



Snohomish County Regional Catastrophic Preparedness Grant Program (RCPGP) Case Study

Fiscal Year (FY) 2019

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FEMA

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1. Overview

The Federal Emergency Management Agency (FEMA) conducted a grant effectiveness case study with Snohomish County, Washington in 2023 to better understand how the Puget Sound Region used the fiscal year (FY) 2019 Regional Catastrophic Preparedness Grant Program (RCPGP) award to build capability related to logistics and supply chain management. FEMA conducted an on-site visit to Snohomish County, Washington to meet with key stakeholders at the Snohomish County Department of Emergency Management (DEM) and partner jurisdictions that worked together on the FY 2019 RCPGP grant. Stakeholders from the Puget Sound Region then shared their experiences with the RCPGP award process.¹ This case study identified the following key takeaways:

- The Puget Sound Region’s proximity to the Cascadia Subduction Zone (CSZ) has had a direct impact on its jurisdictions’ preparedness strategies and priorities, particularly relating to providing life-sustaining commodities to remote or isolated populations.
- Capability gaps identified in the Cascadia Rising 2016 (CR16) Exercise aligned with the Puget Sound Region’s efforts to use the RCPGP award to plan for population islands, contiguous areas isolated by roadway damage and bridge outages, and the provision of life-sustaining commodities during a catastrophic event.
- The Puget Sound Region’s approach to integrating jurisdictions into RCPGP-funded projects by using a tiered system of product development and review allowed for continuous collaboration across jurisdictions with varying resource availability and staffing levels to ensure an integrated, regional approach to building capabilities to address catastrophic events.
- Data-driven strategies and tools such as the RCPGP Community Point of Distribution (CPOD) Prioritization Tool and revised CPOD Siting Methodology have enabled the Puget Sound Region to better identify vulnerable populations and engage in cross-jurisdictional dialogue regarding mutual aid and emergency-planning efforts.
- Building partnerships with private sector and maritime partners through RCPGP-funded efforts has helped bridge knowledge gaps between the maritime and emergency management communities and helped validate planning assumptions across the region.
- Tailored products, such as community playbooks, provide volunteers with actionable next steps to establish operational communications and identify sources of life-sustaining commodities, such as potable water, during emergency incidents.

¹ Partners for the FY 2019 RCPGP grant award include the counties of Snohomish, Skagit, Island, King, Pierce, Thurston, Kitsap and Mason as well as the cities of Seattle, Tacoma, Bellevue, Renton, Everett, Olympia, Bainbridge Island, and the Tulalip Tribe.

This case study is part of a series of case studies that seek to better understand the implementation and use of RCPGP awards. Case studies within this series explore the efforts of RCPGP grant recipients to improve regional collaboration, communication, trust, and stakeholder relationships, in addition to grant recipients' efforts to improve regional capability in areas targeted by the RCPGP. These case studies also review trends in RCPGP investment decision-making.

Throughout this case study, FEMA analyzes the experiences of Snohomish County and the Puget Sound Region during the FY 2019 RCPGP period of performance. The Background section of this study describes the Puget Sound Region and the unique challenges it faces because of its proximity to the CSZ. The Regional Collaboration Section outlines regional collaboration and stakeholder engagement strategies to better illustrate the Puget Sound Region's approach to preparedness. The Key RCPGP Investment section highlights specific RCPGP-funded projects throughout the Puget Sound Region during FY 2019 and describes the experiences of jurisdictions, their communities, and project stakeholders. This case study concludes by highlighting the Puget Sound Region's experiences with the RCPGP award process and best practices for future RCPGP awardees.

2. Background

The Puget Sound Region, highlighted in **Figure 1**, consists of RCPGP participants from eight counties, seven cities, and one tribe, which partnered with one another in FY 2019 to administer the RCPGP award. The region is strongly influenced by its proximity to the CSZ, which has a high probability of producing a catastrophic earthquake that would directly impact the surrounding jurisdictions' critical infrastructure and access to life-sustaining commodities. The region's recognition of the challenges posed by the CSZ has influenced its individual jurisdictions' emergency and catastrophic planning efforts.

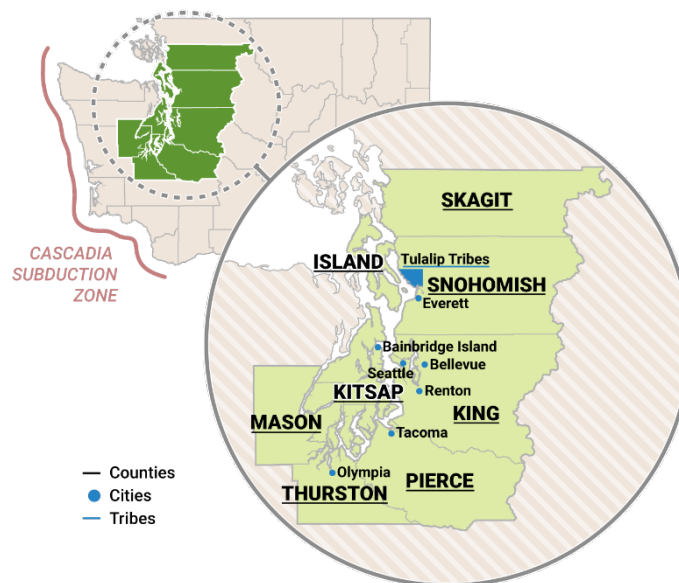


Figure 1: The Puget Sound Region

In 2016, the region participated in the CR16 exercise, which simulated a high magnitude earthquake along the CSZ and included participants from Washington, Oregon, British Columbia, and Alaska.² The exercise simulated severe damage to buildings and infrastructure as well as a tsunami that could further contribute to a catastrophic scenario in the Puget Sound Region. The CR16 exercise highlighted two important capability gaps for the jurisdictions within the Puget Sound Region. First, massive infrastructure breakages would most likely lead to population islands, which are contiguous areas isolated by roadway damage and bridge outages and create inaccessible remote areas or areas in which severely damaged infrastructure would make impacted populations initially unreachable. Second, CR16 illustrated that additional planning would be needed to provide life-sustaining commodities to people within those population islands during a catastrophic incident.

“None of [the jurisdictions] actually had the assets to deliver to those islands. So, when the FY 2019 notice of funding opportunity was released, supply chain and logistics of course was part of [our approach].”

*-Jason Biermann, Senior Policy Advisor,
Snohomish County Executive Office*

In 2019, the Puget Sound Region, led by Snohomish County, received an RCPGP award to focus on siting or identifying new locations or validating the current locations of CPODs. CPODs are specific points throughout a jurisdiction in which infrastructure and accessibility are likely to remain intact after a disaster. Additionally, the region focused on strengthening partnerships with maritime industries. These areas of emphasis directly relate to the two gaps identified by CR16. The Puget Sound Region used these areas of

emphasis to plan for population islands and provide life-sustaining commodities to those communities. These efforts also aligned with the RCPGP emphasis on building capability in logistics and supply chain management.

3. Regional Collaboration

Jurisdictions across the Puget Sound Region work collaboratively to identify potential projects to address capability gaps. In FY 2019, jurisdictions collaborated on investments related to identifying or siting and validating CPODs and providing life-sustaining commodities to the communities most likely to be impacted by a catastrophic earthquake scenario. The Regional Catastrophic Planning Team (RCPT) and the Snohomish County DEM, whose director served as the chair of the RCPT during the FY 2019 RCPGP application period, were the primary facilitators of regional collaboration efforts. This structure allowed for Snohomish County DEM to actively facilitate the RCPGP award through the RCPT and work directly with partners from across the region. The RCPT provides a forum for each of the jurisdictional partners in the Puget Sound Region to discuss jurisdiction-specific challenges as well as potential areas for cooperation. The following subsection describes the role and structure of the RCPT and its decision-making process.

² <https://mil.wa.gov/asset/604b7fa186e5f>

3.1. Regional Catastrophic Planning Team

The purpose of the RCPT is to enhance all-hazard regional catastrophic event planning and preparedness and to guide and manage RCPGP efforts. The FY 2019 RCPT comprised 21 voting members from counties, cities, tribes, and stakeholders—such as private and nonprofit entities—throughout the Puget Sound Region. **Figure 2** denotes the members of the FY 2019 RCPT.

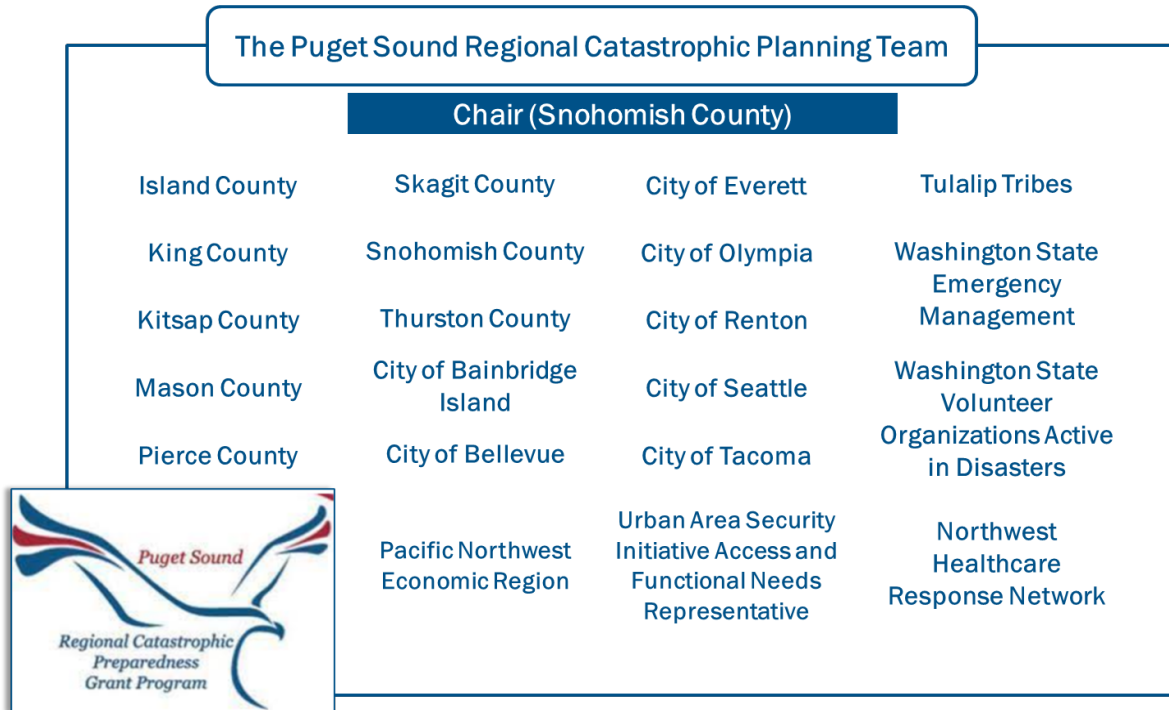


Figure 2: The Puget Sound RCPT

For the FY 2019 RCPGP award, the Snohomish County DEM served as the lead agency for the RCPT during the proposal process, held quarterly meetings with members to gain jurisdictions’ input on RCPGP project priorities, and identified common challenges across the Puget Sound Region where capability could be built. Through this process, the Puget Sound Region identified common priorities and approaches for building capability to respond to a catastrophic event and selected RCPGP-funded projects that were applicable to stakeholders across the region, such as identifying population islands. The process also helped the Puget Sound Region overcome the challenge of duplicating plans outlined within jurisdictional-, regional-, and state-level plans, which arise because the State of Washington and jurisdictions of the Puget Sound Region have different timelines for updating emergency plans. The Puget Sound Region was able to collaborate through the RCPT to reduce overlaps and ensure that scarce resources were being optimally distributed between partner jurisdictions to best serve residents during a catastrophic incident.

“[The RCPT] got together a couple of times to ensure we knew who still wanted to participate [in the FY 2019 RCPGP application] and then give everyone a chance to make their pitch for what they thought the application should look like.”

*-Jason Biermann, Senior Policy Advisor,
Snohomish County Executive Office*

3.2. Engaging Partner Jurisdictions

As Snohomish County began meeting with partner jurisdictions across the Puget Sound Region in FY 2019, jurisdictions demonstrated differing capabilities to support RCPGP efforts. Larger jurisdictions, such as the City of Seattle and King County, were more immediately able to provide staff and resources to support RCPGP-funded CPOD and private sector partnership building, whereas smaller jurisdictions were readily available to provide feedback on newly developed tools, templates, and guidance. Variations in jurisdictions' availability, staff, and resources across the region necessitated a tailored engagement strategy for the Puget Sound Region. More active jurisdictions were designated as "Tier 1" participants and were the primary developers of RCPGP-funded deliverables. Other jurisdictions were considered "Tier 2" participants, and were primarily the recipients of newly created tools, templates, plans, and other materials resulting from the FY 2019 RCPGP award. This distinction between jurisdictions in the Puget Sound Region allowed Snohomish County and the RCPT to task Tier 1 jurisdictions with supporting the primary objectives set forth by the RCPT and outlined in the RCPGP award proposal. Tier 2 jurisdictions were then tasked with testing, evaluating, and providing active feedback to improve materials after their development. Collaboration between partner jurisdictions in the Puget Sound Region allowed Snohomish County and the RCPT to identify key investment areas and reach the objectives set forth in the region's RCPGP proposal. The following section illustrates key investments from the region's FY 2019 RCPGP award as well as best practices that the jurisdictions of the Puget Sound Region implemented to overcome challenges during the period of performance.

4. Key RCPGP Investments

Snohomish County and its partner jurisdictions focused FY 2019 RCPGP investments on identifying and validating CPOD sites and building maritime capacity to rapidly respond to a catastrophic incident. Jurisdictions also used products created by RCPGP investments as a starting point to create tailored versions of products for their own preparedness efforts. Snohomish County and the RCPT's emphasis on building relationships between jurisdictions, creating strong local partnerships, and using data-driven decision-making to validate plans and investments across the Puget Sound Region underpinned the region's approach to investing RCPGP funds. Specifically, Snohomish County and its partner jurisdictions used the FY 2019 RCPGP award to identify population islands, validate sites for CPODs through GIS tools, hold trainings and exercises to increase engagement and preparedness of maritime industry partners, and create deliverables such as the volunteer playbooks. **Figure 3** provides an overview of the amount of RCPGP award funds that supported each of these efforts and select RCPGP-funded staff members. The following investments applied new planning assumptions that resulted from the FY 2019 RCPGP award while also overcoming project-specific challenges such as the COVID-19 pandemic, differing data collection and preparedness goals between jurisdictions, and staff turnover.

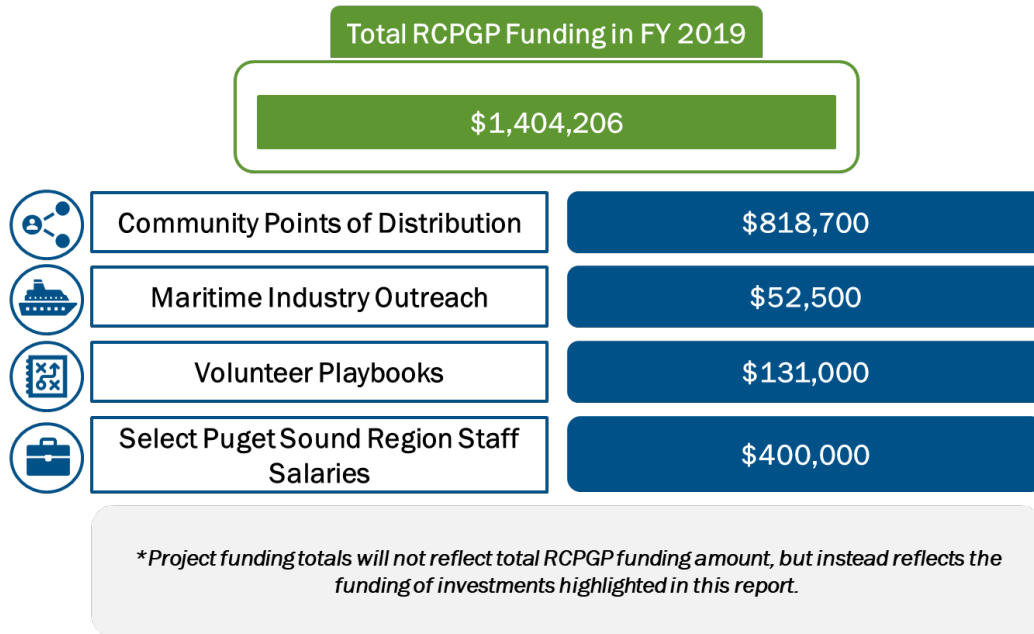


Figure 3: FY 2019 RCPGP Funding Totals

4.1. Validating Community Points of Distribution Sites

The Puget Sound Region invested \$818,700 of FY 2019 RCPGP funds to identify and validate viable locations for CPOD sites. The Puget Sound Region used new and existing data to create tools that helped jurisdictions identify new CPOD sites, reduce the overlap of existing CPOD sites, and identify population islands where individuals may be stranded during a catastrophic event.

4.1.1. POPULATION ISLANDS

Population islands are areas that may become inaccessible during a catastrophic event due to infrastructure damage and therefore unable to receive life-sustaining commodities. The Puget Sound Region used the FY 2019 RCPGP award to contract private sector company CNA to develop a data-informed process for estimating the number of CPOD sites required. The Puget Sound Region

“Having the population islands modeled, I think, has enabled a paradigm shift for emergency response planning in the region. Instead of arbitrarily cutting the county into four areas, we can actually identify places [where] we will need to work together.”

-Amy Lucas, Planning and Resiliency Program Manager, Snohomish County Department of Emergency Management

accounted for population islands in their emergency planning efforts by identifying which population islands would require a dedicated CPOD site during an incident, which population islands would be better suited for evacuation, and which sites would benefit from a workplace rallying point should traditional workplaces become unreachable. Snohomish County and the Puget Sound Region continue to benefit from knowing the locations of potential population islands by focusing on building capabilities in highly vulnerable areas and ensuring that scarce resources are more equitably

distributed during a catastrophic incident.

4.1.2. CPOD SITING METHODOLOGY

The Puget Sound Region also leveraged the new data compiled by CNA and regional partners to develop an updated methodology for identifying, siting, and validating existing CPOD sites outside of population islands. The new data points—including day and nighttime population estimates, functional needs, and food and grocery supply chain factors—helped the Puget Sound Region prepare a new methodology and expand upon its previous CPOD framework.

The largest benefits provided by the new methodology are the ability for the region to determine scoping by population need and better align the region to the CPOD placing criteria. While the previous methodology determined jurisdictions' and communities' needs using a fixed estimate, the updated methodology utilizes a dynamic need factor based on elements such as the time of day, an area's status as a population island, access to functional needs, and risk scenario. The change from a fixed estimate of a population's needs to a dynamic need factor allows jurisdictions to more accurately plan for catastrophic incidents and estimate the volume of aid that communities will need during an emergency. The Puget Sound Region also made additions to this new methodology to help estimate the number of CPODs an area might need and where to locate them, based on the probability of hazards such as landslides, liquefaction, and proximity to hazardous materials.

"[The methodology is] also in the concept of operations, and so people can take that up and repeat it within their own jurisdiction or apply it to their current timeframes."

- Amy Lucas, Planning and Resiliency Program Manager, Snohomish County Department of Emergency Management

"There was a supply chain project that came out prior to [the FY 2019 RCPGP projects] and I think that proved to be an inspiration for framing our conversation [around RCPGP project planning]."

-Elenka Jarolimek, ESF7 Coordinator, City of Seattle

The Snohomish County DEM noted that one of the largest benefits of the updated methodology is the thorough documentation of the update process itself. By creating materials such as guides and references for jurisdictions to use, jurisdictions can take the new CPOD Siting Methodology and apply it to their own communities. One example is the creation of just-in-time training videos, which can be pulled from an archive at the onset of an emergency event to quickly train new

staff and volunteers. Just-in-time training videos and supporting materials also allow the region to more quickly onboard new staff during periods of high turnover in emergency management agencies, which was indicated as a key challenge for jurisdictions such as Mason and Thurston Counties. Additionally, the updated CPOD Siting Methodology serves as a concept of operations, which allows jurisdictions to take principles outlined in the updated materials and apply them to incidents and emergency response efforts in real time. By updating scenarios and timeframes that are currently modeled in the CPOD Siting Methodology, jurisdictions are better prepared to respond during a catastrophic incident by adding their jurisdiction-specific information into these existing scenario templates, which are available on the region's shared ArcGIS website, the [RCPGP Hub](#).

4.1.3. PUGET SOUND RCPGP CPOD PRIORITIZATION TOOL

The Puget Sound Region also collaborated with CNA and partner jurisdictions to develop a GIS-based tool to prioritize CPOD efforts. The tool visualizes CPOD sites across the 16 partner jurisdictions on an interactive map of the region. The Puget Sound Region can use the tool to identify the number of residents that would need to be evacuated during a catastrophic incident and determine which areas might benefit most from a CPOD site. **Figure 4** illustrates the visualization tool and an example of the types of data points that are available to its users.

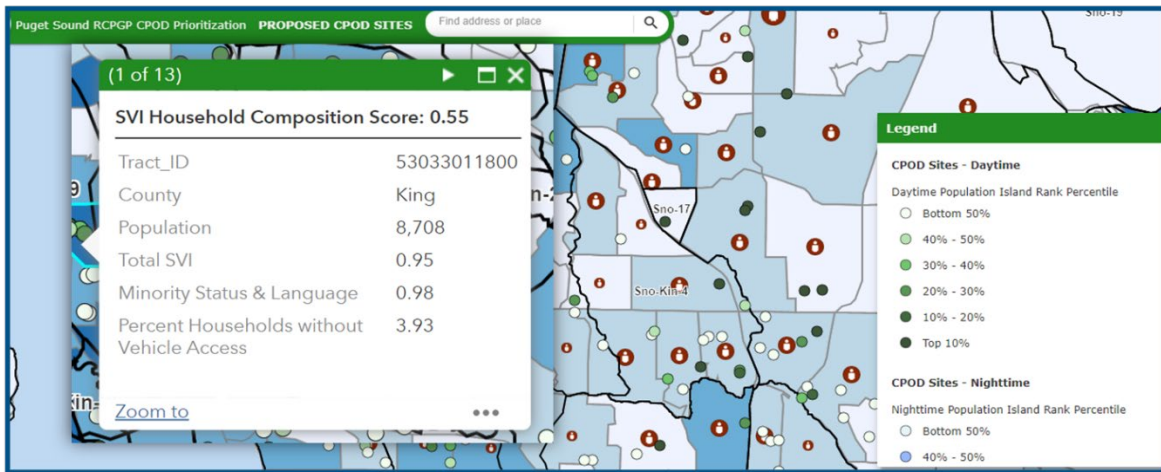


Figure 4: Puget Sound RCPGP CPOD Prioritization Tool

This tool helps the Puget Sound Region understand how the location of emergency management and public safety resources could have an impact on response efforts during a catastrophic incident and provides jurisdictions with guidance and considerations for selecting CPOD locations. For example, many Snohomish County sheriff’s deputies resided outside of Snohomish County, including on Camano Island. Camano Island is in Island County and only accessible to Snohomish County through a single bridgehead or by boat. The Snohomish County DEM used this insight from the CPOD Prioritization Tool to highlight the population island and create contingency plans should the sheriff’s deputies be unable to reach the mainland during a catastrophic incident.

“[The tool] also helps us understand the cross-jurisdictional boundaries [and] which jurisdictions aren’t going to be able to get to some of their residents. [Residents will] have to be accessed through other jurisdictions and counties. So, it really identified those areas.”

- Lucia Schmit, Director, Snohomish County Department of Emergency Management

However, partners such as the City of Seattle also indicated challenges regarding data collection priorities during the FY 2019 RCPGP period of performance. These challenges primarily arose from differing emergency management priorities among jurisdictions and the preparedness needs of rural, suburban, and urban partners. For instance, data collection related to CPOD siting or

"[Kitsap County] went to a lot of the workshops and provided input on Kitsap County as far as the geographic locations and where the potential micro-islands would be. We assisted in giving information to the group that they could use for developing the [CPOD tools]."

- Sarah Peterson, Planning Specialist, Kitsap County

methodology was more time consuming for cities than it was for their rural or suburban counterparts. The Puget Sound Region indicated that additional technical support for urban areas in the future may help to resolve similar barriers to data collection. Additionally, increased collaboration between urban and rural partners continues to help highlight overlapping preparedness interests, which will allow jurisdictions across the region to create more targeted projects in the future.

4.2. Building Maritime Capacity

The Puget Sound Region focused on further developing maritime capabilities in FY 2019 by using \$52,500 of RCPGP funds to address a gap in delivering life-sustaining commodities identified during the CR16 exercise. The Puget Sound Region collaborated with the Pacific Northwest Economic Region (PNWER) to invite maritime partners to participate in a series of three workshops to facilitate a progressive discussion with public and private maritime partners on topics such as

"Without [RCPGP] funding, getting the level of engagement we had with the maritime industry and with the private sector partners, what we were able to do since 2019, it would've taken a decade."

-Jason Biermann, Senior Policy Advisor, Snohomish County Executive Office

damage assessment and debris clearing from a maritime perspective. Although many of the jurisdictions across the region had experience with these processes for roadways, the workshops helped bridge a knowledge gap between the emergency management and maritime sectors. The workshops also helped the Puget Sound Region connect with port officials, the U.S. Coast Guard (USCG), and private maritime partners such as the Global Resilience Institute at Northeastern University to clarify the roles and responsibilities of each entity in a large earthquake or tsunami scenario. This collaboration allowed the region to better understand and validate key planning assumptions that could be impacted during a catastrophic incident. This process also illustrated the region's ability to overcome challenges presented by the COVID-19 pandemic by expanding the reach of the workshop series through a virtual format.

Besides addressing knowledge gaps through the workshop series, the Puget Sound Region also focused its maritime capacity building efforts on expanding the scope of maritime partners beyond public stakeholders to include the private sector. The Puget Sound Region conducted outreach to over 20 of PNWER's private partner working groups, which led to a partnership between PNWER, the Puget Sound Region, and Tote Services. Tote Services, which specializes in transporting commodities and goods in regions with little or no existing port infrastructure, provided the Puget Sound Region

“The strategy of workshops focused on specific issues, so we would have two or three workshops and then some kind of a tabletop [to] really illuminate the gaps and help people really address them.”

- Matt Morrison, CEO, Pacific Northwest Economic Region

with advice and guidance to build capability in the event of a catastrophic incident, as well as roll-on and roll-off ramps to enable the Puget Sound Region to move materials between land and sea. PNWER’s work with Tote Services improved the Puget Sound Region’s ability to use maritime resources in the event of a catastrophic incident by creating and maintaining relationships with private industry and maritime groups. This partnership also provided subject matter expertise and equipment crucial to

preparing jurisdictions for emergency scenarios that could make current port infrastructure inoperable. These relationships were further developed under a subsequent RCPGP grant coordinated out of King County.

The FY 2019 RCPGP award also supported the preparation of analyses that enabled participation in the 2022 Cascadia Rising maritime exercise between Kitsap County and Bainbridge Island that emphasized water delivery. This exercise helped both jurisdictions prepare to move commodities in the event that land-based routes are inaccessible and highlighted the necessity of using the surrounding waterways during an emergency incident, particularly due to Kitsap County’s location on a peninsula. Engagement between the Puget Sound Region and maritime stakeholders allowed jurisdictions to identify planning assumptions, such as the ability to use the ferry system for emergency response, and develop alternative plans, such as working with Naval Station Everett to secure additional pier space for the use of barges during a disaster. The outcomes of this engagement increased the region’s preparedness capabilities for a catastrophic incident.

“You’re never typically more than five kilometers from water if you’re in Kitsap County. So [maritime capacity is] a huge resource for us. It’s probably a nice to have [in] other places. For us, it’s almost critical.”

- Jan Glarum, Acting Director, Kitsap County Department of Emergency Management

4.3. Volunteer Playbooks

In FY 2019, RCPGP jurisdictions across the Puget Sound Region were also able to develop volunteer playbooks to meet jurisdiction-specific needs. Kitsap County used standard operating procedures and the CPOD concept of operation to create their own playbooks to aid its force of approximately 800 volunteers during emergency and catastrophic incidents. Volunteer playbooks cover various topic areas such as sanitation, shelter, and first aid, and are located in emergency caches across the county. These volunteer playbooks help volunteers after a disaster by providing guidance on survival-based topics and next steps for organizing response efforts.

“[Playbooks] would not have happened if that initial [RCPGP] grant didn’t get the seed money and get this going”

- Jan Glarum, Acting Director, Kitsap County Department of Emergency Management

These volunteer playbooks have been adapted for specific locations across Kitsap County to address topics such as locating potable water on each of its 33 micro-islands after a disaster. Many of the

tactics and guidance within the volunteer playbooks are based upon the RCPGP-funded CPOD trainings and concepts, which has allowed Kitsap to tailor existing materials to meet its specific needs. Kitsap County has plans to continue developing playbooks to expand their audience to include emergency operations center personnel and elected officials. Using the CPOD Toolkit and guidance as a foundation, Kitsap County has been able to continue developing products for volunteers and emergency management specialists through ongoing collaboration with partner jurisdictions and by leveraging county-specific data. These efforts continue to support the development of preparedness capabilities in Kitsap County and in the Puget Sound Region.

5. Conclusion

The Puget Sound Region's 16 partner jurisdictions used the FY 2019 RCPGP award to create effective capability building processes that provide value to stakeholders across the region and establish best practices for future preparedness efforts. The Puget Sound Region accomplished this by making data-driven preparedness decisions, emphasizing collaboration across the region, and focusing on building local partnerships to further prepare the region for catastrophic incidents. More specifically, the Puget Sound Region's ability to identify capability gaps, highlight population islands, and establish CPODs to distribute life-sustaining commodities illustrates how jurisdictions use preparedness data to inform planning decisions that contribute to building capabilities across the region.

Additionally, the region's relationship building efforts with the private sector and maritime partners bridged knowledge gaps between maritime and emergency management communities by focusing on continuous engagement and relationship building. The Puget Sound Region's collaborative approach to integrating jurisdictions into RCPGP-funded projects and creation of customizable products has also improved regional cohesion and enhanced the Puget Sound Region's logistics and supply chain management capabilities. Through the FY 2019 RCPGP award, the Puget Sound Region improved its jurisdictions' preparedness capabilities and also created a strong foundation for future emergency planning efforts to address potential catastrophic scenarios resulting from the CSZ. The Puget Sound Region will continue to empower its jurisdictions for future catastrophic incidents and contribute to building a more resilient region through continued collaboration, an iterative approach to developing products essential for preparedness capabilities, and data-driven decision-making.