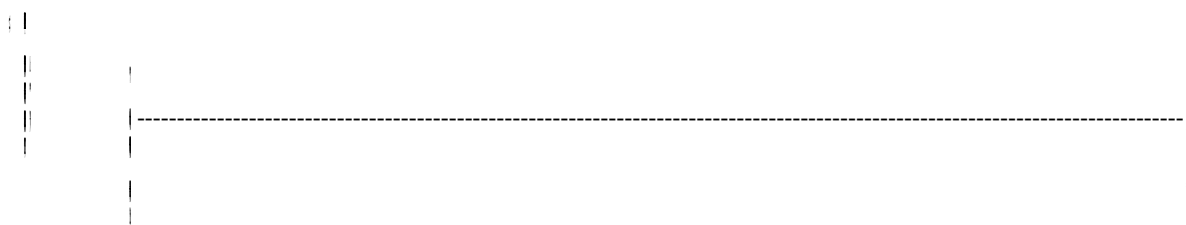
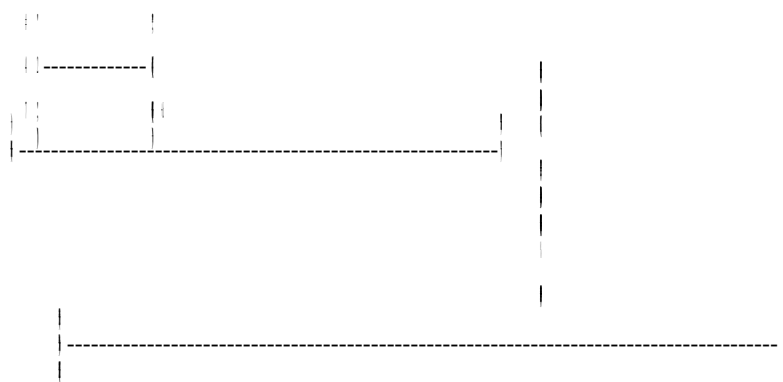
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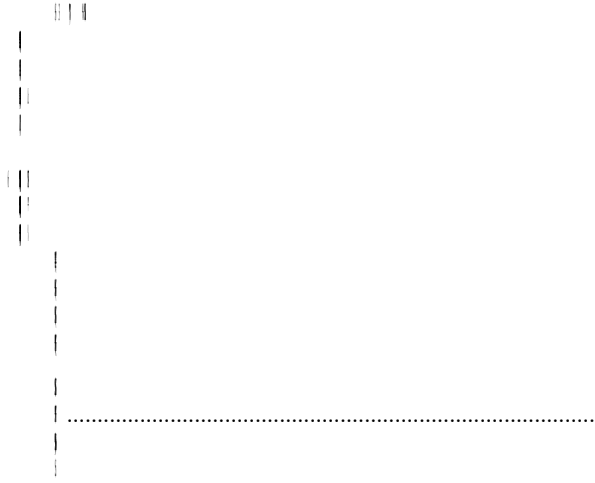
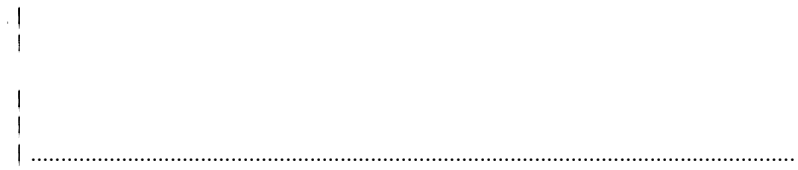
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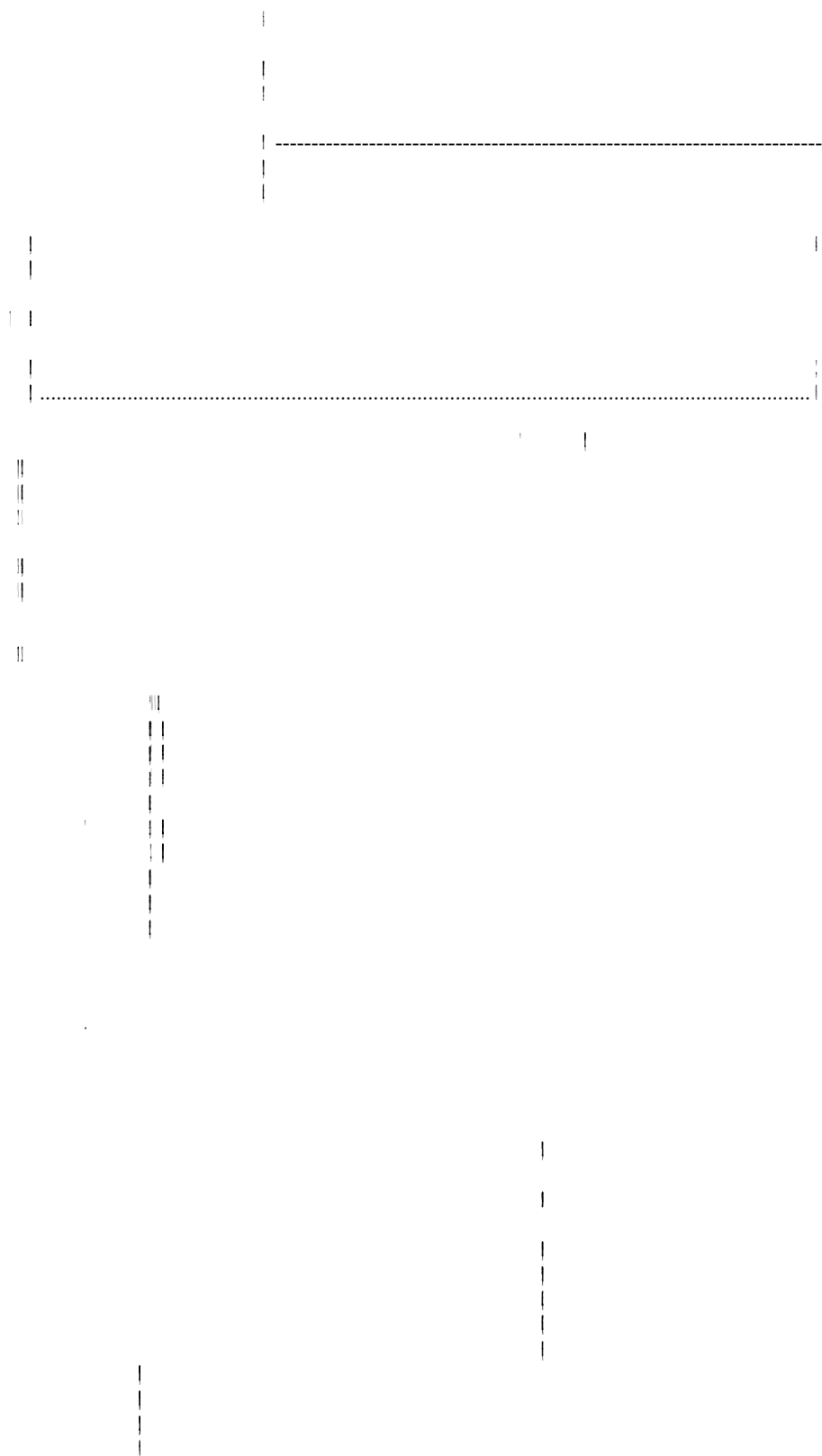
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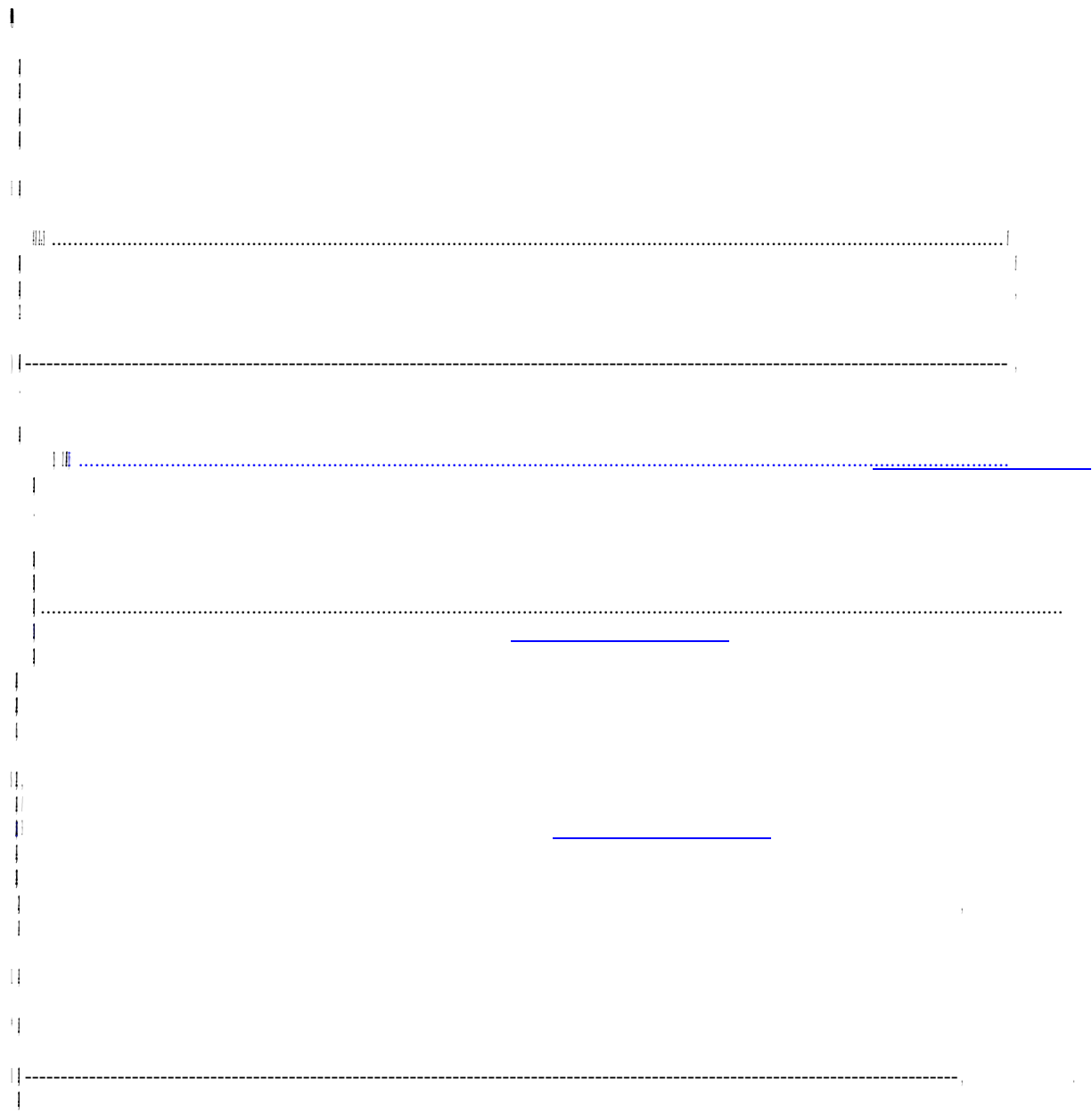
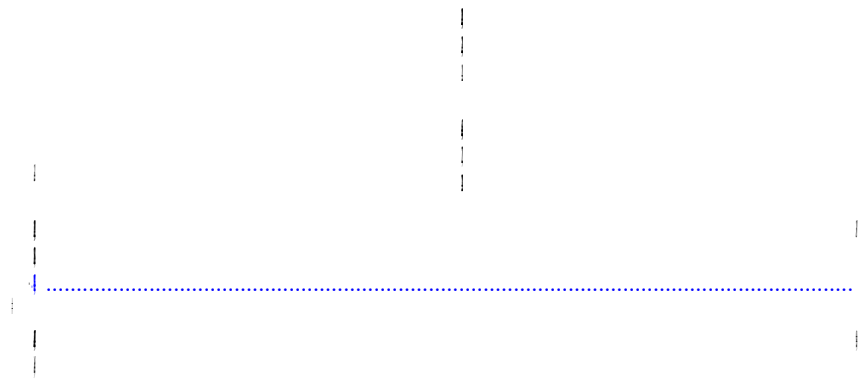
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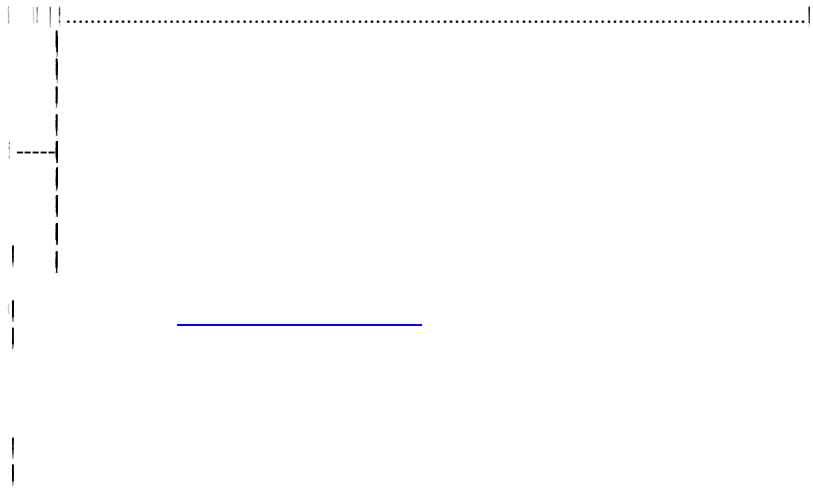




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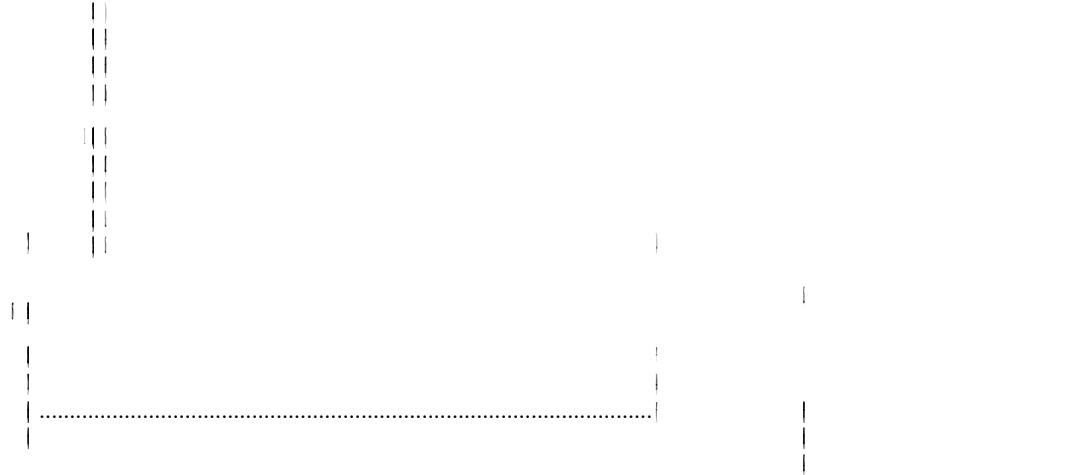


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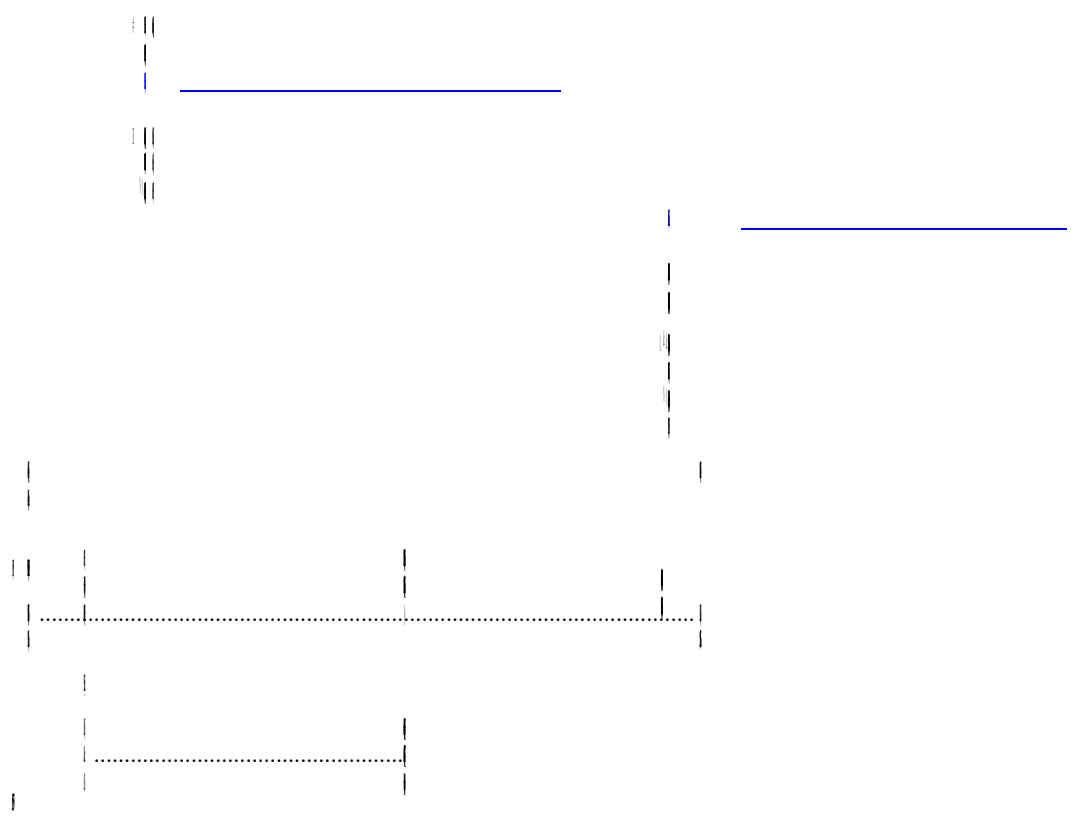


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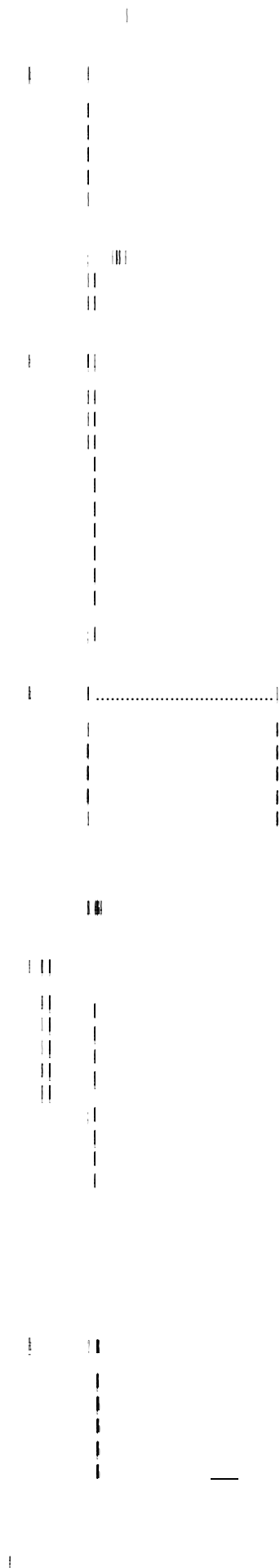
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SERVICES CONTRACT

Click here for the [Contract Questionnaire Popup Quick Reference](#)

Start Questionnaire

Finalize Document

THIS CONTRACT, made and entered into effective as of the ____ day of _____, 20__ (EFFECTIVE DATE) by and between the CITY OF TACOMA, a municipal corporation of the State of Washington (hereinafter referred to as the "CITY"), and **[INSERT legal name of Supplier exactly as it appears in Ariba]**, (hereinafter referred to as "CONTRACTOR");

In consideration of the mutual promises and obligations hereinafter set forth, the Parties hereto agree as follows:

1. Scope of Services/Work

The CONTRACTOR agrees to diligently and completely perform the services and/or deliverables consisting of [INSERT A BRIEF DESCRIPTION OF THE WORK TO BE PERFORMED] as is described in Exhibit XXXXX [A, B, ETC., if needed] attached hereto and incorporated herein.

2. Order of Precedence

To the extent there is any discrepancy or conflict between and/or amongst the terms of this Contract and Exhibit(s) _____, the controlling terms for this Contract will be interpreted in the following order of precedence, with the first listed being the most controlling, and the last listed being the least controlling: Contract, Exhibit ____, Exhibit _____. [INSERT EXHIBIT REFERENCES IN ORDER OF WHICH IS MOST CONTROLLING]

3. Changes to Scope of Work

The CITY shall have the right to make changes within the general scope of services and/or deliverables upon execution in writing of a change order or amendment hereto. If the changes will result in additional work effort by CONTRACTOR, the CITY will agree to reasonably compensate the CONTRACTOR for such additional effort up to the maximum amount specified herein or as otherwise provided by City Code.

4. On Call Contracts

If the services and deliverables performed under this Contract are on an on call or as assigned basis, service and deliverables may be assigned by Task Authorization or Statements of Work, are subject to Section 9, and cannot augment any other work that the CONTRACTOR is doing for the CITY on another Contract. Actual compensation will depend upon the actual purchases made by the City during the life of this Contract and will be paid at the rates set in Exhibit A

5. Term

All services shall be satisfactorily completed on or before [INSERT CONTRACT TERMINATION DATE] and this Contract shall expire on said date unless mutually extended by a written and executed Amendment to this Contract.

6. Renewals

At CITY's sole option, the Term of this Contract may be renewed for additional [INSERT THE RENEWAL PERIOD - 1 YEAR, ETC] periods, not to exceed [INSERT THE MAXIMUM NUMBER OF RENEWAL PERIODS]. CITY will provide written notice of its intent to exercise any renewal options at least 30 days prior to the then existing Term and a written Amendment to this Contract will be mutually executed.

7. Delay

Neither party shall be considered to be in default in the performance of this Contract to the extent such performance is prevented or delayed by any cause which is beyond the reasonable control of the affected party and, in such event, the time for performance shall be extended for a period equal to any time lost as a result thereof. In the event CONTRACTOR is unable to proceed due to a delay solely attributable to CITY, CONTRACTOR shall advise CITY of such delay in writing as soon as is practicable.

8. Compensation

The CITY shall compensate the CONTRACTOR for the services and deliverables performed under this Contract [in accordance with OR on the basis of] [INSERT DESCRIPTION OF COMPENSATION ARRANGEMENTS – REFERENCE EXHIBIT, TIME AND MATERIALS, LUMP SUM ETC.]

9. Not to Exceed Amount

The total price to be paid by CITY for CONTRACTOR'S full and complete performance of the Scope of Work hereunder shall not exceed \$ [INSERT TOTAL AMOUNT OF CONTRACT] plus applicable taxes without a written and executed Amendment to this Contract. Said price shall be the total compensation for CONTRACTOR'S performance hereunder including, but not limited to, all work, deliverables, materials, supplies, equipment, subcontractor's fees, and all reimbursable travel and miscellaneous or incidental expenses to be incurred by CONTRACTOR.

In the event the CONTRACTOR incurs cost in excess of the sum authorized for service under this Contract, the CONTRACTOR shall pay such excess from its own funds, and the CITY shall not be required to pay any part of such excess, and the CONTRACTOR shall have no claim against the CITY on account thereof.

10. Payment

CONTRACTOR shall submit XXXXXXXX {monthly, weekly, annual, Contract milestone, etc.} invoices for services completed and/or deliverables furnished during the invoice period. Upon CITY'S request, CONTRACTOR shall submit necessary and appropriate documentation, as determined by the CITY, for all invoiced services and deliverables.

Payment shall be made through the CITY'S ordinary payment process, and shall be considered timely if made within 30 days of receipt of a properly completed invoice. All payments shall be subject to adjustment for any amounts, upon audit or otherwise, determined to have been improperly invoiced. The CITY may withhold payment to the CONTRACTOR for any services or deliverables not performed as required hereunder until such time as the CONTRACTOR modifies such services or deliverables to the satisfaction of the CITY.

11. Payment Method

The City's preferred method of payment is by ePayables (Payment Plus), followed by credit card (aka procurement card), then Electronic Funds Transfer (EFT) by Automated Clearing House (ACH), then check or other cash equivalent. CONTRACTOR may be required to have the capability of accepting the City's ePayables or credit card methods of payment. The City of Tacoma will not accept price changes or pay additional fees when ePayables (Payment Plus) or credit card is used. The City, in its sole discretion, will determine the method of payment for this Contract.

12. Independent Contractor Status

The services and deliverables shall be furnished by the CONTRACTOR as an independent Contractor, and nothing herein contained shall be construed to create an employer and employee relationship. The CONTRACTOR shall provide at its sole expense all materials, office space, and other necessities to perform its duties under this Contract, unless stated otherwise in this Contract. No payroll or employment taxes of any kind shall be withheld or paid by the CITY with respect to payments to CONTRACTOR. The payroll or employment taxes that are the subject of this paragraph include, but are not limited to, FICA, FUTA, federal income tax, state personal income tax, state disability insurance tax and state unemployment insurance tax. By reason of CONTRACTOR's status as an independent Contractor hereunder, no workers' compensation insurance has been or will be obtained by the CITY on account of CONTRACTOR. CONTRACTOR may be required to provide the CITY proof of payment of these said taxes and benefits. If the CITY is assessed or deemed liable in any manner for those charges or taxes, the CONTRACTOR agrees to hold the CITY harmless from those costs, including attorney's fees.

13. Services Warranty

The CONTRACTOR warrants that all services performed pursuant to this Contract shall be generally suitable for the use to which CITY intends to use said services and deliverables as expressed in the Scope of Work. In the performance of services under this Contract, the CONTRACTOR and its employees further agree to exercise the degree of skill and care required by customarily accepted good practices and procedures followed by professionals or service providers rendering the same or similar type of service. All obligations and services of the CONTRACTOR hereunder shall be performed diligently and completely according to such professional standards.

Unless a higher standard or longer periods of warranty coverage for product deliverables provided under this Contract is provided herein, CONTRACTOR agrees to correct any defect or failure of deliverables supplied under this Contract which occurs

within one year from _____[FILL IN APPROPRIATE TIME FRAME, E.G. GO LIVE, FIRST USE, ETC]. During said warranty period, all of the costs (including shipping, dismantling and reinstallation) of repairs or corrections is the responsibility of the CONTRACTOR. If CONTRACTOR is not the manufacturer of the item of equipment, CONTRACTOR agrees to be responsible for this warranty and shall not be relieved by a lesser manufacturer's guarantee. This Contract warranty period shall be suspended from the time a significant defect is first documented by the CITY until repair or replacement by CONTRACTOR and acceptance by the CITY. In the event less than ninety (90) days remain on the warranty period (after recalculating), the warranty period shall be extended to allow for at least ninety (90) days from the date of repair or replacement and acceptance by the CITY.

14. Reliance on CITY Provided Data or Information

If the CONTRACTOR intends to rely on information or data supplied by the CITY, other CITY contractors or other generally reputable sources without independent verification, such intent shall be brought to the attention of the CITY.

15. Contract Administration

[INSERT NAME TITLE AND DEPARTMENT OF CONTRACT ADMINISTRATOR] for the CITY shall have primary responsibility for contract administration and approval of services to be performed by the CONTRACTOR, and shall coordinate all communications between the CONTRACTOR and the CITY.

16. Specific Personnel

If before, during, or after the execution of this Contract, CONTRACTOR represents to the CITY that certain personnel would or will be responsible for performing services and deliverables under this Contract, then the CONTRACTOR is obligated to ensure that said personnel perform said Contract services to the maximum extent permitted by law. This Contract provision shall only be waived by written authorization by the CITY, and on a case-by-case basis.

17. Right to Audit

During the Term of this Contract, and for six (6) years thereafter, the CITY shall have the right to inspect and audit during normal business hours all pertinent books and records of the CONTRACTOR and/or any sub-contractor or agent of CONTRACTOR that performed services or furnished deliverables in connection with or related to the Scope of Work hereunder as reasonably needed by CITY to assess performance, compliance and quality assurance under this Contract or in satisfaction of City's public disclosure obligations, as applicable.

CONTRACTOR shall, upon three (3) business days of receipt of written request for such inspection and audit from CITY, provide the CITY with, or permit CITY to make, a copy of any work-related books, accounts, records and documents, in whole or in part, as specified in such request. Said inspection and audit shall occur in Pierce County, Washington or such other reasonable location as the CITY selects. The CITY shall bear the cost of any inspection audit requested hereunder, provided, that if an inspection

audit in accordance with the foregoing provisions discloses overpricing or overcharges (of any nature) by the CONTRACTOR to the CITY in excess of one percent (1%) of the total contract billings, in addition to making adjustments for the overcharges, the reasonable actual cost of the CITY's audit shall be reimbursed to CITY by CONTRACTOR. Any adjustments or payments that must be made as a result of any audit and inspection hereunder shall be made no later than 90 days from presentation of CITY's findings to CONTRACTOR.

CONTRACTOR shall ensure that the foregoing inspection, audit and copying rights of the CITY are a condition of any subcontract, agreement or other arrangement under which any other person or entity is permitted to perform the Scope of Work under this Contract.

18. Records Retention

The CONTRACTOR shall establish and maintain records in accordance with requirements prescribed by the CITY, with respect to all matters related to the performance of this Contract. Except as otherwise authorized by the CITY, the CONTRACTOR shall retain such records for a period of _____[INSERT THE TIME THE RECORDS SHOULD BE KEPT. MOST COMMON IS 6 YEARS] years after receipt of the final payment under this Contract or termination of this Contract.

If CONTRACTOR retains any City records or data hosted in a Cloud Service. CITY shall have the ability to access its records hosted in a Cloud Service at any time during the Term of this Contract. CITY may export and retrieve its records during the Term of the Contract and, no later than 30 days from the termination of this Contract, CONTRACTOR shall export CITY records to City's custody and control.

19. Notices

Except for routine operational communications, which may be delivered personally or transmitted by electronic mail all notices required hereunder shall be in writing and shall be deemed to have been duly given if delivered personally or mailed first-class mail, postage prepaid, to the parties at the following addresses:

CITY:	CONTRACTOR:
Name:	Name:
Title:	Title:
Address:	Address:
Telephone No.:	Telephone No.:
E-mail:	E-mail:

20. Termination

Except as otherwise provided herein, the CITY may terminate this Contract at any time, with or without cause, by giving ten (10) business days written notice to CONTRACTOR.

In the event of termination, all finished and unfinished work prepared by the CONTRACTOR pursuant to this Contract shall be provided to the CITY. In the event CITY terminates this Contract due to the CITY's own reasons and without cause due to the CONTRACTOR's actions or omissions, the CITY shall pay the CONTRACTOR the amount due for actual work and services necessarily performed under this Contract up to the effective date of termination, not to exceed the total compensation set forth herein. Termination of this Contract by CITY shall not constitute a waiver of any claims or remaining rights the CITY may have against CONTRACTOR relative to performance hereunder.

21. Suspension

The CITY may suspend this Contract, at its sole discretion, upon seven (7) business days' written notice to the CONTRACTOR. Such notice shall indicate the anticipated period of suspension. Any reimbursement for expenses incurred due to the suspension shall be limited to the CONTRACTOR'S reasonable expenses and shall be subject to verification. The CONTRACTOR shall resume performance of services under this Contract without delay when the suspension period ends. Suspension of this Contract by CITY shall not constitute a waiver of any claims or remaining rights the CITY may have against CONTRACTOR relative to performance hereunder.

22. Taxes

Unless stated otherwise in Exhibit A, CONTRACTOR is responsible for the payment of all charges and taxes applicable to the services performed under this Contract, and CONTRACTOR agrees to comply with all applicable laws regarding the reporting of income, maintenance of records, and all other requirements and obligations imposed pursuant to applicable law. If the CITY is assessed, made liable, or responsible in any manner for such charges or taxes, the CONTRACTOR holds CITY harmless from such costs, including attorney's fees.

If CONTRACTOR fails to pay any taxes, assessments, penalties, or fees imposed by any governmental body, including by Tacoma City ordinance, and including by a court of law, CITY will deduct and withhold or pay over to the appropriate governmental body those unpaid amounts upon demand by the governmental body. Any such payments shall be deducted from the CONTRACTOR's total compensation.

23. Licenses and Permits

The CONTRACTOR, at its expense, shall obtain and keep in force any and all necessary licenses and permits. The CONTRACTOR shall obtain a business license as required by Tacoma Municipal Code Subtitle 6B.20 and shall pay business and occupation taxes as required by Tacoma Municipal Code Subtitle 6A.30. If applicable, CONTRACTOR must have a Washington state business license.

24. Indemnification

CONTRACTOR shall indemnify, defend, and hold harmless the CITY, its officials, officers, agents, employees, and volunteers, from any and all claims, demands, damages, lawsuits, liabilities, losses, liens, expenses and costs arising out of the subject

matter of this Contract; provided that this provision shall not apply to the extent that damage or injury results from the sole negligence of the CITY, or its officers, agents, or employees. This indemnification shall extend to and include attorneys' fees and the cost of establishing the right of indemnification hereunder in favor of the CITY. This indemnification shall survive the termination of this Contract.

It is expressly agreed that with respect to design professional services performed by CONTRACTOR herein, CONTRACTOR's duty of indemnification, including the duty and cost to defend, against liability for damages arising out of such services or out of bodily injury to persons or damage to property shall, as provided in RCW 4.24.115 apply only to the extent of CONTRACTOR's negligence.

CONTRACTOR hereby warrants and represents CONTRACTOR is owner of any products, solutions or deliverables provided and licensed under this Contract or otherwise has the right to grant to CITY the licensed rights under this Contract, without violating the rights of any third party worldwide. CONTRACTOR shall, at its expense, defend, indemnify and hold harmless CITY and its employees, officers, directors, contractors, agents and volunteers from any claim or action against CITY which is based on a claim against CITY for infringement of a patent, copyright, trademark, or other propriety right or appropriation of a trade secret.

25. Title 51 Waiver

CONTRACTOR specifically assumes potential liability for actions brought by the CONTRACTOR'S own employees against the CITY and, solely for the purpose of this indemnification and defense, the CONTRACTOR specifically waives any immunity under the state industrial insurance law, Title 51 RCW. THE CONTRACTOR RECOGNIZES THAT THIS WAIVER WAS THE SUBJECT OF MUTUAL NEGOTIATION.

26. Insurance

During the course and performance of the services herein specified, CONTRACTOR will maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements as is applicable to the services and deliverables provided under this Contract. The City of Tacoma Insurance Requirements documents are fully incorporated herein by reference.

Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

27. Nondiscrimination

The CONTRACTOR agrees to take all steps necessary to comply with all federal, state, and City laws and policies regarding non-discrimination and equal employment opportunities. The CONTRACTOR shall not discriminate in any employment action because of race, religion, creed, color, national origin or ancestry, sex, gender identity, sexual orientation, age, marital status, familial status, veteran or military status, the

presence of any sensory, mental or physical disability or the use of a trained dog guide or service animal by a disabled person. In the event of non-compliance by the CONTRACTOR with any of the non-discrimination provisions of this Contract, the CITY shall be deemed to have cause to terminate this Contract, in whole or in part.

28. Conflict of Interest

No officer, employee, or agent of the CITY, nor any member of the immediate family of any such officer, employee, or agent as defined by City ordinance, shall have any personal financial interest, direct or indirect, in this Contract, either in fact or in appearance. The CONTRACTOR shall comply with all federal, state, and City conflict of interest laws, statutes, and regulations. The CONTRACTOR represents that the CONTRACTOR presently has no interest and shall not acquire any interest, direct or indirect, in the program to which this Contract pertains which would conflict in any manner or degree with the performance of the CONTRACTOR'S services and obligations hereunder. The CONTRACTOR further covenants that, in performance of this Contract, no person having any such interest shall be employed. The CONTRACTOR also agrees that its violation of the CITY'S Code of Ethics contained in Chapter 1.46 of the Tacoma Municipal Code shall constitute a breach of this Contract subjecting the Contract to termination.

29. City ownership of Work/Rights in Data and Publications

To the extent CONTRACTOR creates any Work subject to the protections of the Copyright Act (Title 17 U.S.C) in its performance of this Contract, CONTRACTOR agrees to the following: The Work has been specially ordered and commissioned by CITY. CONTRACTOR agrees that the Work is a "work made for hire" for copyright purposes, with all copyrights in the Work owned by CITY. To the extent that the Work does not qualify as a work made for hire under applicable law, and to the extent that the Work includes material subject to copyright, CONTRACTOR hereby assigns to CITY, its successors and assigns, all right, title and interest in and to the Work, including but not limited to, all patent, trade secret, and other proprietary rights and all rights, title and interest in and to any inventions and designs embodied in the Work or developed during the course of CONTRACTOR'S creation of the Work. CONTRACTOR shall execute and deliver such instruments and take such other action as may be required and requested by CITY to carry out the assignment made pursuant to this section. Any documents, magnetically or optically encoded media, or other materials created by CONTRACTOR pursuant to this Contract shall be owned by CITY and subject to the terms of this subsection. To the maximum extent permitted by law, CONTRACTOR waives all moral rights in the Work. The rights granted hereby to CITY shall survive the expiration or termination of this Contract. CONTRACTOR shall be solely responsible for obtaining releases for the performance, display, recreation, or use of copyrighted materials.

30. Public Disclosure

This Contract and documents provided to the CITY by CONTRACTOR hereunder are deemed public records subject to disclosure under the Washington State Public Records Act, Chapter 42.56 RCW (Public Records Act). Thus, the CITY may be required, upon request, to disclose this Contract and documents related to it unless an exemption under the Public Records Act or other laws applies. In the event CITY receives a request for

such disclosure, determines in its legal judgment that no applicable exemption to disclosure applies, and CONTRACTOR has complied with the requirements herein to mark all content considered to be confidential or proprietary, CITY agrees to provide CONTRACTOR ten (10) days written notice of impending release. Should legal action thereafter be initiated by CONTRACTOR to enjoin or otherwise prevent such release, all expense of any such litigation shall be borne by CONTRACTOR, including any damages, attorneys fees or costs awarded by reason of having opposed disclosure. CITY shall not be liable for any release where notice was provided and CONTRACTOR took no action to oppose the release of information. Notice of any proposed release of information pursuant to Chapter 42.56 RCW, shall be provided to CONTRACTOR according to the "Notices" provision herein.

31. Confidential or Proprietary Records Must be Marked

If CONTRACTOR provides the CITY with records that CONTRACTOR considers confidential or proprietary, CONTRACTOR must mark all applicable pages of said record(s) as "Confidential" or "Proprietary." If CONTRACTOR fails to so mark record(s), then (1) the CITY, upon request, may release said record(s) without the need to satisfy the notice requirements above; and (2) the CONTRACTOR expressly waives its right to allege any kind of civil action or claim against the CITY pertaining to the release of said record(s).

32. Duty of Confidentiality

CONTRACTOR acknowledges that unauthorized disclosure of information or documentation concerning the Scope of Work hereunder may cause substantial economic loss or harm to the CITY.

Except for disclosure of information and documents to CONTRACTOR's employees, agents, or subcontractors who have a substantial need to know such information in connection with CONTRACTOR's performance of obligations under this Contract, the CONTRACTOR shall not without prior written authorization by the CITY allow the release, dissemination, distribution, sharing, or other publication or disclosure of information or documentation obtained, discovered, shared or produced pursuant to this Contract.

CONTRACTOR shall inform its employees, agents, and subcontractors of the confidentiality obligations under this Contract and instruct them so as to ensure such obligations are met. If so requested by the CITY, the CONTRACTOR further agrees to require all such individuals and entities performing services pursuant to this Contract to execute a Confidentiality and Non-Disclosure Agreement in a form acceptable to CITY.

This Section shall survive for six (6) years after the termination or expiration of this Contract.

CITY is required to provide notice of the Red Flags Rules published by the Federal Trade Commission in Title 16 Code of Federal Regulations, Part 681 ("Rules") to all entities that receive confidential or otherwise protected personal information of CITY's customers. Terms in quotations in this Section refer to defined terms contained in the "Rules." CONTRACTOR is, as to "Covered Accounts" of CITY for which CONTRACTOR

performs activities under the Contract, a "Service Provider." "Service Provider" will perform in accordance with its reasonable policies and procedures designed to detect, prevent, and mitigate the risk of identity theft and will promptly report to CITY any specific "Red Flag" incidents detected as to "Covered Accounts" of CITY and upon request by CITY will respond to or reasonably assist CITY in responding reported "Red Flags." This Section shall survive for six (6) years after the termination or expiration of this Contract.

33. Approval for Release of Information Related to Contract

If requested by CITY, CONTRACTOR shall not release any information or documentation concerning the work under this Contract or any part thereof for marketing, advertising, or other commercial activities or publication including, but not limited to, news releases or professional articles without CITY's prior written approval. CONTRACTOR may submit at any time for review and approval a generic abstract describing the component parts of the completed Scope of Services ("Project Abstract"). After receiving written approval of the Project Abstract from the CITY, the CONTRACTOR may make minor insignificant changes to the Project Abstract and use all or parts of the Project Abstract in proposals.

This Section shall survive for six (6) years after the termination or expiration of this Contract.

34. Dispute Resolution

In the event of a dispute pertaining to this Contract, the parties agree to attempt to negotiate in good faith an acceptable resolution. If a resolution cannot be negotiated, then the parties agree to submit the dispute to voluntary non-binding mediation before pursuing other remedies. This provision does not limit the CITY'S right to terminate authorized by this Contract.

35. Miscellaneous Provisions

Governing Law and Venue

Washington law shall govern the interpretation of this Contract. Pierce County shall be the venue of any mediation, arbitration, or litigation arising out of this Contract.

Assignment

The CONTRACTOR shall not assign, subcontract, delegate, or transfer any obligation, interest or claim to or under this Contract or for any of the compensation due hereunder without the prior written consent of the CITY.

No Third Party Beneficiaries

This Contract shall be for the sole benefit of the parties hereto, and nothing contained herein shall create a contractual relationship with, or create a cause of action in favor of, a third party against either party hereto.

Waiver

A waiver or failure by either party to enforce any provision of this Contract shall not be construed as a continuing waiver of such provisions, nor shall the same constitute a waiver of any other provision of this Contract.

Severability and Survival

If any term, condition or provision of this Contract is declared void or unenforceable or limited in its application or effect, such event shall not affect any other provisions hereof and all other provisions shall remain fully enforceable. The provisions of this Contract, which by their sense and context are reasonably intended to survive the completion, expiration or cancellation of this Contract, shall survive termination of this Contract.

Entire Agreement

This Contract and the attached Exhibits, as modified herein, contain the entire agreement between the parties as to the services to be rendered hereunder. All previous and contemporaneous agreements, representations or promises and conditions relating to the subject matter of this Contract are superseded hereby. The Parties hereto mutually acknowledge, understand and agree that the terms and conditions set forth herein shall control and prevail over any conflicting terms and conditions stated in any attachments hereto.

Modification

No modification or amendment of this Agreement shall be effective unless set forth in a written and executed Amendment to this Contract.

Direct Solicitation and Negotiation

For service contracts valued \$25,000 or less the City signature authorizes waiver of competitive solicitation by "Direct Solicitation and Negotiation" of professional and personal services in accordance with Tacoma Municipal Code 1.06.256 and the Purchasing Policy Manual.

IN WITNESS WHEREOF, the Parties hereto have accepted and executed this Contract, as of the Effective Date stated above, which shall be Effective Date for bonding purposes as applicable. The undersigned Contractor representative, by signature below, represents and warrants they are duly authorized to execute this legally binding Contract for and on behalf of Contractor.

CITY OF TACOMA:
By: _____

CONTRACTOR:
By: _____

(City of Tacoma use only - blank lines are intentional)

Director of Finance: _____

City Attorney (approved as to form): _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____



CITY OF TACOMA Appendix C INSURANCE REQUIREMENTS FOR CONTRACTS

This Insurance Requirements shall serve as an attachment and/or exhibit form to the Contract. The Agency entering a Contract with City of Tacoma, whether designated as a Supplier, Contractor, Vendor, Proposer, Bidder, Respondent, Seller, Merchant, Service Provider, or otherwise referred to as "Contractor".

1. GENERAL REQUIREMENTS

The following General Requirements apply to Contractor and to Subcontractor(s) performing services and/or activities pursuant to the terms of this Contract. Contractor acknowledges and agrees to the following insurance requirements:

- 1.1. Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the City of Tacoma.
- 1.2. Contractor shall keep in force during the entire term of the Contract, at no expense to the City of Tacoma, the insurance coverage and limits of liability listed below and for Thirty (30) calendar days after completion of all work required by the Contract, unless otherwise provided herein.
- 1.3. Liability insurance policies, except for Professional Liability and Workers' Compensation, shall:
 - 1.3.1. Name the City of Tacoma and its officers, elected officials, employees, and agents as **additional insured**
 - 1.3.2. Be considered primary and non-contributory for all claims with any insurance or self-insurance or limits of liability maintained by the City of Tacoma
 - 1.3.3. Contain a "Waiver of Subrogation" clause in favor of City of Tacoma
 - 1.3.4. Include a "Separation of Insureds" clause that applies coverage separately to each insured and additional insured
 - 1.3.5. Name the "City of Tacoma" on certificates of insurance and endorsements and not a specific person or department
 - 1.3.6. Be for both ongoing and completed operations using Insurance Services Office (ISO) form CG 20 10 04 13 and CG 20 37 04 13 or the equivalent
 - 1.3.7. Be satisfied by a single primary limit or by a combination of a primary policy and a separate excess umbrella
- 1.4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements below. Verification of coverage shall include:
 - 1.4.1. An ACORD certificate or equivalent
 - 1.4.2. Copies of requested endorsements
- 1.5. Contractor shall provide to City of Tacoma Procurement & Payable Division, prior to the execution of the Contract, Certificate(s) of Insurance and endorsements from the insurer certifying the coverage of all insurance required herein. Contract or Permit number and the City Department must be shown on the Certificate of Insurance.
- 1.6. A renewal Certificate of Insurance shall be provided electronically prior to coverage



CITY OF TACOMA Appendix C INSURANCE REQUIREMENTS FOR CONTRACTS

expiration via email sent annually to coi@cityoftacoma.org.

- 1.7. Contractor shall send a notice of cancellation or non-renewal of this required insurance within Thirty (30) calendar days to coi@cityoftacoma.org.
- 1.8. "Claims-Made" coverages, except for pollution coverage, shall be maintained for a minimum of three years following the expiration or earlier termination of the Contract. Pollution coverage shall be maintained for six years following the expiration of the Contract. The retroactive date shall be prior to or coincident with the effective date of the Contract.
- 1.9. Each insurance policy must be written by companies licensed or authorized (or issued as surplus line by Washington surplus line broker) in the State of Washington pursuant to RCW 48 with an (A-) VII or higher in the A.M. Best key rating guide.
- 1.10. Contractor shall not allow any insurance to be cancelled, voided, suspended, or reduced in coverage/limits, or lapse during any term of this Contract. Otherwise, it shall constitute a material breach of the Contract.
- 1.11. Contractor shall be responsible for the payment of all premiums, deductibles and self-insured retentions, and shall indemnify and hold the City of Tacoma harmless to the extent such a deductible or self-insured retained limit may apply to the City of Tacoma as an additional insured. Any deductible or self-insured retained limits in excess of Twenty Five Thousand Dollars (\$25,000) must be disclosed and approved by City of Tacoma Risk Manager and shown on the Certificate of Insurance.
- 1.12. City of Tacoma reserves the right to review insurance requirements during any term of the Contract and to require that Contractor make reasonable adjustments when the scope of services changes.
- 1.13. All costs for insurance are included in the initial Contract and no additional payment will be made by City of Tacoma to Contractor.
- 1.14. Insurance coverages specified in this Contract are not intended and will not be interpreted to limit the responsibility or liability of Contractor or Subcontractor(s).
- 1.15. Failure by City of Tacoma to identify a deficiency in the insurance documentation or to verify coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- 1.16. If Contractor is a government agency or self-insured for any of the above insurance requirements, Contractor shall be liable for any self-insured retention or deductible portion of any claim for which insurance is required. A certification of self-insurance shall be attached and incorporated by reference and shall constitute compliance with this Section.



2. SUBCONTRACTORS

It is Contractor's responsibility to ensure that each subcontractor obtain and maintain adequate liability insurance coverage that applies to the service provided. Contractor shall provide evidence of such insurance upon City of Tacoma's request. Failure of any subcontractor to comply with insurance requirements does not limit Contractor's liability or responsibility.

3. REQUIRED INSURANCE AND LIMITS

The insurance policies shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve Contractor from liability in excess of such limits.

3.1 Commercial General Liability Insurance

Contractor shall maintain Commercial General Liability Insurance policy with limits not less than One Million Dollars (\$1,000,000) each occurrence and Two Million Dollars (\$2,000,000) annual aggregate. This policy shall be written on ISO form CG 00 01 04 13 or its equivalent and shall include product liability especially when a Contract is solely for purchasing supplies. It includes Products and Completed Operations for three years following the completion of work related to performing construction services. It shall be endorsed to include: A per project aggregate policy limit (using ISO form CG 25 03 05 09 or equivalent endorsement)

3.2 Commercial (Business) Automobile Liability Insurance

Contractor shall maintain Commercial Automobile Liability policy with limits not less than One Million Dollars (\$1,000,000) each accident for bodily injury and property damage and bodily injury and property damage coverage for owned (if any), non-owned, hired, or leased vehicles. Commercial Automobile Liability Insurance shall be written using ISO form CA 00 01 or equivalent. Contractor must also maintain MCS 90 and CA 99 48 endorsements or equivalent if "Pollutants" are to be transported unless in-transit Pollution coverage is covered under required Contractor's Pollution Liability Insurance.

3.3 Workers' Compensation

Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington, as well as any other similar coverage required for this work by applicable federal laws of other states. Contractor must comply with their domicile State Industrial Insurance laws if it is outside the State of Washington.

3.4 Employers' Liability Insurance

Contractor shall maintain Employers' Liability coverage with limits not less than One Million Dollars (\$1,000,000) each employee, One Million Dollars (\$1,000,000) each accident, and One Million Dollars (\$1,000,000) policy limit.

3.5 Professional Liability Insurance or Errors and Omissions

For contracts with professional licensing, design, or engineering services. Contractor and/or its subcontractor shall maintain Professional Liability or Errors and Omissions with limits of One Million Dollars (\$1,000,000) per claim and Two Million Dollars (\$2,000,000) in the aggregate covering acts, errors and omissions arising out of the professional services under this Contract. Contractor shall maintain this coverage for Two Million Dollars (\$2,000,000) if the policy limit includes the payment of claims or defense costs, from the policy limit. If the scope of such design-related professional services includes work related to pollution conditions, the



CITY OF TACOMA Appendix C INSURANCE REQUIREMENTS FOR CONTRACTS

Professional Liability policy shall include Pollution Liability coverage.

3.6 Other Insurance

Other insurance may be deemed appropriate to cover risks and exposures related to the scope of work or changes to the scope of work required by City of Tacoma. The costs of such necessary and appropriate Insurance coverage shall be borne by Contractor.