



Capital Program Coordination, Management and Finance Plan

March 22, 2006
Adopted by Resolution No. 2006-06

Cascade Water Alliance Members

City of Bellevue
Covington Water District
City of Issaquah
City of Kirkland
City of Redmond
Sammamish Plateau Water & Sewer District
Skyway Water & Sewer District
City of Tukwila

Table of Contents

1.0	Introduction	1
	Background.....	1
	Purposes of Cascade.....	2
2.0	Description of Water System	3
	Cascade Water Service Area.....	3
	Water Resource Area.....	3
	Cascade Supply Sources.....	5
	Local Supplies Owned by Cascade Members.....	5
	Regional Water Supplies.....	5
	Interties	7
	Existing Facilities.....	8
	Property Acquisition, Ownership and Disposition	8
	Infrastructure Utilized by Cascade.....	8
3.0	Water Supply Strategy.....	8
	Overview of Water Supply Strategy	8
4.0	System Analysis, Infrastructure Needs, and Capital Improvement Program.....	13
	Background and Basis for Prioritizing Projects	13
	Existing Facilities.....	15
	Proposed Facilities.....	16
	Regional Transmission System and Lake Tapps Water Supply Project	16
	Stage 1 – Central Segment of Regional Transmission Line.....	17
	Stage 2 – North Segment of Regional Transmission Line.....	17
	Stage 3 - Regional Storage Reservoir.....	18
	Bellevue - Issaquah Pipeline	18
	Bellevue-Kirkland-Redmond Extension	18
	Stage 4 – Initial Lake Tapps Development and South Segment Transmission Line.....	19
	Capital Improvement Program	20
5.0	Financial Program.....	20
	Capital Funding Strategy.....	20
	Available Capital Funding Sources	22
	State and Federal Capital Funding Sources	22
	Cascade Capital Funding Sources.....	23

List of Tables

Table 3.1 Mix of Supply Resources – Average Day Basis.....	10
Table 3.2 Mix of Supply Resources – Maximum Week Basis.....	10
Table 4.1 Cascade Regional Water Supply System.....	16
Table 5.1 Capital Funding Strategy 2004 - 2009.....	21

List of Figures

Figure 2.1 Service Area and Key Facilities.....	4
Figure 2.2 Study Area and Regional Facilities.....	6
Figure 3.1 Average Daily Demand (ADD) and Supply (Figure ES-1 from TSP)	11
Figure 3.2 Maximum Week Demand (MWD) and Supply (Figure ES-2 from TSP)	12
Figure 4.1 Proposed Alternative Transmission Lines and Related Features (Figure ES-3 from TSP).....	14

1.0 Introduction

Background

The Cascade Water Alliance (Cascade) was formed on April 1, 1999 by Interlocal Agreement (the Interlocal) under the Interlocal Cooperation Act (chapter 39.34 RCW), and is incorporated as a public, non-profit corporation. Cascade serves as a regional water supplier to its Members. It serves as an instrument of its Members and exercises certain governmental functions on their behalf. Cascade's authorities and responsibilities are defined in the Interlocal and are consistent with state law.

Cascade is an organization of eight King County municipalities formed to plan, develop and operate a water supply system for its Members. Each of these water systems is authorized to provide water within its designated service area. The Members of Cascade entered into the Interlocal to enhance their ability to supply water to their respective service areas and the region by developing, owning, and operating regional water supply assets. The organization is governed by a Board of Directors (Board) consisting of one representative appointed by the City Council or Board of Commissioners of each Member. Each Board Member must be an elected official of the Member. With some exceptions, the Board has the power to take all actions on Cascade's behalf.

Members of Cascade include:

- The City of Bellevue
- Covington Water District
- The City of Issaquah
- The City of Kirkland
- The City of Redmond
- Sammamish Plateau Water and Sewer District
- Skyway Water and Sewer District
- The City of Tukwila

Chapter 39.34 RCW also authorizes cooperative undertakings by municipalities through the adoption and implementation of coordinated watershed management plans addressing water supply, water transmission, water quality treatment or protection or any other water-related purpose. Through the Interlocal, Cascade's members have formed a watershed management partnership for the purpose of carrying out the cooperative undertakings authorized by chapter 39.34 RCW.

This Capital Program Coordination, Management and Finance Plan (the Finance Plan or Plan) provides Cascade's Board of Directors and its General Manager a management tool to assist them in making decisions necessary to implement the water supply purposes of the Interlocal and Cascade's 2004 Transmission and Supply Plan (TSP) once that document receives final approval. The Plan describes financing elements necessary to implement the TSP and the capital improvements described herein as the "cooperative undertaking" that Cascade's members intend to implement through Cascade as a "watershed management partnership". The Finance Plan is Cascade's "watershed management plan" and it enables Cascade to carry out cooperative undertakings.

The Plan contemplates that the financing options needed to implement the Interlocal and the TSP must be fiscally sufficient and programmatically diverse so that Cascade can meet its current and anticipated obligations. As a management tool the Plan provides a summary description of Cascade's service area and its current system, an outline of Cascade's projected supply and demand forecasts, and the financing options to meet current and projected need.

The Plan does not authorize or constitute separate action or approval by Cascade with regard to any project, activity or program that has not been separately and expressly approved by Cascade after compliance with all applicable SEPA environmental review requirements. Until Cascade's TSP receives final approval, adoption of this Plan does not authorize Cascade to make

expenditures for capital projects, except to fulfill contractual obligations for the purchase of water supply, to pay for the purchase of existing capital improvements, or to purchase water supply

In the following sections, the Plan describes the water system, water supply strategy, system analysis, infrastructure needs, capital improvement and financial programs.

Cascade has established its organizational and rate structure, has entered into long-term water supply agreements with Seattle Public Utilities (SPU) and Tacoma Public Utilities (TPU), and is negotiating to acquire a major water right for the future use of Lake Tapps as a source of supply.

Cascade began providing wholesale water to its Members January 1, 2004 through the wholesale agreement with SPU. As reflected in its TSP, Cascade will provide water to its Members through a combination of owned and contracted supply and transmission resources. Individual Members having groundwater sources will continue to produce water to meet a portion of Cascade's needs. Together, these sources will provide supply for the immediate needs of Cascade Members. Over the long term, supply received from SPU will be partially supplanted by wholesale purchases from TPU, reclaimed water, conservation, and other sources.

Purposes of Cascade

The Interlocal requires Cascade to supply the full water requirements of its Members to meet their present and future water demands, after accounting for their independent supply, within each Member's service area. Local supplies continue to be owned and operated by some Cascade Members.

Cascade serves as the primary planning authority for the regional water supplies needed to serve its Members. Cascade is responsible for managing, on behalf of all Members, the regional water supply system and has the responsibility and authority, as authorized under the Interlocal, to plan and provide water to its Members for use within their existing and future water service area boundaries. Members of Cascade retain the authority, within certain limitations, to contract with other entities for additional supply.

The Interlocal lists Cascade's purposes as follows:

- Provide a safe, reliable and high quality drinking water supply to meet the current and projected demands of its Members in a coordinated, cost-effective and environmentally sensitive manner;
- Develop, contract for, manage, acquire, own, maintain and operate water supply assets including, surface and groundwater supplies and reclaimed water supplies;
- Contract with Seattle and Tacoma to purchase water;
- Purchase and provide water supply, transmission services, treatment facilities and other related services;
- Provide conservation programs to promote the wise and efficient use of resources;
- Carry out emergency water supply and shortage management programs for its Members when demands exceed available supply;
- Coordinate and plan cooperatively with other regional or local water utilities and other entities to maximize supply availability and to minimize system costs;
- Develop a Water Supply Plan addressing the needs of its Members and help develop a regional water supply plan with other water providers to meet regional, state, and federal planning requirements, and to take a leadership role in developing and coordinating those supply plans; and
- Share costs and risks among Members commensurate with benefits received.

Cascade has the authority to exercise all powers authorized or permitted under RCW 39.34 to engage in all activities related to the attainment of water supply resources including, but not limited to acquiring, constructing, receiving, owning, managing, leasing and selling real property, personal property, intangible property and other water supply assets.

2.0 - Description of Water System

Cascade Water Service Area

The Cascade water service area is an aggregate of its Members' water service areas (Figure 2.1). Because Members are not all adjacent to one another, this is a noncontiguous service area. The water service boundaries were established under the East King County, South King County, and Skyway Coordinated Water System Plans, respectively. These plans were prepared in accordance with the Public Water System Coordination Act (Chapter 70.116 RCW).

The Cascade water service area is located within King County and includes areas within the corporate boundaries of Members Bellevue, Issaquah, Kirkland, Redmond, and Tukwila. The service area also includes some additional cities and towns that are not themselves Members of Cascade. In addition, portions of the Cascade water service area include unincorporated areas of King County.

Some Members currently provide minor quantities of water from their local, independent supplies to other water systems outside of the Cascade water service area. The area supplied is not considered part of the Cascade water service area but is considered in the Cascade water demand forecast.

Extension of Water Service Areas

Cascade is obligated to provide water to the entire water service area of each Member, whether or not some of that service area is within the Member's current jurisdictional boundaries (for cities) and/or within the current urban growth boundary. From time to time a Member may have an interest in changing its service area boundary. Cascade is not obligated to provide increased water supply to any Member if it is determined that the Member's planning process or plans are materially out of compliance with the requirements of the Washington Growth Management Act (GMA). In addition, Cascade is not obligated to provide water to service area expansions, unless the Board agrees to such expanded service area.

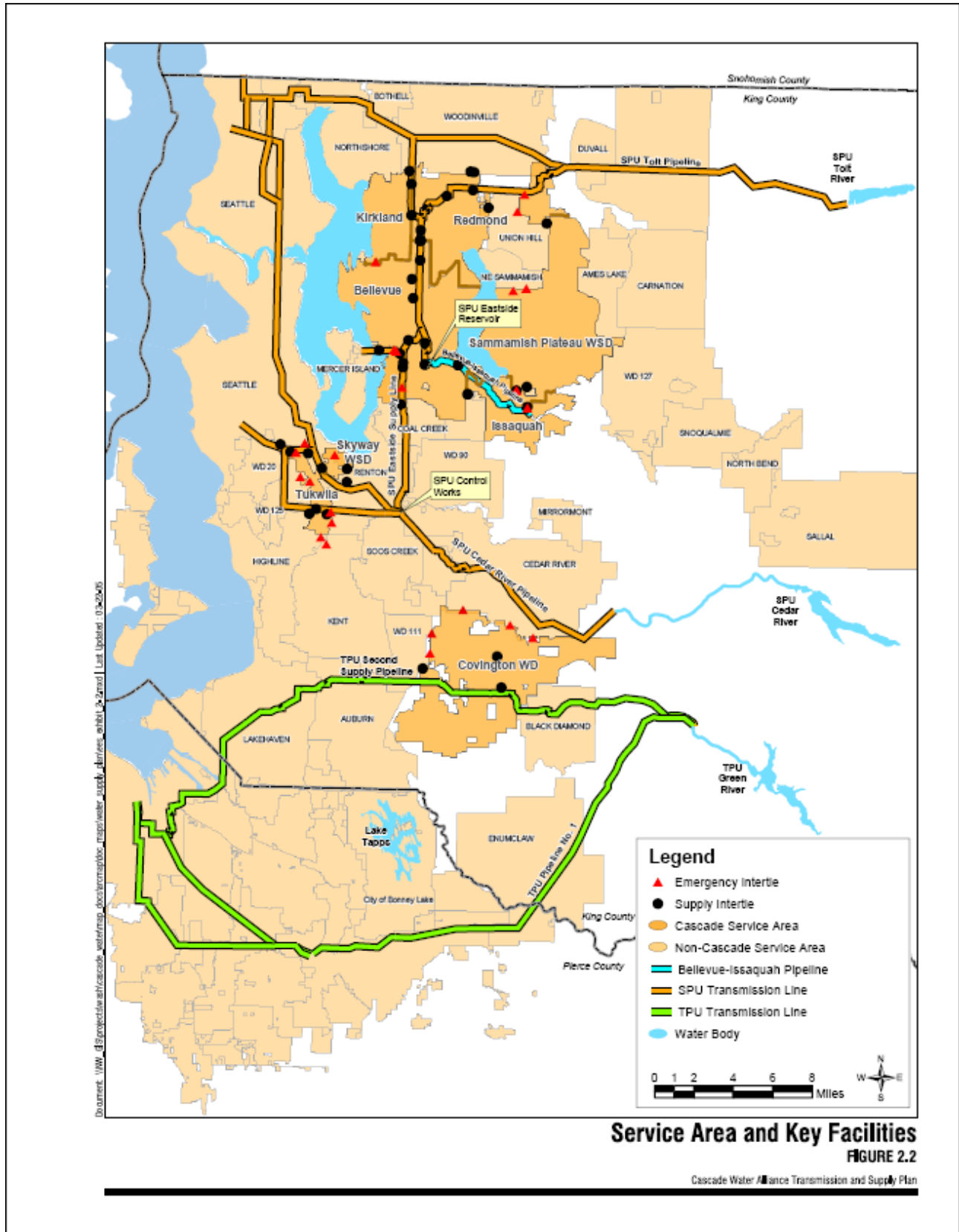
Expansion of Cascade Membership

Subject to place-of-use restrictions on future Cascade water rights or contracted supplies, any municipal water utility serving within the Central Puget Sound Region, an area including King, Pierce, and Snohomish Counties, may be admitted to Cascade with Board approval. The Board will consider such requests on a case-by-case basis, considering factors such as Cascade supplies and demands, the potential new Member's supplies and demands, infrastructure capacity to provide water supply, and the impact on existing Members.

Water Resource Area

Water resources related to Cascade and its Members encompass five of the state's Water Resource Inventory Areas (WRIAs). From north to south these include the Snohomish River, Cedar-Sammamish, Duwamish-Green, Puyallup-White and Chambers-Clover Basins (WRIAs 7, 8, 9, 10, and 12). These include all of King County and portions of Snohomish and Pierce Counties. Current Cascade Member service areas and their local water sources are located entirely within the boundaries of King County. This includes portions of the Snohomish River Basin, Cedar-Sammamish Basin, and Duwamish-Green Basin (WRIAs 7, 8, and 9).

Figure 2.1 Service Area and Key Facilities (Figure 2.2 from TSP)



Major regional sources of supply that serve Cascade Members presently include SPU's Cedar River and South Fork Tolt River Reservoirs. Cascade anticipates purchasing water that will originate from TPU's Howard Hanson Reservoir on the Green River. Cascade has also considered seeking to purchase groundwater that originates in the Chambers/Clover Basin. Cascade also anticipates eventually developing Lake Tapps as a municipal source of supply. All of these features are shown on Figure 2.2.

Cascade Supply Sources

Cascade currently uses a combination of local groundwater supplies owned and operated by its Members and regional supplies purchased on a wholesale basis from SPU. Cascade has an agreement in place with TPU allowing wholesale purchases of water. This section describes each of these sources and summarizes their combined capability for meeting the overall water supply needs of its Members.

Local Supplies Owned by Cascade Members

Local groundwater accounted for about 46 percent of the Cascade 2003 ADD water supply and 33 percent of the 2003 MDD water supply.

Six Members have independent, local sources of supply. Collectively, Members own and operate approximately 45 wells that are used to deliver water to meet demands in their respective service areas. The primary annual water rights (Q_a) and instantaneous water rights (Q_i) of the Members are 19.8 MGD and 35.6 MGD, respectively. These are generally groundwater supplies, though Redmond, Bellevue, and Tukwila also have surface water rights. Redmond's surface water right is currently being used as a supplemental water right to its groundwater rights. Bellevue and Tukwila's surface water rights are used exclusively for golf course irrigation.

Regional Water Supplies

In order to meet the projected water supply needs to 2024 and beyond, Cascade will need to identify new water supply sources or secure additional supply from existing sources. Listed below are the potential surface water, groundwater, storage, and water reuse supply options in the Central Puget Sound Region.

Block Contract with SPU

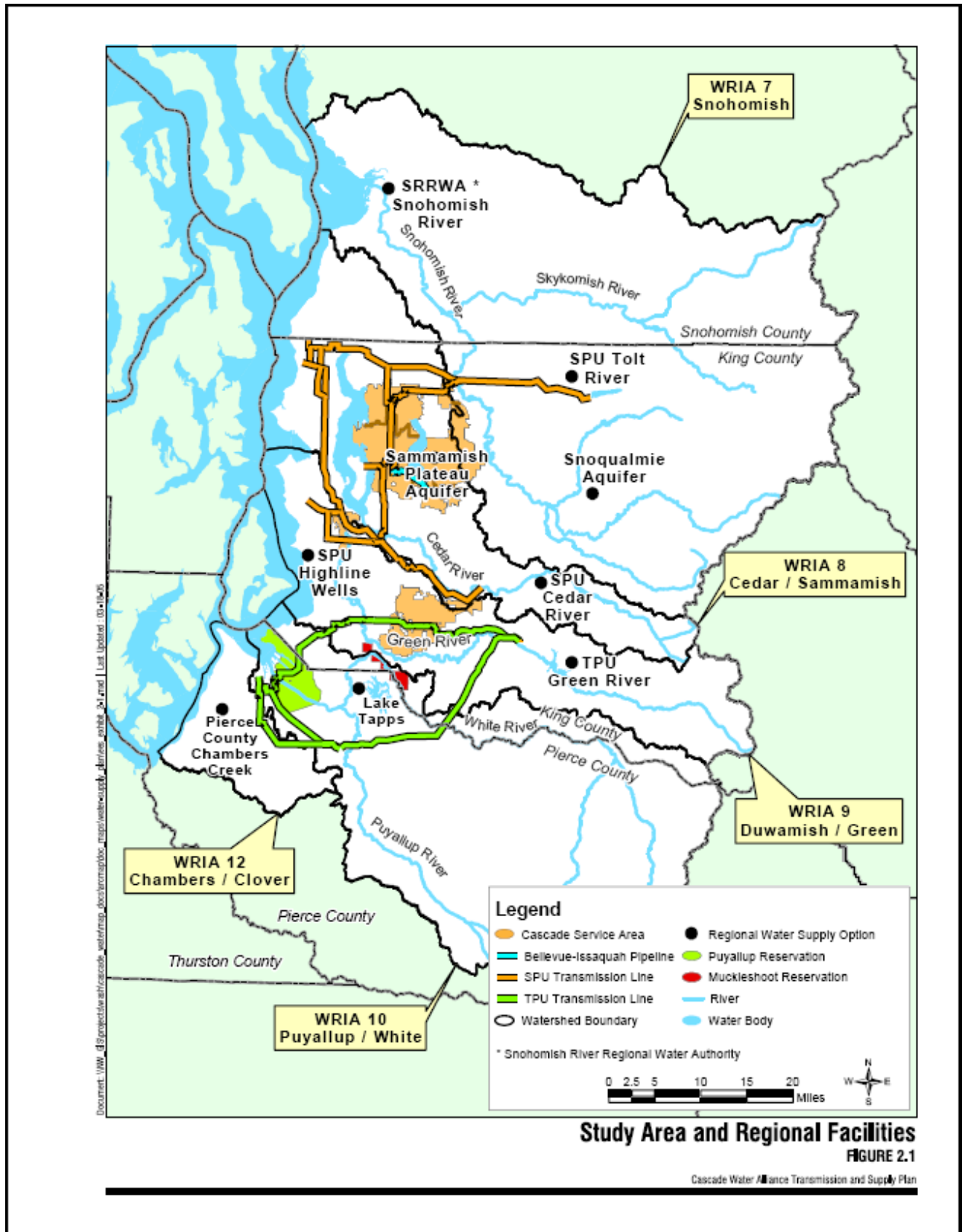
A contract between Cascade and SPU for the sale and purchase of potable water was signed in 2003 with an effective date of January 1, 2004. Under the "50-Year Declining Block Water Supply Agreement between Seattle and the Cascade Water Alliance," SPU is obligated to provide potable water (and Cascade is obligated to purchase it) through December 31, 2053. The quantity through year 2023 is 30.3 MGD on an average annual day basis. Water in excess of the amounts listed in the contract may be supplied by SPU at a surcharged rate. However, SPU does have the option to refuse Cascade's request for additional supply.

Wholesale Contract with TPU

Cascade and TPU have signed an agreement regarding purchase of water. This arrangement includes a permanent block of supply of 4 MGD (average) and 5.4 MGD peak, as well as an additional interim supply of 11 MGD average and 14.9 MGD (peak). The interim supply would last through year 2025.

TPU anticipates final completion of its TSSP in 2008. Cascade has identified in its TSP, and will develop, long-term transmission alternatives to convey the pending contracted water supply from TPU throughout the Cascade water service area. The initial stage of transmission infrastructure is also scheduled to come online in 2008.

Figure 2.2 Study Area and Regional Facilities (Figure 2.1 from TSP)



Purchase of Water from Second Supply Partners

Covington is one of the partners in the TSSP and has access to approximately 18.5 MGD on a seasonal basis. Cascade's TSP anticipates receiving additional TSSP supply over the 20-year planning period through a separate agreement with Covington. It is possible that similar agreements could also be developed with the other two TSSP partners (Kent and Lakehaven Utility District).

Reclaimed Water

King County Metro has developed capacity for producing reclaimed water that could be made available for non-potable uses. Cascade's TSP anticipates the use of reclaimed water where it is cost effective and appropriate as an alternative source for existing and future water utility customers. Tukwila currently receives reclaimed water from Metro's Renton Wastewater Treatment Plant and uses it for irrigating athletic fields. There is potential for Tukwila to receive additional reclaimed water in the future. There is also potential for development of satellite treatment plants to produce additional supplies of reclaimed water for use in other Member service areas. Use of reclaimed water can offset demand for potable supplies, particularly during the summer peak season.

Conservation Program

Water conservation is viewed as an essential part of Cascade's overall strategy. Cascade regional activities are intended to supplement and complement, not fully replace individual Member conservation programs. On May 26, 2004, the Board approved the Transition Water Conservation Program. The Transition Program includes: 1) public education, communications and promotions; 2) incentive (rebate) programs; 3) technical assistance (audits); and 4) monitoring and evaluation.

Lake Tapps Reservoir

Puget Sound Energy (PSE) and Cascade are jointly pursuing the issuance of water rights to allow development of the Lake Tapps Reservoir as a public water supply. A permit granted to PSE by the Washington Department of Ecology (Ecology) on June 30, 2003 was appealed and remanded back to Ecology by the Pollution Control Hearings Board (PCHB) in July 2004. The water rights are expected to be issued in 2006.

Cascade and PSE recently reached agreement on the terms under which Cascade will acquire the water rights and other assets needed to put water rights to beneficial use following final issuance of permits. Cascade has agreed to purchase the lake bed, certain lands adjacent to the lake, and the hydroelectric and canal infrastructure associated with Lake Tapps. The agreement between Cascade and PSE also addresses purchase of the water right, once it is approved by Ecology. The terms of the proposed water rights would allow use of up to 65 MGD on an average annual basis after the construction of the necessary water supply infrastructure. The TSP anticipates that the Lake Tapps Reservoir will not be needed until after 2024. However, this will depend on variables such as actual population growth, expansion of Cascade Membership, the ability to effectively and economically utilize reclaimed wastewater, effectiveness of conservation measures, and continued availability of Cascade Members' independent sources of supply.

Other Regional Water Sources.

Other source options identified in the TSP include purchasing additional water from SPU, TPU, other regional sources such as Snohomish River Regional Water Association, and development or partnership in new regional supplies.

Interties

Interties between water systems are an effective way to maximize the available water resources, safeguard against emergency disruptions or drought, improve water system management, and decrease operational and development costs. Numerous interties between Members and adjacent

purveyors allow movement of water from utility to utility. The interties allow Cascade greater flexibility and reliability in supplying water throughout the service area during emergency and non-emergency conditions.

Existing Facilities

Cascade currently owns a portion of the 24-inch diameter Bellevue-Issaquah pipeline (BIP), acquired recently from Issaquah through Port Blakeley. The purchase of the water main took place in December 2004. Cascade's currently owns the eastern portion of this pipeline, and will negotiate with Bellevue for acquisition of the remaining western portion of the pipeline.

Property Acquisition, Ownership and Disposition

Article V of the Interlocal identifies the powers available to Cascade for acquiring assets. Cascade may construct, purchase, rent, lease, manage, contract for or otherwise acquire and dispose of Water Supply and other assets. Cascade may control and manage both the assets owned by Cascade and those owned by Members that have transferred control of their respective assets to Cascade. This agreement does not give Cascade authority with respect to the assets retained by any individual Member.

Subject to Cascade's agreement, a Member may transfer to Cascade its title to, or operational control and management of water supply and regional transmission assets. Water supply assets may also be fully retained by Members as Independent Supply, subject to the provisions of Article VI of the Interlocal. At the discretion of the Board, Cascade may accept title to, or operational control and management of water supply assets offered by Members, or may accept supply assets that constitute all or part of a Member's Satellite System(s). The Board may accept supply assets subject to the terms and conditions arranged between Cascade and the Member(s), based on the result of the audit process and mutual needs.

Members shall not be deemed to hold legal ownership rights in any water supply asset owned by Cascade, whether that water supply asset has been developed by, purchased by, or transferred to Cascade, and regardless of the accounting treatment of Regional Capital Facilities Charges (RCFC) payments and other payments made to Cascade.

Infrastructure Utilized by Cascade

At this time, Cascade Members receive water from infrastructure owned and operated by SPU. This infrastructure includes reservoirs, transmission mains, water treatment facilities, meters, and related facilities. Water is supplied to Cascade through wholesale meters located in Bellevue, Redmond, Kirkland, Tukwila, and Skyway. Issaquah, Sammamish Plateau, and Covington do not currently receive supply from the SPU Block Contract; instead, localized supply is provided to their respective distribution systems from their independent groundwater supplies and local wholesale contracts.

3.0 - Water Supply Strategy

This section describes Cascade's overall water supply strategy for the next 20 years. It includes information on how various supply sources will be combined over the 20-year time frame, as well as plans for the period from 2024 to 2050.

Overview of Water Supply Strategy

Cascade will utilize a combination of local and regional water sources to provide water to its Members. In the context of the 20-year planning horizon for the TSP, these sources include:

- Groundwater sources owned by individual Cascade Members;
- Water purchased on a wholesale basis from Seattle Public Utilities (SPU);

- Water purchased under a contract with TPU from TSSP;
- Water purchased separately from Covington under its share as one of the four TSSP Partners;
- Reclaimed water from King County Metro and/or other sources;
- Additional supplies as needed, which could potentially include additional water purchased from SPU and/or TPU in excess of the amounts supplied under the contracts listed above; water purchased separately from other partners in TSSP; or water purchased from other water systems with surplus supply in King, Pierce or Snohomish Counties.

In addition, demand management through Cascade’s water conservation program will remain a vital element in Cascade’s water resource management program.

Cascade intends to build transmission and storage facilities to utilize these local and regional sources to meet Members’ water supply needs. Descriptions of these facilities are provided in Section 4.

Based on the demand forecast presented in the TSP, it is clear that additional supplies will be needed after 2024. Cascade believes it prudent to plan long in advance for regional-scale water supply sources to meet this need. Several options are potentially available. Cascade’s preferred option is development of the Lake Tapps Reservoir in Pierce County as a long-term source of municipal water supply. Cascade has negotiated with Puget Sound Energy (PSE) to purchase water rights and facilities at Lake Tapps for this purpose.

Cascade will continue to work toward development of the Lake Tapps source. In addition to further action on the water right, this will include permitting and environmental review for necessary capital improvements, assessment of engineering considerations for infrastructure development, financial planning, and other steps as needed.

In order to ensure a robust resource strategy, Cascade will continue to evaluate parallel supply alternatives besides Lake Tapps. There are several supplies that could potentially be developed. Pierce County holds a water right in the Chambers Creek area and Cascade has discussed potential use of this source with the County. The Snohomish River Regional Water Authority, a partnership of Everett, Woodinville Water District, and Northshore Utility District, has water rights in the lower Snohomish River that could be developed for regional water supply purposes. Development of groundwater resources from the Snoqualmie Aquifer has been explored by the East King County Regional Water Association. Cascade will continue to work toward ensuring that appropriate supplies are in place for long-term needs, and to obtain all necessary approvals from local, state, and federal agencies.

The suite of water sources currently identified for both the 20-year planning period and the long term is presented in Table 3.1 (annual average day basis) and Table 3.2 (maximum week basis). In addition,

Figure 3.1 and Figure 3.2 show how existing and planned supplies compare with projected demands from the TSP.

Table 3.1 Mix of Supply Resources – Average Day Basis

	Cascade's Average Day Supply (MGD)				
	2004	2009	2023	2024	2050
Supplies					
Member-owned groundwater (Actual production capacity)	13.50	14.58	14.72	14.72	14.72
Covington contract with TPU	--	--	5.28	5.28	5.28
Other Local Contracts	0.18	0.21	--	--	--
SPU Block Contract	30.30	30.30	30.30	25.30	5.30
TPU Contract (Interim)	--	--	11.00	11.00	--
TPU Contract, (Permanent)	--	--	4.00	4.00	4.00
Lake Tapps - Full Water Right	--	--	--	32.50	64.60
Lake Tapps - Source Exchange ^f	--	--	--	(4.90)	(9.80)
Reclaimed water	0.01	0.01	0.47	0.89	0.89
Other Supplies (Add'l purchases, or Supplies TBD)	0.00	20.28	0.00	0.00	0.00
Total Supplies	43.98	65.38	65.78	88.79	84.99

Table 3.2 Mix of Supply Resources – Maximum Week Basis

	Cascade's Maximum Week Supply (MGD)				
	2004	2009	2023	2024	2050
Supplies					
Member-owned groundwater (Actual production capacity)	27.64	28.09	28.09	28.09	28.09
Covington's contract with TPU	0.99	1.99	18.47	18.47	18.47
Other Local Contracts	1.30	1.30	--	--	--
SPU Block Contract	56.27	56.27	56.27	46.99	9.84
TPU Contract (Interim)	--	--	14.90	14.90	--
TPU Contract, (Permanent)	--	--	5.40	5.40	5.40
Lake Tapps - Full Water Right	--	--	--	50.00	96.95
Lake Tapps - Source Exchange	--	--	--	(8.00)	(16.00)
Reclaimed water	0.02	0.02	1.42	2.67	2.67
Other Supplies (Add'l purchases, or Supplies TBD)	0.00	36.78	0.00	0.00	0.00
Total Supplies	86.22	124.45	124.55	158.51	145.42

Figure 3.1 Average Daily Demand (ADD) and Supply (Figure ES-1 from TSP)

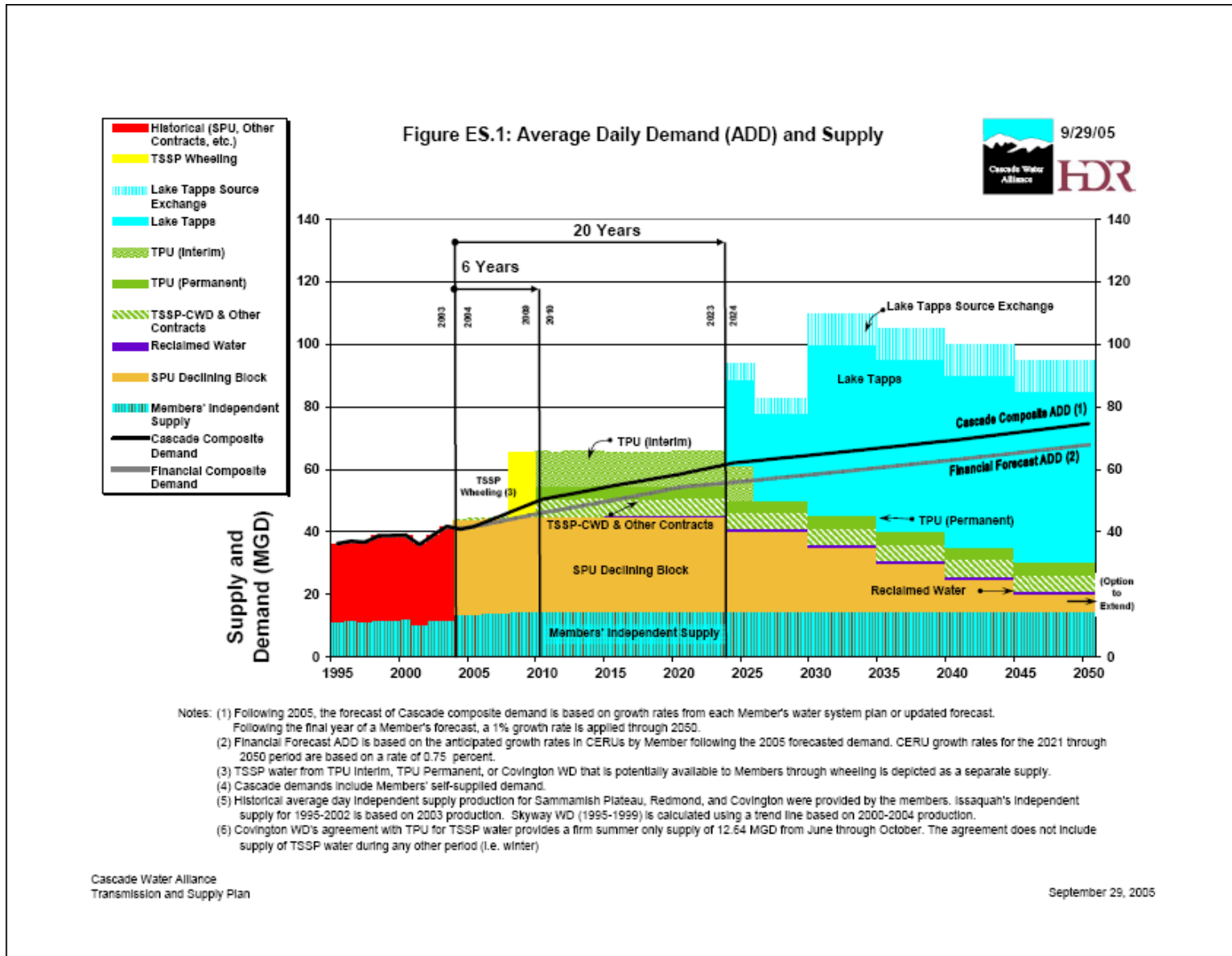
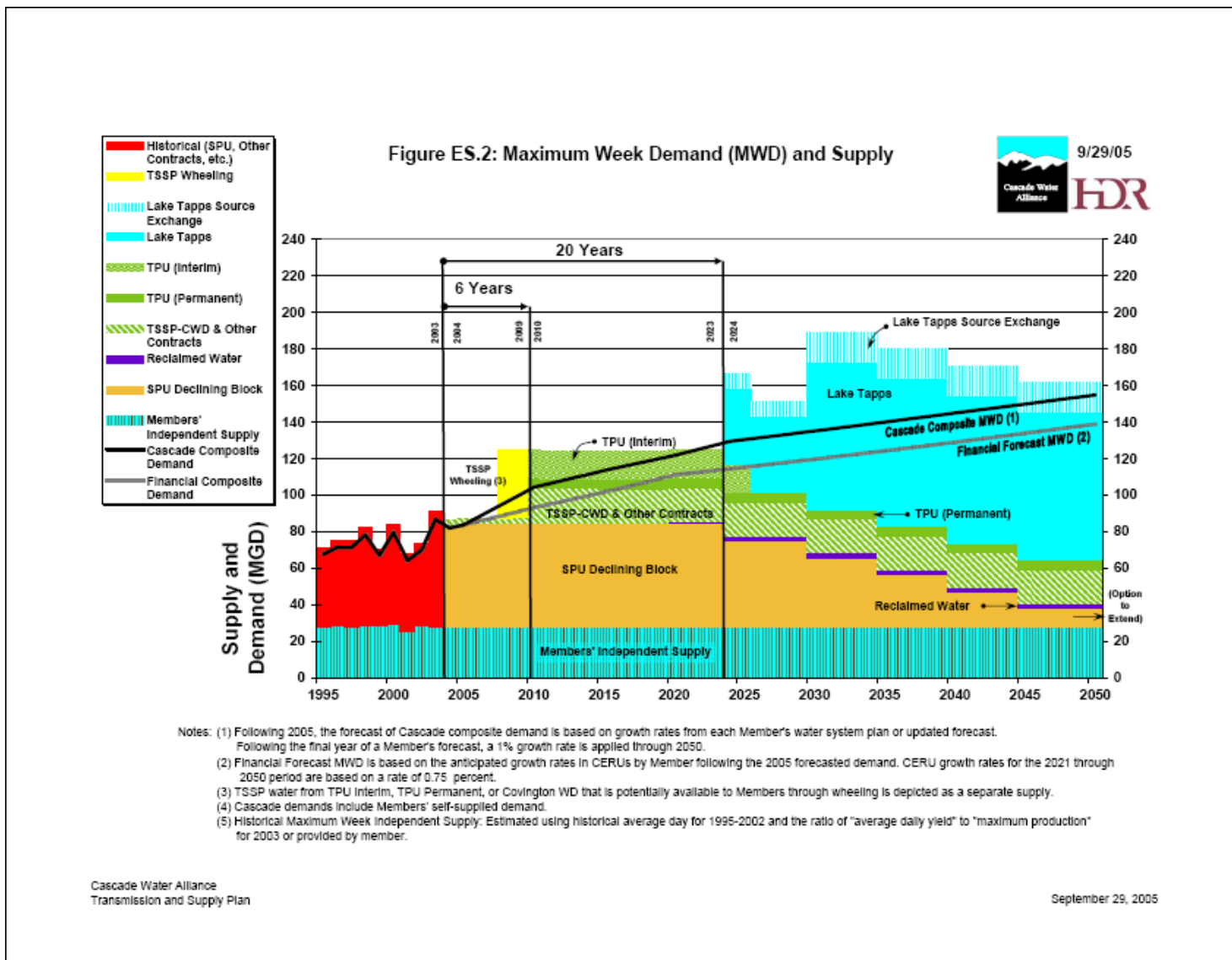


Figure 3.2 Maximum Week Demand (MWD) and Supply (Figure ES-2 from TSP)



Assumptions built into these figures and tables include:

- The timeline for capital improvements is as presented in the Capital Improvements Program.
- Satisfactory conclusion of a wheeling agreement between Cascade and SPU, beginning in 2008, to deliver TPU water. Alternatively additional water purchased from SPU could substitute for wheeling of TPU water.
- Cascade can vary allocations of SPU water to its Members as Cascade infrastructure is developed over the years.
- The Lake Tapps source of supply is developed for long term needs. In the event an alternative source is ultimately developed, it will need to provide quantities of water comparable to those shown for Lake Tapps.
- Member-owned groundwater (i.e. independent supplies) is consistent with the discussion in the TSP.
- Member wholesale contracts remain in place at the supply levels currently available.
- Within the six-year planning period modeling indicates that not all members need to fully utilize groundwater or Member wholesale contract supplies to satisfy demand. Excess supply from local sources cannot be delivered to other members; therefore the tables show only that portion of local supply utilized by the respective Members.

For additional information regarding local sources owned by Cascade Members, regional supplies from contracts with SPU and TPU and Lake Tapps refer to the TSP.

4.0 - System Analysis, Infrastructure Needs, and Capital Improvement Program

This Section outlines Cascade's plans for developing a regional water transmission and supply infrastructure system to meet the needs of its Members. The overall strategy for utilizing available sources of supply is described in Section 2 and Section 3. Figure 4.1 presents the features discussed in this section.

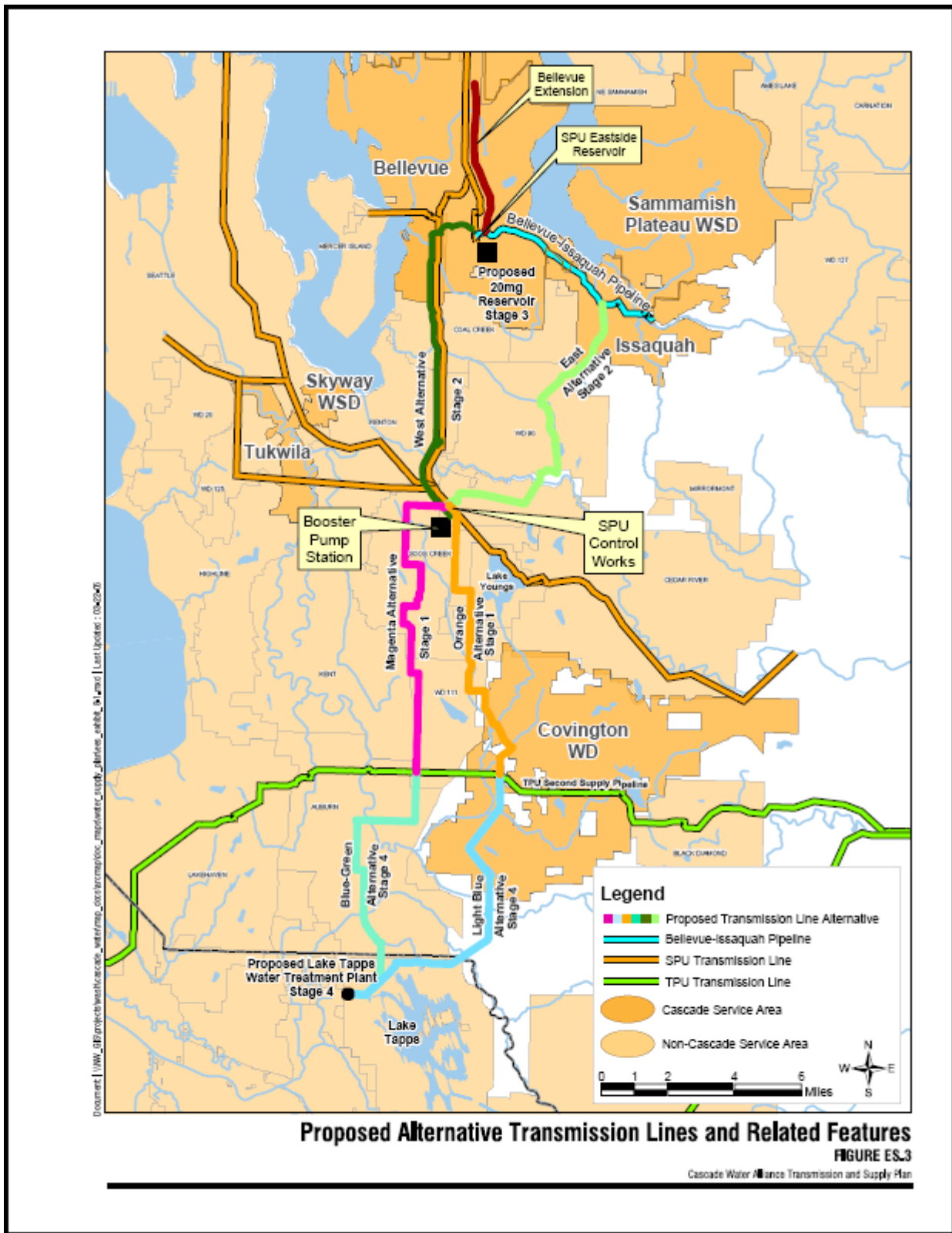
The initial driver for capital improvements is the need to deliver water purchased from the TPU to Cascade Members. Major regional transmission projects are needed for this purpose.

In the long term, Cascade intends to develop Lake Tapps as a source of supply. The TSP and this Financial Plan anticipate that supply from Lake Tapps will not be required prior to 2024. The configuration of transmission infrastructure needed to deliver TPU water is best understood in the context of anticipated capital projects needed later for Lake Tapps. In order for Lake Tapps to be brought online in 2024, the required treatment and transmission infrastructure must be planned, permitted and constructed prior to that time.

Background and Basis for Prioritizing Projects

The order and timing for developing infrastructure elements is based on providing water to Member utilities in the most efficient and expeditious manner possible. Cascade has negotiated contracts with SPU and TPU for supplying water to its Members. SPU's water is being delivered to Member utilities through existing infrastructure. TPU's water is available from the TSSP, which at present can be delivered only to Covington through existing interties off the TSSP pipeline. To deliver TPU water to the other Cascade Members will require construction of additional facilities.

Figure 4.1 Proposed Alternative Transmission Lines and Related Features (Figure ES-3 from TSP)



Cascade is attempting to negotiate a wheeling agreement with SPU so that water purchased from TPU can be delivered to the SPU system at or near its Control Works northwest of Lake Youngs and then wheeled by SPU through existing infrastructure to Cascade Members. Facilities are scheduled in order to provide transmission pipelines from the TSSP to Cascade, both with and without the possibility of an initial connection to SPU that allows for wheeling.

These facilities will connect to the existing Bellevue-Issaquah Pipeline (BIP), which now connects the Bellevue and Issaquah systems with an intertie to Sammamish Plateau.

Cascade is currently developing alternatives to wheeling in the event that a satisfactory wheeling agreement cannot be negotiated. In general, the facilities identified in this section will not change if wheeling is unavailable. However, the timing of construction will change.

Completion of the transmission connection to the BIP will allow Cascade to deliver TPU water to the Bellevue, Issaquah, and Sammamish Plateau systems. It is anticipated that a regional storage facility will be constructed near the connection of the new transmission pipeline to the BIP to provide a measure of redundancy and to meet short-term demands in excess of the capacity of the transmission line. Required storage volume will be based on the difference between Maximum Day Demands (MDD) and Maximum Week Demand (MWD).

For longer term planning, Cascade intends to purchase the Lake Tapps Reservoir Water Right from PSE and put it to beneficial use as municipal supply. This will require construction of a water treatment plant, pump stations, and additional transmission pipeline to get water from Lake Tapps to Cascade Members. Based on previous discussions with SPU, it is assumed that SPU's current position of not accepting fully treated Lake Tapps water into the SPU system will preclude the possibility of wheeling Lake Tapps water through SPU's transmission system. Assuming that SPU does not alter its current stance, this means Cascade must own and operate its own transmission facilities as needed to deliver Lake Tapps water directly to its Members. At this time, Cascade plans to first deliver Lake Tapps water to Bellevue, Issaquah, and the Sammamish Plateau Water and Sewer District. This will be followed by delivery to Kirkland and Redmond as demand increases and the amount of water purchased from SPU decreases.

It is Cascade's intent that water be delivered to its members at or near existing and planned supply connection locations. This means that individual members will not have to modify their own distribution systems just to receive water supplied by Cascade. This also means that additional Cascade-built transmission pipelines will be required in order to get Lake Tapps water to these members. Pump stations may also be needed.

Existing Facilities

Cascade currently owns the eastern portion of the Bellevue-Issaquah Pipeline (BIP) that runs from the Bellevue water system near SPU's Eastside Reservoir to Issaquah. Cascade plans to acquire the remaining, western portion of the pipeline from Bellevue in the near future. The BIP is a 24-inch diameter ductile iron pipeline with an estimated capacity of 12 MGD.

Cascade is currently negotiating with PSE for the purchase of its White River Project (Lake Tapps). The project includes:

- An intake on the White River, a canal pipeline, flow-way, fish screens, and bypass to Lake Tapps;
- The Lake Tapps dams and dikes;
- The lake intake, tunnel, forebay, and penstocks off Lake Tapps; and
- Structures that return water from Lake Tapps to the White River at the downstream end of the system.

Proposed Facilities

Cascade is now conducting a study to determine the sizing and routing of the proposed transmission pipelines. The results of this study will determine the pipe diameters and potential routes for different segments of the transmission system. The following facilities have been identified based on current information, and form the basis for the Capital Improvement Program (CIP) and financial program described in this Finance Plan and the TSP:

- The Central Segment pipeline of the Regional Water Supply System between TSSP and the vicinity of SPU's Control Works,
- The North Segment pipeline of the Regional Water Supply System connecting the Central Segment to the existing Bellevue-Issaquah Pipeline (BIP),
- A regional storage reservoir with 20 million gallons of storage capacity,
- Phase 1 of the Lake Tapps Water Treatment Plant,
- The South Segment pipeline of the Regional Water Supply System and a booster pump station,
- If needed, a pipeline parallel to the BIP, and
- A portion of a Bellevue-Kirkland-Redmond Extension pipeline, initially reaching northern Bellevue.

Cost ranges are presented in Table 4.1. These facilities are shown in Figure 4.1.

Table 4.1 Cascade Regional Water Supply System

Phase / Project	Projected Online Date ¹	Cost Range ²	
Transmission Line – Central Segment-1	2008	\$57,000,000	\$76,000,000
Transmission Line – North Segment-West	2010	\$65,000,000	\$87,000,000
BIP Parallel Line	2021	\$14,000,000	\$21,000,000
Reservoir - 20 million gallons	2021	\$20,000,000	\$22,000,000
Lake Tapps Water Right Acquisition	2024	\$37,000,000	\$37,000,000
Phase 1 Lake Tapps Treatment Plant	2024	\$110,000,000	\$130,000,000
Transmission Line – South Segment	2024	\$65,000,000	\$70,000,000
Booster Pump Station	2024	\$20,000,000	\$22,000,000
Bellevue-Kirkland-Redmond extension – North Bellevue Phase	2019	\$14,000,000	\$16,000,000
Total CIP Costs to 2024		\$402,000,000	\$481,000,000

Notes:

1. Dates shown are for a non-wheeling scenario for one alternative and option. Other scenarios, options, and alternatives may have different dates for specific activities.
2. Costs are presented in 2004 dollars. Where applicable, costs were inflated to 2004 dollars using the *Engineering News and Review* Construction Cost Index.

Regional Transmission System and Lake Tapps Water Supply Project

The various stages of the regional transmission system will be constructed to accommodate flows from the TPU and eventually Lake Tapps. Cascade is now conducting a transmission system routing study to determine the sizing and routing of the proposed transmission pipelines. The results of this routing study will determine the pipe diameters and potential routes for the different segments of the transmission system.

At this time, three options for the transmission system are being considered, which will be developed in stages. The following paragraphs describe the options and stages as they are currently planned. The schedule for development will depend on the configuration and route ultimately selected and on whether or not Cascade and SPU reach an agreement on wheeling.

The proposed features and the alternatives shown on are described below.

Stage 1 – Central Segment of Regional Transmission Line

Assuming a wheeling agreement can be reached, construction of a water transmission line between the TSSP and SPU's Control Works will allow Cascade to receive water from the TSSP, deliver it to the SPU Cedar River transmission system, and wheel the water to Cascade Members already connected to SPU's system. This project is now in the planning and permitting phase. As soon as a route is selected, design will proceed. Construction is scheduled to start in 2006, with the line becoming operational in 2008.

The size and number of pipelines are still under study. Three options are presently being considered. One has two equal-sized lines; a second has a single line; and the third has two unequally-sized lines. The total capacity of each option is about 110 MGD, which will allow delivery of the entire peak supply from Lake Tapps plus 13 MGD from the TSSP, either as a direct purchase or as part of the Covington contracted supply from TPU.

The Central Segment will run primarily north and south along existing road or electrical transmission rights-of-way. The segment will be approximately 10 miles long, depending on the final route selected. If a dual pipe system with equal-sized pipes is used, the first pipe installed would be 54-inch diameter buried steel pipe, which could deliver about 60 MGD. If a single pipe system is used, the pipe would be 72-inches in diameter. If two unequal pipes are used, an initial 66-inch diameter pipe would be installed, with later installation of a 36-inch diameter pipe to handle the entire available flow from both Lake Tapps and TPU.

For cost estimating purposes, two general routes have been identified for the segment as follows:

- **Orange Route** – This route connects to the TSSP at the existing 36-inch diameter outlet near the Kent Black Diamond Road and runs generally north and west along existing roads to the SPU Control works. The route is 9.8 miles long.
- **Magenta Route** – This route connects to the TSSP at a new outlet on 124th Avenue SE and runs north and east to the SPU Control Works. The route is 10.7 miles long.

Plans for the Central Segment include a possible turn-out into the Covington service area. One or more additional turn-outs may be built depending on the final transmission pipeline route selected, the timing and location of actual demands that develop within Covington's service area, and other detailed factors.

Stage 2 – North Segment of Regional Transmission Line

Construction of a water transmission line from the end of the Central Segment to the BIP will allow Cascade to deliver water to portions of the Bellevue, Issaquah and Sammamish Plateau systems without wheeling. Thus, Cascade is working on the planning and permitting of this segment concurrently with the work on the Central Segment. Construction is scheduled to start immediately after completion of the Central Segment, and the line is scheduled to be in operation in 2010. The Central and North Segments will operate together to deliver water from the TSSP to the BIP.

The size and location of the North Segment is also under study. This will also be coordinated with the BIP and a potential new line parallel to the BIP. Based on the demand forecasts for the various Members and the projected operation of the overall system, the need for water will be greater at the Bellevue end of the BIP than at the Issaquah and Sammamish Plateau end. Thus, if only a single pipeline is to be installed, it will need to connect to the west (Bellevue) end of the BIP. If two

equal-sized pipelines are to be installed, one will connect to the west end and the other to the east (Issaquah) end of the BIP. If two unequal-sized lines are to be installed, they will be sized so that the demand at each end can be met without adding capacity to the BIP. Based on the projected demands and the available capacity from Lake Tapps and TPU, this would require a 66-inch diameter line to the west end and a 36-inch diameter line to the east end.

There are currently two general routes being considered for the north segment as follows:

- **West (Dark Green) Route** – This route connects to the Central Segment at the SPU Control Works and follows the general route of SPU's Cedar River Eastside Supply Line (CESSL) to connect with the BIP at its west end. The total length of this route is 9.8 miles.
- **East (Light Green) Route** – This route goes east and then north from the Control Works along existing and new rights-of-way to connect with the eastern part of the BIP at Newport Way NW. This route is 10.4 miles long.

Stage 3 - Regional Storage Reservoir

Regional storage is included in the Cascade transmission system. Regional storage can provide a continuous supply of water when maximum day demands in the peak use season exceed the hydraulic capacity of the transmission pipeline system. A reservoir with an approximate 20 million gallon capacity has been sized for the Cascade Regional Supply System. A total of 20 million gallons of storage is needed by around 2021.

Bellevue - Issaquah Pipeline

The BIP transfers water between Issaquah and Sammamish Plateau and Bellevue roughly parallel to but a distance off the Interstate Highway 90 right-of-way. The capacity requirements for the BIP are dependent on the location of the northern terminus of the Northern Segment pipeline of the Regional Water Supply System. The BIP will be used to transfer water from the connection point to Cascade Member(s) at the other end of the line. Depending on the transmission option selected, there may be a need to increase the capacity of the BIP by adding a parallel line. If a parallel BIP is ultimately needed, it will most likely be located north of Interstate 90, as opposed to being on the south side where the present BIP is located. The following describe these possibilities:

- If a single transmission line is installed to the west end, there will need to be a parallel 24-inch diameter line installed to supply the future demands of Issaquah and Sammamish Plateau.
- If two equal-sized transmission lines are installed to the two ends, a parallel 36-inch diameter line will be required to carry water from the east end to the west end to meet the projected demands in Bellevue, Kirkland, and Redmond.
- If two unequal-sized transmission lines are installed, they can be sized so that no additional capacity will be required in the BIP.

Bellevue-Kirkland-Redmond Extension

As the portion of the total demand being served through the transmission system increases, there will be a need for pipelines extending north of the western end of the BIP to serve the demand in northern Bellevue, Kirkland, and Redmond that is now served by SPU off its Eastside Supply Line or Tolt Pipeline. Based on current forecasts for demand and supply, the first portion of these extensions would be required in 2019 to meet demands in central and northern Bellevue. Extensions into Kirkland and Redmond would not be required until 2030 and 2035, respectively.

For purposes of this document and providing costs for the CIP, a phased approach to providing connections has been assumed. The first phase would include a 36-inch diameter pipeline extending approximately three miles north to connect with the Bellevue system at or near its existing feeds from SPU. The second phase would be a five-mile long 42-inch diameter pipe

connecting the west end of the BIP to the Kirkland and Redmond systems and a two-mile long 24-inch diameter line to the SPU feeds to the Kirkland system. The third and final phase would be a three mile long 36-inch diameter line to the SPU feeds to the Redmond system. All these lines will be optimized in future planning and design work.

Stage 4 – Initial Lake Tapps Development and South Segment Transmission Line

In 2024, when the SPU Block Contract starts to decline, Cascade will need to bring new supplies online to meet projected demands. Cascade anticipates developing Lake Tapps as a water supply source for this purpose. The initial development of the Lake Tapps water right will include a water treatment plant, pump stations, and the south segment of the transmission line. These features are all considered part of “Stage 4” of Cascade’s regional supply system.

In order to provide for Lake Tapps coming online in 2024, permitting and design of the Lake Tapps Treatment Plant and the related facilities should begin in approximately 2019. Construction would then begin in 2022 with completion in 2024. These assumptions are used in Cascade’s CIP.

For purposes of preparing the CIP, it is assumed that development of the Lake Tapps water right will take place in two phases with equal flows. How the development will actually be phased will depend on future demand and forecasts developed closer to the time when the project will be designed and constructed. It is assumed that the following features will be included in the first phase:

- **Connection to Forebay and Raw Water Pipeline to WTP** - A connection to the existing penstock forebay structure will be made and a control gate will be installed. A steel pipeline will run north to the water treatment plant to convey raw water to the plant and will be sized for the ultimate plant capacity of 97 MGD.
- **Water Treatment Plant** – At this time, plans include locating the proposed treatment plant north of the existing penstock at an elevation of about 475 feet. The plant will include screens, flocculation, membrane filtration, activated carbon beds, disinfection, and fluoridation, if required. In addition, there will be backwash pumps and piping, a washwater recovery separator, and a solids dewatering system. The plant will be initially sized for 32.5 MGD average and 50 MGD peak flow with potential for expansion to 65 MGD average and 97 MGD peak.
- **Clearwell** - Finished water will be delivered to a clearwell at the north end of the site.
- **Finished Water Pump Station** - Water from the clearwell will be pumped into the south segment of the transmission line, which will connect with the central and northern segments built earlier and described above. The pump station will include four vertical turbine pumps capable of pumping water to north of Lake Youngs.

South Segment of Transmission Pipeline

- The South Segment transmission line will be constructed to convey water from the Lake Tapps treatment plant to the previously constructed Central Segment transmission line. Because the full capacity of Lake Tapps will be required within a short time, a single 66-inch diameter line that would handle the ultimate capacity of the plant will be installed for all three options. Two routes from the proposed location of the water treatment plant to the TSSP have been identified. Both routes start at the finished water pump station and go east along PSE land to the west shore of Lake Tapps.
 - The Blue-Green route runs north through Auburn before turning east across the Green River and then north to connect with the Central Segment at the TSSP as shown on Figure 4.1. This route is 9.6 miles long.
 - The Light Blue route follows a generally northeast route around the north shore of Lake Tapps, across the White River, the Auburn-Enumclaw Road and the Green River to the start of the Orange Route at the TSSP, as shown on Figure 4.1. This route is 10.4 miles long.

- **Booster Pump Station** - Due to the elevation of the proposed treatment plant and the desire to minimize the size of individual pumps and pressures in the transmission pipelines, a second booster pump station will be required in the vicinity of the Lake Youngs control works. This pump station will boost pressures so that water can be delivered at the required pressure in the BIP.

Capital Improvement Program

This section describes the Cascade's 20-year CIP. Table 4.1 lists the projects and schedule of improvements, together with costs in 2004 dollars. The ranges of costs reflect the differences between options. The dates shown for each project or phase are for one alternative and one option of the non-wheeling scenario. Other options and alternatives as well as wheeling may result in different dates. Development of the CIP was informed by modeling conducted during development of this TSP.

Additional information is presented below:

Stage 1 – Central Segment of Regional Transmission Line - For estimating cost of the Central Segment, two general routes were identified. Costs for installing the different-sized pipe along each route were estimated. The estimated costs for the two routes are similar (less than 5 percent difference). An average of the costs for the two routes is shown for each Option.

Stage 2 – North Segment of Regional Transmission Line - For estimating cost of the Northern Segment, two general routes were identified. Costs for installing the different-sized pipe along each route were estimated. Since the end point of the route is important, the estimated cost for the appropriate route and pipe size is shown for each Option.

Bellevue-Issaquah Pipeline - The opinion of cost for additional capacity in the BIP is based on a parallel pipeline in the same road right-of-way as the existing pipe. Depending on the option and scenario, the additional capacity may not be required until after the planning period considered in this plan.

Bellevue-Kirkland-Redmond Extension - The estimate of cost for the initial phase of the BKR Extension is based on a single line to the northern-most Bellevue connection to SPU. The second and third phases of the BKR are not shown in the CIP because they will not be needed until after the planning period considered.

Stage 3 – Regional Storage Reservoir - The estimate of cost for the regional storage reservoir includes general industry estimates for large reservoirs, costs for site development, and pipelines connecting the reservoir to the transmission system.

Lake Tapps Water Right - Cost reflects purchase of Lake Tapps water rights and associated assets and facilities from PSE.

Stage 4 – Initial Lake Tapps Development: An estimate of cost is presented for the first phase of the Lake Tapps water treatment plant, pump stations, and the south segment of the transmission line.

South Segment of Regional Transmission Line: The estimate of cost for the South Segment is based on the average of the estimated costs for the two routes identified.

5.0 - Financial Program

Capital Funding Strategy

Table 5.1 shows a possible capital funding strategy for the capital projects in the TSP over the next 6 years. Costs are shown for two options that are under consideration in the pipeline routing study, bracketing a range from the low end to the high end of estimated costs; however, the actual mix of funding sources depends upon Board decisions that will be influenced by factors such as

capital funds available from rates or regional capital facilities charges, the availability of grants and loans, the status of Cascade’s reserves, and the condition of the bond market.

Table 5.1 shows the capital funding strategy anticipated for the capital projects laid out in this Finance Plan over the next 6 years:

Table 5.1 Capital Funding Strategy - 2004-2009 (Millions of Dollars)		
	Option IA	Option IIA
Capital Costs		
Capital Project Costs (2004-2009) ¹	\$186.6	\$231.0
SPWSD Loan Payment ²	10.0	10.0
Total Capital Costs	\$196.6	\$241.0
Capital Funding (2004-2009)		
RCFCs	\$ 53.9	\$ 58.2
Use of Reserves	6.3	6.7
SPWSD Loan	10.0	10.0
Revenue Bonds	126.4	166.0
Total Funding	\$196.6	\$241.0

1. Adjusted for construction cost inflation (assumed to be three percent per year).

2. This loan was used to execute the purchase of the Bellevue-Issaquah Pipeline, which occurred in late 2004.

A number of critical assumptions underlie the capital funding strategy shown in Table 5.1. The most important of these assumptions are listed here:

- The RCFC is set to \$2,222 per CERU in 2005 and \$4,648 per CERU in 2006. Beginning in 2007, the RCFC is adjusted for inflation annually because the RCFC basis consists of non-inflated costs. This remains consistent with Cascade’s “growth pays for growth” policy.
- Depreciation is funded through Member Charges as the greater of:
 - Full cost less principal paid on debt service
 - 0.5 percent of total asset value
- Because capital costs that are not covered by RCFCs and related reserves make their way into the Demand Share cost basis, an appropriate program of Demand Share Charge adjustments accompanies the funding strategy.

The initial capital program outlined in Table 5.1 shows reliance on debt for roughly 65% of the capital program, with RCFCs the primary source of remaining funding. The debt service cost associated with this strategy will require roughly \$10 million per year in revenues to support repayment, currently planned to derive from Demand Share Charges. This results in roughly a 75% increase in Demand Share Charges.

Alternatively, Cascade could increase its charges sooner to reduce its reliance on borrowing. However, the magnitude of increases needed to materially affect the funding of planned capital projects would be far higher than 75%, and would need to occur more rapidly than under the intended strategy.

Similarly, Cascade could increase its reliance on debt and commit all or some of its RCFC revenues to debt service repayment. A change in policy to increase borrowing and use RCFCs to repay debt could reduce projected rate increases to roughly 50%. However, this would increase estimated borrowing by roughly \$50 million, and by committing RCFCs to repayment continue this trend in the future. Ultimately rates would be higher and financial stability reduced by this alternate

approach. However, due to its potential benefits in mitigating near-term impacts, it remains under consideration.

With either strategy, Cascade is committing all available resources to fulfill the capital program. After these initial investments, Cascade would under the planned strategy be accumulating RCFC funds for future capital needs, maintaining a moderate balance of cash and debt financing of future projects. If RCFCs are committed to repay debt service, future projects would be nearly fully dependent on new debt for financing.

Available Capital Funding Sources

The funding options available to Cascade for capital projects consist primarily of debt funding through a variety of available mechanisms and cash funding through various Member Charges and existing reserves.

State and Federal Capital Funding Sources

Federal and State loan programs are available to local utilities for capital funding assistance. These programs generally do not have adequate funding in relation to the number of applicants received; nonetheless, the benefit of even low-interest loans makes the effort of applying worthwhile. State programs identified as potential funding sources for the utility improvements set forth in this Finance Plan are summarized below.

- **Public Works Trust Fund** - The Public Works Trust Fund (PWTF) is a commonly used, low-cost revolving-loan fund established by the 1985 State Legislature to provide financial assistance to local governments for public works projects. Eligible projects include repair, replacement, rehabilitation, reconstruction, or improvement of eligible public works systems to meet current standards for existing users. With recent revisions to the program, growth-related projects consistent with projected needs over a 20-year planning horizon are now eligible.

PWTF loans are available at interest rates of 0.5 percent, 1 percent, and 2 percent, with the lower interest rates given to applicants who pay a larger share of the total project costs. The loan applicant must pay a minimum of 5 percent toward the project cost to qualify for a 2-percent loan, 10 percent for a 1-percent loan, and 15 percent for a 0.5-percent loan. The useful life of the project determines the loan term up to a maximum of 20 years; the borrowing limit is \$10 million per jurisdiction per biennium.

The applicant must be a local government, such as a city, county, special purpose utility district, or Interlocal agency and have an approved long-term plan for financing its public works needs. Local governments must compete for PWTF dollars since more funds are requested each year than are available. The Public Works Board evaluates each application and transmits a prioritized list of projects to the Legislature. The Legislature then indicates its approval by passing an appropriation from the Public Works Assistance Account to cover the cost of the approved loans. Once the Governor has signed the appropriations bill into law, the local governments receiving the loans are offered a formal loan agreement with the appropriate interest rate and term, as determined by the Public Works Board.

- **Community Economic Revitalization Board** - Managed by the Department of Community Trade and Economic Development, this program provides grants and loans to fund public facilities that result in specific private-sector development. Eligible projects include water, sewer, roads, and bridges.
- **Community Development Block Grant (CDBG) Program** - A federal government program administered by the Department of Housing and Urban Development, the CDBG program provides grants and loans for infrastructure improvements (including water projects) that benefit low/moderate-income communities.

- **Department of Ecology Grants and Loans** - The Department's Water Quality Financial Assistance Program sponsors four grant and loan programs: the Centennial Clean Water Fund, Federal 319 Programs, State Revolving Fund Loans, and the Aquatic Weeds Grant Programs. While most of the funding goes to wastewater programs, projects such as development and implementation of wellhead protection and lake/stream restoration programs are included.
- **Drinking Water State Revolving Fund (DWSRF)** - The U.S. Congress has authorized a limited amount of money for the Drinking Water State Revolving Fund (DWSRF) loan. Administered by the Department of Health, the DWSRF provides funds specifically for programs to improve water quality. Funding for a given project is generally limited to 50 percent and comes as either a grant or low-interest loan (0 percent for up to 5 years, increasing to 4.8 percent for 15 to 20 years).

The PWTF is the most attractive of these programs; however, given the level of competition for these low-cost funds and Cascade's relatively near-term need for financing, the PWTF should not be relied on as a significant source of funding for Cascade's capital needs.

Cascade Capital Funding Sources

In the absence of such subsidized funding sources, Cascade must fund its planned capital expenditures through a combination of RCFC collections, existing reserves, and revenue bond debt. Issuing revenue bonds are an appealing alternative for at least three reasons. First, the majority of the capital costs associated with this plan are intended to serve both existing and future customers. Assuming a long-term revenue bond (20 or more years), debt funding will spread the cost of growth across rates for many years, ultimately ensuring that the new customers pay for a share of the capital costs for the improvements built for them. Second, revenue bonds provide a means of mitigating the near-term impact of these capital costs by spreading costs over the long-term. Finally, revenue bonds can offer tremendous flexibility not found in other debt instruments. For example, a bond issue may be structured to require only interest payments for a number of years with "balloon payments" of principal at specific points in the amortization schedule. This could further reduce immediate rate impacts by allowing Cascade to accumulate RCFCs in anticipation of balloon payments at intervals of five, ten, or twenty years.

Specific sources of funding include:

- **Revenue Bonds** - Revenue bonds are tax-exempt municipal bonds that are secured by the pledged revenues from an enterprise activity. In the case of Cascade's water system improvement projects, revenue from Member Charges provides the dedicated payment stream for these bonds. Revenue bonds are sold in the open securities market; proceeds for the proposed project are generated from the buyers of these bonds.

The Interlocal Cooperation Act (RCW 39.34.210) grants Watershed Management Partnerships the power to issue revenue bonds for certain purposes. Cascade has, through the Interlocal, established itself as a Watershed Management Partnership in order to secure direct access to bond markets. Cascade's Interlocal also provides for "conduit financing" whereby a Member agency may issue debt on Cascade's behalf, secured by the pledge for repayment from Cascade and, indirectly, it's Members.

The interest rate applicable to tax-exempt revenue bonds such as Cascade anticipates issuing; currently stand at around 5 percent for serial bonds with a 30-year term. In addition to financing costs, there can be various issuance costs associated with the sale of revenue bonds, typically paid out of debt proceeds. These costs include professional costs associated with the sale, closing costs, and insurance costs.

It is common practice to establish a set of covenants upon the sale of revenue bonds. Covenants can define a number of policies and security requirements, which may include the following:

- Repayment Terms
- Call Features
- Default
- Maintenance of a Bond Reserve
- Coverage
- ***User Charges as a Capital Funding Source*** - Cascade's Member Charges are the primary source of funding for all Cascade activities. Capital funding can be included in the cost basis to be recovered by Member Charges as either direct cash expenditures or annual debt service payments. The chief advantage of this mechanism is its stability and low cost (no interest expense is required); however, an excessive capital burden in the Member Charge cost basis can cause high near-term rate increases.
- ***Regional Capital Facilities Charges (RCFCs)*** - Cascade imposes Regional Capital Facilities Charges (RCFCs) on Member agencies experiencing growth. The RCFC is a type of connection charge as authorized for cities and special purpose districts in the Revised Code of Washington [RCW 35.92.025 and RCW 57.08.005 (10), respectively]. These connection charges are imposed by Member agencies on new customers connecting to their water systems as a condition of service, in addition to any other costs incurred to connect the customer such as meter installation charges. Typically, the basis for such charges is a combination of past and planned future capital costs related to providing the water system.

The purpose of the RCFC is twofold—it provides a source of funding for capital financing, and it recovers an equitable level of investment in the system from new customers. In the absence of such a right-to-connect charge, growth-related costs would be borne primarily by existing customers; furthermore, the addition of new customers would dilute the net investment in the utility made by current customers. This would, in effect, be a subsidy by existing customers to new customers.