



SUMMARY OF CASCADE'S PAST AND PRESENT WATER SUPPLY MANAGEMENT

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CASCADE'S PAST

Cascade's First Decade: Securing Water Supply

Cascade Water Alliance was created April 1, 1999, with members Bellevue, Kirkland, Issaquah, Redmond, Tukwila, Sammamish Plateau Water, Skyway Water and Sewer District, and Covington Water District¹ as a watershed management partnership. The cities and districts formed Cascade to ensure a voice and a vote in future water decisions. This followed indications from the City of Seattle (Seattle) that suburban utilities might not receive future water supplies or would be required to bear the full cost of any new water supply development.

Cascade's number one mission was to acquire water to meet the current and future demand of its members. The demand forecast in Cascade's first Transmission and Supply Plan (TSP) in 2004 used a method of combining the demands provided by individual members. Like many other water utilities in the region, over the course of time these demand estimates proved to be greater than actual demand.

The initial demand estimate led to a series of decisions to acquire long-term supply:

- Seattle Contract – In 2003, Cascade signed a “take or pay” declining block agreement with Seattle for 30.3 million gallons per day (MGD) of water through 2024. The take-or-pay aspect meant Cascade paid Seattle regardless of the amount of water used. In 2008 the agreement was amended to add another 3 MGD from 2009-2017 and an additional 2 MGD from 2018-2023.
- Tacoma Contract – In 2005, Cascade signed an agreement with Tacoma which included a progressive take-or-pay for 4 MGD of permanent supply and 6 MGD of temporary supply.
- Bellevue-Issaquah Pipeline – In 2004, Cascade purchased the Bellevue-Issaquah Pipeline (BIP) to deliver water to Issaquah and Sammamish Plateau.
- White River-Lake Tapps Reservoir – In 2009 Cascade purchased the White River-Lake Tapps Reservoir system from Puget Sound Energy (PSE) as the key element of Cascade's long-term water supply portfolio. As a potential source of municipal water, this not only provided an insurance policy for future needs but also allowed Cascade members to be a part of future regional water supply decisions.

Early in its negotiations with PSE, Cascade and Pierce County signed a memorandum of understanding agreeing to work together to maintain the Reservoir's value as a recreational, economic and environmental asset. This included managing land use, water quality, lake levels, recreational activities and safety. Although this MOU is not binding, the intent is for the Lake Tapps Reservoir to be maintained as a public recreational asset regardless of whether and when it is developed as a source of municipal supply.

Several stakeholder groups raised concerns and opposition to Cascade's intended use of the Lake Tapps Reservoir. To resolve these concerns, Cascade worked collaboratively with stakeholders and entered into a series of agreements, key conditions of which were included in the water right permits issued to Cascade. (One-page summaries of the agreements below and other key agreements are attached.)

- Muckleshoot and Puyallup Tribes – The *White River Management Agreement* ensured protection of fish, enhanced habitat, municipal water supply and recreation in the White River-Lake Tapps Reservoir system through the establishment of the White River minimum

¹ Cascade's original members also briefly included Mercer Island, Woodinville Water District, Duvall, and Olympic View who withdrew prior to signing the Seattle block contract. Covington withdrew in 2012.

flow and diversion requirements. In addition, settlement agreements with each of the Tribes enabled Cascade and the Tribes to avoid litigation over claims.

- Homeowners – The *Lake Tapps Community Agreement* required Cascade to maintain lake levels at a certain range for recreational use, with exceptions for operational needs and weather conditions. Cascade agreed to keep lake levels in a range from elevation 541.5 to 543 feet from April 15 through September 30, for 30 years, or until the use of the Lake Tapps Reservoir for municipal water supply starts, whichever is later.
- The Four Cities – Auburn, Bonney Lake, Buckley and Sumner were concerned that Cascade's eventual use of the Lake Tapps Reservoir for municipal water supply would impact their water supply. The *Four Cities Agreement* gave the cities options for water supply to help them meet their water needs. To purchase Regional Reserved Water, the cities must exercise the option by 2030.
- Lake Tapps Reservoir Water Right Permits – In 2010, the Washington State Department of Ecology (Ecology) issued Cascade water right permits to develop the Lake Tapps Reservoir for municipal drinking water. While the typical development period for perfecting water rights is 20 years or less, Cascade's development period is 50 years, with the following development schedule:
 - December 31, 2040 – begin construction.
 - 15 years after start of construction – complete construction.
 - December 31, 2060 – full use of the water supply.

Cascade also made a permanent donation of 684,571 acre-feet of water to the State's Trust Water Rights Program. An additional 154,751 acre-feet of water was donated on a temporary basis through 2033. The Trust keeps water in the White River for the benefit of fish, wildlife and the natural environment without impacting lake levels or instream flows.

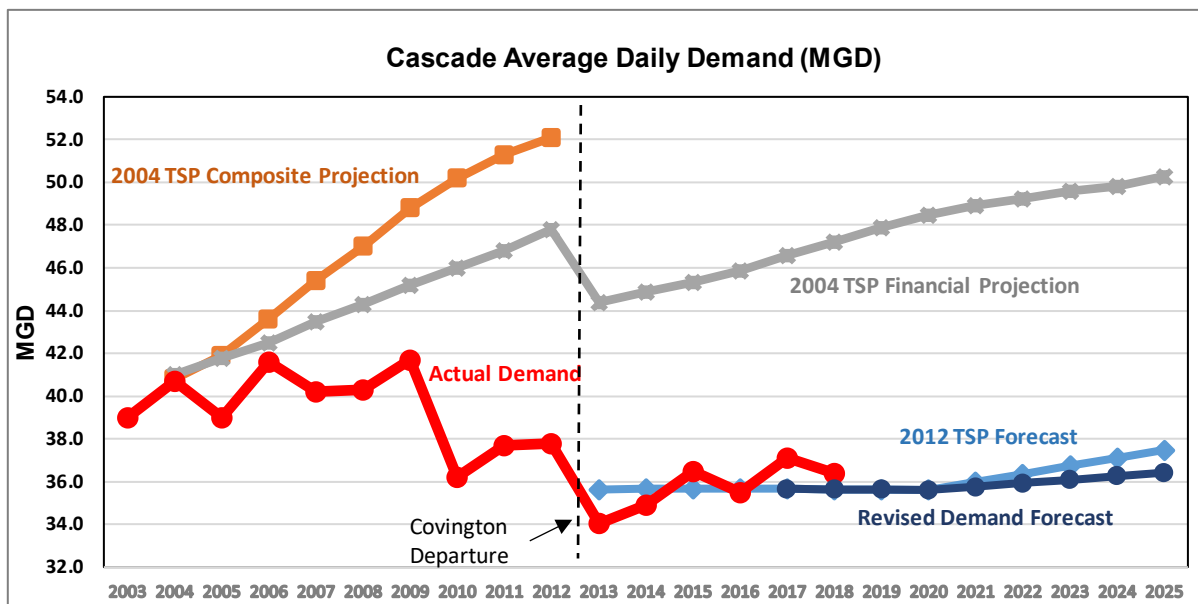
Another component of Cascade's supply portfolio is members' independent supplies. Members are required to have their water system and independent supply audited by Cascade for: (1) determining Cascade's supply obligation to that member; (2) recognizing when the member has lost independent supply; and (3) allocating credits against the member's RCFC for its independent supply. Independent supply production is relied on when planning future supplies, including the Lake Tapps Reservoir. The audits help determine when that source may be needed.

Cascade's Second Decade: Stewardship

The purchase of Lake Tapps Reservoir provided certainty of future water supply with a flexible supply portfolio. With its options for long-term water supply now secured, Cascade moved into a period of focusing on stewardship of its finances, infrastructure and other assets.

In 2011, the Washington Legislature passed the Joint Municipal Utilities Services Act. Cascade developed and promoted the legislation in support of improved regional governance. The Act authorized the formation of municipal corporations to perform water, wastewater, and stormwater services. Municipal corporations could be composed of individual counties, cities, towns, and special purpose districts that collectively could more effectively and efficiently serve their customers. In 2012 Cascade's Board adopted the Joint Municipal Utilities Services Agreement (JMUSA) and converted Cascade from a watershed management partnership to a municipal corporation and the State's first joint municipal utility services authority.

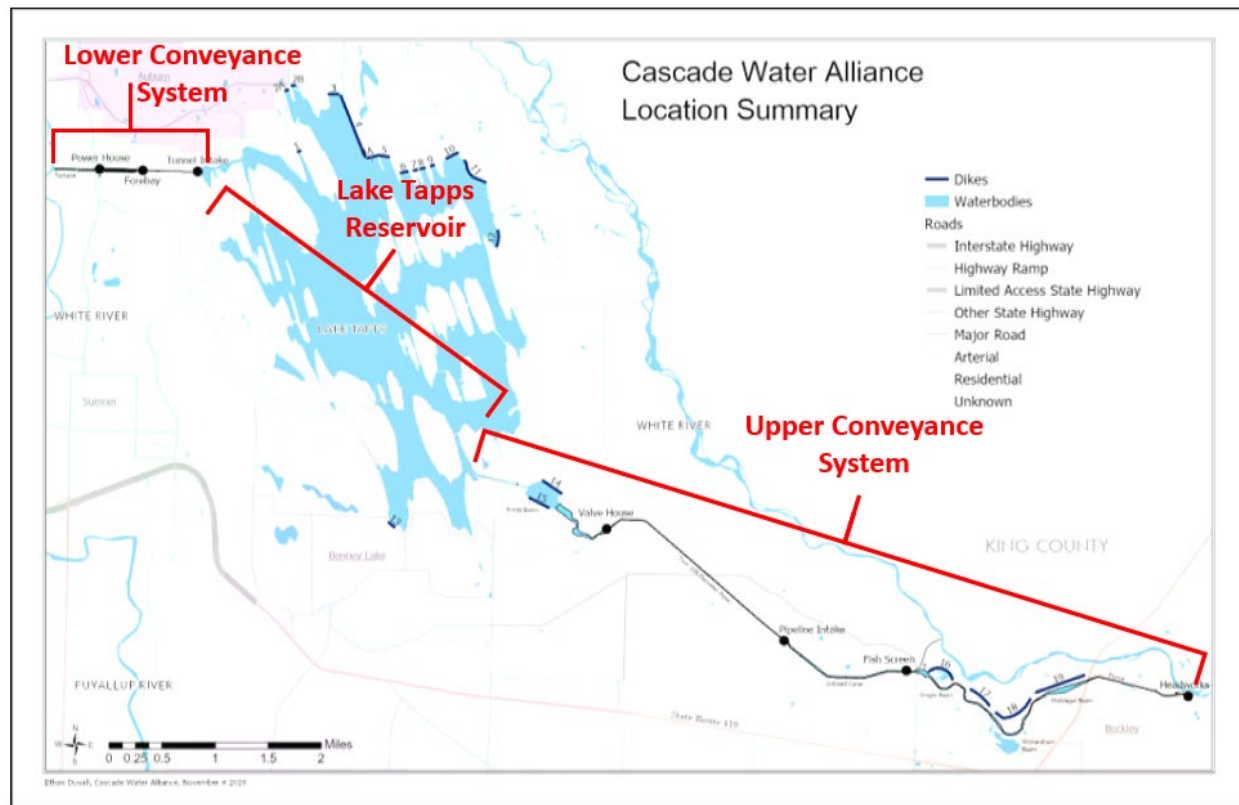
Demand and Water Contracts. In 2012 Cascade completed its second TSP as required by State law. The new TSP incorporated a more realistic demand forecast based on analysis conducted in 2009. The forecast applied detailed demographic data, used the regional Growth Management Plan population and employment forecasts from the Puget Sound Regional Council, and included conservation assumptions as a basis for projecting water demand. The graphic below provides a comparison of the 2004 and 2012 TSP demand forecasts.



The new demand information, coupled with the acquisition of the Lake Tapps Reservoir, allowed Cascade to successfully renegotiate its contracts with Seattle and Tacoma. The amended contracts resulted in significant monetary savings for Cascade.

- Tacoma Contract Amendment—The 2012 amended agreement reduced Cascade's payments, allowed the resale of purchased capacity, and provided supply availability of 8 MGD through 2042. Per the amended agreement, Cascade sold some extra capacity to Auburn and Bonney Lake. However, the window for marketing any extra capacity has now closed. Payments to Tacoma will continue until 2042 with a major decline after 2029. The payment reductions, plus the resale of water, resulted in \$30M in savings.
- Seattle Contract Amendment – The 2013 amendment extended the supply term of the agreement by 15 years until 2039 and enabled further extensions. It also eliminated the second step of the supplemental supply, capping Cascade's supply at 33.3 MGD. In 2040, the contract supply begins to decline, and in 2064, the contract expires unless it is extended. The savings amounted to \$60M.

Infrastructure Investments. Over the past decade, Cascade has invested \$25M-\$30M to restore the integrity of the White River-Lake Tapps Reservoir system. The assets Cascade purchased from PSE were more than 100 years old and in need of major repair or replacement. Their original use was hydroelectric power production, requiring Cascade to upgrade the assets and modify operations. In 2014-2015, Cascade lowered the Lake Tapps Reservoir from the recreational level of 541.5 feet elevation to around 500 feet to allow crews to safely walk inside the pipes and complete a condition assessment. The assessment resulted in a list of capital improvements ranked in order of urgency, from "Immediate" to "Future Needs". A number of the projects Cascade completed during this time reduced the risk of imminent failure, such as replacing the timber flume.



Programmatic Investments. In addition to investing in its assets and infrastructure, Cascade has also implemented several programs to maintain its operating agreements and protect the Lake Tapps Reservoir for future municipal use:

- Water efficiency is a critical part of Cascade’s water management strategy. It makes the best use of existing water supplies before developing the Lake Tapps Reservoir and reduces future demand. Since 2004, Cascade has developed a robust water efficiency program, which includes rebates, retrofits, and technical expertise to achieve significant savings. Additionally, Cascade has implemented several education and empowerment programs that help community members better understand the value of water and the role they can play in conserving and protecting the resource.
- Cascade and the U.S. Geological Survey (USGS) have had a joint agreement since 2010 for USGS to operate and maintain 11 gages that monitor minimum flows and ramping rates as required by Cascade’s water rights permit and the White River Management Agreement.
- Cascade’s water quality activities in the Lake Tapps Reservoir helps ensure that when water is taken for municipal drinking water supply, it will be treated to meet or exceed all federal, state and local standards. One example is the TappsWise Program, a partnership with the Tacoma Pierce County Health Department to provide outreach to homeowners regarding the importance of maintaining septic tanks and practicing natural yard care. Another is Cascade’s annual milfoil treatment program. Milfoil is a non-native and invasive aquatic plant, and although it is a non-regulated weed in Pierce County, Cascade manages milfoil to keep the Reservoir clean and healthy.

CASCADE'S PRESENT

Today Cascade is in a continued period of stewardship while actively planning for its long-term future.

Infrastructure and Programmatic Investments. Cascade continues to keep the White River-Lake Tapps Reservoir system functioning to meet regulatory requirements and operating agreements while preparing for future municipal water use. Over the next decade, Cascade has programmed roughly \$30 million in capital and maintenance projects to protect existing assets from failure. These include the following projects:

- The Supervisory Control and Data Acquisition (SCADA) and Security project involves a comprehensive upgrade and replacement of outdated instrumentation and control systems that were originally designed for PSE's hydropower production.
- The Headworks Intake Modifications project is the third phase of the U.S. Army Corps of Engineers' Mud Mountain Dam Fish Passage Facility project and will improve how water is diverted from the White River to the Lake Tapps Reservoir and will reduce sediment and debris diversion.
- Several valve replacement projects are planned for the upcoming years: 1) the six-foot gate valve located in Wolslegal Basin enables Cascade to drain the basin for sediment removal; 2) a 60-inch energy dissipating cone valve in the outlet structure allows flow to transition from two 10-foot pressurized pipes to an open canal that leads to the Lake Tapps Reservoir; and 3) a relief valve in the Powerhouse enables water to be released to the tailrace and then back to the White River.
- Three dikes are scheduled for major improvements in the next few years to improve seismic resiliency and reduce seepage.

Cascade also continues to invest in its water quality and water efficiency program as well as other resource management activities.

- The two-year water quality monitoring and sampling program is about half-way done. The data being collected and analyzed will help inform water quality policies and procedures for future municipal water use.
- The water efficiency program continues to benefit thousands of residents, businesses, schools, and public agencies through a variety of education and outreach activities, training, and replacement of old fixtures and equipment.
- In early 2021, Cascade completed a solar power feasibility study which concluded that the Powerhouse is a good candidate for solar power development. Since green energy production is likely to be required when Cascade begins construction of a future water treatment plant, the Powerhouse project will help inform how best to include solar energy generation in the plant.

Regional Partnerships. Because the White River-Lake Tapps Reservoir system has multiple uses for multiple stakeholders in the region, Cascade has actively managed the White River-Lake Tapps system to meet a variety of public interests. Efforts include collaborating on other agencies' projects and evaluating regional use of Cascade's water right permits.

- Cascade is currently collaborating with the City of Sumner and the BNSF Railway Company on environmental restoration and the construction of a railroad staging yard on a 170-acre site along the lower White River. The project site intersects with Cascade's tailrace but will not impact Cascade's ability to provide future municipal water.
- As part of the City of Sumner's restoration project, Cascade and the City have been in discussion over the use of Regional Reserved Water and tailrace water as supporting mitigation for the City's pending water rights application with Ecology.

- Cascade is also in discussion with Ecology about the potential purchase of Cascade water to provide permit-exempt well mitigation in the Puyallup-White River basin as part of Ecology's streamflow restoration program required under state law.

Financial Stewardship. The development of the Lake Tapps Reservoir for municipal supply will impose substantial challenges both in terms of executing a major capital program and bearing the cost of development and operation of that source of supply. Development costs are estimated to be about \$800 million and operating costs are estimated to exceed \$6 million per year, all in current costs. To help address these challenges, Cascade has implemented several financial strategies:

- Regional capital facilities charges (RCFCs) are charges for new or expanded water connections and its revenues are used to repay debt and fund capital projects. Cascade's current RCFC is \$6,807 per equivalent residential unit, of which a large part is based on developing the Lake Tapps Reservoir. All RCFC revenues are currently dedicated to the capital construction program.
- Cascade's long-range financial forecast includes rate increases to members that are significantly higher than current rates. In 2021 and 2022, the adopted average rate increases are 2.2% per year. With advance planning, the projected rate increase for 2035-2041 rises to 9.8% per year to build up the cash needed to help meet Cascade's debt-financing fiscal policy of 80% debt to 20% equity. Without advance planning, those increases would average 20%.
- Cascade is in the process of implementing the Water Supply Development Fund as a key part of the water supply financial plan. The Fund defines a policy structure for cash accumulation to help pay for development of Lake Tapps Reservoir. This is needed because rate increases alone will be insufficient to meet Cascade's 80/20 debt-financing policy. Contributions to the Fund will come from several one-time and recurring sources such as underspending the annual operating budget, higher than budgeted RCFC revenues, and savings from bond refunding.

Members have the option to leave Cascade. Doing so requires providing Cascade with the member's allocable share of costs, such as bond and contract obligations and fixed operating costs. The allocable share of costs is determined by the Board. In 2012 Covington Water District exercised this option and paid roughly \$6M in departure fees. The table below provides a current summary of the buyout amount for each member using a comparable method. However, the actual buy-out amounts will be based on the Board's policy direction at such time.

Projected 2020- 2100 Member Payments (Present Value Summary @ 5.75%)			
Member	Member Charges Excluding RCFCs	RCFCs	Total
Bellevue	\$339,792,081	\$17,521,665	\$357,313,747
Issaquah	\$42,561,826	\$10,125,855	\$52,687,681
Kirkland	\$94,540,371	\$9,113,270	\$103,653,641
Redmond	\$125,068,161	\$13,997,294	\$139,065,455
Sammamish Plateau Water	\$37,931,783	\$17,521,665	\$55,453,448
Skyway WSD	\$7,181,540	\$253,146	\$7,434,686
Tukwila	\$41,199,197	\$759,439	\$41,958,636
Total	\$688,274,959	\$69,292,334	\$757,567,294

Supply, Demand, Water Right Permits and Water Contracts. Cascade is at a crucial juncture in planning for the future water supply needs of its members. Demand and supply forecasts have changed significantly since Cascade was issued its water right permits in 2010 and since it developed its demand forecast for the 2012 TSP. This has led Cascade to pause and evaluate alternative scenarios for development of the Lake Tapps Reservoir.

As noted earlier, the development schedule in Cascade's water right permits requires construction of Lake Tapps Reservoir to start no later than December 31, 2040. Analysis of current conditions shows that regional supplies, if made available to Cascade, remain sufficient to defer construction of the Reservoir beyond 2040. Table 1 shows Cascade's current demand forecast compared to the forecast in Ecology's report when it issued Cascade its permits.

Table 1 – Comparison of Cascade Demand Forecasts (Average Day Demand in MGD)

YEAR	2010 Ecology Report	Current Forecast
2010	41	32.2*
2020	44	34.7*
2030	49	37.7
2040	54	39.2
2050	60	40.9
2060	69	42.6

**Actual demand*

In addition to the updated demand forecast, the most current three-county central Puget Sound water system plan forecasts show a continued abundance of supply in 2060. Since its formation, Cascade has had a strategy of using available regional wholesale supply contracts to "bridge" Cascade's demand requirements until the Lake Tapps Reservoir is brought on-line. Continuing with this strategy, Cascade has reached out to Seattle to discuss extending its water supply contract. Discussions are likely to begin in early 2022 after Seattle renegotiates its full-and partial contracts with its other wholesale customers. Cascade is also beginning to explore a path to contracting with Tacoma in the event a contract extension with Seattle is unsuccessful.

A key component of getting an extended contract with Seattle or a new contract with Tacoma is securing an extension of Cascade's water right permits development schedule. Without a permit extension, Cascade is obligated to begin construction of the Lake Tapps Reservoir by 2040. This requires Cascade to begin planning in earnest in the late 2020's for property acquisition, permitting, design of transmission pipes and pumps, a treatment plant and other infrastructure. Given this, with the Board's approval, Cascade is submitting a request to Ecology to extend its development schedule by 25 years. If approved, Cascade will need to begin construction of the Lake Tapps Reservoir by 2065 and provide full use by 2085.

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SUMMARY OF KEY HISTORIC AGREEMENTS

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SUMMARY OF AGREEMENTS

Agreement	Primary Objective	Implications for Future Decisions Regarding Lake Tapps Reservoir
1. Joint Municipal Utility Services Agreement	Establishes Cascade as a joint municipal utility services authority and a municipal corporation of the State to improve its ability to exercise essential government functions on behalf of its Members.	As long as Cascade provides water to Members, regardless of the source of supply, JMUSA lays out Cascade's operating and financial parameters.
2. Water Right Permits Summary	Allows Cascade to develop the Lake Tapps Reservoir for municipal water supply.	After the water right permits were issued in 2010, circumstances and planning assumptions changed. Current and forecasted conditions indicate there will be an abundance of supply in the central Puget Sound region through 2060. Given this, Cascade is pursuing an extension of the development schedule for Lake Tapps Reservoir with Ecology. A permit extension is critical to Cascade's ability to negotiate a contract extension with Seattle or negotiate a new contract with Tacoma, which would defer development of the Reservoir. Without an extension, Cascade will need to start planning for the development of Lake Tapps Reservoir between 2025 and 2030 in order to start construction in 2040.
3. White River Management Agreement with the Puyallup and Muckleshoot Tribes	Settled disputes with the Muckleshoot Indian Tribe and Puyallup Tribe of Indians and gained their support for the water right applications. Establishes flow regime of minimum instream flows and associated activities such as flow monitoring, gaging, fall drawdown and spring refill plans, etc.	Cascade needs to continue to meet Minimum Instream Flows, water quality requirements and other conditions in the Agreement as long as it is diverting water from the White River.
4. Muckleshoot Tribe Settlement Agreement	Settled disputes with the Muckleshoot Indian Tribe (MIT) to gain their support for water right applications and funds for past costs, capital projects and operations, thereby avoiding litigation over claims.	After 2057, Cascade may need to provide further mitigation funding to compensate for continuing project impacts on aquatic resources of the White River. This cost has not been included in financial planning to date.
5. Puyallup Tribe Settlement Agreement	Settled disputes with the Puyallup Tribe of Indians (PTI) to gain their support for water right applications and funds for past costs, capital projects and operations, thereby avoiding litigation over claims.	After 2046, Cascade may need to provide further mitigation funding to compensate for continuing project impacts on aquatic resources of the White River. This cost has not been included in financial planning to date.
6. Four Cities Agreement	Provides the Four Cities (Auburn, Bonney Lake, Buckley and Sumner) with options to help them meet their water supply needs and provide assurance that there is a venue to address potential negative impacts from Cascade's supply operations.	The purchase of Regional Reserved Water or Tailrace water by one or more of the Four Cities would not negatively impact Cascade from a future water supply standpoint and would generate positive financial benefits for Cascade.

Agreement	Primary Objective	Implications for Future Decisions Regarding Lake Tapps Reservoir
7. Lake Tapps Community Agreement	Settled disputes that caused the Lake Tapps Community to oppose Cascade’s water right applications. The Community supported the water right applications in return for Cascade’s commitment to maintain the reservoir at recreational lake levels or “Normal Full Pool” (541.5’ to 543’ elevation) from April 15 through September 30.	<p>Cascade needs to continue to maintain recreational lake levels from April 15 through September 30 pre- and post-development of Lake Tapps Reservoir as a source of drinking water supply.</p> <p>If Cascade chooses to sell all or part of its Lake Tapps Reservoir assets, Lake Tapps Community has the right of first offer.</p>
8. Pierce County Water Supply and Recreation MOU	Establishes a cooperative working relationship between Cascade and Pierce County regarding management of Lake Tapps Reservoir as a public water supply project and a recreational facility.	Although this MOU is not binding, the intent is for Lake Tapps Reservoir to be maintained as a public recreational asset regardless of whether and when it is developed as a source of municipal supply.
9. Seattle Water Sale Agreement	Provides for the purchase of a combined Base and Supplemental block of water from Seattle through 2063, with the total supply beginning to decline in 2040	If Cascade can negotiate a contract extension with Seattle and can receive a water rights permit extension from Department of Ecology, it will be able to defer development of Lake Tapps Reservoir. If Cascade is unable to negotiate a contract extension, it will need to pursue a new supply contract with Tacoma or begin building out Lake Tapps Reservoir.
10. Tacoma Water Sale Agreement	Provides Cascade with up to 8 MGD of water through 2042 with lower payments than were stipulated in the original 2005 agreement. Also allows for the sale of extra capacity to the Four Cities.	If Cascade were to take delivery of water from Tacoma as a bridge prior to developing Lake Tapps Reservoir as a source of water supply, it would first need to complete construction of the Tacoma-Cascade Pipeline (TCP), its appurtenances and other infrastructure. Once Lake Tapps Reservoir is developed, the TCP could continue to be used to deliver Lake Tapps municipal supply to Members.
11. Membership Audit Acceptance Agreements	Requires an audit of each Member’s water system and independent supply for: (1) determining Cascade’s supply obligation to that Member; (2) recognizing when the Member has lost independent supply; and (3) allocating credits against the Member’s RCFC for its independent supply.	Member independent supply production is relied on when planning future supplies including Lake Tapps Reservoir. This Agreement helps determine when that source may be needed.

Links to each of the agreements in their entirety can be found on Cascade’s website:
<https://cascadewater.org/about/about-cascade/members/for-cascade-members-only/>.

1. JOINT MUNICIPAL UTILITY SERVICES AGREEMENT

Parties to the Agreement: Cascade and Current Member Agencies
Agreement Date: March 28, 2012
Expiration Date: n/a

PRIMARY OBJECTIVE OF AGREEMENT

Establishes Cascade as a joint municipal utility services authority and a municipal corporation of the State to improve its ability to exercise essential government functions on behalf of its Members.

BACKGROUND

Cascade was originally formed in 1999 as a non-profit corporation and watershed management partnership under the Interlocal Cooperative Act (RCW 39.34). This designation proved to be challenging for Cascade, limiting its legal authority regarding interlocal agreements, property transfers, procurement, funding and other basic, essential government functions.

In 2011 the Washington Legislature passed ESHB 1332, the Joint Municipal Utilities Service Act. Cascade developed and promoted the legislation in support of improved regional governance. The Act established a more effective interlocal mechanism for cooperation among local government utilities that provide water, wastewater, stormwater and/or flood control services. It authorized cities, towns, counties, and special purpose districts voluntarily to form an intergovernmental municipal corporation to provide services to those local utilities and their customers.

On March 28, 2012, the Board adopted Resolution No. 2012-06 by 65% Dual Majority Vote to convert Cascade to a joint municipal utility services authority and a municipal corporation of the State. The Board also approved an amendment to the Interlocal Agreement to execute the Joint Municipal Utility Services Agreement (JMUSA). On April 25, 2012, the Board adopted Resolution No. 2012-07 to complete Cascade's conversion to a joint municipal utility services authority by amending the Cascade Code to be consistent with JMUSA.

KEY FEATURES OF AGREEMENT

- Provides powers to exercise a host of essential government functions that were limited to Cascade when it was a watershed management partnership.
- Defines how new Members may join Cascade and how existing Members can withdraw.
- Defines the organizational structure of the Board, including voting, officers and committees.
- Describes how Cascade issues RCFCs and rates and the step-up provision for payment defaults.
- Provides a supply commitment to each Member.
- Requires Board approval for new independent supplies.
- Requires Cascade to implement a conservation program that Members need to participate in.
- Calls for Cascade to respond to water shortages and manage water quality.
- Describes how Cascade can disincorporate.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

As long as Cascade provides water to Members, regardless of the source of supply, JMUSA lays out Cascade's operating and financial parameters.

2. WATER RIGHT PERMITS

Parties to the Permit: Cascade and Department of Ecology (Ecology)

Permit Date: December 10, 2010

Expiration Date: Cascade must inform Ecology if construction has not started by December 31, 2040.

PRIMARY OBJECTIVE

Allows Cascade to develop the Lake Tapps Reservoir for municipal water supply.

BACKGROUND

The demand forecast in Cascade's 2004 Transmission and Supply Plan led to a series of decisions to acquire long-term supply. In 2009 Cascade purchased the White River-Lake Tapps Reservoir Project from Puget Sound Energy (PSE) as the key element of Cascade's long-term water supply portfolio. In 2010, Ecology approved Cascade's applications (including a change to the purpose of use of the former PSE water rights claim, No. CS2-160822CL) and issued a set of permits to use the Lake Tapps Reservoir for municipal drinking water. Lake Tapps Reservoir is permitted to provide Cascade a permanent supply of up to 54,300 acre-feet per year (75 cfs or 48.4 MGD¹). Ecology issued the final water right permits in four parts, described below.

FOUR PARTS TO WATER RIGHTS PERMIT

1. ***Diversion from the White River for municipal purposes (S2-29920(A))***. Establishes timing for development of Lake Tapps Reservoir as follows: construction to begin by the end of 2040 and completed within 15 years of the start of construction, and water to be in full use by the end of 2060. The permit also includes 22 Conditions, including requirements defined in other agreements:
 - Agreements with the Tribes – establishes minimum instream flow, maximum diversion rates, releases into the Tailrace, ramping rates and streamflow monitoring.
 - Agreement with Lake Tapps Community – establishes recreational lake levels.
2. ***Storage in Lake Tapps Reservoir for municipal purposes (R2-29935)***. Acknowledges that storage in the Reservoir has begun under the former PSE claim and requires that municipal water must be put to full use by the end of 2060.
3. ***Withdrawal from Lake Tapps Reservoir for municipal use (S2-29934P)***. Establishes timing for withdrawal from the Reservoir for municipal use; same timing as in the diversion permit above.
4. ***Regional Reserved Water Program (S2-29920(B))***. Allocates certain White River flows for any of the Four Cities (Auburn, Bonney Lake, Buckley and Sumner) to use in mitigating impacts of a water right application(s), which must be approved by Ecology by December 31, 2030 (no extension). This part of the permit is consistent with the Four Cities Agreement.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

After the water right permits were issued in 2010, circumstances and planning assumptions changed. Current and forecasted conditions indicate there will be an abundance of supply in the central Puget Sound region through 2060. Given this, Cascade is pursuing an extension of the development schedule for Lake Tapps Reservoir with Ecology. A permit extension is critical to Cascade's ability to negotiate a contract extension with Seattle or negotiate a new contract with Tacoma, which would defer development of the Reservoir. Without an extension, Cascade will need to start planning for the development of Lake Tapps Reservoir between 2025 and 2030 in order to start construction in 2040.

¹ Over the past five years, Cascade's average use has been about 27.6 MGD, excluding independent supply.

3. WHITE RIVER MANAGEMENT AGREEMENT (WRMA)

Parties to the Agreement: Cascade, the Muckleshoot Indian Tribe (MIT) and the Puyallup Tribe of Indians (PTI)
Agreement Date: August 6, 2008
Expiration Date: The Agreement will continue as long as Cascade or successor diverts water from the White River. It can be terminated upon written agreement by all parties and approved by resolution or ordinance, or upon permanent cessation of diversions from the White River into the Lake Tapps Reservoir and surrender of the water rights authorizing the diversion.

PRIMARY OBJECTIVE OF AGREEMENT

Settled disputes with the Muckleshoot Indian Tribe and Puyallup Tribe of Indians and gained their support for the water right applications. Establishes flow regime of minimum instream flows and associated activities such as flow monitoring, gaging, fall drawdown and spring refill plans, etc.

BACKGROUND

After PSE applied for water rights in to allow municipal use of the waters of the Lake Tapps Reservoir, several stakeholders groups, including the MIT and the PTI, raised concerns over use of the Reservoir as a municipal drinking water supply. The Tribes were particularly concerned about the proposed diversion of water from the White River into Lake Tapps Reservoir. As a means to gain the Tribes' support for the water right applications, Cascade, as the future owner, entered into this Agreement. In 2009, Cascade became the successor-in-interest to PSE. This Agreement settled disputes and was necessary for the issuance of Cascade's water right permits.

KEY FEATURES OF AGREEMENT

- Establishes minimum flows for various time periods during the year, diversion rates, ramping rates and pool elevation.
- Requires flow monitoring including the streamflow at the Buckley Gage and diversion from the White River into Lake Tapps Reservoir.
- Requires Cascade funding of the USGS to operate and maintain gaging equipment, telemetry and data production.
- Requires development and implementation of a Project Maintenance Plan that includes:
 - Maintaining and assessing the effectiveness of the fish screens.
 - Preventing exotic or predatory species from entering the White River from Lake Tapps.
 - Trapping sediment to prevent sediment and nutrients from entering Lake Tapps.
 - Maintaining the rock chutes and other facilities.
- Requires a plan for refilling Lake Tapps in the spring and drawing down the water in the fall.
- Calls for a Tailrace study to identify and address water quality and fisheries concerns and a Tailrace Plan to implement the study's recommendations.
- Calls for Cascade to transfer excess water² to the State Water Trust to provide instream flows in the White River.
- Calls for protecting, monitoring and improving water quality.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

Cascade needs to continue to meet minimum instream flows, water quality requirements and other conditions in the Agreement as long as it is diverting water from the White River.

² Excess water is portion of the perfected hydropower water right obtained from PSE in excess of the amount of water permitted to be diverted into Lake Tapps.

4. MUCKLESHOOT TRIBE SETTLEMENT AGREEMENT

Parties to the Agreement: Cascade and the Muckleshoot Indian Tribe (MIT)

Agreement Date: August 6, 2008

Expiration Date: The Agreement will continue as long as Cascade or any successor diverts water from the White River. It can be terminated upon written agreement by both parties and approved by resolution or ordinance by the MIT and Cascade, or upon permanent cessation of diversions from the White River into the Lake Tapps Reservoir and surrender of the water rights authorizing the diversion.

PRIMARY OBJECTIVE OF AGREEMENT

Settled disputes with the Muckleshoot Indian Tribe (MIT) to gain their support for water right applications and funds for past costs, capital projects and operations, thereby avoiding litigation over claims.

BACKGROUND

After PSE applied for water rights to allow municipal use of the waters of the Lake Tapps Reservoir, several stakeholders groups, including the MIT, raised concerns over Cascade's use of the Reservoir as a municipal drinking water supply. The MIT was particularly concerned about the proposed diversion of water from the White River into Lake Tapps Reservoir. As a means to gain the Tribe's support for the water right applications, Cascade, as the future owner, entered into this Agreement in addition to the three-party White River Management Agreement. These agreements enabled Cascade and the MIT to avoid litigation over claims between the two parties and were necessary for the issuance of Cascade's water right permits.

KEY FEATURES OF AGREEMENT

- Makes two settlement payments to the MIT for a total of \$6.8 million. \$6.2 million of the total amount grants Cascade the right to divert 72,400 acre feet of water annually from the White River and the Lake Tapps Reservoir for municipal water supply purposes.
- Starting in 2057, calls for a reevaluation of the impact of Cascade's municipal water supply project on the White River's aquatic resources and an agreement in further mitigation funding beyond 2060.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

After 2057, Cascade may need to provide further mitigation funding to compensate for continuing project impacts on aquatic resources of the White River. This cost has not been included in financial planning to date.

5. PUYALLUP TRIBE SETTLEMENT AGREEMENT

Parties to the Agreement: Cascade and the Puyallup Tribe of Indians

Agreement Date: August 6, 2008

Expiration Date: Parties must meet by December 31, 2046 to discuss renewal of the Agreement. If the Agreement is not renewed by January 1, 2051 the Agreement expires and neither party can assert their respective rights or entitlements.

PRIMARY OBJECTIVE OF AGREEMENT

Settled disputes with the Puyallup Tribe of Indians (PTI) to gain their support for water right applications and funds for past costs, capital projects and operations, thereby avoiding litigation over claims.

BACKGROUND

After PSE applied for water rights to allow municipal use of the waters of the Lake Tapps Reservoir, several stakeholders groups, including the PTI, raised concerns over Cascade's use of the Reservoir as a municipal drinking water supply. The PTI was particularly concerned about the proposed diversion of water from the White River into Lake Tapps Reservoir. As a means to gain the Tribe's support for the water right applications, Cascade, as the future owner, entered into this Agreement in addition to the three-party White River Management Agreement. These agreements enabled Cascade and the PTI to avoid litigation over claims between the two parties and were necessary for the issuance of Cascade's water right permits.

KEY FEATURES OF AGREEMENT

- Makes three settlement payments to the PTI for a total of \$14.5 million:
 - \$1.5 million for past costs.
 - \$6.0 million to fund capital projects to restore, protect and enhance fishery resources, fishery habitat and water quality in the lower White River and in the Puyallup River.
 - \$7.0 million to fund operations.
- Commits the PTI to support Cascade's water rights.
- Commits the PTI to release all claims against Cascade.
- Calls for Cascade and PTI to initiate good faith negotiations on the terms and conditions for a subsequent agreement, starting no later than December 31, 2046.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

After 2046, Cascade may need to provide further mitigation funding to compensate for continuing project impacts on aquatic resources of the White River. This cost has not been included in financial planning to date.

6. FOUR CITIES AGREEMENT

Parties to the Agreement: Cascade, Auburn, Bonney Lake, Buckley and Sumner

Agreement Date: February 5, 2010

Expiration Date: 2060 unless terminated earlier; can be extended by written agreement.

PRIMARY OBJECTIVE OF AGREEMENT

Provides the Four Cities with options to help them meet their water supply needs and provide assurance that there is a venue to address potential negative impacts from Cascade's supply operations.

BACKGROUND

After Cascade purchased the White River-Lake Tapps Reservoir Project in 2009, several stakeholders groups, including the Four Cities, raised concerns over Cascade's use of the Reservoir as a municipal drinking water supply. Auburn, Bonney Lake, Buckley and Sumner were concerned that Cascade's eventual use of Lake Tapps Reservoir for municipal water supply could impact their water supply. As a means to gain the Four Cities' support for the water right applications, Cascade and the Four Cities entered this Agreement.

KEY FEATURES OF AGREEMENT

- Establishes the Lake Tapps Municipal Advisory Group comprised of the mayors of each of the Four Cities and three Cascade Board members. This group deals with issues affecting the Four Cities and is intended to meet twice each year.
- Provides for remedies if Cascade's water supply operations has negative impacts to the water supplies of any of the Four Cities.
- Provides an opportunity for the Four Cities to purchase Tacoma wholesale water through 2026. *[Due to revised Tacoma Agreement, this option converted into a reduced cost offer that expired on March 1, 2018.]*
- Provides an opportunity for the Four Cities to purchase Regional Reserved Water through 2030:
 - The total amount is 7 cfs annual average and 10 cfs peak.
 - This can be used to assist the Four Cities to apply for water rights.
 - Price is \$744,000 per cfs (0.65 mgd).
 - Water would not be diverted into the Lake Tapps Reservoir but would flow in the White River for potential mitigation use by any of the Four Cities.
- Provides an opportunity to purchase Tailrace water from Cascade if available and subject to negotiations.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

The purchase of Regional Reserved Water or Tailrace water by one or more of the Four Cities would not negatively impact Cascade from a future water supply standpoint and would generate positive financial benefits for Cascade.³

³ Sumner plans to purchase approximately 1 cfs of Regional Reserved Water for water rights mitigation.

7. LAKE TAPPS COMMUNITY AGREEMENT

Parties to the Agreement: Cascade and the Lake Tapps Community (comprised of Friends of Lake Tapps, Lake Tapps Community Council, Church Lake Maintenance Co., Driftwood Point Association, Inlet Island Maintenance Company, Snag Island Maintenance Association, Tacoma Point Improvement Club, Tapps Island Association, and West Tapps Maintenance Co.)

Agreement Date: May 13, 2009

Expiration Date: Agreement remains in effect unless terminated by mutual agreement.

PRIMARY OBJECTIVE OF AGREEMENT

Settled disputes that caused the Lake Tapps Community to oppose Cascade's water right applications. The Community supported the water right applications in return for Cascade's commitment to maintain the reservoir at recreational lake levels or "Normal Full Pool" (541.5' to 543' elevation) from April 15 through September 30.

BACKGROUND

After PSE applied for water rights in to allow municipal use of the waters of the Lake Tapps Reservoir, several stakeholders groups, including the Lake Tapps Community, raised concerns over use of the Reservoir as a municipal drinking water supply. Lake Tapps Community's main concern was maintaining recreational lake levels. PSE and the Community entered into an agreement in 2004. As a means to gain the Community's support for the water right applications, Cascade, as the future owner, entered into a similar agreement in 2008. In 2009, Cascade became the successor-in-interest to PSE. Upon addressing this and other concerns, the key conditions in this Agreement were included in Cascade's water right permits issued in 2010.

KEY FEATURES OF AGREEMENT

- Requires recreational lake levels from April 15 through September 30, with some exceptions.
- Calls for making reasonable efforts to maintain Normal Full Pool through October 31.
- Sets water priorities as: 1) meeting Minimum Instream Flows (MIF); 2) maintaining recreational lake levels; and 3) providing for municipal water supply.
- Requires a Lake Management Team and annual meetings.
- Calls for a comprehensive review of the Agreement to be conducted no later than 2030. Either Cascade or the Lake Tapps Community may propose modifications to the Agreement, and changes require mutual agreement.
- Requires controlling milfoil to the extent required by law or to meet Cascade's operational goals.
- Requires monitoring stream flows, lake levels and water quality.
- Allows Cascade to transfer the Project assets and terminate the Agreement after providing the Lake Tapps Community the right to acquire assets on "terms and conditions that are fair and reasonable".
- Damages paid due to breach of the Agreement (primarily not maintaining recreational lake levels) will not exceed \$100,000 per occurrence and \$1,000,000 in aggregate.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

- Cascade needs to continue to maintain recreational lake levels from April 15 through September 30 pre- and post-development of Lake Tapps Reservoir as a source of drinking water supply, with some exceptions.
- If Cascade chooses to sell all or part of its Lake Tapps Reservoir assets, Lake Tapps Community has the right of first offer.

8. PIERCE COUNTY WATER SUPPLY AND RECREATION MOU

Parties to the Agreement: Cascade Board Chair, Pierce County Executive

Agreement Date: August 2, 2005

Expiration Date: N/A

PRIMARY OBJECTIVE OF AGREEMENT

Establishes a cooperative working relationship between Cascade and Pierce County regarding management of Lake Tapps Reservoir as a public water supply project and a recreational facility.

BACKGROUND

This MOU was signed while Cascade was negotiating the purchase of the White River-Lake Tapps Project from Puget Sound Energy with the intent to develop the Reservoir into a future water supply. Cascade and Pierce County agreed to work together to maintain the Reservoir's value as a recreational, economic and environmental asset. This included managing land use, water quality, lake levels, recreational activities and safety. The MOU is not binding.

KEY FEATURES OF AGREEMENT

- Pierce County efforts include:
 - Protecting and enhancing water quality by:
 - Minimizing discharges through regulating stormwater, on-site wastewater systems and other point and non-point sources.
 - Minimizing and eliminating the adverse effects of non-point discharges from future development and redevelopment by encouraging best management practices (BMPs).
 - Completing and implementing the White River Basin Plan focused on maintaining and enhancing water quality.
 - Completing and implementing the Lake Tapps Boat Management Plan.
- Cascade efforts include:
 - Operating Lake Tapps as a public water supply reservoir and for recreation.
 - Entering into an agreement with the Lake Tapps Community regarding reservoir operations.
 - Developing and implementing BMPs to maintain and potentially enhance water quality.
 - Developing a Lake Management Advisory Team to address water quality, recreational lake levels, and boating and recreational safety.
- If Cascade is unable to develop a public water supply project, Cascade and Pierce County will work cooperatively to transfer ownership to an entity that will preserve the lake for public recreational benefit.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

Although this MOU is not binding, the intent is for Lake Tapps Reservoir to be maintained as a public recreational asset regardless of whether and when it is developed as a source of municipal supply.

9. SEATTLE WATER SALE AGREEMENT

Parties to the Agreement: Cascade and City of Seattle

Agreement Date: July 15, 2013

Expiration Date: December 31, 2063

PRIMARY OBJECTIVE OF AGREEMENT

Provides for the purchase of a combined Base and Supplemental block of water from Seattle through 2063, with the total supply beginning to decline in 2040.

BACKGROUND

In 2004 Cascade entered into a 50-year agreement with Seattle which included a take-or-pay declining block for 30.3 MGD of water through 2024. In 2008 the agreement was amended to add another 3 MGD from 2009-2017 and an additional 2 MGD from 2018-2023. Subsequently, regional supply and demand forecasts indicated demand was growing more slowly than previously forecast over the next 50 years, providing an opportunity to amend and extend the contract. The July 15, 2013 extension allowed Cascade to defer development of the Lake Tapps Reservoir and provided Seattle with additional revenue.

KEY FEATURES OF AGREEMENT

- Provides Cascade with a take-or-pay Base and Supplemental Block of water, with a termination date of December 31, 2044 for the Supplemental Block.
- Allows Cascade to purchase up to 5.3 MGD starting 2064 for Members that cannot be served economically by other means.
- Provides increased amounts of water during the peak season and peak month.
- Reduces Cascade's block proportionally if Seattle's Firm Yield is reduced.
- Allows Cascade or Seattle to request consideration to further extend the supply commitment, beginning January 2020 and each January at 5-year intervals.

Year	Size of Block (in MGD)		
	Base	Supplemental	Total
2004-2023	30.3	3	33.3
2024-2029	29.3	4	33.3
2030-2034	26.8	6.5	33.3
2035-2039	24.3	9	33.3
2040	24.3	7	31.3
2041	24.3	5	29.3
2042	24.3	3	27.3
2043	24.3	2	26.3
2044	24.3	1	25.3
2045	24.3	0	24.3
2046	23.3	0	23.3
2047-2063	1 less than prior year	0	1 less than prior year
2064	5.3	0	5.3

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

If Cascade can negotiate a contract extension with Seattle and can receive a water rights permit extension from Department of Ecology, it will be able to defer development of Lake Tapps Reservoir. If Cascade is unable to negotiate a contract extension, it will need to pursue a new supply contract with Tacoma or begin building out Lake Tapps Reservoir.

10. TACOMA WATER SALE AGREEMENT

Parties to the Agreement: Cascade and City of Tacoma

Agreement Date: December 31, 2012

Expiration Date: December 31, 2042

PRIMARY OBJECTIVE OF AGREEMENT

Provides Cascade with up to 8 MGD of water through 2042 with lower payments than were stipulated in the original 2005 agreement. Also allows for the sale of extra capacity to the Four Cities.

BACKGROUND

Cascade originally entered into an agreement on October 13, 2005 with Tacoma which included a progressive take-or-pay for 4 MGD of permanent supply and 6 MGD of temporary supply. Subsequently, regional supply and demand forecasts indicated Cascade had sufficient water supply for the next 50 years without taking delivery of water from Tacoma. The 2012 amended agreement enabled Cascade to reduce its payments and receive a new capacity commitment of 8 MGD through 2042. It also allowed Cascade to sell extra capacity to Auburn, Bonney Lake, Buckley and Sumner to satisfy its obligations in the Four Cities Agreement (*both Auburn and Bonney Lake bought Tacoma supply through this feature*).

KEY FEATURES OF AGREEMENT

- Restructures Cascade's payment schedule to Tacoma. Provides for a significant decline after 2029, from \$6.86 million to \$1 million, and ends payments in 2042. Payments are required irrespective of Cascade's use of Tacoma water.
- Allows Cascade to request all or a portion of 8 MGD from Tacoma to serve Members' retail customers or other direct use by Members. Does not allow for the water to be resold or wheeled by Cascade or Members without Tacoma's written consent. (*Note: Cascade has not taken any delivery of water from Tacoma to date.*)
- Requires Cascade to be responsible for the design, engineering, permitting and construction of infrastructure necessary to interconnect and take delivery of water from Tacoma.
- Allows for the sale of wholesale water to the Four Cities until December 31, 2017. (*Note: Auburn and Bonney Lake both purchased some wholesale water.*)

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

If Cascade were to take delivery of water from Tacoma as a bridge prior to developing Lake Tapps Reservoir as a source of water supply, it would first need to complete construction of the Tacoma-Cascade Pipeline (TCP), its appurtenances and other infrastructure. Once Lake Tapps Reservoir is developed, the TCP could continue to be used to deliver Lake Tapps municipal supply to Members.

11. MEMBERSHIP AUDIT ACCEPTANCE AGREEMENTS

Parties to the Agreements: Cascade and each Member individually (separate agreements for each Member)

Agreement Dates:

- May 23, 2008: Bellevue, Issaquah, Kirkland, Redmond, Sammamish Plateau Water, Tukwila
- April 9, 2019: Skyway Sewer & Water

Expiration Dates: N/A

PRIMARY OBJECTIVE OF AGREEMENTS

Requires an audit of each Member's water system and independent supply for: (1) determining Cascade's supply obligation to that Member; (2) recognizing when the Member has lost independent supply; and (3) allocating credits against the Member's RCFC for its independent supply.

BACKGROUND

Cascade Members are required to have their water system and independent supply audited by Cascade. Prior to adoption of the Joint Municipal Utilities Services Agreement (Joint Agreement), this requirement was articulated in Article V, Section 5.2.2 of the Amended and Restated Interlocal Contract, dated December 15, 2004. Today, this requirement is codified in Section 3.2 of the Joint Agreement Section, and the authority to carry out audits of a Member's independent supply is stated in Section 5.2.B.

Cascade completed audits of Issaquah's, Redmond's and Sammamish Plateau's independent supplies in May 2008 and Skyway's independent supply in March 2012. Updated audits of all four Members' independent supplies are currently in progress.

KEY FEATURES OF AGREEMENTS

- States that the audit will accurately identify and quantify Members' independent supply for the purpose of establishing Cascade's supply commitment to Members.
- Reaffirms wheeling arrangements.
- Describes expectations regarding points of delivery.
- Describes the awarding of RCFC credits. *[No longer relevant for existing agreements as all credits were repurchased by Cascade in 2012.]*
- Describes administering, enforcing and waiving production requirements.

IMPLICATIONS FOR FUTURE DECISIONS REGARDING LAKE TAPPS RESERVOIR

Member independent supply production is relied on when planning future supplies including Lake Tapps Reservoir. This Agreement helps determine when that source may be needed.