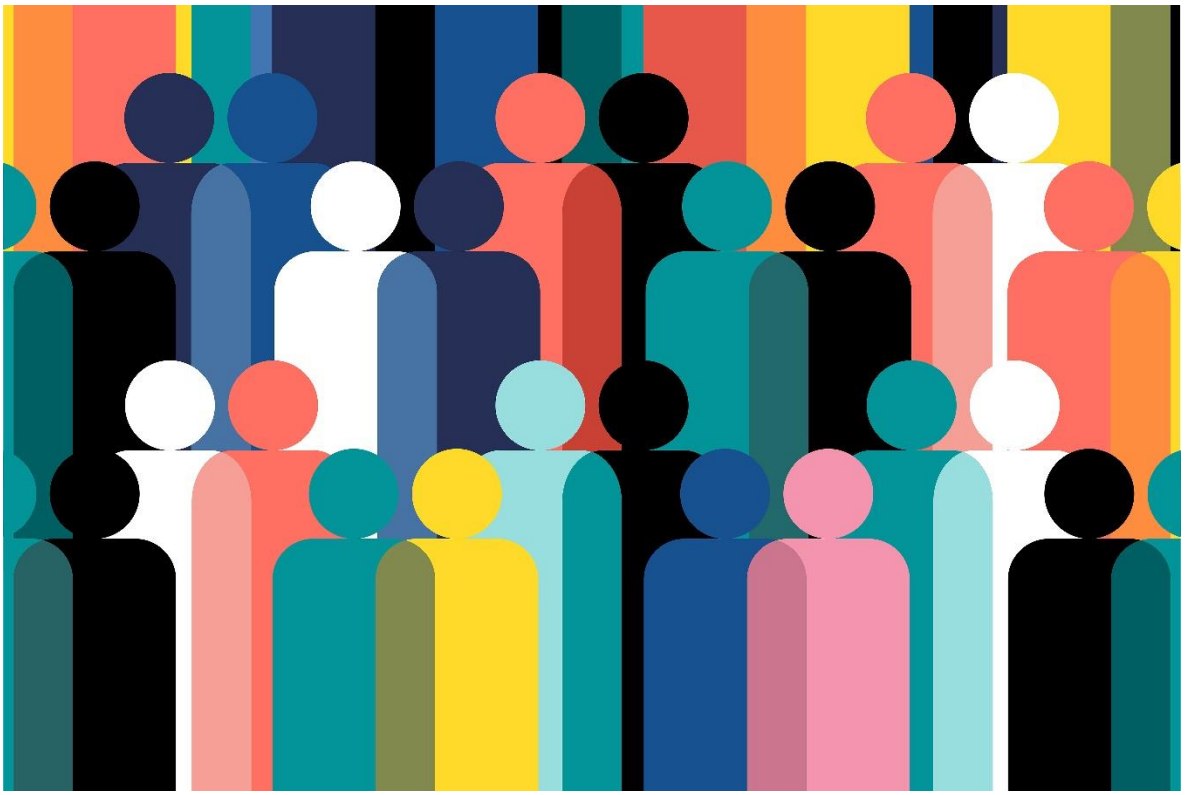
Revising Oregon's Disadvantaged Community Definition for Drinking Water State Revolving Fund

Final



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OREGON HEALTH AUTHORITY

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Protect Our Health from Source to Tap • Drinking Water State Revolving Fund

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Origin and Purpose of Project

The purpose of this project was to help identify gaps in the current disadvantaged communities (DAC) definition and research options to revise the definition to be more inclusive of indicators that address other socioeconomic, environmental justice and demographic considerations. With the assistance of Cadmus Group, LLC (Cadmus), the project evaluated Oregon's Drinking Water State Revolving Fund (DWSRF) DAC definition and proposed indicators to meet the program's goals.

Oregon's DWSRF Program is co-administered by two state agencies. Oregon Health Authority (OHA) is the primacy agency via its Drinking Water Services who provide direct services with experienced regulatory technical staff, establish program and project priorities, and manage the annual grant application processes, including the four unique program Set-Asides that allow OHA options for program uses, such as technical assistance and capacity development.

OHA has an interagency agreement with Business Oregon to operate, manage, and administer the Safe Drinking Water Revolving Loan Fund, which is capitalized by Oregon's DWSRF to fund drinking water infrastructure and source protection related projects. Additionally, Business Oregon ensures projects are managed and comply with strict federal standards and are serviced throughout the life of project loans, grants, and subsidies (i.e., principal forgiveness).

The primary motivation was to revise the definition to capture a greater diversity of communities, especially public water systems (PWSs) or communities served by those PWSs that have been excluded by the current DAC definition but exhibit characteristics consistent with DACs. PWS, in the context of this report, refers only to entities eligible to receive DWSRF funding, community water systems and non-profit non-community water systems. Additionally, OHA was driven to be more inclusive to meet the Bipartisan Infrastructure Law (BIL) requirements around funding priorities for DACs and specific levels of principal forgiveness awarded to DACs. OHA requested support to provide information about other state DAC definitions, present data and indicators that could be used in a revised definition and provide a method for evaluating the proposed DAC definitions.

This report provides background on the DAC definition requirements, Oregon DWSRF's current DAC definition, a review of other state definitions, a detailed description of the data considered, the scenario development and evaluation, and a preferred definition.

DAC Definition Background

In 1996, amendments to the Safe Drinking Water Act (SDWA) established the DWSRF to assist with financing infrastructure improvements for PWSs, ensure compliance with drinking water

standards, and advance public health protection objectives. To assist communities that may face barriers to financing drinking water infrastructure improvements, the SDWA was amended in 2016 to require states to establish affordability criteria that define DAC. BIL, signed in 2021, introduced new mandates for DWSRF funding, which increased the implication of a community's DAC determination to receive more affordable funding options for infrastructure projects. BIL provided General Supplemental funding, Lead Service Line Replacement funding and Emerging Contaminants (EC) funding. As part of these BIL mandates, 49 percent of funds must be provided as principal forgiveness (subsidy) only to DACs through the BIL General Supplemental and Lead Service Line Replacement funding. Additionally, 100 percent of BIL-EC funding is awarded as principal forgiveness, with no less than 25 percent of BIL-EC funding awarded to DACs or PWSs serving less than 25,000 people.

As a result of BIL's implementation, states were asked to evaluate and revise their DWSRF DAC definition to ensure they address state-specific economic conditions and use current data. The EPA Memorandum, *Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law* (the EPA Implementation Memorandum), dated March 8, 2022, outlined example indicators for use. Some example indicators outlined included:

- Median household income (MHI) below 80 percent of state MHI;
- Poverty greater than or equal to 20 percent;
- Unemployment greater than or equal to 3.4 percent; and
- Vacant housing greater than or equal to 12.1 percent.[1]

The example indicators were not requirements. Instead, states were allowed to adjust thresholds based on state-specific socioeconomic factors. The EPA Implementation Memorandum further encouraged states to review their DAC definition on a regular basis.[2]

Oregon's Current DWSRF DAC Definition

Currently, Oregon's DWSRF program determines DAC status based on the MHI of a PWS. A disadvantaged community is a public water system with a service area with an MHI below the state MHI.[3]

[1] U.S. EPA. "Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law," March 8, 2022. https://www.epa.gov/system/files/documents/2022-03/combined_srf-implementation-memo_final_03.2022.pdf.
[2] Ibid.
[3] This DAC definition is included in the State of Oregon Drinking Water State Revolving Fund Intended Use Plan 2023.

MHI for PWS service areas are determined by the most recent data release of the American Community Survey (ACS) from the U.S. Census Bureau.

DACs can be further categorized as 'severely disadvantaged' through OHA's DWSRF Rating, Ranking and Project Priority List section of the internal Letter of Interest Rating Guidance for OHA's purpose of project ranking. OHA uses three indicators (MHI, poverty and unemployment) to classify PWSs as 'severely disadvantaged', which affects the rating and ranking score assigned to a project on the Priority List. The ranking score helps with identifying funding priorities, as higher ranked projects on the Priority List are first targeted for funding opportunities in instances of limited funding available within the program. The rating system considers the PWS service area's MHI and whether the PWS service area has poverty and unemployment greater than the state rates. To qualify as severely disadvantaged, communities must meet 15 points using one of the below sets of criteria:

- Have less than 60 percent of state MHI (15 points);
- Have 60-69 percent of state MHI (10 points) AND either a community poverty rate greater than the state poverty rate (5 points) OR an unemployment rate greater than the state unemployment rate (5 points); or
- Have 70-79 percent of state MHI (5 points) AND a community poverty rate greater than the state poverty rate (5 points) AND an unemployment rate greater than the state unemployment rate (5 points).

While this rating system incorporates additional indicators that address affordability, currently the DAC status of a PWS is based solely on MHI. MHI as an indicator for defining DAC status has its limitations; the use of MHI does not specifically address the lowest income households, the affordability of water rates among that portion of the population and other socioeconomic, demographic or environmental justice indicators.

Other State Indicators for DAC Definitions

States often use a variety of indicators to determine eligibility for DAC status that broadly fall under five main categories: socioeconomic, demographic, financial, public health and environmental justice.

Socioeconomic factors include MHI, unemployment, poverty and the total population that is receiving government assistance. As of December 2022, forty-nine states use MHI, eighteen use

unemployment and twelve use poverty, according to the Association of Drinking Water Administrators (ASDWA). [4]

Demographic factors include population trends, age composition, and educational attainment.

Financial factors can cover a broad range of items including water rates, the PWS size, the debt of the PWS, property values, and regionalization or consolidation of PWS service areas. Twenty-five states use water rates to determine eligibility and fifteen use PWS size based on the number of people served. The PWS's debt, regionalization or consolidation of PWSs, and property values are used less often as indicators. Three states also use community financial assessments to determine eligibility.

Public health factors can include a variety of human health-related factors such as environmental pollution and contamination. Other states integrate public health considerations and other environmental factors with environmental justice tools, including the examples discussed below.

The EPA Environmental Justice Screening and Mapping Tool (EJScreen) [5], the Climate and Economic Justice Screening Tool (CEJST) from the Council on Environmental Quality[6], or the Center for Disease Control (CDC) Social Vulnerability Index[7] can be used to define what constitutes a DAC by combining indicators or using a single indicator to determine the DAC status for a PWS. DAC definitions can be roughly categorized into two main types: a single indicator or multiple indicator definition. Single metric definitions rely on a singular data point to determine eligibility by using a threshold for determining the PWS's DAC status, such as below 80 percent of state MHI. A multiple metric definition is one that relies on two or more metrics for determining DAC status. For example, a state may choose to use water rates as a percentage of MHI and poverty rates, where PWSs could qualify by meeting either metric or both metrics. Within the multiple metric system, a state may choose to require either one metric or another but not all the metrics be met, for example poverty OR unemployment. A state may also require meeting all the metrics, for example poverty AND unemployment. The "And" metric system is not as common as the "Or" metric system, which includes more PWSs in

[4] Association of State Drinking Water Administrators. "A New Era for the Drinking Water State Revolving Funds: Identifying Ways to Better Assist Disadvantaged Communities," January 2023. https://www.asdwa.org/wp-content/uploads/2023/01/ASDWA-A-New-Era-for-the-Drinking-Water-State-Revolving-Funds.pdf.
[5] U.S. EPA. "Environmental Justice Screening and Mapping Tool." September 2023. https://ejscreen.epa.gov/mapper/.
[6] U.S. Council on Environmental Quality. "Climate and Economic Justice Screening Tool." November 22, 2022. https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5.
[7] Agency for Toxic Substances and Disease Registry. "Social Vulnerability Index." U.S. Center for Disease Control, December 1, 2022. https://www.atsdr.cdc.gov/placeandhealth/svi/interactive_map.html.

the DAC definition. Many states also use the points systems, where each metric is given a certain number of points, and those points are added together to determine eligibility.

According to the EPA Implementation Memorandum, DACs can include various indicators for environmental justice concerns. Environmental justice covers the intersection of environmental concerns, such as flood risk and pollution, and socioeconomic factors, such as low-income and unemployment. This intersection can be used to indicate areas that experience the effects of environmental concerns disproportionately, including high exposure to pollution – whether in air, land, or water.

The EJScreen, the CEJST, the CDC Vulnerability Index and EPA's Inflation Reduction Act (IRA) Disadvantaged Communities Map are all environmental justice-based tools that utilize U.S. Census data to combine environmental and socioeconomic factors to determine DAC status. The environmental indicators include data such as particulate matter, ozone, toxic releases to air, traffic proximity and volume, lead paint and wastewater discharge. Socioeconomic factors include data related to people of color, low-income status, unemployment rate, limited English-speaking population and less than a high school education. Since these tools and other state definitions use a variety of socioeconomic data, the Oregon DWSRF staff explored several scenarios utilizing various socioeconomic indicators. Guidance from the EPA regarding the implementation of BIL encouraged states to revisit their DAC definition and utilize environmental justice indicators while also complying with Title VI of the Civil Rights Act.[8] EPA's regulations require federal financial assistance programs do not have a discriminatory effect based on race, color, national origin (including limited English proficiency), age, disability or sex. After consideration of this guidance and regulatory requirements, the Oregon DWSRF staff agreed that indicators based on race and ethnicity (such as the percent of population of people of color) and national origin (such as limited English proficiency) should not be included in the revised definition. The data used by Oregon DWSRF staff is explored further below.

DAC Definition Approach

The technical assistance team facilitated multiple meetings with representatives from Oregon's DWSRF program to develop a definition that meets the needs of the state. During these meetings, the technical assistance team presented indicators used by other states, environmental justice tools available to define DAC status, and relevant data with DAC scenarios. The technical assistance team also worked alongside representatives of Oregon's

[8] U.S. EPA. "Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law," March 8, 2022. https://www.epa.gov/system/files/documents/2022-03/combined_srf-implementation-memo_final_03.2022.pdf.

DWSRF program to assist with developing a variety of scenarios to ultimately arrive at Oregon's preferred DAC definition for its DWSRF program.

From January to May 2024, there were six meetings to review data that other states were using for their DAC definition, to evaluate Oregon-specific data analysis of socioeconomic, demographic and environmental justice indicators, and to produce and evaluate DAC definition scenarios.

The initial discussions included a broad consensus that there were PWSs that did not qualify under the current DAC definition but likely had high percentages of poverty and unemployment. Oregon's DWSRF program also sought to be inclusive of indicators that may address other socioeconomic and environmental justice indicators. The main goal was to update the DAC definition to be more inclusive and provide additional indicators that could capture communities that are disadvantaged but currently fall outside of the parameters used by Oregon's DWSRF program. The objectives within this goal included:

- Create a DAC definition that is easy to understand, implement and use.
- Identify and capture current gaps in the definition that would allow for a more inclusive DAC definition.
- Explore disadvantaged status of smaller communities/neighborhoods within a larger PWS.
- Create a report for the community engagement phase, which will include a public comment process.

The technical assistance team reviewed the data that OHA was using to assess PWSs, which included MHI, poverty and unemployment. The team developed scatterplots to understand the relationship between poverty and unemployment, and MHI. The team then evaluated the number of PWSs with MHIs greater than the state MHI that also had high rates of unemployment and poverty (i.e., that possess characteristics of disadvantaged but that do not meet the current Oregon DAC definition) (Figure 1 and Figure 2). The scatterplots of Poverty by MHI and Unemployment by MHI were divided into quadrants, where the upper right section showed PWSs above the state rate for poverty or unemployment and above the state MHI. The PWSs in this section of the quadrant would not qualify under the current definition as DACs, but exhibit disadvantaged characteristics. There were also PWSs that fell under the state MHI but exhibit low levels of poverty and unemployment. These PWSs qualify as disadvantaged under the current DAC definition despite having low levels of poverty and unemployment. The technical assistance team and Oregon's DWSRF used the scatterplots to identify indicators that could be included to expand the DAC definition. Scenarios were then created by including various indicators and evaluating based on the number and percent of PWSs and population included in each scenario.

Data from the U.S. Census Bureau (including ACS data) are provided on different geographic levels, including census tracts or block groups – block groups are sub-units that make up a census tract. Data are also available for "places" – incorporated (e.g., municipality, city, village and town) or unincorporated population centers with defined boundaries. The technical assistance team used data from the environmental justice-based tools described above - CEJST, EJScreen, and IRA - to evaluate Census block group data for the PWSs. These data tools are prepopulated with several socioeconomic and environmental justice indicators that use a methodology to determine whether a Census block group is considered disadvantaged. These data tools specifically address disadvantaged status, at the block group or tract-level, using percentiles. Many PWS boundaries intersect multiple block groups (in which case, a weighted average must be calculated) or align with census places. Percentiles cannot be averaged or applied to census places, so this was a significant limitation. Additionally, these tools may not use the most up-to-date ACS data available. For these reasons, the team decided against using them. However, these tools provided some insight into other indicators that could be used to capture the diversity of the population.

OHA and the technical assistance team chose some of the indicators (low-income, unemployment, and less than high school education) from the environmental justice tools and used their primary source, the ACS data. This allowed OHA to gather data from a single up-to-date source and for geographic areas (Census place and block group) that represent the majority of their PWSs. The Oregon DWSRF staff expressed interest in an evaluation of the effect of utilizing additional socioeconomic indicators, rather than the initial consideration of incorporating metrics of unemployment and poverty into the definition, in an attempt to better represent diversity amongst their populations. The indicators included poverty, MHI, unemployment, housing cost burden, and less than high school education.

Data and Methods

The current definition for DACs used by Oregon's DWSRF program focuses only on state MHI. However, some communities may be slightly above state MHI, but disadvantaged along another affordability or environmental justice axis. For example, areas with high rates of poverty, but an MHI that is between 100 to 120 percent of state MHI, may indicate that a community has higher rates of economic disparity and may be disadvantaged (see Figure 1 below).

When determining DAC status, other states used MHI ranges from 80 percent to 120 percent of state MHI in determining eligibility. In looking at the distribution of MHI for Oregon's PWSs, the quartiles were evaluated to understand where natural breaks occur in the data. The natural break for the third quartile for the MHI data was approximately 120 percent of state MHI. Using

120 percent of state MHI would include an additional 25 percent of PWSs in Oregon for further evaluation. To align with the goals of Oregon's DWSRF program and to potentially capture additional disadvantaged communities, the technical assistance team analyzed Oregon's PWSs using a variety of tools that address environmental justice, such as EJScreen and CEJST. The data sets in each of these tools were used to select appropriate indicators to address environmental justice concerns.

The technical assistance team and OHA's GIS Specialist used the publicly available ACS data to calculate all indicators: MHI and poverty rate, unemployment, less than high school education, and housing cost burden. All ACS data referenced in this report are from the 2022 ACS 5-year data. This calculation allowed the team to determine if a PWS service area is within the boundaries of a disadvantaged Census place, block group, or combined set of block groups - as determined by the scenarios that were developed using a combination of some or all the indicators.

Each indicator was calculated using PWS service area and the Census Bureau's 2022 ACS 5-year data. ACS data are available for census places, block groups and tracts. Census place data was used when the geographic area closely aligned with the PWS service area. If the PWS was not associated with a census place and the service area was located wholly within one block group, then that block group's data was used. If the PWS was not associated with a census place and the service area intersected multiple block groups, then a weighted average was calculated using block group data. Each block group that the PWS intersected was geographically weighted to produce a single data point for that PWS.

Poverty

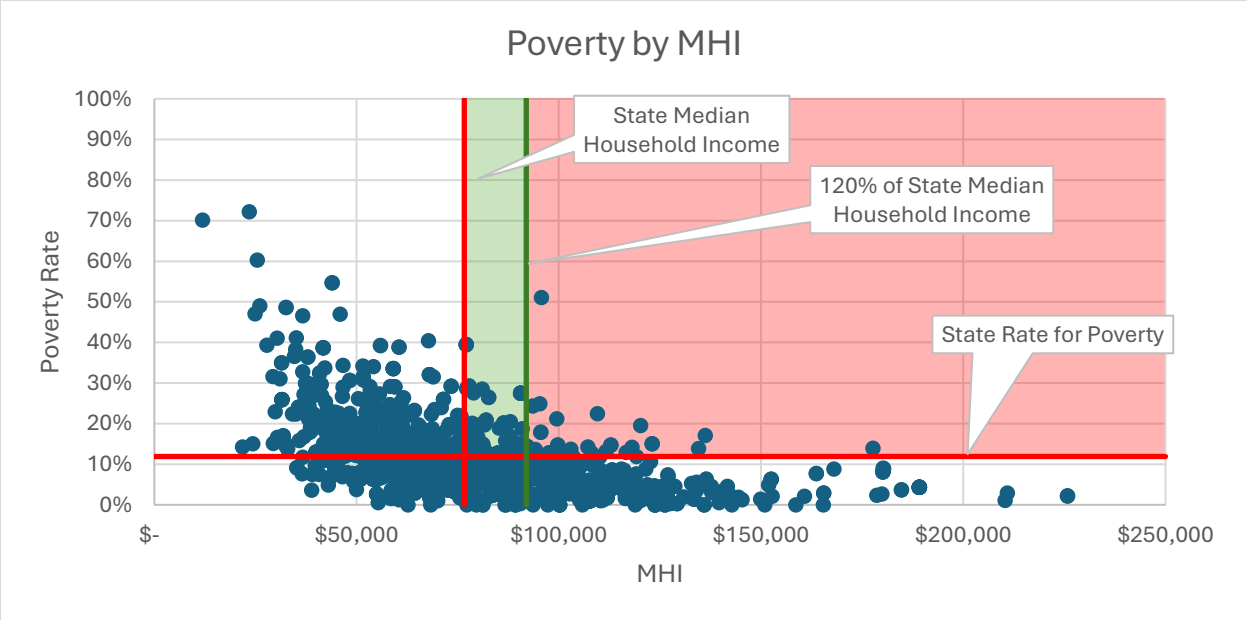
The rate of poverty in a given area is a common data point used to determine economic status and as a measure for environmental justice considerations. For the ACS, poverty is determined by a matrix of cut-offs for total family income before taxes in a year based on family size. The cut-offs are determined by the U.S. Census Bureau. A larger family will have a higher total income cut-off. An entire family unit will be classified as "in poverty" if their income is less than their cut-off. Unrelated people living in the same household will count as two separate "families" for the purposes of the ACS. The rate of poverty is the population below the poverty line compared to the total population. The threshold for poverty is based on a federal poverty guideline and is not adjusted by state. OHA will be using the poverty rates developed by the ACS to determine eligibility for a PWS at the Census place and block group level.

A high poverty rate may result in an increased population of people who could encounter difficulties paying increased rates for PWSs that need to incur debt for projects necessary to repair, replace or improve the water infrastructure. Poverty may also intersect with other

economic and environmental justice factors. Poverty indicators are used by tools such as EJScreen, CEJST and IRA to address underserved communities and environmental justice. Poverty can be a more accurate indicator of disadvantaged status than MHI because it is a measure of the lowest earners within the PWS's service area, rather than measuring the midpoint of earners, especially as poverty is based on the size and composition of the family, whereas MHI is purely based on household income. This means that two households that have the same income may be classified differently by poverty indicators. The lowest earners in a PWS's service area are often those who face affordability issues when PWS rates are increased.

Poverty was compared against MHI, as shown in Figure 1. It is expected that as poverty rates increase, the MHI will decrease. However, some areas have an MHI that is high enough to disqualify them under the current state DAC definition despite having high rates of poverty. Figure 1 shows that the state may be missing potential DACs by only using MHI as its determining factor, specifically the communities that have between 100 and 120 percent of state MHI but have a poverty rate higher than the state. Under the current definition, these areas would not be considered for DAC-related funding.

Figure 1: A graph showing MHI and the poverty rate for PWSs in Oregon. The red lines indicate the state MHI and poverty rate. The green line represents 120 percent of state MHI. PWSs that fall in the shaded area have a poverty rate that is higher than the state but also an MHI that is greater than the state MHI. A DAC definition with poverty as a factor and an upper limit of 120 percent of state MHI may consider some of the PWSs in the green area as potential DACs. A DAC definition with poverty as a factor, and no upper limit for MHI, may consider some of the PWSs in both the red and green shaded areas as potential DACs.

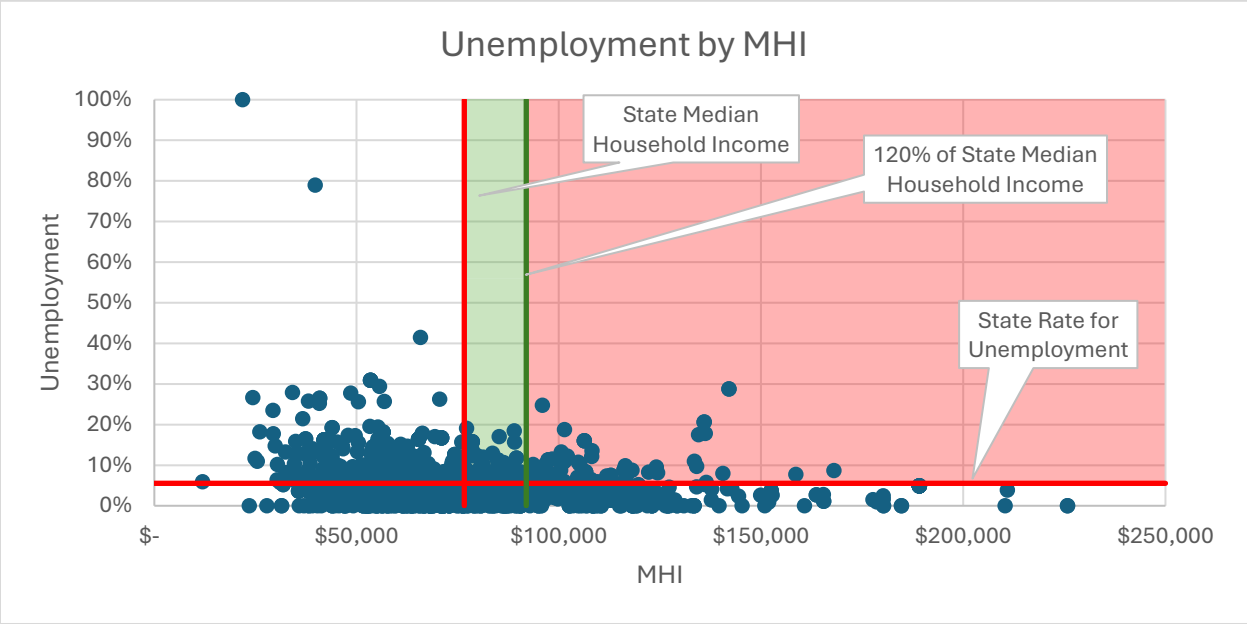


Unemployment

The rate of unemployment is an indicator used by many environmental justice tools, including EJScreen and CEJST. The unemployment rate is based on data from the ACS and refers to all civilians that are at least 16 years old that were not working but were actively looking for work in the last four weeks prior to the survey being conducted. This means that people who were retired and not looking for work, or people who were otherwise not seeking work and therefore not considered to be in the workforce, were not counted as unemployed. If an area has a large unemployed population, it may indicate economic depression in the area, or a population that may have difficulty paying for the increased rates that often follow PWS projects and repairs. A high unemployment rate is a factor that, similar to poverty rate, is not indicative of a population in need on its own but may intersect with other economic, demographic and environmental factors to result in a disadvantaged area.

Unemployment rates were compared against MHI, as shown in Figure 2. It would be expected that as unemployment rates increase, the MHI will decrease. However, some areas may have an MHI that is high enough to disqualify them under the current state DAC definition despite having a high rate of unemployment relative to the rest of the state. Figure 2 shows some communities that may be missed under the current definition, as determined by unemployment rates, especially communities that fall between 100 and 120 percent of state MHI but have above the state rate for unemployment. Under the current definition, these areas would not be considered for DAC-related funding.

Figure 2: A graph showing MHI and the unemployment rate for PWSs in Oregon. The red lines indicate the state MHI and unemployment rate. The green line represents 120 percent of state MHI. PWSs that fall in the shaded area have an unemployment rate that is higher than the state but also an MHI that is greater than the state MHI. A DAC definition with unemployment as a factor and an upper limit of 120 percent of state MHI may consider some of the PWSs in the green area as potential DACs. A DAC definition with unemployment as a factor and no upper limit for MHI may consider some of the PWSs in both the red and green shaded areas as potential DACs.

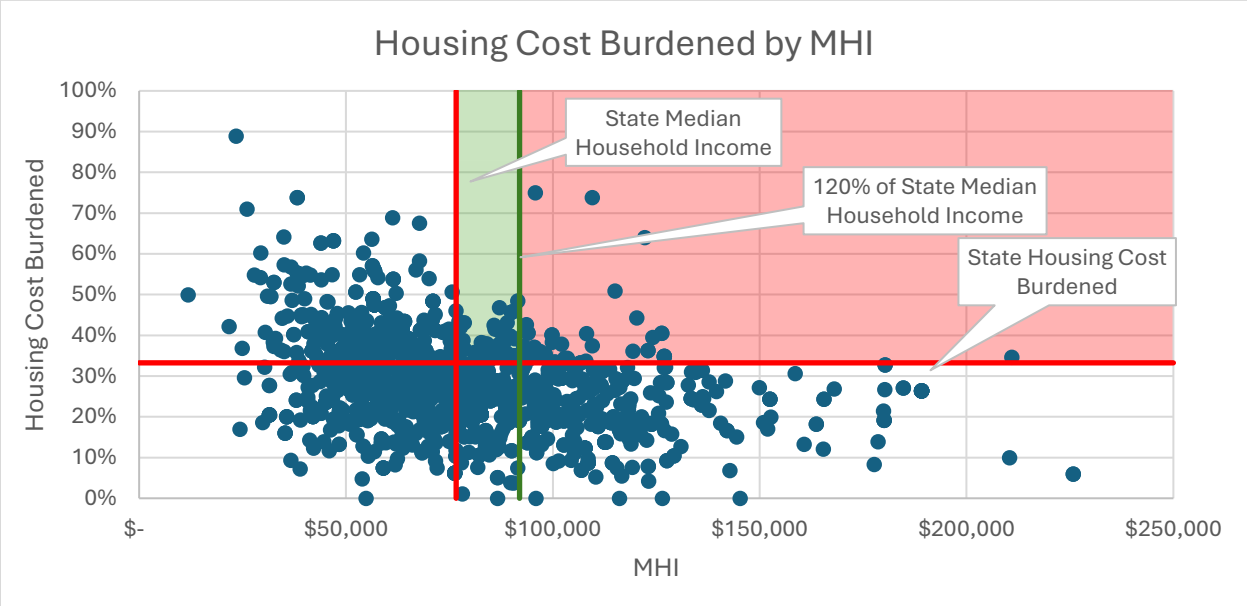


Housing Cost Burdened

Housing cost burdened is a metric that considers the cost of renting or owning a home compared to the income of the household and is used in the CDC Social Vulnerability Index. The Census Bureau considers households that spend more than 30 percent of their income on rent, mortgage payments or other housing-related expenses to be cost burdened. The housing cost burdened metric is based on data from the ACS and includes monthly rental and utility costs for renters and mortgage principal and interest, real estate taxes, homeowners' insurance, utilities, mobile home costs, second mortgage payments and condominium fees, if applicable, for homeowners. Households with higher housing cost ratios have a lower percentage of their income to spend on essential goods such as food, transportation and childcare. Housing cost burden can be especially high in areas where there are lower household incomes, or in areas where housing is more expensive. A high housing cost burden can indicate a water system population that may struggle to pay increased rates that can come from infrastructure financing expenses. While a high housing cost burden is not indicative of a population in need on its own, it provides important insight into the costs a community faces, and when evaluated in conjunction with other socioeconomic factors, could help to highlight areas that could be considered disadvantaged.

The housing costs burdened metric was compared with MHI, as shown below in Figure 3. As MHI decreases, the rate of housing cost burdened increases, which indicates that lower income areas make up the bulk of the housing cost burdened. Many of these PWSs are already considered disadvantaged under the current DAC definition; however, some PWSs may have an MHI that is high enough to disqualify them under the current state DAC definition despite having high rates of housing cost burdened. Figure 3 shows communities that may be missed under the current definition, as determined by MHI, especially communities that fall between 100 and 120 percent of state MHI but have housing cost burdened rates higher than the state rate for housing cost burdened. Under the current definition, these areas would not be considered for DAC-related funding.

Figure 3: A graph showing MHI and rate of housing cost burdened for PWSs in Oregon. The red lines indicate the state MHI and the state rate for housing cost burdened. The green line represents 120 percent of the state MHI. PWSs that fall in the shaded area have a higher rate of housing cost burdened than the state rate but also an MHI that is greater than the state MHI. A DAC definition with housing cost burdened as a factor and an upper limit of 120 percent of state MHI may consider some of the PWSs in the green area as potential DACs. A DAC definition with housing cost burdened as a factor and no upper limit for MHI may consider some of the PWSs in both the red and green shaded areas as potential DACs.



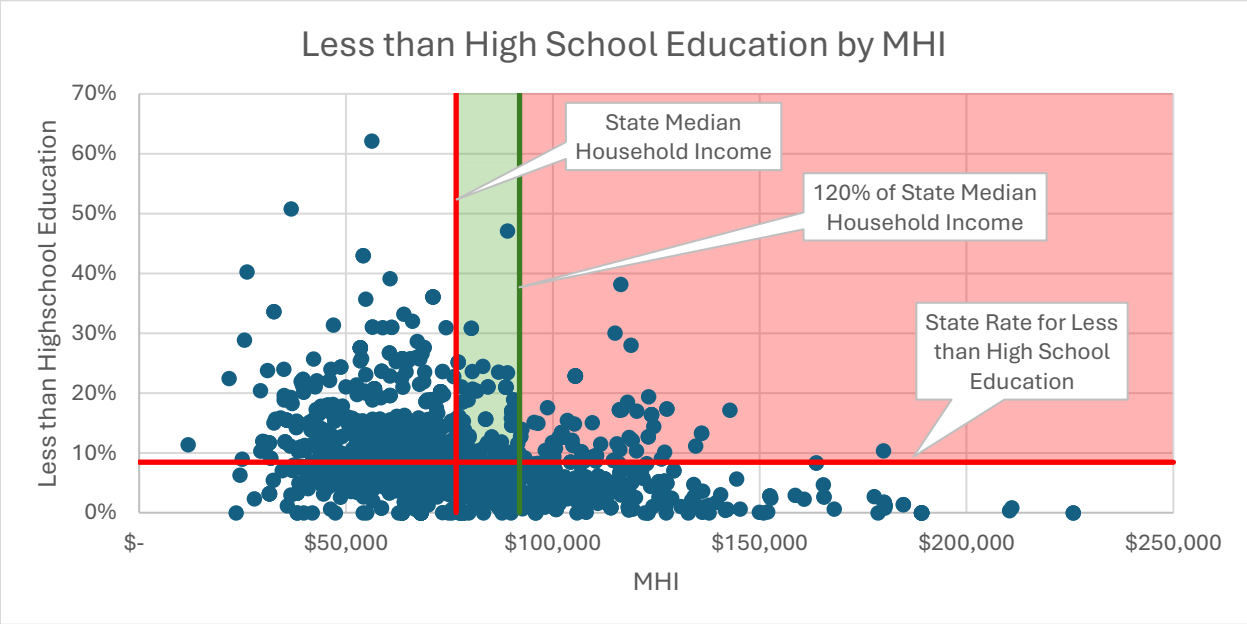
Less than High School Education

The last factor considered by Oregon's DWSRF program was the rate of people with less than a high school education. This data is also based on the ACS and is used in tools like EJScreen and CEJST as a consideration for environmental justice issues. This metric only considers those who haven't obtained a G.E.D., a high school diploma or other credit equivalency. Areas with high rates of their population with less than a high school education may indicate economic disparity that may make paying the increased water rates resulting from upgrading infrastructure more

difficult for the population. While this is not always the case, when combined with other demographic and socioeconomic data, it can provide a clearer picture of the community's need.

Figure 4 below shows the general relationship between MHI and the percentage of people with less than a high school education. This shows that a high percentage of a given population with less than a high school education or equivalent may live in areas with a lower MHI, though this is not always the case. However, it can be another indicator that, when combined with other socioeconomic factors, helps identify communities that are likely to have subpopulations with greater need. This is a means of understanding the disparity between households within the same community. Figure 4 also shows some communities that may be missed under the current DAC definition with MHI as the only indicator especially communities that have between 100 and 120 percent of state MHI but have a higher percentage of people with less than a high school education when compared to the state percentage.

Figure 4: A graph showing MHI and the percentage of people with less than a high school education for PWSs in Oregon. The red lines indicate the state MHI and less than high school education rate in Oregon. The green line represents 120 percent of state MHI. PWSs that fall in the shaded area have less than high school education rate that is higher than the state but also an MHI that is greater than the state MHI. A DAC definition with less than high school education as a factor and an upper limit of 120 percent of state MHI may consider some of the PWSs in the green area as potential DACs. A DAC definition with less than high school education as a factor and no upper limit for MHI may consider some of the PWSs in both the red and green shaded areas as potential DACs.



DAC Scenarios Development

The technical assistance team and Oregon's DWSRF program staff ran multiple scenarios using GIS and Excel to process the data for each scenario. The method for evaluation of each DAC definition scenario was based on an assessment of the following factors: the total number of PWSs that qualify as DAC, difference in number of PWSs compared to current definition, total

population of PWSs included in each DAC definition, percentage of total PWSs defined as DAC and the percentage of population served by PWSs defined as DAC (see Table 1). A sampling of unnamed PWSs were selected from the scenarios and evaluated based on the above indicators as well as characteristics such as inclusion of tribal lands and PWS population size. The overall goal was to evaluate the impact of a revision of the DAC definition that, when implemented, included communities that were not currently represented, but showed indicators of a disproportionately affected community that could benefit from affordable access to infrastructure improvements. There was a desire to create an inclusive DAC definition that captured communities falling outside of the MHI threshold for the existing DAC definition but still exhibiting disadvantaged characteristics. The scenarios were developed by using functions such as “AND”, “OR” and “2 out of 4” to set limits for qualifying for DAC status.

Table 1 shows the seven scenarios that were developed for the DAC definition. MHI was included in all definitions to provide a level of continuity between the existing and new DAC definition. MHI was used as both a threshold and as an option where PWSs could qualify by meeting a certain number of qualifying indicators (e.g., PWS meets 2 out of 4 indicators to qualify). The scenarios use two MHI thresholds to create the different DAC definition scenarios that were evaluated: less than 100 percent and less than 120 percent of the MHI for Oregon. The upper limit for most scenarios using MHI was 120 percent of state MHI.

Scenarios 1, 2, 2a, 3 and 3a included three indicators in the definition (MHI, poverty and unemployment) with various conditions including scenarios using the functions “AND”, “OR” and “2 out of 3”. The results for these scenarios were a net decrease for the number of PWSs included in the DAC definition compared to the current DAC definition, except for Scenario 1 (MHI < 100 percent of state MHI OR (Poverty > state Rate AND Unemployment > state Rate)), which increased the number of PWSs included by 25. Oregon’s DWSRF program and the technical assistance team decided to include additional indicators for the purpose of expanding the number of PWSs that would be included in the DAC definition.

Scenario 4 included all PWSs with an MHI of 100 percent and PWSs that had 2 of the 3 indicators (rate greater than the state rate for poverty, unemployment and housing cost burden) with an upper limit of 120 percent of the state MHI. This scenario saw a net increase in the DAC status for PWSs by 46 and a population of 2,549,537.

Scenario 5 included the additional indicator of the less than high school education rate. The scenario included all PWSs with an MHI less than 100 percent of Oregon’s MHI and PWSs that had 2 of the 4 criteria (rate greater than the state rate for poverty, unemployment, housing cost burden, and less than high school education) with an upper limit of 120 percent of state MHI. Scenario 5 resulted in a net increase of 79 PWSs and covering a total population of

2,599,190. This scenario was the most inclusive of both population and PWSs that were defined as DACs.

As part of evaluating the potential revision of the DAC definition, the dual state agencies considered how the proposed changes might affect the nine federally recognized Tribes in Oregon. OHA does not regulate water systems located in an area governed by a Tribe; it falls to EPA Regional Offices at the federal level to implement regulatory authority. These systems are potentially eligible for DWSRF funding, so in addition to the evaluation of the GIS dataset of state-regulated community water systems and non-profit non-community water systems, the assessment of the impact of the definition on Oregon's Tribal water systems was performed. Under the state's existing DAC definition, eight out of the nine Tribes in Oregon currently meet the criteria and would be considered disadvantaged. MHI data for one Tribe (Burns Paiute) is not available, so disadvantaged status cannot be determined from MHI alone. However, under the proposed new definition utilizing the additional socio-economic criteria such as poverty, education, and housing cost burden, all nine federally recognized Tribes would be considered disadvantaged.

Table 1: DAC definition scenarios. Each scenario compares the PWSs and affected populations that are DAC under the current definition to determine approximately how many PWSs and people the changes would affect. Numbers in red and in parentheses are negative and show a reduction in the number of PWSs. The scenario in orange is the preferred definition (Scenario 5).

Scenario	Scenario Description*	Total PWSs Affected	Difference in Number of PWSs Compared to Current Definition	Total Population Included in DACs	% of total PWSs Defined as DAC	% of Population Served by PWSs Defined as DAC
Statewide	N/A	1272	N/A	3,775,106	N/A	N/A
Current Definition	MHI <100%	698	N/A	1,743,301	55%	46%
1	MHI < 100% of State MHI OR (Poverty > State Rate AND Unemployment > State Rate)	723	25	2,432,268	57%	64%
2	MHI < 120% AND 2 out of 3 of: MHI < 100% of State MHI, Poverty > State Rate, Unemployment > State Rate	556	(142)	2,248,437	44%	60%
2a	2 out of 3 of: MHI < 100% of State MHI, Poverty > State Rate, Unemployment > State Rate	565	(133)	2,254,658	44%	60%
3	MHI < 120% AND (Poverty > State Rate OR Unemployment > State Rate)	647	(51)	2,423,176	51%	64%
3a	2 out of 3 of: MHI < 120% of State MHI, Poverty > State Rate, Unemployment > State Rate	656	(42)	2,429,397	52%	64%
4	MHI < 100% of State MHI OR 2 out of 3 of: Poverty > State Rate, Unemployment > State Rate, Housing Cost Burdened > State Rate	744	46	2,549,537	58%	68%
5	**MHI < 100% of State MHI OR 2 out of 4 of: Poverty > State Rate, Unemployment > State Rate, Less than High School Education > State Rate, Housing Cost Burdened > State Rate**	**777**	**79**	**2,599,190**	**61%**	**69%**

*All scenarios except 2a and 3a include an upper limit of 120% of state MHI. This means that a PWS with an MHI greater than 120% of state MHI will not be considered disadvantaged in those scenarios, even if they meet all other criteria.

DAC Definition Selection

Across all definitions, Oregon's DWSRF program narrowed their selection to scenarios 4 and 5. These scenarios met the primary goal of finding a definition that was more inclusive of other socioeconomic and environmental justice factors. Adding additional metrics when determining DAC status paints a broader and more inclusive picture of communities and takes into consideration different ways that communities struggle with access to infrastructure funding. Included in this goal was the desire to retain all the PWSs that are currently DAC status, while adding communities that exhibit disadvantaged characteristics, and balancing the total number of systems for inclusion.

While scenarios 2 and 3 had additional metrics, they also reduced the number of PWSs being captured by the definition, which was not the direction the program was seeking to go with the revision. Scenario 1, similarly, was still relatively narrow and did not broaden the inclusivity of the definition in a way that considered the unique disadvantages a community may face. While several other indicators and combinations were considered, Oregon's DWSRF program decided to remove indicators due to the risk of violating Title VI of the Civil Rights Act. This leaves scenarios 4 and 5 as potentially viable options, with a preference for scenario 5.

Scenario 4 defines DAC as:

- Any PWS with an MHI less than the state MHI
- OR if a PWS has an MHI higher than the state MHI but less than 120 percent of the state MHI, then the PWS must have two of three criteria:
    - Greater than the state poverty rate,
    - Greater than the state unemployment rate,
    - Greater than the state housing cost burdened.

Scenario 4 includes 744 PWSs, which is a net increase of 46 PWSs with a total population of 2,549,537. The PWSs represent 58 percent of PWSs and include 68 percent of the total population served by PWSs.

Preferred DAC Definition: Scenario 5

When evaluated against the initial goal, Scenario 5 was considered the best option to meet the state's primary objective: updating the DAC definition to be more inclusive and providing additional indicators that could capture disadvantaged communities that currently fall outside of the parameters. Scenario 5 uses four indicators to develop and broaden the DAC definition for Oregon and includes an additional 79 PWSs and a total population of 2,599,190 in the definition as well as all nine federally recognized Tribes.

Oregon's DWSRF program selected Scenario 5 as its preferred definition; it covers approximately 61 percent of PWSs and 69 percent of the population served by PWSs. Scenario 5 defines DACs as:

- Any PWS with an MHI less than the state MHI
- OR if a PWS has an MHI higher than 100 percent of the state MHI but less than 120 percent of the state MHI, then the system must meet two of four criteria:
    - Greater than the state poverty rate,
    - Greater than the state unemployment rate,
    - Greater than the state percentage of people with less than a high school education,
    - Greater than the state housing cost burdened.

Scenario 5 has the second highest net increase in PWSs (79) added to the DAC definition and the largest increase in the total population included. For example, the team reviewed a selection of PWSs near the margins for the DAC definitions and evaluated whether the definitions were inclusive of PWSs that had been originally identified as potentially disadvantaged, but falling outside of the current DAC definition limits. The scenarios were also evaluated to understand the characteristics of PWSs included in the DAC definition scenario such as federally recognized Tribes and PWS population size. It was important for Oregon's DWSRF program to find a balance between inclusion of additional PWSs in the DAC definition and not oversaturating the DAC status with too many PWSs or too much of the population.

Public Engagement

The state agencies conducted a public engagement process including a public comment period prior to finalizing the updated DAC definition, with the goal to have the definition finalized and adopted in advance of the February 15, 2025, Letter of Interest (LOI) submission deadline for the DWSRF program. The engagement process included the following elements:

- Sharing of all materials related to the process on OHA's Project Ranking and Disadvantaged Status website.
- Development of a Frequently Asked Questions (FAQ) document in multiple languages to help summarize what the disadvantaged definition is, what significance it has, and the process to revise it. The FAQ document was posted on OHA's website and included in email announcements about the process.
- Posting of the draft Oregon DAC Definition Report summarizing the process to reach a proposed revised DAC definition.

- Virtual Open House held on October 29, 2024 to present the process and proposed DAC definition, answer questions, and receive input. Sixty-three people registered, forty-four attended (including agency representatives).
- Posted the recording of the Open House to OHA's website the day after the event.
- Invitation for interested parties to request direct, one-on-one engagement for additional questions or comments. No requests were made.
- Thirty-day public comment period from November 8 through December 16, 2024. No comments were received.
- Multiple email announcements throughout the process from Business Oregon and OHA regarding the posting of materials on the website, Open House registration, posting of the Open House recording, and the notice of the public comment period.

Next Steps and Additional Policy Considerations

The purpose of this process was to review and revise the definition of DAC under Oregon's DWSRF program to incorporate a wider range of indicators, addressing socioeconomic, environmental justice and demographic factors, to create a more inclusive framework that better identifies and supports DACs.

With no requests for one-on-one engagement and no submissions of public comment, and after consideration of questions posed and input received from the Open House, Oregon's DWSRF program will adopt the proposed revised DAC Definition as presented in this report. For clarity, staff made minor modifications to the proposed definition to include systems whose MHI may be equal to the state MHI and phrase the four added indicators in the same format:

- Any PWS with an MHI less than the state MHI
- OR if a PWS has an MHI equal to or greater than 100 percent of the state MHI but less than 120 percent of the state MHI, then the system must meet two of four criteria:
    - Greater than the state poverty rate,
    - Greater than the state unemployment rate,
    - Greater than the state housing cost burdened rate,
    - Greater than the state rate of people with less than a high school education.

Once the revised definition is finalized, there will be programmatic updates and additional policy decisions for the agencies to consider. For example, a key step in the funding process is rating and ranking of the project LOIs. The ranking process is important for prioritizing projects that address health and compliance needs and serve DACs. OHA has a rating system which allocates points based on specific system and project criteria, including community affordability. Currently, higher rates of poverty and unemployment are factors that are allocated additional points during the rating process. Once the DAC definition is updated, the

community affordability rating criteria will need to be reviewed and potentially updated to reflect the changes to the DAC definition.

Another example is the potential to consider applying the new DAC definition to smaller communities or neighborhoods within a larger PWS. This approach would need to be evaluated by the state for feasibility and, if adopted, a process established for implementation.

Through the various laws, regulations, and policies that guide the program, the DWSRF funding has specific requirements around the loans that states can provide, including limitations on the amount of funding that can be awarded as principal forgiveness. The proposed revision of the DAC definition aims to identify and support additional communities in need, which will impact the state's decision-making process for financing and allocating limited additional subsidy available under the program. Under the preferred proposed definition, an increased number of water systems serving these newly classified DACs will be eligible for forgivable loan funding to support infrastructure improvements. However, the DWSRF program faces the challenge of higher demand for funding than resources available. The program is unable to support all existing requests for funding, which currently exceed $500 million. To enhance equity in allocating limited resources, Business Oregon will evaluate and revise policies and financing options regarding forgivable loan limits following the finalization of a new DAC definition. The program intends to ensure financial support is effectively directed toward improving water infrastructure, sustainability and public health statewide, while also prioritizing communities in need of affordability assistance.

Refinement of the DAC definition is part of ongoing efforts to address the needs of DACs and foster an environment of comprehensive support and inclusion. Adoption and implementation will prompt further programmatic updates and policy decisions, providing the opportunity for both agencies to continually refine their approaches to better serve DACs.