Criterion 1: Project Summary and Approach (35 points)

Section 1a: Project Narrative including a clearly written description of the overall project

Seattle will use the grant funds to enable local businesses to set up infrastructure to fill a key gap in the local circular economy for salvaged wood. The infrastructure we are aiming to establish with these grant funds is a secure, covered urban warehouse space large enough to initially accommodate, at a minimum, the wood recovered from 10% of Seattle's homes removed annually or about 12 tons per month.

The waste stream associated with the construction and demolition of buildings and homes is estimated to be twice the size of municipal solid waste in the U.S.[1] There are major efforts to reduce the greenhouse gas (GHG) emissions impact of buildings by focusing on their operating energy efficiency. It is critical to also reduce the sizeable waste and GHG emissions that results from the construction and demolition (C&D) of those buildings due to the embodied carbon bound up in those building materials.

Deconstruction is the systematic disassembly of a building to maximize material recovery. Today, most homes and commercial buildings slated for removal are demolished rather than deconstructed, resulting in mixed and fragmented C&D waste that is difficult to sort and recycle. Even when C&D materials from a demolition can be separated, they are often of such poor quality that reuse and recycling is impractical. This is especially true for wood waste generated from demolition. If it is recovered at all, demolition wood waste is typically sold to third parties to burn as fuel, which generates air pollution and carbon emissions. In 2020, about 40,000 tons of wood waste was burned as fuel at mills and other factories and approximately 100,000 tons of C&D wood waste from Seattle was disposed of in a landfill, which generates significant GHG gas emissions.

Deconstruction allows for the recovery of high-quality salvaged wood that can be diverted to reuse rather than burned, with clear public health benefits for both decarbonization and improved air quality. The Oregon Department of Environmental Quality has estimated that for each house that is deconstructed rather than demolished, 7.6 metric tons of carbon emissions are avoided. Pollutants such as lead, asbestos, PCBs, and other toxins can enter the air in dust clouds and runoff into stormwater when structures containing these pollutants are demolished. These toxins are more likely to be found, removed, and properly managed with deconstruction.

The City of Seattle has been working to increase deconstruction and wood salvage through various regulations and incentives. We have also recently implemented a financial incentive program to increase deconstructions, encourage new deconstruction contractors, and raise awareness about deconstruction and its benefits. However, to realize the full potential of benefits possible through deconstruction, **Seattle needs reuse infrastructure for salvaged wood**. Seattle's housing stock is mostly wood framed, a product of our region's evergreen forests. The old growth lumber prevalent in much of our housing stock being replaced is being landfilled or burned for fuel every day rather than being salvaged for reuse. It is high-quality wood that is no longer available for harvest in the Pacific Northwest and is highly valued for reuse.

Although Seattle has available deconstruction contractors and is working to support and expand deconstruction activities in numerous ways, high property values and capital costs have been a barrier to private development of the infrastructure needed to sustain and grow the emerging deconstruction and salvaged wood markets. What we hear from our local businesses involved in deconstruction and wood salvage, and echoed in a Portland, Oregon survey of reuse businesses, is that they struggle to find affordable, urban locations to run or grow their businesses.

> ***Space:*** *The biggest challenges that reuse, repair, and share organizations and businesses face are space and location. These challenges include rising lease rates, lack of storage, lack of donation processing and repair space, and [operating in] hard-to-access locations.*[1]

Urban areas, such as Seattle, are the best and also the most difficult places to locate reuse businesses. This is where reusable building materials are both generated and utilized, since both demolition and construction happens here at very high rates. Having reuse businesses located in central urban locations minimizes transport time, costs, and the GHG emissions impact of dropping off and purchasing salvaged materials and maximizes access to these materials by the greatest number of consumers. We believe that the establishment of a salvaged wood warehouse to handle the wood from the deconstruction sector in a convenient urban location will facilitate a scale of operations more capable of meeting the quantities/specifications desired by construction contractors, and will enable this emerging market for deconstruction and salvaged wood to be more reliable, competitive, and sustainable.

Seattle's plan to support deconstruction and associated wood reuse is bolstered by community assets such as a strong environmental ethic, old housing stock, and the presence of deconstruction and salvage contractors. Additionally, Washington is one of two states (Oregon is the other) that have state building code that recognize reclaimed lumber as usable for new structural applications without regrading. This building code has removed a significant barrier to lumber reuse.[2]

Upon notification of intent to award the EPA SWIFR grant, Seattle will draft a solicitation to distribute those funds through an RFP selection process. The process will, as called out in EPA's grant requirements, comply with competitive procurement contracting requirements as well as EPA's rule on Participation by Disadvantaged Business Enterprises in EPA Programs in 40 CFR Part 33. We would also move to engage a consultant to update the business plan for a Salvaged Lumber Warehouse, published by the King County Solid Waste GreenTools program in 2014. Feedback from local businesses indicates it would be helpful if we provided a model business plan with our RFP to show how such a business might successfully operate in Seattle today.

The RFP will require a plan to establish a secure, covered, weather-impervious urban warehouse space large enough to initially accommodate, at a minimum, the wood recovered from 10% of

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[1] *Reuse, Repair, and Share: Needs Assessment Executive Summary,* download (portland.gov), July 2021.
[2] See Washington's 2018 International Residential Code, Section R602.1.1.1 Used sawn lumber. Residential Code Amendments | SBCC (wa.gov)

Seattle's homes removed annually or about 12 tons per month. This space would also be large enough to accommodate large trucks coming onto the property to drop off and pick up large volumes of wood. Wood that has been salvaged from the deconstruction of homes and building would be stored and sold here, by a single vendor or vendor collaborative. The space would also be used for processing the salvaged wood, such as removing nails from it or planing it, to make it ready for use by new construction contractors. Proposers will be required to address their funding requests for equipment and space needed to establish a salvaged wood warehouse.

Equipment. Seattle's grant will be designed to provide funding to purchase all necessary tools and equipment for a salvage lumber warehouse. We envision allocating up to $300,000 of the awarded funds to be distributed through Seattle's grant process to equipment, such as:

- trucks, including trucks with tipping beds
- forklifts for use inside and outside
- lumber racks
- hand tools, including nail "kickers" to remove nails
- sawmill
- compressor
- planer
- bins for storing and organizing
- a wood grinder for any material that does not have a market

Space. The remainder of the grant funds – approximately $3.7 million depending on equipment costs – would be allocated for securing a warehouse space within city limits as well as renovations and repairs.[3] Our preference is to support the purchase of a property: If a business or group of businesses can purchase a property and manage the payments for three years, they are more likely to be successful moving forward. However, we will consider proposals that use grant funds towards lease costs for the grant period. As a condition of the grant, we will require that the grant recipient commit to operating the warehouse under the same use or change the use or ownership in accordance with requirements of Real Property rules of 2 CFR Part 200, Subpart D.

We are confident that our established local salvage and deconstruction businesses are best suited to implement and manage the operations of a salvaged lumber warehouse. The funding available from this infrastructure funding opportunity would allow the city to jump start this missing component of wood circularity. Reuse businesses struggle to establish in Seattle due to high property values, so we do not expect private sector to establish this infrastructure without public support and this funding drastically expands Seattle's ability to do that. Given climate change, daily loss of valuable materials, rising property costs, and our increased appreciation for the

[3] We have begun a process to identify city-owned property that would be suitable for a salvaged wood warehouse that could be offered for lease for this purpose. We will continue this investigation and, if a property is identified, include in our RFP solicitation. If not, the grant funding will be offered to support the purchase or lease of a suitable location within the city limits.

climate, human, and economic benefits inherent in reuse, the time to act on this opportunity is now.

Section 1b: Application identifies and explains how project meets the requirements in Section I. G: Scope of Work and Section I.H: General Environmental Results and EPA Strategic Plan Linkage

Meeting Requirements of Section 1.G.

This application addresses the objective, as called out in *Section I.G: Scope of Work*: Establish, increase, expand, or optimize collection and improve materials management infrastructure.

Further, this project would fund the development of reuse infrastructure, specifically in the form of a staging area for material reuse/donation and reuse warehouse.

Meeting Requirements of Section 1.H.

This application supports the following goals and objectives of the FY 2022-2026 **EPA Strategic Plan**:

- *Goal 1: Tackle the Climate Crisis, Objective 1.1: Reduce Emissions that Cause Climate Change*
    - How project addresses: Enables a marketplace for wood recovered from deconstructed buildings which prevents the release of embodied carbon through disposal or burning for energy and displaces the need to harvest trees so leaves carbon in place.
- *Goal 5: Ensure Clean and Safe Water for All Communities Objective, 5.2: Protect and Restore Waterbodies and Watersheds*
    - How project addresses: Reduces stormwater pollution caused by the spraying down of dust and debris during demolition by encouraging deconstruction.
- *Goal 6: Safeguard and Revitalize Communities, Objective 6.2: Reduce Waste and Prevent Environmental Contamination*
    - How project addresses: Strengthens and expands the market for deconstruction by ensuring a market for salvaged wood, which reduces the amount of wood waste sent to landfills or burned for fuel and reduces air and water pollution created through demolition.

The activities funded through this application would enhance policies and programs to support circularity, an objective of the National Recycling Strategy (NRS).

Section 1c: Project Narrative clearly identifies the goals and objectives of the project and includes an effective, easily understood plan with well-reasoned steps and milestones to meet the stated objectives

The goal for this project is to establish a salvaged wood warehouse to handle reclaimed wood diverted from disposal or burning for fuel, including wood recovered from deconstructions, and could also accept scrap (leftover) wood from new construction projects. This facility/capacity is a missing piece in Seattle's circular economy "ecosystem" for wood salvage and reuse, and the

goal therefore is to fill this important gap, creating a holistic circular economy capacity for wood.

On average, about 300 houses are demolished or otherwise removed in Seattle annually. Proposers will be expected to provide a solution that meets a goal of handling the wood recovered from 10% of those homes the first year. If each home generates 5 tons of useful wood, deconstructing 30 homes would yield about 150 tons of lumber, or about 12 tons per month. Over the course of the grant period, that should grow to 200-300% in order to reach our wood recovery goals.

Please see Milestones and Time Schedule Table, included as an attachment to this application, for a list of steps and milestones.

Section 1d: Project Narrative sets forth a reasonable time schedule for the execution of the tasks associated with the project and for achieving the project goals and objectives by project end

Please see Milestones and Time Schedule Table, included as an attachment to this application, for a time schedule.

Criterion 2: Environmental Justice (15 points)

Section 2a: How the project benefits communities including those that have experienced a lack of resources or other impediments to addressing the impacts identified above that affect their community

The project this application would fund would have broad benefits for communities across Seattle, including those that have experienced a lack of resources. By increasing deconstruction and salvaged lumber reuse in Seattle, we will have a positive impact on climate through greenhouse gas emission reductions, and on health and equity outcomes for vulnerable populations by improving air quality and creating training opportunities.

Construction workers are a vulnerable population in the workforce who do not have the luxury of choosing where they work and are at risk of exposure to environmental and health hazards on the job. By increasing deconstruction over demolition, we will help to create safer, healthier work sites for this workforce, as well as for residents and other community members near these projects.

In addition, deconstruction is more labor-intensive than demolition, and so not only is it safer for construction workers, but it also creates more jobs with relatively low barriers to entry. For example, Sledge Seattle is an existing deconstruction contractor operating in the Seattle area with an ethic of employing people who were formerly incarcerated. Sawhorse Revolution is also a local model: it is a women-led nonprofit which offers a carpentry training program for at-risk Seattle high-school students.

Furthermore, lower-income and marginalized communities and neighborhoods are often disproportionately impacted by the negative impacts of demolition because they do not always have the time or information necessary to advocate for themselves on this issue. By working to

better incentivize and regulate deconstruction, we seek to address this inequity by increasing healthy building removal practices in neighborhoods most impacted by poor air quality.

Section 2b: The extent to which the project addresses engaging local residents in communities who will be affected by the project, to ensure their meaningful participation in the design, project planning, and performance of the project

Our engagement will be two-fold. First, we will actively solicit proposals from women and minority-owned business enterprises to maximize representation for companies belonging to overburdened communities in Seattle.

Second, we will work with local neighborhoods experiencing high levels of racial health inequities, who are already disproportionately impacted by high levels of asthma and poor air quality, to support increasing rates of deconstruction by developers, to reduce demolition and its negative health impacts.

The facility itself is expected to only have positive impacts on local communities. Given the high cost of real estate in areas of Seattle zoned as or adjacent to residential neighborhoods, it is likely that any new warehouse would be sited in an industrial area without adjacent residents.

Criterion 3: Performance Measure- Anticipated Outputs and Outcomes (10 points)

Key metrics of success will include:

- The establishment of a new salvage lumber warehouse.
- The number of deconstruction projects served by the salvage lumber warehouse.
- The number of jobs that result from establishment of the salvage lumber warehouse.
- The tons of wood handled by the warehouse and the resulting reduction in metric tons of carbon dioxide generated/emitted associated with the recovery of wood compared to use of wood in place.
- Financial data showing the warehouse is profitable at the end of the grant period.

Criterion 4: Programmatic Capability and Past Performance (10 points)

a. Past performance in successfully completing and managing the assistance agreements identified in response to Section IV: Application and Submission Information of the solicitation:

At any point, Seattle is managing a large number of projects funded by grants from different government and non-governmental organizations. Below is a selection of grants ranging in size from $50,000 to almost $12 million, received by Seattle Public Utilities in the past three years from state sources, including one indirectly funded by a federal agency. In general, Seattle Public Utilities receives grants primarily from county, state, and federal agencies.

Project Title	Project Manager	Type of Funding	Contract Number	Start Date	End Date	Grant/Loan Amount
Ship Canal Waster Quality Project	Maria Coe	EPA Water Infrastructure Finance and Innovation Act (WIFIA)	WIFIA-N18106WA	4/24/20		$192.2 million
Wood Recycling and Reuse in King County	Katie Kennedy	WA State Department of Ecology Recycling Development Center	21-064 OTGP-2021-SEAPUD-00060	2/15/21	6/30/21	$50,000
South Park Landfill Cleanup	Jeff Neuner	WA State Department of Ecology through Model Toxics Control Act (MTCA)	15-049	7/1/15	6/31/23	$11,805,426
Royal Arch Reach Floodplain Reconnect (Ph1) Design[4]	Brent Lackey	WA State Recreation and Conservation Office (indirectly from NOAA Pacific Coastal Salmon Recovery Fund)	20-011 RCO (PSAR/SFRB) 19-1319P	3/6/20	6/30/22	$424,065
Seattle Public Utilities RV Wastewater Pump-out Service	Chris Wilkerson / Erik Lust	WA State Department of Ecology	20-155-G RV Pump-out Service WQC-2022-SeaPUD-00162	7/1/2022		$490,552

[4] SPU has implemented eight separate grants with the State Recreation and Conservation office over the past 15 years leveraging $2M in SPU funds to acquire and spend $2M in State funds and $2.2M in state administered federal block grant funds for salmon recovery.

b. History of meeting the reporting requirements under the assistance agreements identified in response to Section IV: Application and Submission Information of the solicitation including whether the applicant submitted acceptable final technical reports under those agreements and the extent to which the applicant adequately and timely reported on their progress

Individual grants received by the city are managed by the project manager, typically the staff person who applied for the grant. Our centralized financial systems manage grant funding received. It is the responsibility of each project manager to adhere to progress reporting and other deliverable deadlines. All reporting requirements have been complied with for the above grants.

c. Organizational experience and plan for timely and successfully achieving the objectives of the proposed project:

The City of Seattle is accountable to our residents and businesses for services and stewardship of public funds and resources. With a budget of $1.4 billion in 2021, Seattle Public Utilities provides essential drinking water, drainage and wastewater, and solid waste services to more than 1.5 million people in the greater Seattle area. About 1,400 SPU employees work with our community to provide affordable and equitable stewardship of our water and waste resources for future generations. Ratepayers pay for essential services, infrastructure, and day-to-day operations through their utility bills. We are focused on financial sustainability and careful use of our resources to help us manage costs for our ratepayers; invest in operations, infrastructure, and technologies that carefully manage SPU risks, resilience, and effectiveness; and are committed to be an adaptive, learning organization that continuously improves and deepens our culture of safety, excellence, and innovation.

d. Staff expertise/qualifications, staff knowledge, and resources or the ability to obtain them, to successfully achieve the goals of the proposed project:

The 1.5 FTE dedicated to this project will be supported most directly by the Solid Waste Planning & Program Management Division. Beyond this division, we have the resources and skill sets available within the Solid Waste Line of Business, Seattle Public Utilities, and the City of Seattle overall.

Criterion 5: Budget and Expenditure of Awarded Grant Funds (10 points)

Please see Budget Table and Description, included as an attachment to this application.

Criterion 6: Project Sustainability (10 points)

The salvaged wood warehouse itself will likely endure past the grant period because we will prioritize proposals that purchase the property rather than leasing.

In addition to the grant-funded infrastructure proposed here, which focuses on establishing an urban space for storing, processing, and distributing salvaged wood, the City of Seattle has been and will continue to work on a parallel track (not funded by the grant) to strengthen City regulations and incentives related to C&D salvage and deconstruction. Building on a strong history and community ethic of green building, we recently established new healthy building incentives that include offering expedited permitting for projects utilizing deconstruction or use

of salvaged lumber through Seattle's "Priority Green" Building Incentive Program. We have also begun to offer expedited electrical disconnects for deconstruction projects, a benefit that deconstruction professionals have told us will incentivize builders to choose deconstruction.

During the grant period, we will focus on effective approaches to strengthening the City's permitting requirements and building code related to salvage and deconstruction for older homes. We recently implemented a financial incentive program to increase deconstructions, encourage new deconstruction contractors, and raise awareness about deconstruction and its associated benefits. To maximize the benefits of deconstruction including the reduction in GHG emissions, a broad deconstruction mandate will ideally be adopted at the city level, as has been done in nearby cities like Portland, Oregon. But before Seattle can consider a mandate to require deconstruction, we first must ensure that the local circular economy around wood is robust enough to absorb such a mandate, including having established and sustainable infrastructure for the storing, processing, and distribution of salvaged wood.

We envision that the increased market robustness resulting from this project will be self-sustaining. The two-pronged approach of strengthening supply in the private market (through the grant-funded efforts), and strengthening City regulations (on a parallel, internally funded track), will create self-sustaining synergies, resulting in increased building deconstruction and salvage of wood, and the positive health, climate, and equity benefits that it generates. The grant will provide the catalytic funding to make a circular wood market feasible and economical in Seattle, and will result in multiple co-benefits for individuals and communities. We will continue to monitor market activity and compliance with existing and new regulations to determine if there are persisting gaps, and if so, identify opportunities to address them.

Criterion 7: Innovative Approaches and Solutions (5 points)

This application proposes a project that addresses two innovative strategies to support the development of infrastructure for post-consumer materials management.

1. **Creating and encouraging the development of emerging markets.** Performing a deconstruction is not business as usual. In Seattle, upwards of 90% of houses are currently removed through demolition, a process that renders the components unrecoverable for reuse. Many people have never heard of deconstruction and do not know that it is a viable alternative to demolition. We hope to change that through this project. Although Seattle has available deconstruction contractors, their longer-term business prospects are in doubt if government incentives and investment are not marshaled to bolster the business environment for recovery and reuse. We believe with the establishment of the salvaged lumber warehouse to handle the wood from the deconstruction sector, coupled with complementary efforts underway by the city to thoughtfully incentivize deconstruction and salvage, we can enable this emerging market for deconstruction and salvaged wood be more competitive and sustainable.
2. **Purchase or installation of emerging technologies.** We will also look at emerging technologies, such as the *Urban Machine*[5], a robotics approach to removing metal from

[5] urbanmachine.build

deconstructed wood. This technology is currently in testing, but the company expects to deploy machines to 12 cities across the country in 2024, ideal timing for the implementation of this project.

Criterion 8: Replicability (5 points)

There is increasing interest by a number of cities across the US in C&D material reuse. Increasing the reuse of C&D materials, including wood, holds the potential to be part of the solution for multiple pressing, and often interconnected, challenges that cities, both in the US and across the world, are facing. These include the urgent need to mitigate greenhouse gas emissions, increasing construction pressures related to population growth, natural resource conservation, poor localized air quality, health disparities between zip codes, and other inequities. This project will help Seattle pilot wood reuse infrastructure that can reinforce the connection between more responsible practices in material reuse and the associated desirable beneficial health, environmental, and equity outcomes. In so doing, this project will provide a roadmap for other cities as they work to address these complex challenges and look at C&D reuse as a valuable component that could aid them in their efforts.

Criterion 9: Leveraging (5 points)

We envision working with both private and public sector partners to leverage the funding from the EPA SWIFR grant.

- Seattle has **dedicated funds** to incentivize deconstruction ($80,000 per year for 2023-2024), and could direct additional funding towards related efforts such as contractor trainings and outreach to builders and architects to support deconstruction and use of salvaged wood.
- Seattle has **committed staff time** to this effort. For the next 3 years, we have dedicated 1.5 FTE to supporting and expanding Seattle's wood reuse sector through salvage and deconstruction.
- We have worked with and will continue to work with the **local green building certification program Association of King and Snohomish Counties Built Green Program**. Based on feedback from Seattle and others, the program checklists now better incentivize recovering and using salvaged building materials, especially lumber.
- A very good opportunity for additional funding for the purchase of property for the selected grant recipient is the **Washington Economic Development Finance Authority (WEDFA)**. They provide low-interest loans to the private sector for projects such as solid waste infrastructure projects.
- We will engage **a local consulting firm to update the business plan**, funded by Seattle, rather than by the grant.
- We are engaged with King County and other local interested jurisdictions on how to support this work.