Northwest **Power** and **Conservation** Council

October 4, 2023

DECISION MEMORANDUM

TO: Council members

FROM: Laura Thomas
Regional Technical Forum Manager

SUBJECT: 2024 RTF Work Plan

PROPOSED ACTION: Staff is seeking approval of the 2024 RTF Work Plan.

SIGNIFICANCE: The RTF works on a calendar year and is supported primarily by separate Bonneville and regional utility funding. Under the RTF's charter, the Council has authority to approve the RTF's work plan and budget, with input from the RTF Policy Advisory Committee and interested parties. Staff is seeking approval of the 2024 Work Plan

BUDGETARY/ECONOMIC IMPACTS
The RTF is primarily funded by regional utilities and Bonneville. The Council does contribute staff time in the form of RTF assistance, technical support from Power Division staff, and finance, legal, and IT support. The Council also provides office and meeting space for the RTF. Approval of the 2024 RTF Work Plan does not change these current levels of support.

BACKGROUND
Staff is seeking Council approval of the 2024 RTF Work Plan and Budget. Staff will present an overview of the proposed 2024 RTF Work Plan, and the proposed Business Plan and Work Plan documents are attached.

The Council chartered the RTF as an advisory committee to the Council in 1999, in response to the 1996 Congressional mandate and recommendations from the 1997 Comprehensive Review of the Northwest Energy System. The Congressional mandate directed Bonneville Power Administration and the Council to "convene a regional technical forum to develop consistent standards and protocols for verification and evaluation of energy savings, in consultation with all interested parties," and the directive further stated that the RTF's services should be available to all Northwest utilities. Since 1999, the RTF workload has grown, as has the budget. In 2010, the Northwest Energy Efficiency Taskforce recommended that the RTF operations and budget be reviewed by a high-level committee to improve the operations of the RTF and to put it on a stable long-term funding basis. In response, the Council chartered the RTF Policy Advisory Committee (PAC) as an advisory committee to the Council, which has advised the Council on funding and policy related matters and worked to secure stable funding for the RTF.

In 2019, the RTF PAC agreed to a five-year funding agreement (2020-2024) with a $1.8 million budget in 2020, escalating to $1.99 million by 2024 to account for inflation. The RTF PAC further agreed to managing the next cycle as a five-year budget, where unspent funds can be rolled over to a future year to complete RTF work. Additionally, the RTF PAC agreed to use $173,504.95 in unspent electric funds from the early years of the RTF to further support work during the 2020-2024 business cycle. Annual approval of the work plan is still necessary.

The proposed 2024 Work Plan and Budget represents the fifth year and final year of the five-year agreement. A draft work plan was presented to the RTF in July 2023, which initiated a 30-day stakeholder comment period. Staff received comments from Cadeo Group and Energy 350. Based on the comments, staff added clarity to the description of the Market Analysis line item to increase understanding of the scope of this budget item, adjusted the RTF manager travel budget to allow for potential increased travel to relevant conferences in 2024, and increased the budget for the enhancements to the residential energy efficiency and demand response modeling tool specific to heat pumps and heat pump water heaters. At its September 19th meeting, the RTF adopted the work plan with recommendation to the Council for approval. The RTF PAC met on September 15th to review the proposed work plan. A positive recommendation from the RTF PAC is included in the Council packet.

The proposed 2024 budget is $2.56 million. This budget includes the agreed funding for 2024 ($1.98 million) and $483,744 of additional unspent funds from 2020-2023. Staff believes this is adequate to support the level of work expected to be feasible in 2024. This includes ensuring focus on the core work of measure development and maintenance, while tackling several projects in support of broader understanding around energy efficiency and demand response savings, costs, and benefits.

ATTACHMENTS
RTF 2020-2024 Business Plan, Updated for the 2024 Work Plan
Proposed Detailed 2024 Work Plan (Excel)
Recommendation Memo from the RTF Policy Advisory Committee Co-Chairs

Northwest **Power** and **Conservation** Council

October 4, 2023

MEMORANDUM

TO: **Council Members**

FROM: **Ginny Burdick, Co-Chair, RTF Policy Advisory Committee**
Debbie DePetris, Co-Chair, RTF Policy Advisory Committee

SUBJECT: **Recommendation for approval of the RTF 2024 Work Plan and Budget**

The RTF Policy Advisory Committee (PAC) recommends approval of the 2024 RTF Work Plan and Budget. The work plan and budget reflect a scope of work and level of effort that was agreed to by all funders and supported through our five-year funding agreements for 2020 through 2024.

Most of the work plan focuses on the core strengths of the RTF over the past 20 years: developing electric energy efficiency savings estimates and methodologies for use in the region's efficiency program planning and evaluation. In addition, this work plan continues efforts to analyze natural gas energy efficiency savings. The work plan also expands its focus on demand response opportunities, with particular focus on understanding, and in turn properly accounting for, the full interaction of costs and benefits between energy efficiency and demand response opportunities. The 2024 Work Plan also identified other important projects that continue to improve our analysis of energy efficiency, including following recommendations identified in the Council's 2021 Power Plan and developing technical analysis that will support utility integrated resource plans and future Council planning.

The RTF PAC agrees that the funding levels are appropriate and sufficient to support the work of the RTF in fulfilling its directive and meeting the needs of regional utilities. The RTF PAC appreciates the opportunity to offer this recommendation to the Council and respectfully requests the Council's approval of the 2024 Work Plan and Budget.

2024 RTF Work Plan and Budget

October 12, 2023
Council Meeting
Laura Thomas, RTF Manager

Northwest Power and Conservation Council

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Purpose

Seeking Council approval of the 2024 RTF Work Plan and Budget

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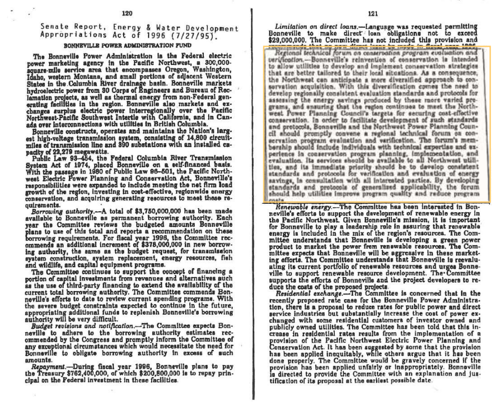
Regional Technical Forum History

- In 1996, Congress directed Bonneville and the Council to convene a Regional Technical Forum in Senate Report 104-120 to:
  - Develop standardized protocols for verifying and evaluating conservation savings
  - Ensure region meets Council's conservation targets
  - Include individuals with appropriate technical expertise
  - Ensure services are available to all NW utilities
- RTF consists of 20-30 individuals representing a range of technical expertise and perspectives and do not represent their individual organizations
  - Appointed by the Council every three years



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Senate Report, Energy & Water Development Appropriations Act of 1996 (7/27/95).

BONNEVILLE POWER ADMINISTRATION FUND

The Bonneville Power Administration is the Federal electric power marketing agency in the Pacific Northwest, a 300,000-square-mile service area that encompasses Oregon, Washington, Idaho, western Montana, and small portions of adjacent Western States in the Columbia River drainage basin. Bonneville markets hydroelectric power from 30 Corps of Engineers and Bureau of Reclamation projects, as well as thermal energy from non-Federal generating facilities in the region. Bonneville also markets and exchanges surplus electric power interregionally over the Pacific Northwest-Pacific Southwest Intertie with California, and in Canada over interconnections with utilities in British Columbia.

Bonneville constructs, operates and maintains the Nation's largest high-voltage transmission system, consisting of 14,800 circuit-miles of transmission line and 390 substations with an installed capacity of 22,279 megawatts.

Public Law 93–454, the Federal Columbia River Transmission System Act of 1974, placed Bonneville on a self-financed basis. With the passage in 1980 of Public Law 96–501, the Pacific Northwest Electric Power Planning and Conservation Act, Bonneville's responsibilities were expanded to include meeting the net firm load growth of the region, investing in cost-effective, regionwide energy conservation, and acquiring generating resources to meet these requirements.

Borrowing authority.—A total of $3,750,000,000 has been made available to Bonneville as permanent borrowing authority. Each year the Committee reviews the budgeted amounts Bonneville plans to use of this total and reports a recommendation on these borrowing requirements. For fiscal year 1996, the Committee recommends an additional increment of $378,000,000 in new borrowing authority, the same as the budget request, for transmission system construction, system replacement, energy resources, fish and wildlife, and capital equipment programs.

The Committee continues to support the concept of financing a portion of capital investments from revenues and alternatives such as the use of third-party financing to extend the availability of the current total borrowing authority. The Committee commends Bonneville's efforts to date to review current spending programs. With the severe budget constraints expected to continue in the future, appropriating additional funds to replenish Bonneville's borrowing authority will be very difficult.

Budget revisions and notification.—The Committee expects Bonneville to adhere to the borrowing authority estimates recommended by the Congress and promptly inform the Committee of any exceptional circumstances which would necessitate the need for Bonneville to obligate borrowing authority in excess of such amounts.

Repayment.—During fiscal year 1996, Bonneville plans to pay the Treasury $762,400,000, of which $200,800,000 is to repay principal on the Federal investment in these facilities.

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Limitation on direct loans.—Language was requested permitting Bonneville to make direct loan obligations not to exceed $29,000,000. The Committee has not included this provision and recommends that no new direct loans be made in fiscal year 1996.

Regional technical forum on conservation program evaluation and verification.—Bonneville's reinvention of conservation is intended to allow utilities to develop and implement conservation strategies that are better tailored to their local situations. As a consequence, the Northwest can anticipate a more diversified approach to conservation acquisition. With this diversification comes the need to develop regionally consistent evaluation standards and protocols for assessing the energy savings produced by these more varied programs, and ensuring that the region continues to meet the Northwest Power Planning Council's targets for securing cost-effective conservation. In order to facilitate development of such standards and protocols, Bonneville and the Northwest Power Planning Council should promptly convene a regional technical forum on conservation program evaluation and verification. The forum's membership should include individuals with technical expertise and experience in conservation program planning, implementation, and evaluation. Its services should be available to all Northwest utilities, and its immediate priority should be to develop consistent standards and protocols for verification and evaluation of energy savings, in consultation with all interested parties. By developing standards and protocols of generalized applicability, the forum should help utilities improve program quality and reduce program costs.

Renewable energy.—The Committee has been interested in Bonneville's efforts to support the development of renewable energy in the Pacific Northwest. Given Bonneville's mission, it is important for Bonneville to play a leadership role in assuring that renewable energy is included in the mix of the region's resources. The Committee understands that Bonneville is developing a green power product to market the power from renewable resources. The Committee expects that Bonneville will be aggressive in these marketing efforts. The Committee understands that Bonneville is reevaluating its current portfolio of renewable resources and urges Bonneville to support renewable resource development. The Committee supports the efforts of Bonneville and the project developers to reduce the costs of the proposed projects.

Residential exchange.—The Committee is concerned that in the recently proposed rate case for the Bonneville Power Administration, there is a proposal to reduce rates for public power and direct service industries but substantially increase the cost of power exchanged with some residential customers of investor owned and publicly owned utilities. The Committee has been told that this increase in residential rates results from the implementation of a provision of the Pacific Northwest Electric Power Planning and Conservation Act. It has been suggested by some that the provision has been applied inequitably, while others argue that it has been done properly. The Committee would be gravely concerned if the provision has been applied unfairly or inappropriately. Bonneville is directed to provide the Committee with an explanation and justification of its proposal at the earliest possible date.

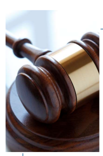
*Senate Report 104-120 – Energy and Water Development Appropriations Bill, 1996

RTF Activities Outlined in Charter

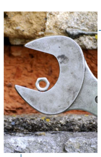
Develops and maintains measure library with savings, lifetime costs, and estimated value to the power system

Analyzes the demand response impact of technologies that also provide energy efficiency

Provides analytical support to the Council in assessing energy efficiency measures, demand response technologies, technology trends, etc.



Has an established process for updating measures and an appeals process for demonstration of different values



Maintains tools that support analysis of energy efficiency and demand response opportunities for RTF/Council work, as well as utility programs and NEEA

Conducts the annual Regional Conservation Progress survey on behalf of the Council to track regional progress against Council goals

Values of the RTF

Leverages the energy efficiency work across the region to reduce the individual burden on any one utility

Brings together thirty unbiased, technical experts to analyze the data and provide recommendations

Uses a public process to bring transparency, as well as additional ideas and expertise, to the analysis

Reduces some of the friction between utilities and regulators when estimating and claiming savings

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Where Does the Funding Come From?

- RTF is funded by BPA, Energy Trust of Oregon, and regional utilities
  - Council also supports RTF through staff, office/meeting space, etc.
- RTF Policy Advisory Committee consists of funders and other key organizations to advise the Council on policy and scope considerations around the RTF
- Committee also is responsible for securing funding for RTF

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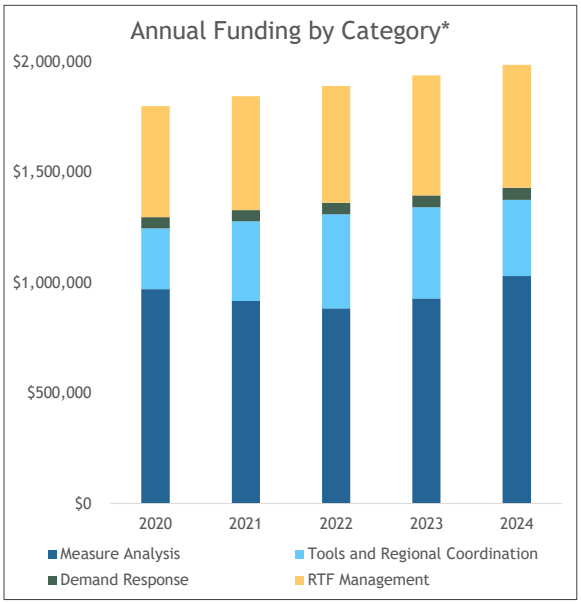
Agreed Funding Levels

- Starting with $1.8 million in 2020 and increasing with inflation
- Sufficient budget for:
  - 6 contract analysts
  - Additional contract support
  - RTF Manager
- Funders agreed to manage this as a five-year budget, allowing unspent funds from early years to support expanded scope in later years as needed



*Does not include NW Power and Conservation Council contribution

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Work Plan Development Timeline

July 18
- Presented draft work plan to the RTF and start of stakeholder comment period

August 18
- Stakeholder comment period closed

September 15
- Presented proposed final work plan to the RTF PAC for recommendation to the Council

September 19
- Presented proposed final work plan to the RTF for approval

October 4
- Submitted work plan to the Council for consideration

October 12
- Today, seeking Council decision for adoption

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Proposed 2024 Work Plan Budget

Category	Contract RFP	Contract Analyst Team + Manager	Total Funders	Council Staff Contribution	Percent of Total
Existing Measure Maintenance	$285,700	$466,000	$751,700	$24,640	29%
New Measure Development	$83,657	$386,900	$470,557	$6,930	18%
Standardization of Technical Analysis	$45,000	$180,000	$225,000	$0	9%
Tool Development	$50,000	$71,000	$121,000	$3,000	5%
Regional Coordination	$240,000	$210,830	$450,830	$21,000	18%
Demand Response	$0	$55,000	$55,000	$10,000	2%
Regional Conservation Progress & Website	$61,200	$0	$61,200	$45,000	2%
RTF Meeting Support	$136,400	$133,000	$269,400	$10,000	11%
RTF Management	$7,000	$153,000	$160,000	$66,500	6%
Total	**$908,957**	**$1,655,730**	**$2,564,687**	**$187,070**	**100%**

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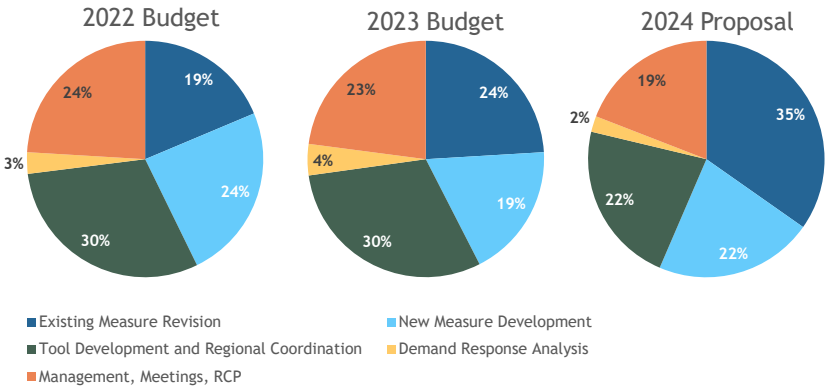
Total Budget Compared to Previous Years

Comparison of 2024 Budget by Category to 2022-2023



- More measures sunsetting in 2024
- Completing some projects delayed in previous years
- Increased focus on new measures to support region based on feedback received

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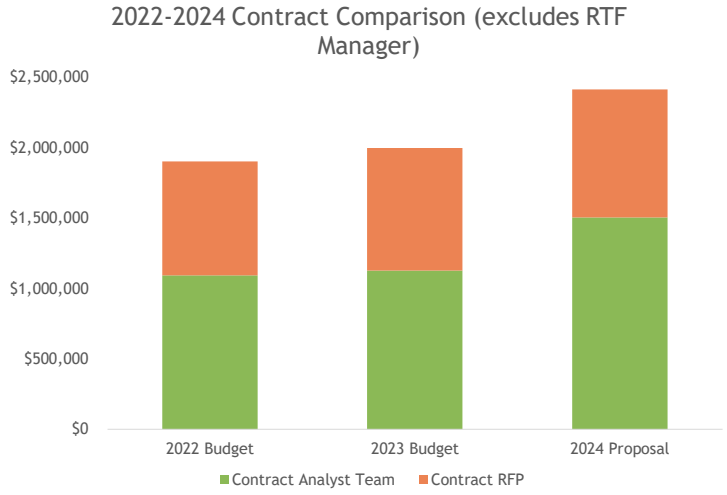
Breakout Between Contract Analyst and Other Contracts



- Contract Analyst provide analytical support, work with subcommittees, and develop recommendations for RTF consideration
- Proposing an increase in the amount of CAT support for 2024 (to 7 FTE)
- Majority of the work is energy efficiency measure development best suited for CATs

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Projects Identified for 2024

- Measure maintenance and development
- Updates to Standard Information Workbook and Guidelines
- Enhancements to residential modeling for heat pumps and water heating
- Continuing efforts on the EE and DR interface
- Creating and improving savings shapes to inform on timing of savings
- Continuing work on 2021 Power Plan directives for valuation
- Increased support of regional research coordination and planning

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Stakeholder Comments and Updates

- Staff made three changes based on stakeholder comments:
  - Residential modeling budget for HPWH and heat pump work was doubled to $50k due to strong regional interest
  - Additional description was provided for the Market Analysis budget to provide better understanding of what this budget item captures
  - RTF Manager travel budget was increased based on recommendation for potential attendance to ACEEE Summer Study in 2024 or another relevant conference

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Comments Received and Responses

Work Plan Category/ Topic	Comment	Response
Demand Response	One commenter expressed concern that the budget for DR is low but understands that is due to the determined amount in the RTF business plan. Recommend reassessing the budget in the next business plan as demand response will continue to be important area for the industry to consider	No changes made to the work plan based on this comment, this will discussed during the development of the next five-year business plan starting late 2023/early 2024
Tools	One commenter noted the RTF's modeling tools have DR capabilities, but calibration was mostly done on monthly data and to use these tools for DR purposes hourly/daily data will be needed. Potentially additional calibration maybe needed if the tools will be used for DR and using hourly/daily data sources. Additionally, considering COVID impacts on load shapes and our calibration efforts will be important.	• REEDR calibration plan has changed direction to focus more closely on HEMs data, which includes 15-minute/hourly data. • No changes are made to the work plan based on this comment, but this feedback will be incorporated as we move forward with the commercial savings shape and model updates in 2024.
Measure work	One commenter expressed support of the new measure scan included in the work plan for 2024 and would encourage this be done on a regular cadence even if that is only every 5 years or so.	No changes were made as this was just supporting items in the work plan and staff will consider this in future work plans based on the new measure queue.
Contractor support	One commenter noted that it appeared that the work plan was proposing expanding the RTF Contract Analyst team and they advocated for that approach if there is adequate budget.	No changes were made as this comment supported the work plan's proposal to expand the RTF Contract Analyst team.

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Continued: Comments Received and Responses

Work Plan Category/ Topic	Comment	Response
Rollover Budget	One commenter suggested that unspent funds from previous years of the business plan could be used for primary research efforts on several planning measures to move them to proven. The commenter recommended developing a priority research list of planning measures and what it might take to contract out the work to get them to proven. Regardless, it would help fulfill research objectives, remove the barrier of scheduling and procuring services through utility programs, and better inform cost estimates for future research through learning (i.e., can all this work in the research strategy really be done for $100k?)	Not incorporated into the work plan at this time as the RTF does not do primary research.

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Summary

- Seeking approval from the Council of the 2024 RTF Work Plan and Budget of $2,564,687
  - These funds next year will be spent to provide the core functions and mission of the RTF to establish methods for reliable energy savings, including
    - Measure development
    - Tool development
    - Demand response
    - Regional coordination and analysis
    - Administrative

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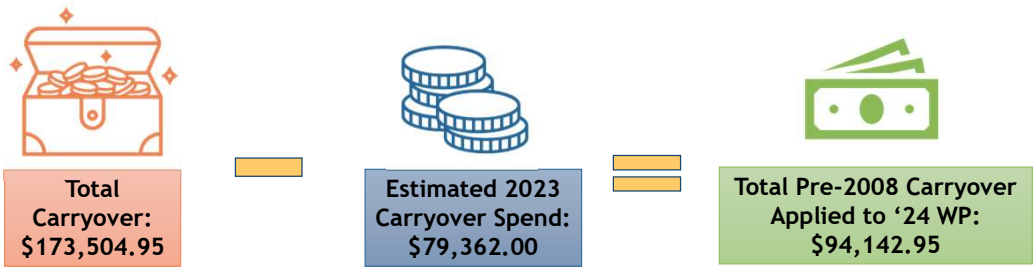
Pre-2008 Carryover Funds

- At the start of this business plan cycle, we found unspent funds from earlier years of the RTF (pre-2008), and we felt it was impossible to identify the correct funders to return these funds. The PAC discussed and agreed to apply these funds to this business cycle to accelerate or expand work. Any remaining portion of these funds at the end of 2024 would be returned to the electric funders based on the current pro rata share.
- In preparing for the final year of this business plan, we took time to revisit the estimate of pre-2008 funds to ensure we had the correct estimate. This resulted in a slight increase of $5,000 which has now been accounted for.



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Budget Based on Business Plan

Category	Contract RFP	Contract Analyst Team + Manager	Total Funders	Council Staff Contribution
Existing Measure Maintenance	$285,700	$466,000	$751,700	$24,640
New Measure Development	$30,500	$277,900	$308,400	$5,390
Standardization of Technical Analysis	$0	$180,000	$180,000	$0
Tool Development	$50,000	$21,000	$71,000	$2,500
Regional Coordination	$0	$130,100	$130,100	$21,000
Demand Response	$0	$55,000	$55,000	$10,000
Regional Conservation Progress & Website	$61,200	$0	$61,200	$45,000
RTF Meeting Support	$136,400	$133,000	$269,400	$10,000
RTF Management	$7,000	$153,000	$160,000	$66,500
Total	$570,800	$1,416,000	$1,986,800	$185,030

- Includes:
  - 32 existing measures
  - 7 new measures and whole building work
  - Maintenance and refinement of residential and commercial models

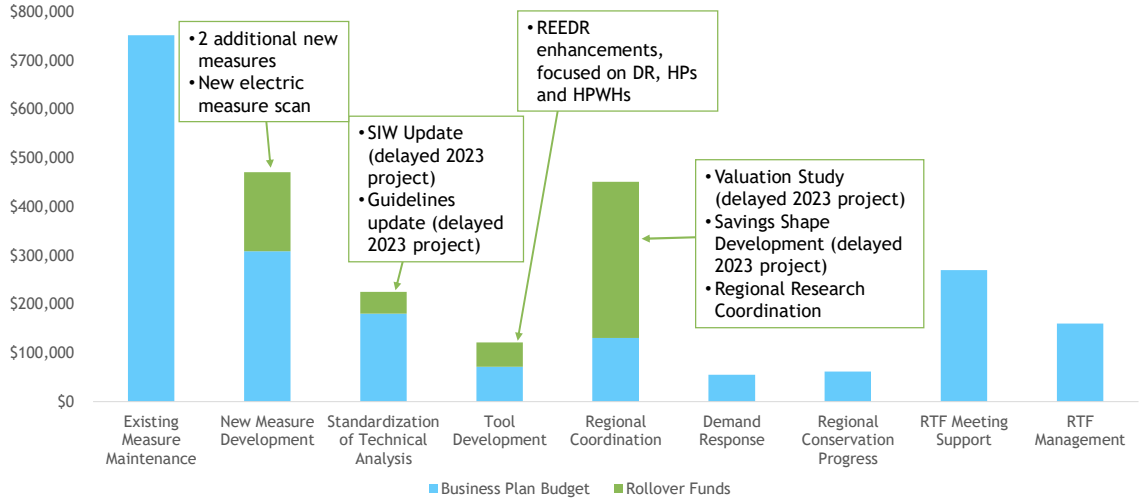
Additional Rollover and Carryover Funds

Estimated 2023 Rollover: $483,744

Estimated Pre-2008 Carryover: $94,142.95

What is this from?
- Three projects were delayed in 2023
- Contracts for some projects were less than originally estimated
- Estimate of underspend to allow for balancing budget between 2023 and 2024

Proposed Budget with Rollover Applied



Regional
Technical Forum

Regional Technical Forum
2020-2024 Business Plan

Updated for the 2024 Work Plan
Final Proposed: October 2, 2023

Introduction

The Regional Technical Forum (RTF) is an advisory committee to the Northwest Power and Conservation Council (Council). The RTF meets monthly to review analysis and make decisions on methodologies for estimating energy efficiency savings and demand response impacts. The RTF is supported by Council staff and outside contractors that manage the workflow and conduct technical analysis. This document describes the RTF's role, funding, operations and staffing, and planned activities for the 2020-2024 period. It has been updated to reflect refinement in the business plan based on the work completed in 2020-2023 and the anticipated needs for 2024.

Role of the RTF

The RTF was formed in 1999 as an advisory committee to the Council in response to a directive from Congress (1996) and the 1996 Comprehensive Review of the Northwest Energy System. The primary roles of the RTF have been, and continue to be:

- Developing and maintaining a readily accessible list of eligible conservation resources, the estimated lifetime costs and savings associated with those resources, and the estimated regional power system value associated with those savings;
- Establishing a process for updating the list of eligible conservation resources as technology and standard practices change, and an appeals process through which utilities, trade allies, and customers can demonstrate that different savings and value estimates should apply;
- Developing a set of protocols by which the savings and system value of conservation resources should be estimated with a process for applying the protocols to existing or new measures;
- Assisting the Council in assessing: 1) the current performance, costs and availably of new conservation technologies and measures; 2) technology development trends; and 3) the effect of these trends on the future performance, cost and availability of new conservation resources;
- Tracking regional progress toward the achievement of the region's conservation targets by collecting and reporting on regional research findings and energy savings annually.

For the 2020-2024 funding cycle, the RTF will expand upon its core mission to include:

- Developing and maintaining a list of natural gas and dual fuel energy efficiency resources, including methodologies for estimating lifetime energy savings and costs associated with those resources, and a process for updating those estimates as technology and standard practices change
- Conducting technical analysis on technologies that provide both energy efficiency and demand response potential to assist the Council in assessing the technical potential of the technologies

Funding

The RTF is funded by Bonneville, the Energy Trust of Oregon, investor-owned utilities, and large generating public utilities in the region. The RTF Policy Advisory Committee (RTF PAC) established funding levels for 2020-2024 based on the planned activities described below in more detail. The proposed funding level for the five-year period is $9,461,300, starting out at $1.8 million in 2020 and increasing annually at 2.5% to account for inflation. The five-year funding period provides a level of consistency to ensure long-term goals of the RTF are sufficiently supported, while providing flexibility to meet regional needs on an annual basis.

The RTF PAC agreed to use the allocation method developed by the Northwest Energy Efficiency Alliance (NEEA) for funding. The RTF PAC further agreed to the following methodology for sharing costs across the electric and gas utility funds:

- Electric ratepayer dollars are allocated to work that is intended to solely support electric demand side management programs (ex: electric-only energy efficiency measures and demand response)
- Gas ratepayer dollars are allocated to work that is intended to solely support natural gas programs (ex: gas-only efficiency measures)
- Costs will be shared for work that is intended to support all ratepayers (ex: dual fuel measures, tool development, and overhead) with 75 percent allocated to electric ratepayer dollars and 25 percent to gas ratepayer dollars

The resulting funding shares are as follows:

Table 1: Funding Shares and Five-Year Contribution

Organization	Proposed Funding Share	Total 5-Year Contribution
Bonneville Power Administration	30.03%	$2,841,100
Energy Trust of Oregon	22.54%	$2,132,800
Puget Sound Energy	18.99%	$1,796,500
Idaho Power Company	7.54%	$713,300
Avista Corporation, Inc	6.78%	$641,400
PacifiCorp (Washington)	2.08%	$197,200
PacifiCorp (Idaho)	1.78%	$168,200
NorthWestern Energy*	1.70%	$161,000
Seattle City Light	2.86%	$270,800
PUD No 1 of Clark County	1.02%	$96,800
Tacoma Power	0.77%	$73,200
Snohomish County PUD	0.54%	$51,400
Eugene Water and Electric	0.17%	$16,500
Chelan County	0.81%	$76,700
PUD No 1 of Cowlitz County	0.15%	$14,500
Cascade Natural Gas	1.66%	$157,000

NW Natural	0.56%	$52,900
Total	**100.00%**	**$9,461,300**

*NorthWestern Energy share adjusted to 52% of NEEA allocation share.

The RTF PAC agreed to manage the funding as a five-year budget, by applying any unspent and unallocated funds from previous years to later years. At the end of the five-year period, any unspent funds will be credited back to the funders.

In addition to the agreed to funding for this work plan cycle, the RTF PAC considered how best to apply funds that were not spent or returned from the early years of the RTF prior to the implementation of formal funding agreements. The carryover funding from previous cycles totals $173,504.95. The RTF PAC agreed to apply these funds to additional work in this 2020-2024 Business Plan cycle for a total five-year budget of $9,629,032.

Operations and Staffing

The RTF is an advisory committee consisting of 20-30 voluntary members. The Council appoints the membership to ensure a fair balance in technical expertise for successful completion of the work plan. The RTF as a body meets approximately once a month for a full-day meeting at the Council's main office in Portland, OR.

To reduce the burden placed on the voluntary members, the RTF budget supports funding for one full-time manager and contracted technical support. The RTF Manager is a Council employee whose responsibility is to oversee day-to-day operation of the RTF. This includes developing and managing work plans, managing contracts, developing quarterly and annual reports, and interfacing with the Council. Approximately 6 percent of the RTF budget goes to this function in 2024.

The largest portion of the budget (around 59 percent in 2024) supports a team of dedicated contract analysts that conduct the bulk of technical analysis on behalf of the RTF. The RTF transitioned to this team approach from one-off contracts as a way of ensuring greater consistency in analysis across work products and providing flexibility in workflow for achieving annual work plan goals. The 2024 funding levels are sufficient to support up to seven contract analysts.

The remaining 35 percent of the budget is set aside for specific contracts in support of work plan goals. This work generally falls into one of the following categories: 1) contracting with a firm to act as a third party for quality control review, 2) supporting members attendance at meetings, and 3) expanding the technical capabilities of the team for specific projects or tool development.

Council Contribution

In addition to the funding described above, the Council contributes staff time and office and meeting space to the RTF. From a staffing perspective, the Council contributes staff to operation, coordination, technical analysis, contracting and legal assistance, and other administrative tasks. These staff contributions are estimated in the table below. The exact estimates will be updated annually to reflect the previous year rollover of funds, application of carryover from previous cycles, and any shifts across categories.

Table 2: Annual Funding Levels

	2020	2021	2022	2023	2024
Contract RFP	$433,000	$431,400	$412,900	$440,400	$436,000
Contract Analyst Team	$1,193,000	$1,235,200	$1,295,400	$1,310,600	$1,358,700
RTF Manager	$174,000	$178,400	$182,800	$187,400	$192,100
Annual Funding	**$1,800,000**	**$1,845,000**	**$1,891,100**	**$1,938,400**	**$1,986,800**
Council Staff Contribution	$185,600	$190,300	$195,000	$199,900	$204,900

Activities and Budget

The specific tasks contained in this business plan are driven by existing measure work, anticipated growth for new measure requests, and expectations for future analysis tied to regional research or planning efforts. The specific work in any calendar year is largely driven by the existing measure needs and any requests received from parties within the region, primarily utilities, Bonneville, the Energy Trust of Oregon, NEEA, and Council staff. The RTF solicits topics from stakeholders through an annual request as part of the work planning and through an online form for proposing new measures. Each year, the RTF typically adjusts the allocation of resources among the categories in its work plan based on requests received, proposals, and the pace of multi-year projects. The RTF notifies the Council and its funders of all significant reallocation of resources or priorities. Table 3 provides an overview of the anticipated allocation of work for the 2020-2024 business plan cycle, and Table 4 provides a detailed breakdown of activities for 2024. Annual changes in Table 3 budgets represent anticipated shifts in work between measure analysis and other analytical support through tools and regional coordination. More details on those shifts are provided below.

Table 3: Strategic Plan Funding, by high level category, excluding Council contribution

Subtotal Funders	2020	2021	2022	2023	2024
Measure Analysis	$971,000	$916,300	$883,500	$928,400	$1,029,900
Tools and Regional Coordination	$275,000	$360,800	$425,600	$413,500	$345,400
Demand Response	$50,000	$51,200	$52,500	$53,800	$55,200
RTF Management/Administration	$504,000	$516,700	$529,500	$542,700	$556,300
Total	**$1,800,000**	**$1,845,000**	**$1,891,100**	**$1,938,400**	**$1,986,800**

Table 4: Proposed 2024 Budget Levels

Category	Contract RFP	Contract Analyst Team and Manager	Total Funder Contribution	Council Contribution	% of total
Existing Measure Maintenance	$285,700	$466,000	$751,700	$24,640	29%
New Measure Development	$83,657	$386,900	$470,557	$6,930	18%
Standardization of Technical Analysis	$45,000	$180,000	$225,000	$0	9%
Tool Development	$50,000	$71,000	$121,000	$3,000	5%
Regional Coordination	$240,000	$210,830	$450,830	$21,000	18%
Demand Response	$0	$55,000	$55,000	$10,000	2%
Regional Conservation Progress	$61,200	$0	$61,200	$45,000	2%
RTF Meeting Support	$136,400	$133,000	$269,400	$10,000	11%
RTF Management	$7,000	$153,000	$160,000	$66,500	6%
Total	**$908,957**	**$1,655,730**	**$2,564,687**	**$187,070**	**100%**

As of September 13, 2023, staff estimates around $483,744 of unspent/unallocated funds from 2020-2023. Additionally, $94,143 of carryover funds (all electric) from early years of the RTF remain unspent. The primary drivers for unspent funds are:

- Reduction in meeting costs in 2020-2022 due to Covid-19 and reduced in person meetings in 2023
- Reduction in contract analyst team workflow in 2020 as the team adjusted to Covid-19 impacts
- One contract analyst leaving the RTF mid-year in 2021, resulting in roughly 45 percent of the contract unspent
- Decision not to pursue project on savings shape development in 2021 ($100k), as it relies heavily on the regional end use load metering and would benefit from a longer metering period to better account for post-Covid-19 “normal”
- Actual contract cost of one project in 2023 was substantially less than anticipated
- Decision to delay of multiple projects to allow additional time to identify appropriate next steps, including the RTF Guidelines update, Standard Information Workbook update, and additional valuation studies
- Reduction in management costs due to changes in RTF manager

Included in Table 4, is an increase to the original agreed to amount. This reflects the application of $577,887 in rollover and carryover funds to work planned for 2024. The additional funds are specifically tagged for contract RFP work and identified in more detail below.

Measure Analysis

Approximately 50 percent of the five-year budget is anticipated to directly support measure analysis. This includes maintenance of the existing measure library, the addition of new measures, and activities associated with ensuring consistency in analysis approach across the entire measure suite.

Existing Measure Maintenance

One half of the measure analysis work is focused on the maintenance of existing measures. The pace of existing measure review and update is driven by the sunset dates of measures. The RTF assigns sunset dates that range from one to five years based on the specific circumstances of a measure. For example, the RTF typically applies shorter sunset dates for measures in markets that are changing rapidly to keep pace with that change, whereas it applies longer sunset dates to more stable markets and measures. Other factors that will impact sunset dates are anticipated updates to Federal or state codes and standards, updates to ENERGY STAR® specifications, or anticipation of new data. The number of anticipated measures sunsetting or otherwise requiring review in any given year of the funding cycle ranges between 16 and 26 measures. This assumption is in line with the 2015 to 2018 funding cycle, during which time the number of existing measures considered in any year ranged from 15 to 30.

The 2024 work plan assumes updates to 32 of its existing measures. This is driven by the sunset dates of 19 electric measures, 11 dual fuel measures, and 2 gas measures. The work includes measure review and update by the contract analyst team and quality control/quality assurance review by an outside contractor.

New Measure Development

The RTF is continually seeking ways to provide value to the region's utilities. As efficiency programs are successful in transforming markets, emerging technologies are going to be important for meeting future efficiency goals. To support this need, the RTF is allocating approximately 15 percent of its five-year budget to assessing new measure opportunities. The estimate of new measure work varies each year, with the anticipation of between six and nine new measures annually. The exact number of measures in any given year is highly uncertain, as it is driven primarily by utilities' needs. For reference, the RTF developed between two and nine new measures in any given year of the 2015 to 2019 funding cycle.

The 2024 work plan assumes development of eight new measures. There are several potential new measures in the RTF queue, and prioritizing funding on development of these measures will help to expand the RTF library in support of regional efficiency program needs. This assumes seven new electric and one new gas measures. This also assumes that the RTF will continue to focus some effort on providing guidance for reliable savings estimation of complex programs. The RTF is proposing to allocating approximately $162,000 in rollover funds to develop additional electric measures and perform a measure scan to identify new opportunities.

Standardization of Technical Analysis

The RTF has made attempts over the last several years to improve the consistency of its analysis across measures. Key to this was the development of Operative Guidelines and the establishment of a dedicated contract analyst team to perform the majority of the technical analysis. As part of the 2020 to 2024 funding cycle, the RTF is allocating approximately 15 percent of its five-year budget to ensuring thorough and consistent analysis across all its categories.

The largest portion of this work is to support coordination and review across the contract analyst team. This work primarily takes place in the weekly contract analyst team meeting, during which the team reviews each other's analysis, develops recommendations to the RTF for consideration, and explores new analytical techniques.

Another piece of this work is the maintenance of the RTF Operative Guidelines and its Standard Information Workbook. The RTF will be working to update the Guidelines with a specific focus on adding some consideration to addressing equity as part of evaluation. In addition, the Standard Information Workbook will be updated, particularly the costs and other parameters. Both of these updates will be completed by the end of 2024.

Support of Small and Rural Utilities

The RTF allocates a small portion of its new measure development ($40,000 annually, plus inflation) to support the needs of region's small and rural utilities. For 2024, this effort will be fully supported through one contract analyst's time. The work includes supporting a standing subcommittee that discusses the applicability of existing RTF measures to small and rural utilities and explores potential refinements to measures to better meet their specific needs. This work also includes the development of new measures of specific interest to small and rural utilities that might not otherwise get developed for the RTF.

Tool Development

The RTF maintains a handful of tools to support measure development, including its cost-effectiveness tool (ProCost) and building simulation models to estimate energy savings. For the 2020 to 2024 funding cycle, the RTF is allocating approximately 7 percent of its five-year budget to this function. The annual funding level varies, as much of the work is tied to other regional efforts. Additionally, the RTF will spend more time on tool development when there are fewer measures requiring update or development.

ProCost

The RTF uses and maintains the Council's cost-effectiveness tool. Given this, the ProCost development work is closely tied to the Council's regional planning cycles. In 2021 and 2022, the RTF pursued significant updates to ProCost that streamlined code, increased transparency, and improved functionality. The timing was to align with the Council's 2021 Power Plan. With these updates complete, the RTF assumes only minimal support in 2024.

Building Simulation Models

The RTF uses building simulation models for estimating energy savings in residential and commercial buildings. Currently, the RTF uses SEEM[1] for modeling residential single family,

[1] The Simplified Energy Enthalpy Model (SEEM) is developed and maintained by Ecotope. More information, and the latest version of SEEM, can be found on the RTF's website: https://rtf.nwcouncil.org/simplified-energy-enthalpy-model-seem.

manufactured homes, and low-rise multifamily buildings and uses EnergyPlus[2] to model commercial buildings. Much of the efforts in 2020 through 2024 are focused on ensuring that these models are well calibrated to the region's building stock.

In 2020-2022, the RTF focused on enhancing its commercial EnergyPlus models, leveraging the latest NEEA Commercial Building Stock Assessment for calibration and enabling more robust modeling of building energy. The RTF started using these models for measure analysis in 2021 and plans to continue this work going forward. In 2024, the RTF expects that some potential improvements or support will be needed based on savings shape development work to be completed in 2023 and the majority of time in these models will be supporting new measure analysis.

In 2020 and 2021, the explored alternative modeling tools or enhancements to improve its residential model for energy efficiency and demand response analysis. The outcome was a recommendation to pursue EnergyPlus for at least a portion of the residential work. A primary driver for this recommendation was the capabilities for enhanced demand response modeling and better interactive modeling between energy efficiency and demand response opportunities. In 2022, the RTF started to develop a front end that will best meet its needs into the future. This new front-end tool was launched and calibration started in 2023. In 2024, the RTF anticipates continued refinement of the tool for specific measures, including water heating enhancements, incorporating heat pump performance curves, and support of demand response modeling. As a portion of this work will be for enhancements focused for electric measures the RTF is proposing to apply $50,000 of rollover funds.

Regional Coordination

The RTF does not have funding for the primary research required to inform its savings analysis. Rather, the RTF relies on Bonneville, NEEA, the Energy Trust, the region's utilities, and others to conduct this primary research. The RTF has allocated approximately 9 percent of its five-year budget to coordinating with those regional entities to help inform research, identify opportunities to leverage that research for RTF analysis, and connect RTF analysis to regional efforts. As with its tool development efforts, the annual workflow varies to better coordinate with regional efforts, while also providing a balance in the RTF workload when there are fewer measures requiring updates or development.

Research Coordination

The RTF's contract analysts are expected to coordinate with regional entities to help inform regional research. This includes working with specific utilities on defining upcoming research needs that might support RTF measure development and discussing the outcomes of the research to inform measure analysis. As directed by interested research funders, the contract analysts can support coordination of joint research projects funded by utilities in support of RTF analysis.

[2] EnergyPlus is a whole building energy simulation program developed by the Department of Energy. The RTF uses and adapts the building prototype models to better reflect buildings in the Pacific Northwest, based on regional data from NEEA's Commercial Building Stock Assessment.

The RTF also allocates a portion of contract analyst time to help inform regional studies, such as the NEEA stock assessments. The RTF supports contract analyst time for engagement in the Residential Building Stock Assessment work group, which provides guidance throughout the design and implementation of the study.

Market Analysis Review

The RTF, Council, and efficiency programs rely on market intelligence to inform baselines and program design. Over the last several years, Bonneville and NEEA have dedicated more resources to studying markets. During the 2020 through 2024 business cycle, the RTF will allocate resources to engagement in this research. The goal of this effort is to understand available data, provide recommendations on data analysis, weigh in on uncertainty around market factors, and support estimation of total market consumption.

Savings Shape Development

Over the last few years, the region has increased its focus on understanding when energy efficiency measures save energy to inform how energy efficiency can provide capacity benefits. The RTF reviewed its existing load profiles to understand the relative quality of profiles and where better data are needed to improve our understanding of the timing of savings. The region has also launched residential and commercial end use metering studies to collect more data on energy use. In this business plan, the RTF has allocated resources to using the results of the end use metering studies (and other data sources as available) to develop end use load profiles and measure savings shapes. The bulk of this work is anticipated to occur in the latter half of the funding cycle, as the data come in and in preparation for the Council's ninth power plan.

The RTF delayed the work planned for 2023 to continue to enhance its savings shape library and will be leveraging these unallocated funds in 2024. This work will leverage the RTF's EnergyPlus models, the regional end use load research, and other data.

Council Plan and Other Regional Support

Being an advisory committee to the Council, one of the roles of the RTF is to provide technical support and analysis on energy efficiency measures. Most of this work is directly tied to the Council's power planning efforts. The Council's 2021 Power Plan was finalized in early 2022. The RTF anticipates allocating some time to support Council work in 2024 as Council staff prepare for the midterm of the 2021 Power Plan.

In addition to supporting power planning analysis, the RTF has often been called upon to conduct technical studies on energy efficiency. For the 2020 to 2024 funding cycle, the RTF has allocated funding to support such a study. The 2021 Power Plan directed RTF to support the valuation of resiliency and flexibility, which will be used in future planning analysis. This work started in 2022. The RTF anticipates continuing this work, specifically focused on the energy efficiency and demand response interaction for flexibility, in 2024, and allocating the carryover funding and some of the rollover funding of approximately $120,000 to an additional valuation study. Additionally, the RTF anticipates focusing on advancing the resiliency valuation work in 2024, specifically incorporating Council feedback into the Resilience Valuation Tool and determining how to present resilience values for RTF measures. An additional $30,730 in

rollover funds has been allocated to support the regional research coordination and Council Plan support as the 9th Power Plan development will begin in 2024.

Demand Response

The RTF has allocated 3 percent of its budget annually to support technical analysis on demand response technologies. The RTF will specifically look at technologies that provide both energy efficiency and demand response opportunities, as a way of leveraging the RTF's existing knowledge and thinking about these opportunities holistically. The RTF analysis will focus on technical considerations of the technologies, estimating the technical, per unit demand impact potential for technologies, absent any specific product design considerations. The purpose of this work is to be an input, of many, into Council and utility demand response supply curves.

The work in the 2020 to 2024 funding cycle builds upon the RTF's scoping effort in 2019. In 2020 through 2022, the focus of the work is on enhancing the RTF's analytical capabilities, including exploring enhancements to existing building simulation models or alternative modeling approaches. As described above, the work in 2024 focuses on continuing to update the RTF's demand response analysis leveraging the residential EnergyPlus work.

RTF Management

The final 28 percent of the budget is allocated to management of the RTF, including support for RTF meetings and the RTF Manager. This also includes management of the Council's Regional Conservation Progress survey.

Regional Conservation Progress Report

Per its charter, one of the roles of the RTF is to track the region's progress against the Council's power plan targets for energy efficiency. This is done through the annual Regional Conservation Progress (RCP) survey and report. Every year, the RTF collects data from Bonneville, Energy Trust, NEEA, and the region's utilities on the energy efficiency savings and expenditures from the previous year. The 2020 to 2024 funding cycle allocates $50,000 annually, plus inflation, to contract out the data collection and analysis. This budget assumes that the RTF Manager, in coordination with other Council staff, will be responsible for compiling the results into a final report for the Council.

Meeting and Member Support

The RTF meets approximately monthly for a one-day meeting. It is at these meetings where the formative work of the RTF occurs. Given the importance of these meetings, the RTF allocates approximately 15 percent of its budget to supporting this function. The most significant portion of this budget is ensuring that all the members and contract analysts are able to attend and participate in the monthly meetings in person. As noted above, the RTF members serve in a voluntary capacity. To ensure that all members can attend the meeting in person, the RTF supports travel costs and participation for some of the members. Additionally, several of the contract analysts have traditionally lived outside of Portland. Part of contract costs for these analysts includes the travel and time for attending the RTF meetings.

The RTF also allocates a small portion of the budget to contract out for meeting minute services, as well as phone lines and web conferencing. Each of these components is important to ensuring that the RTF meetings are publicly available, including to those that are unable to travel or attend a specific meeting.

The 2024 budget assumes that RTF meetings will be a mix of virtual and in person meetings.

Management and Administration

The final 10 percent of the RTF annual budget goes to support RTF management and administration. This is primarily the support of the RTF Manager, who provides the day-to-day management of the RTF.