

BYLAWS of the Spatial Reference Center of Washington (SRCW)

ARTICLE I – NAME

This organization shall be known as the Spatial Reference Center of Washington, hereinafter referred to as the Center. The Center is directed by the Spatial Reference Council and its Executive Committee.

ARTICLE II – PURPOSE

The State of Washington needs Height Modernization (as outlined by National Oceanic and Atmospheric Administration (NOAA) and National Geodetic Survey (NGS) in a June 1998 National Height Modernization Study Report to Congress), a statewide GPS network of Continuously Operating Reference Stations (CORS) accessible to the public through the Internet and a real-time CORS reference system. The primary purpose of the Center is to develop and implement strategies to achieve these goals.

ARTICLE III – MISSION

The mission of the Center, in cooperation with the National Geodetic Survey is to:

Ensure the availability of accurate, consistent, and timely spatial referencing data for Washington, including a system of Continuously Operating Reference Stations that provide accurate horizontal and vertical data accessible through the Internet, and the availability of a real-time component to the CORS reference system.

ARTICLE IV – OBJECTIVES

The objectives of the Center are, in cooperation with NGS to:

- A.** Ensure, through grants and membership funding, that a high-accuracy, horizontal and vertical Geodetic Reference Network is extended and maintained in Washington. This network shall be based on the Global Positioning System (GPS), related technologies and terrestrial techniques; including in-ground monuments, CORS, and geodetic models. The network will be designed to meet the spatial positioning needs within Washington for surveying, engineering, Earth science research (e.g., crustal motion/earthquake studies), geographic information systems, resource management, disaster preparedness and recovery, transportation systems, and other activities dependent upon reliable spatial referencing.

- B. Ensure that applicable GPS and other observations are processed, adjusted, and provided to NGS, with appropriate electronic data files and related information, for inclusion into the National Spatial Reference System (NSRS) database. Such efforts shall be in accordance with accepted NGS procedures and shall conform to all Revised Codes of Washington (RCW's) and Washington Administrative Codes (WAC's) pertaining to surveying and engineering.
- C. Ensure that time-dependent geodetic coordinates, velocities, GPS observational data, and supplemental station information (historical coordinates, seismic data, etc.) are readily available to agencies, research entities, and other public and private organizations involved in spatial referencing through the Internet.
- D. Improve the geoid model through orthometric height verification across the state, which entails the use of existing, quality elevations and measuring new elevations where necessary.
- E. Ensure that current, quality gravity measurements are available across the state to improve the geoid model.
- F. Ensure that the proposed network is tied to NOAA tide stations.
- G. Promote the development of specifications and guidelines for GPS surveys not otherwise provided at the national level.
- H. Educate users and potential users on (a) spatial referencing issues, (b) and the availability and application of spatial data and other information.
- I. Foster cooperation and partnerships among agencies, research entities, and organizations involved in spatial referencing issues.
- J. Solicit funds and apply for grants to support the objectives of the.

ARTICLE V – SPATIAL REFERENCE COUNCIL

The Spatial Reference Council, hereinafter referred to as the Council, shall be the guidance body of the Spatial Reference Center of Washington. The Executive Committee of the Council shall act as the Board of Directors for the Spatial Reference Center of Washington. The Council will have a structure separate from the Spatial Reference Center of Washington as outlined by these bylaws.

ARTICLE VI – COUNCIL MEMBERSHIP

- A. **Council Membership:** All organizations and individuals that have an interest in spatial referencing in Washington.

- B. Membership Benefits:** Membership in the Council will allow input and direction to the Spatial Reference Center of Washington. Membership is a shared involvement with an extensive network that benefits many different public and private interests across the state.
- C. Terms:** Each member of the Council may continue as a member until a successor is chosen by the entity that he/she represents or until he/she resigns, retires, or dies or until the member's membership is not renewed.
- D. Dues:** Organizations and Individual Members shall pay an initiation fee which includes the first calendar year's dues. Dues shall be paid annually to the Council within the first thirty days of each calendar year. The Council Treasurer shall send an invoice to each organization 30 days before the first day of each year. The dues will be sent to the address specified by the Treasurer.
1. Organizations shall pay an initiation fee of \$1,000 and annual dues of \$200 a year. Organizations shall be voting members and may serve as Officers of the Council.
 2. Individuals may be members of the Council. Individuals shall pay an initiation fee of \$100 and annual dues of \$50 a year.
 3. The Director of the Department of Natural Resources, Geodetic Survey Section shall be a continuous member and will not be assessed a membership fee or annual dues.
 4. The National Geodetic Survey Advisor to Washington State shall be a continuous member and will not be assessed a membership fee or annual dues.
 5. Organizations that are 90 days behind in their dues shall lose voting privileges.
 6. Organization and Individual Members who are 120 days behind in their dues shall become inactive members and will be required to pay past and current dues to become active members again.
- E. Alternate Members:** An organization Council member may appoint, an alternate Council representative from the same entity that he/she represents. The alternate Council representative shall replace the regular organization Council member, and shall have the same authorities as the regular Council member. An alternate member appointment is not effective until the Council Chairperson is notified of the of the alternate member.

F. Responsibilities and Duties: The primary responsibility of the Council is to address all issues, concerns, and needs of the spatial referencing community. Specific duties and responsibilities include but are not limited to:

1. Review, approve, and assist in managing the annual Center business plan.
2. Review, approve, and assist in setting semi-annual priorities for the Center.
3. Review, recommend, and approve revisions to the Council Bylaws.
4. Review, recommend, and approve revisions to the Articles of Incorporation of the Center.
5. Develop and adopt broad directives, goals, and objectives for the Center.
6. Recommend solutions to help resolve controversial and sensitive issues.
7. Promote the Center and assist in obtaining funds for spatial referencing in Washington.
8. Foster cooperation and partnerships among agencies, research entities, and organizations involved in spatial referencing issues.
9. Educate users and potential users on (a) spatial referencing issues; (b) availability and application of the Center's data, products, and other information; and (c) services available from the Center.

ARTICLE VII – NONDISCRIMINATION

In compliance with the policy of the State of Washington, the Spatial Reference Center of Washington and Council do not discriminate based on race, color, national origin, religion, sex, handicap, age, marital status, or sexual orientation. This nondiscrimination policy covers membership selection, activities, policies, hiring, contracting, and practices of the Council.

ARTICLE VIII – OFFICERS

A. Officers: The officers of the Council shall be elected and shall consist of:

Chairperson
Vice Chairperson
Secretary
Treasurer
Past Chairperson

B. Chairperson: At the end of each term, the Chairperson position will be filled by the Vice Chairperson or will be elected if the Vice Chairperson position is

vacant. The Chairperson shall have general and active management of the business of the Council and Spatial Reference Center of Washington and shall see that all orders and resolutions of the Council and Executive Committee are carried into effect. The Chairperson shall preside over meetings of the Council and the Executive Committee, shall perform other duties, and exercise other powers as designated by the Council or Executive Committee. The Chairperson shall appoint committees and committee chairs and delegate authority to them to perform operational Council work. However, committees and their membership shall not be effective until approved by the Executive Committee. The Chairperson shall prepare and/or make assignments for the preparation of an annual written report on the activities of the Council and Spatial Reference Center of Washington. The report shall include, but is not limited to, the past-year's accomplishments; current issues; the past-year and proposed next-year budgets of the Council and Spatial Reference Center of Washington; proposed goals and objectives to be accomplished in the near term and long range; suggested actions for the Council and Spatial Reference Center of Washington; and the current Council roster. The report shall be distributed to the Council members before, or at, the annual Council meeting. At the annual Council meeting, the Chairperson shall provide an overview presentation on the required annual report.

- C. Vice Chairperson:** The Vice Chairperson will automatically move to the Chairperson position at the beginning of each term of office. The Vice Chairperson, in the absence of the Chairperson, shall perform the duties and exercise the powers of the Chairperson. In addition, the Vice Chairperson shall perform such other duties and exercise such other powers as the Council or Executive Committee shall prescribe.
- D. Secretary:** The Secretary shall be responsible for ensuring that a) minutes are prepared for all meetings and other official actions of the Council and Executive Committee, b) correspondence is received, prepared, and filed, c) current membership rosters are maintained, and d) maintain or cause to be maintained the Spatial Reference Center of Washington Web Site. In addition, the Secretary shall perform such other duties as the Council, Executive Committee, or Chairperson shall prescribe.
- E. Treasurer:** The Treasurer is responsible for the financial administration of the Council under the direction of the Executive Committee, which includes signing checks, (See Article XII, Section D), making financial commitments on behalf of the Council, requesting payment on behalf of the Council, and safeguarding the assets of the Council. The Treasurer must prepare periodic financial reports for the Council and Executive Committee. The Spatial Reference Center financial administration will be managed by the Center Director and is not part of the Treasurer's responsibility.
- F. Past Chairperson:** The Past Chairperson shall advise the council.

- G. Terms:** The term of office for each officer shall be two years beginning on March 1st and ending on last day of February. Each officer shall be eligible to serve not more than two consecutive full two-year terms in each office.
- H. Vacancies:** If the Chairperson should temporarily be unable to serve, the Vice Chairperson shall serve in his/her absence. If the Chairperson should resign, or be unable to serve for the balance of his/her term of office, the Vice Chairperson will serve as Acting Chairperson for the remaining portion of the Chairperson's term and will also serve the Chairperson's term that was originally intended for the Vice Chairperson. Vacancies will be filled by election. If any other officer is unable to serve or resigns, the Executive Committee shall appoint an appropriate Council member to fill the remaining portion of his/her term.
- I. Policy:** Officers shall not advocate or cause the contracting or compensation of a company with which the officer is associated for Council or Center business. Officers shall not participate in any action relating to the contraction or the employment of a family member with Council or Center business.

ARTICLE IX – COUNCIL EXECUTIVE COMMITTEE

- A. Executive Committee:** It is the intention of the Council that the Executive Committee have representatives from professional organizations that represent Surveying, Mapping, GIS, Geophysical, and Educational Professionals; and Federal Agencies, Washington State Agencies, Cities, Counties, Utility Districts, Utility Firms, Flood/Irrigation Districts, Educational Organizations, Washington Tribes, and private firms specializing in any of the above activities.

The following shall be voting members of the Executive Committee:

1. The Chairperson of the Council (will only vote to break a tie).
 2. The Vice-Chairperson of the Council.
 3. The Secretary of the Council.
 4. The Treasurer of the Council.
 5. The Past Chairperson of the Council.
 6. Four additional Members either a designee of one of the Permanent Members as defined below in item B. or a Member elected by the Council.
- B. Permanent Members:** In order to foster the participation and commitment of agencies of the State of Washington the following state agencies shall have permanent and continuing representation on the Executive Committee:
 1. Washington State Department of Natural Resources.

2. Washington State Department of Transportation.
 3. Central Washington University.
- C. Ex Officio Members:** The individuals holding the following positions are non-voting advisory members of the Executive Council:
1. National Geodetic Survey Geodetic Advisor to the State of Washington.
 2. Director of the Washington State Department of Natural Resources Geodetic Survey Section.
- D. Terms:** The terms of all elected Executive Committee members shall begin on March 1 and end on the last day of February. The term of office for each elected Executive Committee member shall be two years. Each elected Executive Committee member shall be eligible to serve not more than two consecutive full two-year terms.
- E. Vacancies:** If any Executive Committee member is unable to serve or resigns, the remaining Executive Committee members shall appoint an appropriate Council member to fill the remaining portion of his/her term.
- F. Participation:** If any member of the Executive Committee fails to attend three or more consecutive regular meetings of the Committee, the other Committee members, at their discretion, may declare that the member's position is vacant. The non-participating member will be notified of the committee's decision to fill their vacant position. Such vacancies shall be filled as noted in Article VIII, paragraph C.
- G. Responsibilities and Duties:** The Executive Committee shall be authorized to conduct the operations of the Council and Spatial Reference Center of Washington, open bank accounts, authorize signatures thereon, approve expense disbursements, receive and deposit funds, plan programs and set fees for such programs (if applicable). The Executive Committee shall develop and adopt policies and procedures that are consistent with the direction of the Council membership and these Bylaws.

Specific duties of the Executive Committee are:

1. Comply with provisions set forth in the Memorandum of Understanding with the Department of Natural Resources Geodetic Survey Section.
2. Review the operational policies of the Center and recommend additions and/or changes to such policies.
3. Pursue and solicit funds for Height Modernization, a Geodetic Reference Network, and a Real Time CORS network in Washington State.

4. Develop and review priorities, work efforts, and programs for the Spatial Reference Center of Washington and ensure that such priorities, work efforts, and programs are consistent with the direction of the Council membership, these Bylaws, and the Spatial Reference Center of Washington's mission and objectives.
5. Review and recommend changes to, and approval of, the annual budget of the Spatial Reference Center of Washington and of the Council.
6. Review revisions to the adopted annual budget of the Spatial Reference Center of Washington and Council recommend changes to, and approval of, such revisions.
7. Review the qualifications of persons under consideration for appointment as the Center's staff and make hiring and termination decisions.
8. Determine the composition of and compensation for Center staff.
9. Review and recommend compensation rates for consultants (experts) to be contracted by the Center. All contracted professional Engineering and Land Surveying services shall follow qualifications-based procurement procedures as established in Chapter 39.80 RCW.
10. Review and approve (or disapprove) committee memberships and chairs selected by the Chairperson.
11. Controversial and/or sensitive issues are to be referred to the Council's membership for resolution.
12. Advise the Center on what geodetic and related data shall be maintained and archived.
13. Foster cooperation and partnerships among agencies, research entities, and organizations involved in spatial referencing issues.
14. Educate users and potential users on (a) spatial referencing issues; (b) availability and application of the Center's data, products, and other information; and (c) services available from the Center.

ARTICLE X – COUNCIL ELECTIONS

- A. Election and Eligibility:** The organization member representatives of the Council shall elect the Executive Committee and officers. Each elected person must be a Council member at the time he/she is elected and throughout his/her term of office.
- B. Schedule:** After the initial filling of all Executive Committee positions, all further elections shall be conducted at the annual meeting of the Council.
- C. Representation:** It is the goal of the Council to have broad representation among the officers and Executive Committee. The combined body of

officers and elected Executive Committee members shall represent at least four different Membership Groups.

- D. Voting:** Election shall be by written ballot that may be cast in person by a an organizational member representative at the meeting, or may be submitted by mail, facsimile, or e-mail if received by the Executive Committee Secretary or appointed substitute before the meeting. An election shall be valid if sufficient ballots are received to meet the quorum requirements, (see Article X, Section I). Each election shall be decided in favor of the nominee receiving a majority of votes.
- E. Ballots:** A valid ballot shall contain no more than one vote per position.
- F. Counting Ballots:** The Chairperson of the Council and two selected Executive Council members who are not candidates for the given election shall count the ballots.
- G. Term of Office:** See Article XII and XIII.

ARTICLE XI – COUNCIL MEETINGS

- A. General Membership Meetings:** There shall be at least two regularly scheduled meetings of the Council membership during each calendar year – one in February and in August. The Chairperson may call meetings at other times. Notices of meetings of the Council shall be mailed or e-mailed to members of the Council at least twenty-one (21) days before the meeting. An agenda for the meeting shall be prepared by the Chairperson and accompany the meeting notice.
- B. Executive Committee Meetings:** Executive Committee meetings shall be held bimonthly. The Chairperson shall call the meetings, but any member of the Executive Committee may request a meeting. Notices of meetings of the Executive Committee shall be mailed or e-mailed to members of the Committee by the Chairperson. The purpose of the meeting shall be prepared by the Chairperson and accompany the meeting notice.
- C. Annual Meeting:** An annual meeting of the membership shall be held each calendar year. The annual meeting shall be the Winter meeting of the Council.
- D. Attendance:** Meetings may be conducted and/or attended in-person, by telephone conference, or electronically via the Internet as designated by the Chairperson.
- E. Minutes:** Minutes for each meeting shall be prepared, distributed, and maintained by the Secretary. Distribution shall be to all members within two weeks of the meeting.

- F. Location:** The Chairperson shall designate the location of each meeting.
- G. Open Meetings:** All meetings shall be open to the public, and all persons shall be permitted to attend any meeting. The Executive Committee may conduct closed sessions during any meeting to consider matters as deemed appropriate.
- H. Action Without a Meeting:** Any action required or permitted to be taken by the Council or Executive Committee may be taken without a meeting if a majority of the voting members of the Council or Executive Committee consent in writing or by e-mail to the adoption of a resolution authorizing the action. Minutes of such actions shall be prepared and shall contain the resolution and the written/e-mail consents from each approving member. The minutes of such actions shall be included with the minutes of the next official meeting of the Council or Executive Committee, whichever occurs first.
- I. Quorums:**
1. Council Membership Meetings: A quorum to conduct official business at Council membership meetings shall be the average of the member attendance at the three previous meetings.
 2. Executive Committee Meetings: A quorum to conduct official business at Executive Committee meetings shall be five members.
- J. Voting:**
1. Council Membership Meetings: Each voting member of the Council shall be entitled to one vote on each issue, except the Chairperson, who shall only vote to break a tie vote.
 2. Executive Committee Meetings: Each member of the Committee shall be entitled to one vote on each issue, except the Chairperson, who shall only vote to break a tie vote.
- K. Proxy Votes:** There shall be no proxy votes permitted. Alternative representatives are not considered proxies.
- L. Decisions:** Except as otherwise expressly required by these Bylaws, all matters shall be decided by a majority of the voting members voting at the time of the vote, if a quorum is present.
- M. Conflicting Decisions:** Any decision made by the Executive Committee may be superseded by a 2/3 vote of the entire Council membership.

ARTICLE XII – GEODETIC REFERENCE NETWORK

The Geodetic Reference Network referred to in Article IV, item A, shall conform to the conceptual and design details described in Appendix B. Periodically, the

Executive Committee (or a Special Committee appointed by the Chairperson) shall review the specified network details and make appropriate revisions to Appendix B to ensure that the described Geodetic Reference Network is consistent with current technology and user needs. Revisions to Appendix B shall be approved by the Council membership before becoming effective.

ARTICLE XIII – FISCAL and RELATED MATTERS

- A. Fiscal year:** The fiscal year of the Center shall be July 1st to June 30th.
- B. Contracts:** Contracts for work related to the Center’s business activities will be entered into directly by the Center. The Executive Committee will review and approve the professional service roster and the proposed contracts managed by the Center before the consultant selection process begins, but the contracts will be entered by the Center. All professional engineering and surveying contracts shall be awarded on a “qualifications based selection” process. Officers and Executive Committee members that have any relationship with a firm that has submitted a proposal for a given contract, or any other potential conflict of interest, shall not be involved in the contractor selection process for that contract.
- C. Compensation for Officers, Executive Committee Members, and Council Members:** Officers, Executive Committee members, and Council members will not be compensated, except as provided herein. The Center Director will be paid salary, benefits, and travel expense incurred during Center business. At the discretion of the Chairperson, reimbursement for actual travel costs may be provided in accordance with the requirements of the Council and the funding agencies. In general, the policy of the Council shall be to reimburse travel costs only if the officers, Executive Committee members, or Council members incur travel-related expenses that are not reimbursed by the organization that he/she represents. Prior approval must be obtained from the Chairperson for any reimbursement of travel costs.
- D. Check Issuance:** The Chairperson and Treasurer shall co-sign any check written for \$1,000 or more from any account maintained by the Council. The Treasurer may sign checks for under \$1,000. (See Article VII, Section E.) The Center’s Director will manage all Center finances separately from those of the Council.
- E. Access to Information:** The Executive Committee shall be authorized to receive from any financial institution with which the organization maintains accounts, any information, records, or photocopies of transactions relating to the Council and Spatial Reference Center of Washington’s accounts as which the Executive Committee may at any time request from the financial institution.

- F. Disputes:** Any controversy or claim arising out of or related to Spatial Reference Center of Washington or Council business, or breach thereof, shall be resolved according to the dispute resolution process outlined below. Either party may invoke the dispute resolution process by notifying the other, in writing, of its intent to do so (Dispute Notice). The Dispute Notice shall set out the issue(s) in dispute and the notifying party's position on the issue(s). The first stage of the process shall include a face-to-face meeting between the representatives of the two parties to attempt to resolve the dispute by negotiation. The meeting shall be convened within thirty (30) days of receipt of the Dispute Notice. If the parties cannot resolve the dispute by negotiation within sixty (60) days, the parties shall hire a mutually agreed upon qualified mediator to assist them in attempting to negotiate the dispute. The cost of the mediator shall be borne equally by the parties. The mediator shall determine the mediation format. Any resolution shall be memorialized by the mediator and bind the parties. If mediation is unsuccessful within ninety (90) days of the initiation of mediation, the matter shall be submitted to arbitration and settled in accordance with the rules of the American Arbitration Association. Any judgment rendered by the arbitrator shall bind the parties and may be entered in any court having jurisdiction thereof. Each party shall equally share the cost of the arbitrator.
- G. Indemnification:** The corporation shall, to the fullest extent authorized and in the manner provided by Chapter 24.03 of the Revised Code of Washington, indemnify any person who was, is, or is threatened to be made, a defendant or a respondent in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was a director or officer of the corporation, against judgments, penalties, fines, settlements and reasonable expenses (including attorney's fees) actually incurred by such person in connection with such proceeding.
- H. Confidentiality:** The Spatial Reference Center of Washington or Council membership shall not disclose to any third party any proprietary or confidential information received from the Center, or acquired during the course of work under Center business, and shall not use for their own benefit or that of others, any such information, whether developed in the course of Center business or derived from the Center, except as may be authorized by the Council Executive Committee in writing. All information developed in the performance of Center business shall be considered the Center's propriety information.
- I. Severability:** If any provision of this document or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this document which can be given effect without the invalid provision, and to this end the provision of this document is declared to be severable.

- J. Entire Agreement:** This document contains all covenants, stipulations, and provisions to which agreed by all members. No agent or representative of any member has authority to make, and the parties shall not be bound by or be liable for any statement, representation, promise or agreement not set forth herein.

ARTICLE XIV – PARLIAMENTARY PROCEDURE

Robert's Rules of Order, Revised, when not in conflict with these Bylaws, shall govern all meetings of the Council, the Executive Committee, and other organizational groups of the Spatial Reference Center of Washington.

ARTICLE XV – AMENDMENTS

These Bylaws may be amended by a resolution that is approved by a two-thirds majority of the Executive Council members voting at a legally convened meeting of the Executive Council. The proposed amendments shall be distributed by regular mail or e-mail to all current Council members at least twenty-one (21) days before the meeting at which the Council will act on the proposed amendment.

ARTICLE XVI – DISSOLUTION

If the Center should ever dissolve, any remaining assets held in its name shall be distributed within 90 days following the rules set forth within ARTICLE IX, ARTICLES OF INCORPORATION OF SPATIAL REFERENCE CENTER OF WASHINGTON. If the Council should ever dissolve, any remaining assets held in its name shall be distributed within 90 days following the rules set forth within ARTICLE IX, ARTICLES OF INCORPORATION OF SPATIAL REFERENCE CENTER OF WASHINGTON.

APPENDIX A – Suggested Council Membership

Membership Subgroup	Organization	
Professional Surveying and Mapping Organizations	American Society for Photogrammetry & Remote Sensing	
	Land Surveyors' Association of Washington	
	Washington Council of County Surveyors	
	Washington State Section - American Congress on Surveying and Mapping	
GIS Organizations and Professionals	Urban and Regional Information Systems Association	
	Washington Geographic Information Council	
Geophysical Research Professionals	Pacific Northwest Geodetic Array Plate Boundary Observatory	
Federal Agencies	Bureau of Land Management	
	Director of NGS	
	Federal Aviation Administration	
	Federal Railroad Administration	
	Homeland Security	
	<ul style="list-style-type: none"> • Federal Emergency Management Administration • US Coast Guard 	
	NGS State Geodetic Advisor	
	US Army Corps of Engineers	
	US Bureau of Reclamation	
	US Forest Service	
	USGS	
Washington State Agencies	Dept. of Agriculture	
	Dept. of Ecology	
	Dept. of Natural Resources	
	Dept. of Transportation	
	Office of the Attorney General	
	Washington Dept. of Fish & Wildlife	
	Washington Military Department	
	<ul style="list-style-type: none"> • Emergency Management • Air National Guard • Army National Guard • Homeland Security 	
	Washington State Patrol	
	Other State Agencies	
	Cities	City of Bellingham
		City of Everett
City of Olympia		
City of Renton		
City of Seattle		
City of Spokane		

	City of Tacoma
	City of Vancouver
	Tri-Cities
	Other cities and/or a representative from the Association of Washington Cities.
Counties	Clark County
	King County
	Pierce County
	Skagit County
	Snohomish County
	Spokane County
	Other Counties
Utility Districts	Northshore Utility District
	Shoreline Utility District
	Other Utility Districts
Utility Firms	Bonneville Power Administration
	Puget Sound Energy
	Seattle Public Utilities
	Snohomish Public Utility
	Other Utility Firms or Agencies
Flood/Irrigation Districts	Kennewick Irrigation District
	Tieton Irrigation District
	Other Irrigation Districts
Educational Professionals	Geophysical
	Surveying
	And others
Non-Designated Professionals	Various Professionals (at large)
Washington Tribes	Colville Tribe
	Muckleshoot Tribe
	Puyallup Tribe
	Tulalip Tribe
	Yakima Tribe
	Other Tribes
Educational Organizations	Central Washington University
	Renton Technical College
	University of Washington
	Other Educational Institutions
Private Sector	Interested parties as approved by the Council

APPENDIX B –GEODETTIC REFERENCE NETWORK (Conceptual and Design Details)

- A. Purpose:** The purpose of the Geodetic Reference Network – as envisioned by the Center and established, maintained, and monitored by NGS, the Center, and others is to provide an accurate, consistent, real-time spatial reference network, throughout the State of Washington, that will fulfill the many diverse spatial referencing needs of Washington’s users.
- B. Concepts:** The Spatial Reference Center-envisioned network shall conform to the following basic concepts:
- The network shall be part of the National Spatial Reference System (NSRS).
 - The network shall conform to the datum, accuracy classifications, guidelines, and methodologies accepted by the National Geodetic Survey (NGS).
 - The basis of the network shall be derived from NGS CORS.
 - The network shall be established, maintained, and monitored through GPS geodetic survey procedures conforming to the accuracy classifications, guidelines, and methodologies accepted by the NGS.
 - Each network CORS station shall have, at the minimum, values for horizontal position, ellipsoidal and orthometric heights, horizontal velocity, and a stated accuracy standard for each value.
 - The geodetic values for the network stations shall be kept current or supplemental information shall be provided to enable the user to determine the current geodetic values. An exception is vertical values for stations within identified subsidence or unstable areas.
 - The network design shall provide suitable stations and appropriate geodetic data for GPS positioning techniques – both horizontal and vertical. In general, each station shall provide both horizontal and vertical data. Exceptions are selected NAVD88 benchmarks that are stable and located in non-subsidence areas, as determined by the National Geodetic Survey and the Spatial Reference Center’s Executive Committee.
 - In general, accuracy standards and station spacing shall conform to the provisions specified in this document. The Council recognizes that exceptions are necessary and appropriate in specific areas.
 - The objective of the envisioned network is to provide a statewide “basic” (framework) spatial reference system; it is not intended to provide specific project-related control monuments.

C. Network Components: The Spatial Reference Center of Washington - envisioned network shall consist of three components – CORS, Primary Stations, and Secondary Stations. The goals for accuracy standards (two sigma level), station spacing, and the involvement of NGS, the Spatial Reference Center and others for each component shall be as follows:

Component	Standard		Station Spacing (km)	Involvement ⁽³⁾		
	Horiz.	Ortho. ⁽¹⁾			Establish	Maintain
			⁽²⁾			
CORS	1 cm	2 cm	80 (Nominal)	Yes ⁽⁴⁾	Yes ⁽⁴⁾	Yes
Primary	1 cm	2 cm	40 (Nominal)	Yes ⁽⁵⁾	Yes ⁽⁵⁾	Yes ⁽⁷⁾
Secondary	1 cm	2 cm	7 (Average)	No ⁽⁶⁾	No (6)	Yes ⁽⁷⁾

Notes:

- (1) Stations in terrain with significant relief may have a lesser standard as appropriate.
- (2) Stations in sparsely populated areas (deserts, forest areas, mountainous areas, etc.) may have a greater station spacing as appropriate.
- (3) Definition of Involvement Terms:
 - **Establish** – To establish new stations or to select suitable existing stations.
 - **Maintain** – To replace stations that are disturbed or destroyed.
 - **Monitor** – To periodically establish new geodetic values for the stations based on new GPS observations.
- (4) As feasible, existing CORS shall be utilized. If existing CORS are not available at the selected, proposed locations, the Council shall encourage NGS, the Center, or others to establish such CORS. The Council will encourage partnership efforts.
- (5) Generally, the Council envisions that only Primary Stations required for the 40-km network shall be established and maintained by NGS or the Center.
- (6) Generally, the Council envisions that Secondary Stations shall be established and maintained by others, in cooperation with the NGS and the Center.
- (7) Primary and Secondary Stations in non-subsidence areas shall be monitored by NGS, the Center, or others using data obtained from monitoring the CORS together with available seismic knowledge and information. Subsidence areas shall be monitored as appropriate.

D. Network Establishment: The Center’s efforts shall initially be directed toward the establishment and maintenance of a CORS network, nominally

spaced at 80 km and a Primary network, nominally spaced at 40 km. The Center shall work in partnership and in cooperation with others to densify the network.

- E. Lesser Spaced Stations:** In general, the Council shall recommend that stations spaced less than seven km (average) shall not be accepted into the Center's network (database), unless approved by the Executive Committee. When "Records of Surveys" are required for such stations, they shall be recorded with the applicable county official.
- F. Standards:** All stations included in the Geodetic Reference Network shall be established in accordance with the accuracy classifications, guidelines, and methodologies accepted by NGS. The geodetic surveys used to establish network stations shall be submitted in approved format to NGS for inclusion in the NSRS.
- G. Network Stations:**

 - 1. **CORS:** CORS included in the Geodetic Reference Network shall conform to the specifications established by NGS and the Center. CORS included in the Center's network that are not established by the Center shall be certified, in writing, that the CORS meet NGS and the Center's requirements.
 - 2. **In Ground Monuments:** In ground monuments for the Primary and Secondary Stations of the Geodetic Reference Network shall conform to the specifications established by NGS and the Center.
 - 3. **Public Access:** All stations, except CORS, included in the Geodetic Reference Network shall be accessible to the public. Exceptions to the "public access" requirement may be required in certain cases.
- H. Links to Other Networks:** The Council shall encourage the Spatial Reference Center of Washington to provide Internet links to other geodetic data such as those included in NGS/CORS, PANGA, PBO, WSRN and other continuous GPS arrays in Washington.
- I. Geodetic Models:** The Center shall encourage NGS to develop and distribute geodetic models necessary to properly use the Geodetic Reference Network and related data. These models shall become a related component of the Geodetic Reference Network and shall include as a minimum the following:

 - 1. **Transformation Parameters:** Seven parameters (i.e. delta [X, Y, Z], rotation [X, Y, Z], and scale) for transformation from the current International Terrestrial Reference Frame (ITRF) datum to the current NGS datum and the current Washington State Plane Coordinate System.

2. Horizontal Velocity: Secular and episodic crustal motion data compiled into a computer readable format for coordinate conversion between epoch dates.
3. Geoid Heights: The most current geoid model approved by NGS.
4. GPS Orbits: Precise post-fit ephemeris for the GPS constellation.

APPENDIX C

MEMORANDUM OF UNDERSTANDING
Between
Washington State Department of Natural Resources
And
Spatial Reference Center of Washington
Regarding Geodetic Control Modernization

This Memorandum of Understanding is made and entered into by and between the Washington State Department of Natural Resources, hereinafter referred to as the DNR, and the Spatial Reference Center of Washington, a non-profit corporation, hereinafter referred to as the SRCW.

Background: Traditionally and historically, Washington surveyors and other spatial reference users have depended on the National Geodetic Survey (NGS), and its predecessor agencies, for geodetic control. In the last 10 to 15 years, the focus of NGS has changed from maintaining relatively dense control networks to maintaining a basic “framework” system consisting primarily of CORS GPS sites. Any additional geodetic control is generally established and maintained either through cooperative agreement with NGS or by independent, local efforts. The decline in NGS’s geodetic control efforts has occurred just as the need for an accurate, seamless statewide control network has greatly increased. NGS’s support for the need to improve the geodetic vertical network in the United States is called the Height Modernization Program (HMP) and is supported by grants awarded to agencies through the National Oceanic and Atmospheric Administration (NOAA). DNR has received an HMP grant from NOAA through NGS.

Organizational Framework: The SRCW was incorporated in February 2004 as a non-profit corporation, under section 501(c)(3) of the Internal Revenue Code and under Chapter 24.03 of the Revised Code of Washington, with the purpose of implementing Geodetic Control Modernization Program (GCMP) through grants and cooperation of Federal, State and Local government agencies. The DNR has the authority through the Revised Code of Washington, section 58.24.030, to cooperate and advise with agencies and registered land surveyors and engineers for the purpose of connecting boundary and other reference marks to National Spatial Reference System, and for the purpose of facilitating the use of the Washington state coordinate system, and for the purpose of promoting the use of the level net established by the National Geodetic Survey.

Purpose: The DNR desires to cooperate and advise with the SRCW for purpose of GCMP activities. Based upon mutual understanding, the parties enter into this Memorandum of Understanding regarding Geodetic Control Modernization with the following goals, policies and practices:

Objective of the Agreement: The objective of this agreement is to acknowledge an understanding and agreement between the parties that the SRCW Executive Committee will serve in the official capacity as the advisory organization to the DNR Geodetic Survey Section and provide advice, interaction, cooperation, professional counsel and recommendations in support of geodetic control modernization tasks. Initially, cooperation relates to activities funded by grants from the National Oceanic and Atmospheric Administration (NOAA) through the National Geodetic Survey (NGS) to implement a height modernization program in Washington State. It is intended that should the DNR be recipient of other grants or funds designated for geodetic control modernization, SRCW will continue to serve in the same capacity.

The objectives of Geodetic Control Modernization and of the Height Modernization Program are intended to support the SRCW Geodetic Reference Network as detailed in their Bylaws Appendix B and include the following:

1. To ensure that a high-accuracy horizontal and vertical Geodetic Reference Network is extended and maintained in Washington State. This network shall be based on the global positioning

- system (GPS) related technologies and terrestrial techniques including monuments, continuously operating reference stations (CORS) and geodetic models.
2. To design the network to meet the spatial positioning needs for surveying, engineering, earth science research, geographic positioning systems, resource management, disaster preparedness and recovery, transportation systems and other systems dependent upon reliable and accurate spatial referencing.
 3. To ensure that applicable GPS and other observations are processed, adjusted and provided to NGS with appropriate electronic data files and related information for inclusion into the National Spatial Reference System (NSRS) database.
 4. To ensure that time-dependent geodetic coordinates, velocities, GPS observational data and supplemental station information (historical coordinates, seismic data, etc.) are available to the public.
 5. To improve the geoid model by orthometric height verification and acquisition of current, quality gravity measurements.
 6. To ensure that the proposed network is tied to NOAA tidal stations.
 7. To promote the development of specifications and guidelines for GPS surveys not otherwise provided at the national level.
 8. To educate users and potential users on (a) spatial referencing issues, (b) and the availability and application of spatial data and other information.
 9. To foster cooperation and partnerships among agencies, research entities, and organizations involved in spatial referencing issues.

DNR responsibilities:

1. So long as there are sufficient grants or other funds specifically allocated to a Geodetic Control Modernization Program DNR will maintain a Geodetic Survey Section in Engineering Division devoted to GCMP activities composed of permanent project employees.
2. DNR will recognize the SRCW Executive Committee (board of directors) as the advisory body for GCMP activities.
3. DNR will provide equal or majority representation to SRCW on any panel assembled to choose an employee to work in the GCMP section within DNR.
4. Other activities by mutual agreement of the parties.

SRCW responsibilities: Coordination of the activities with the SRCW shall be conducted through the Executive Committee of the SRCW. It is hereby agreed that the Executive Committee shall:

1. Review and recommend tasks and priorities related to development and adoption of the Geodetic Control Modernization Annual Work Plan.
2. Review and provide recommendations regarding modifications, revisions or supplements to the Geodetic Control Modernization Annual Work Plan.
3. Review and recommend allocation of funds related to the Geodetic Control Modernization Annual Budget.
4. Review and provide recommendations regarding modifications, revisions or supplements to funding allocations in the Geodetic Control Modernization Annual Budget.
5. Develop and recommend modifications or revisions to the goals and objectives of the Geodetic Control Modernization Program.
6. Promote Geodetic Control Modernization and support acquisition of funds to further spatial referencing in Washington.
7. Support and encourage cooperation and partnerships related to Geodetic Control Modernization issues.
8. Provide advice regarding specific geodetic data and other related data that should be maintained and archived.
9. Other activities by mutual agreement of the parties.

Modification: This cooperative agreement may be modified by mutual written consent of the parties.

Termination: This agreement may be terminated by either party upon at least thirty (30) days prior written notice.

Nothing herein contained shall be construed to obligate the DNR or the SRCW beyond the extent of funds specifically programmed or allocated to the Geodetic Control Modernization Program.

In recognition of the mutual understandings discussed herein the parties hereto affix their signatures. This memorandum of understanding shall be effective upon the date and signature of the final signing party, the Department of Natural Resources.

Washington State
Department of Natural Resources

Spatial Reference Center
of Washington

Engineering Division Manager

Chair

Date

Date