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Technical Memorandum

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Metro
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RE: 2025-27 Regional Flexible Funds and Trails Bond Risk Assessment

Overview

Metro's Regional Flexible Funds Allocation (RFFA) process allows local agencies to apply for federal funding, distributed through Metro, and Metro's 2019 Parks and Nature bond measure (Trails Bond) funds trail projects within the region. Metro is evaluating the 2025-2027 RFFA and Trails Bond project applications based on how meaningfully they can help the region achieve the four Regional Transportation Plan priorities of advancing social equity, improving safety, implementing the region's Climate Smart Strategy and managing congestion.

Kittelson & Associates, Inc. (Kittelson) worked with Metro and the local agencies to identify and mitigate risks through the RFFA and Trails Bond application process. Prior to submitting applications, agencies had the opportunity for Kittelson to review preliminary application materials and provide recommendations for additional information and/or risk mitigation. Kittelson developed and applied a methodology for evaluating risks for each project application, considering the likelihood of a project being completed on budget and as intended. After applying the methodology to each application, Kittelson then provided these draft risk assessments to each agency with a set of clarifying questions about their application(s). Each agency was able to update their applications or provide clarification to inform the risk assessment. This memorandum summarizes the risk assessment methodology and provides a risk level and summary for each RFFA project application.

Methodology

The following section outlines the risks that Kittelson used to examine each RFFA and Trails Bond project application, how project risks varied based on the level of project development a project was seeking, and how risks were scored. This methodology was based on a review of risk evaluation best practices the project team conducted for the 2022-2024 RFFA cycle and applied to the local evaluation scenarios.

Major Risk Considerations

In considering potential risks, the project team divided project risks into two groups. The first group are risks (Project Management Risks) that can be accounted for through project budget, with sufficient outreach and collaboration, with an adequate project scope, and/or with an appropriate timeline for project completion. For example, if there are significant utilities that need to be moved to accommodate a project, the risks captured in the Project Management risk category are risks that can be minimized. A jurisdiction can reach out to the utility about the project in advance of the project, utility relocation costs

can be included in a project budget, and an appropriate amount of time can be added to a project schedule to account for the relocation needs. In short, this risk category captures the level of risk identification and mitigation.

The second group (Inherent Risks) are risks due to the complexities of a project that cannot be changed. Continuing the example used above, a project that requires significant utility relocation inherently has more risk than one that requires no utility relocation simply because it adds complexity to the project, creating a greater likelihood of something unexpected happening that may impact the project. In short, this risk category captures the fact that the more complex a project, the more risk it has even when available risk management measures are taken. These risk categories and their related assessments are explained in more detail in the following sections.

Project Management Risks

The project team evaluated multiple risk assessment factors within this risk category. These risks are focused on project scope, budget, and collaboration and are defined below.

Project Scope

The project scope assessment measures project understanding and whether the project needs have been considered comprehensively. The farther along in scoping or development a project is, the more details have been determined and the lower the likelihood of an unknown risk developing. These assessment factors are based on current project stage in relation to the stages of project development requested for funding. To reduce risk, projects requesting funding for construction are expected to have a greater level of previous project development and project understanding. To help inform the scope risk, the Kittelson team considered the following assessment factors:

- Is the scope comprehensive?
- What is the status of planning and scoping documents?
- What is the status of the preliminary engineering and design phase?
- Have environmental (and the National Environmental Policy Act, if applicable) impacts and mitigation been defined and accounted for?
- Have utility relocation needs been addressed?
- Has stormwater treatment been identified and accounted for?
- Is there a need for street lighting and has it been accounted for?

Project Budget

The project budget assessment examined the project budget for completeness and appropriate cost projections. An inadequate project budget can risk the ability to deliver the full scope of a project or to deliver a project at all. Kittelson considered the following budget assessment factors as a cross section to determine budget related risks:

- Has staff time been budgeted?
- Does the budget include Oregon Department of Transportation (ODOT) or other agency delivery if necessary?
- Have inflation/escalation costs been included?
- Is there adequate budget contingency?
- Is community engagement appropriately budgeted?
- Are permitting costs included if necessary?
- Are mobilization costs included if necessary?

- Are construction easement costs included if necessary?
- Do the overall project costs feel reasonable?
- Has the jurisdiction secured local funding match for the project?

In evaluating whether inflation and escalation costs were included, the project team compared inflation indices included in each cost estimate to ODOT's current estimated inflation index. Inflation indices similar to or higher than ODOT's inflation index were considered "low risk", inflation indices significantly lower than ODOT's inflation index were consider "medium risk", and projects with no inflation applied were considered "high risk" for that factor. This assessment was intended to identify relative project risk with regards to inflation, and the project team acknowledges that if ODOT's inflation index is low in comparison to actual inflation, even projects scored as "low risk" with regards to cost inflation may not sufficiently account for inflation.

Addressing Outside Coordination

The assessment for whether a project has adequately addressed outside coordination evaluates the extent to which the applicant has included or accounted for relevant outside jurisdictions, organizations, and stakeholders in the project development or scoping process. In cases where the agency has coordinated with those stakeholders, the project received a lower risk score, whereas if there were outside interests that had not been accounted for that could change the scope of the project, the project received a higher risk score. Kittelson considered the following assessment factors related to outside coordination:

- Will an outside agency be delivering the project and does the applicant have support from that agency?
- Are there other jurisdictions or major partners involved and has the applicant coordinated with these partners?
- Does the project impact an existing railroad and has the applicant addressed this appropriately (made contact, completed permits, etc.)?
- Will the project require right-of-way acquisitions, and have they been initiated or completed?
- Is there local community support?
- Is there governing body support?

Inherent Risks

Within the Inherent Risk group, all risks fall under the project complexity factor. While the project complexity category also falls within the Project Management group, the risks are measured in a different way under Inherent Risk. The risks here are measured based on whether and to what extent they exist within each project, whereas the risks in the section above are measured based on whether the applicant has adequately addressed on each risk item.

Project Complexity

The project complexity assessment aimed to identify potential implementation challenges that could impact the project and are beyond the control of the applicant agency. These challenges included physical impact complexities like needing to acquire right-of-way and working in wetlands, floodplains, and other environmentally sensitive areas as well as outside coordination related complexities. The outside coordination complexities assessment addressed issues that could arise that go beyond the applicant jurisdiction's control, such as working with a large number of partners or stakeholders and needing to work with a railroad. This grouping asks evaluates questions similar to the *addressing outside* coordination category within the PM risks, but as outlined previously, the assessment factors within this Inherent Risk

category are judged based on whether the additional complexity of needing to work with other agencies exists. Kittelson considered the following assessment factors within the "Project Complexity" category:

Physical Impact Complexities

- How many right-of-way acquisitions will be needed and what level of controversy is anticipated for these parcels?
- To what extent will the project create environmental impacts and the need for environmental permitting?
- Will major utilities need to be relocated?
- Are there major or complex water quality or water quantity treatment needs?

Outside Coordination Complexities

- Will an outside agency be delivering the project?
- How many other jurisdictions or major partners are involved?
- Will a railroad line impact the project?
- Are there other important complexities or impacts that have not previously been covered?

Project Development Stage Considerations

In reviewing the RFFA and Trails Bond applications, Kittelson distinguished between projects of different project development stages. Some projects just sought funding to complete planning work for a project, some projects sought funding for preliminary engineering and design, and some project sought funding for project construction. Other projects sought funding for some combination of these three project phases. The team assigned each assessment factor to the project development stages appliable for that assessment factor. Mobilization costs and right-of-way acquisitions, for example, apply to construction projects but not to planning or preliminary engineering projects.

As a result, all of the risks within the Project Management Risk category and Inherent Risk apply to projects that are seeking funding for construction, while a handful of these risks are screened out for projects that are only seeking funding up to preliminary engineering or planning.

Project Scoring

Every risk assessment factor was judged on a low-, medium-, and high-risk scale based on a standard definition of what constituted each level of risk for each assessment factor. The team also assigned different scoring weights to each assessment factor based on the severity of the risk.

Table 1 below shows three sample risk categories, their weightings, and the scores associated with each level of risk. *Appendix A includes the full risk assessment with all assessment factors and weights.*

Table 1. Sample Risk Categories and Associated Scoring

Assessment Factor	Weighting	Low Risk Definition	Low Risk Point Allocation	Medium Risk Definition	Medium Risk Point Allocation	High Risk Definition	High Risk Point Allocation
Street Lighting Need	Low	Not necessary or complete	0	Need is uncertain or partially addressed	2	Necessary and not addressed	4
Quality of Project Scope	Medium	High	0	Developing	4	Low	8
Status of Right-of-Way Acquisitions	High	Complete or Unnecessary	0	Underway	8	Not Initiated	16

Based on the results of the evaluation, each RFFA and Trails Bond project application received a Project Management Risk score and an Inherent Risk score, as well as a combined total score. As shown in the table above, lower scores represent lower overall risk.

Archeological Considerations

In addition to Metro contracting with Kittelson and Associates, Inc. to conduct a general risk assessment, Metro contracted with Willamette Cultural Resources Associates, Ltd. (WillametteCRA) to conduct a cultural resources assessment. Because archeological findings can affect project risk, Metro asked Kittelson to include a summary of WillametteCRA's archeological probability findings for each project in this risk assessment.

WillametteCRA used multiple data sources to assess the probability of both precontact and historic archaeological sites and historic properties (structures). Historic General Land Office (GLO) maps and surveyor notes, USGS topographic maps, and historic aerial photographs provide information on the timing, level, and trajectory of historic development in the area. WillametteCRA used publicly available aerial imagery (both historic and modern) and topographic maps to determine the project locations' overall topography, slope and aspect, the locations of landforms such as terraces and benches, and water resources such as streams, drainages, ponds, and wetlands in the project vicinities. WillametteCRA reviewed the Oregon SHPO archaeological database to identify any known precontact or historic-era sites or isolates in or within approximately one mile of each project location. Finally, WillametteCRA also collected information on previous archaeological surveys within and near the project locations to assess the likelihood and expected type of unrecorded resources based on nearby studies in similar environments.

WillametteCRA synthesized the above information into a qualitative estimate of archaeological potential on a scale of low to extreme. Key variables in this classification include the landform, the scope and intensity of previous surveys, distance to nearby water resources, the type and proximity of known archaeological sites, the environments nearby sites are most frequently recorded in, and the type, extent, and proximity of historic development. Projects that include known archaeological sites are classified as "extreme." Locations without known resources but in physical settings where archaeological sites or historic properties are known to be found nearby are classified as "high." Projects with no sites present, that are not mapped as intersecting historic features, and are on landforms generally considered low probability (e.g. steep slopes, no nearby water resources), and/or have been previously adequately surveyed in entirety with negative results, would be assessed as "low."

The archeological probability for each project is presented alongside the risk score in the risk summary tables presented in the Overview of Project Risks section of this report.

Overview of Project Risks

Kittelson evaluated each project based on the identified assessment factors. For consistency, each project was assigned a score per assessment factors, and the sum of the scores was used to determine overall risk level. Those risk levels and a summary of risk for each project are provided below and categorized by the funding source and project development stages for which they are seeking funding.

Risk Summary for All Projects – By Funding Source and Project Type

Table 2. Trails Bond Planning and Project Development Projects

Project	Applicant	Fund Source	Requested Amount	Project Management Risks	Inherent Risk	Total Risk	Risk Score	Archeological Probability
Emerald Necklace Trail Master Plan	Forest Grove	Either	$200,000	36	24	60	Medium-High	Moderate to High
Tigard-Lake Oswego Regional Trail Gap: I-5 to Wall Street	Tigard	Either	$245,000	16	20	36	Medium-Low	High
Brookwood Parkway Pedestrian Overpass	Hillsboro	Either	$4,500,000	40	36	76	High	Moderate to High
Scott Creek Trail Development	Happy Valley	Bond	$162,840	42	20	62	Medium-High	Moderate
Westside Trail: Segment 1 Planning and Design	King City	Bond	$210,000	42	36	78	High	Moderate to High
Westside Trail Bicycle and Pedestrian Bridge	Tualatin Hills Parks & Recreation District (THPRD)	Bond	$1,907,500	28	32	60	Medium-High	Low

Table 3. Trails Bond Construction Projects

Project	Applicant	Fund Source	Requested Amount	Project Management Risks	Inherent Risk	Total Risk	Risk Score	Archaeological Probability
Marine Drive Trail: I-205 to NE 122nd Avenue	Portland Parks & Recreation	Either	$2,261,645	20	12	32	Medium-Low	High
North Portland Greenway: Kelley Point Park to the North Slough	Portland Parks & Recreation	Either	$3,626,632	12	16	28	Low	Very High
North Portland Greenway: Columbia Boulevard to Cathedral Park (Greenway/Trails Only)	Portland Parks & Recreation	Either	$1,858,161	10	8	18	Low	Very High[1]
North Portland Greenway: Columbia Boulevard to Cathedral Park (Columbia Boulevard Bridge)	Portland Parks & Recreation	Either	$2,779,340 - $5,215,608	22	52	74	High ($2.9M funding request) to Medium-High ($5.4M funding request)	Very High[1]
Council Creek Regional Trail Enhanced Street Crossings	Washington County	Either	$5,511,000	34	20	54	Medium	Moderate to High
Cornfoot Road Multi-Use Path	Portland Bureau of Transportation	Either	$5,225,500	32	24	56	Medium	High
Clackamas River Trail	Happy Valley	Bond	$666,175	52	36	88	High	Moderate
Trolley Trail: Milwaukie Bay Park	North Clackamas Parks & Recreation District (NCPRD)	Bond	$651,750	18	16	34	Medium-Low	Very High
Gresham-Fairview Trail: Halsey to Sandy	Gresham	Bond	$4,232,978	16	12	28	Low	High
Sandy River Greenway – Riverfront Trail and Park	Troutdale	Bond	$1,945,800	12	28	40	Medium-Low	Moderate to High

[1] Evaluation performed for the combined Columbia Boulevard to Cathedral Park project, including the bridge, trails, and greenways

Table 4. RFFA Planning and Project Development Projects

Project	Applicant	Fund Source	Requested Amount	Project Management Risks	Inherent Risk	Total Risk	Risk Score	Archaeological Probability
Emerald Necklace Trail Master Plan	Forest Grove	Either	$200,000	48	24	72	High	Moderate to High
Tigard-Lake Oswego Regional Trail Gap: I-5 to Wall Street	Tigard	Either	$245,000	20	20	40	Medium-Low	High
Brookwood Parkway Pedestrian Overpass	Hillsboro	Either	$4,500,000	50	44	94	High	Moderate to High
SW Allen Blvd: SW Murray Blvd to SW King Boulevard	Beaverton	RFFA	$723,670	6	8	14	Low	Moderate to High
Fanno Creek Trail Project Development: Bonita Road to Durham Road	Tigard	RFFA	$1,606,705	2	28	30	Low	Moderate to High
I-205 Multi-Use Path Gap Refinement Plan	Clackamas County	RFFA	$1,094,858	10	16	26	Low	Moderate
Lakeview Boulevard – Jean Road to McEwan Road	Lake Oswego	RFFA	$450,036	34	8	42	Medium-Low	Moderate to High
S Troutdale Road Complete Street and Fish Passage: SE Stark Street to Beaver Creek Lane	Multnomah County	RFFA	$1,720,000	6	24	30	Low	Moderate to High

Table 5. RFFA Construction Projects

Project	Applicant	Fund Source	Requested Amount	Project Management Risks	Inherent Risk	Total Risk	Risk Score	Archaeological Probability
Marine Drive Trail: I-205 to NE 122nd Avenue	Portland Parks & Recreation	Either	$2,899,104	20	12	32	Medium-Low	High
North Portland Greenway: Kelley Point Park to the North Slough	Portland Parks & Recreation	Either	$4,648,824	12	16	28	Low	Very High
North Portland Greenway: Columbia Boulevard to Cathedral Park (Greenways/Trails Only)	Portland Parks & Recreation	Either	$1,926,645	10	8	18	Low	Very High[2]
North Portland Greenway: Columbia Boulevard to Cathedral Park (Columbia Boulevard Bridge)	Portland Parks & Recreation	Either	$2,934,002 - $5,505,841	22	52	74	High ($2.9M funding request) to Medium-High ($5.4M funding request)	Very High[1]
Council Creek Regional Trail Enhanced Street Crossings	Washington County	Either	$5,511,000	34	24	58	Medium	Moderate to High
Cornfoot Road Multi-Use Path Project	Portland Bureau of Transportation	Either	$6,698,345	22	24	46	Medium-Low	High
NE 148th Avenue Safety and Access to Transit	Portland Bureau of Transportation	RFFA	$7,100,335	20	4	22	Low	Moderate
Beaverton Creek Trail Segments #3 and #4	Tualatin Hills Parks & Recreation District	RFFA	$2,055,647	48	72	120	High	High
SE 7th Avenue Complete Street Project	Portland Bureau of Transportation	RFFA	$10,692,227	10	4	14	Low	High
NE 162nd Avenue Complete Street	Gresham	RFFA	$7,575,882	14	20	34	Medium-Low	Moderate
Cully Boulevard/ 57th Avenue Complete Street Project	Portland Bureau of Transportation	RFFA	$7,643,201	18	8	26	Low	Moderate to High

[2] Evaluation performed for the combined Columbia Boulevard to Cathedral Park project, including the bridge, trails, and greenways

Project	Applicant	Fund Source	Requested Amount	Project Management Risks	Inherent Risk	Total Risk	Risk Score	Archaeological Probability
SW Taylors Ferry Road Access to Transit	Portland Bureau of Transportation	RFFA	$10,124,236	30	44	74	Medium-High	Moderate to High
NE Sandy Boulevard Complete Street: Gresham City Limits to Quail Hollow	Multnomah County	RFFA	$7,870,000	8	48	56	Medium	High[3]
NE Martin Luther King Jr. Blvd Safety and Access to Transit (Phase 2)	Portland Bureau of Transportation	RFFA	$5,532,955	14	8	22	Low	Moderate
Willamette Falls Drive Multimodal Improvement Project – 16th Street to Ostman Road	West Linn	RFFA	$3,497,580	22	20	42	Medium-Low	High

[3] Evaluation performed for the combined Sandy Boulevard Complete Street project from Gresham City Limits to NE 230th Avenue

Risk Summary for Individual Projects - Alphabetically

Project name:	NE 148th Avenue Safety and Access to Transit
Applicant:	Portland Bureau of Transportation
Amount requested:	$7,100,335
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	This is a low-risk project as most of the changes are occurring through signing/striping within the existing curbs and existing project development has defined and accounted for most of the complexities.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability:	Moderate. Very few archaeological sites have been documented in the area, and those that have been recorded are predominantly located along drainages and other water sources, which are not present in the project location. Previous surveys in the area, while sparse, have not identified any sites. However, the project area is within the developed area of East Portland, and historic maps indicate that the proposed trail crosses both the former location of a historic structure and a historic road (GLO1852), this, in combination with the fact that the location has never been surveyed in entirety, increases the probability of encountering historic archaeological sites.

Project name:	NE 162nd Avenue Complete Street
Applicant:	Gresham
Amount requested:	$7,575,882
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	Although included in the budget, there are inherent project risks associated with the need to acquire right-of-way and stormwater treatment around increased impervious surfaces.
Risk ratings:	**RFFA**
Risk Score	Medium-Low
Archaeological Probability:	Moderate. There are no archaeological sites or historic features mapped within the project area. The proposed location is not adjacent to any current or historic water resources. However, the project area has never been surveyed and archaeological resources have been recorded in the broader vicinity. Additionally, historic development in the area increases the likelihood of encountering historic archaeological resources.

Project name:	SE 7th Avenue Complete Street Project
Applicant:	Portland Bureau of Transportation
Amount requested:	$10,692,227
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	This is a low-risk project as most of the changes are occurring through reorganization and crossing additions within the existing curbs. The key project risk is potential controversy due to parking removal, but past outreach has indicated that this is the most supported option for this project.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	High. The project area is located on relatively level ground, less than 0.5 mi. west of the Willamette River, elevated above the river's wetland margins depicted in the GLO map. While the area has been undoubtedly disturbed by historic development, this environment has a moderate to high probability for encountering precontact archaeological resources. Additionally, the project vicinity crosses two historic roads, was used historically for agricultural purposes, was develop in the early 20th century, is proximal to a historic ferry landing, and is bounded on either end by two gulches/ponds that were historically filled during the early development of Portland. There is a very high likelihood of historic archaeological deposits.

Project name:	SW Allen Blvd: SW Murray Blvd to SW King Boulevard
Applicant:	Beaverton
Amount requested:	$723,670
Source requested:	RFFA
Project phase(s):	Planning
Risk overview:	The team found this project to be a low-risk planning project to identify multimodal safety options for this corridor. The project appears to be well budgeted and has few external complexities.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate to High. The proposed project area is located approx. 0.3 mile east of South Johnson Creek where the landform levels slightly. The project crosses an unnamed historic road, and located in close proximity to three freshwater resources. There has also been early 20th century historic development in the vicinity. While there are no archaeological sites recorded within the proposed project area and scarce resources recorded in the broader vicinity, previous survey of the project location either did not look for precontact archaeological resources or did not include subsurface probing. The proximity of the project to numerous freshwater resources and historic features increases the probability of encountering archaeological resources.

Project name:	Beaverton Creek Trail Segments #3 and #4
Applicant:	Tualatin Hills Parks & Recreation District
Amount requested:	$2,055,647
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	The project includes significant complexities. These include wetland implications, right-of-way acquisitions, utility and railroad impacts. The applicant has made progress in identifying and mitigating the risks that can be controlled through existing project development. There is some risk in requesting construction funds while utility, PE, and right-of-way activities are ongoing.
Risk ratings:	**RFFA**
Risk Score	High
Archaeological Probability	High. Very few archaeological sites have been documented in the area, but this likely reflects the lack of formal survey and subsurface exploration rather than an actual absence of sites. The project area crosses Beaverton Creek, and historically also intersected a large wetland. Precontact sites are likely to be found on higher ground adjacent to these water sources. Additionally, the proposed project area is also located proximal to an unnamed historic road and the historic Oregon Electric Rail Line, increasing the probability of encountering historic archaeological sites.

Project name:	Brookwood Parkway Pedestrian Overpass	
Applicant:	Hillsboro	
Amount requested:	$4,500,000	
Source requested:	Either	
Project phase(s):	Planning, Project Development	
Risk overview:	There are inherent risks due to the complexities regarding the proximity to a floodplain, potential impact to major utilities, and the need to coordinate with multiple partners including ODOT, Washington County, Portland General Electric, and Bonneville Power Administration. There are risks around the project budget. There is risk in assuming that Washington County (not federally-certified) will deliver the project.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	High	High
Archaeological Probability	Moderate to High. Only one precontact isolate has been identified in the area despite 26 previous surveys in the area. The project area is located near Cha-Ta-Kuin, an ethnographically known gathering area used by native peoples, however its exact location is not known. The chances of encountering historic deposits are higher as five sites and two isolates have been found within 1-mile of the proposed trail and the trail location has been used for agriculture since 1862.	

Project name:	Clackamas River Trail
Applicant:	Happy Valley
Amount requested:	$666,175
Source requested:	Trails Bond
Project phase(s):	Construction
Risk overview:	Key risks include whether more public outreach should be incorporated, how to access the site, and understanding the implications for stormwater, wildlife habitat impacts, and the environmental impacts more broadly.
Risk ratings:	**Trails Bond**
Risk Score	High
Archaeological Probability	Moderate. The proposed trail location is in a low-lying area along the western bank of the Clackamas River. While proximity to water increases the probability of encountering archaeological sites, those that do exist are likely either deeply buried under alluvial deposits or are exposed by erosion. The sites that have been identified in the project vicinity are all situated on higher elevation terraces. Low-lying areas like this are more likely to have been used for resource extraction, leaving little in the way of an archaeological signature.

Project name:	Cornfoot Road Multi-Use Path Project	
Applicant:	Portland Bureau of Transportation	
Amount requested:	$5,225,500 (Trails Bond)	$6,698,345 (RFFA)
Source requested:	Either	
Project phase(s):	Project Development, Construction	
Risk overview:	Key project risks include the special National Environmental Policy Act process with the Federal Aviation Administration and right-of-way acquisition needs.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium-Low	Medium-Low
Archaeological Probability	High. There is a high probability of encountering precontact archaeological deposits in the area given the proximity to the Columbia River and slough channels. Additionally, the trail location is south of an ethnographically known village on the Columbia River. The presence of the historic airbase also increases the likelihood of encountering historic archaeological deposits.	

Project name:	Council Creek Regional Trail Enhanced Street Crossings	
Applicant:	Washington County	
Amount requested:	$5,511,000	
Source requested:	Either	
Project phase(s):	Construction	
Risk overview:	While Washington County has comprehensively mitigated risks where possible, there are project complexities that create inherent risk for this project. Those include the number of jurisdictions required for coordination, work with the railroad, and reliance on an ongoing project.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium	Medium
Archaeological Probability	Moderate to High. Most of the project area has likely been disturbed by development. The proposed trail follows a decommissioned Oregon Electric rail line and runs through the heavily developed areas of Forest Grove, Cornelius, and Hillsboro. Only one site and one isolate have been identified within 1 mile of the project area despite 22 past studies. However, only two of those surveys intersected the project area. The trail location is in close proximity to a permanent water source crossing Council Creek between Cornelius and Hillsboro, then following within 1 kilometer of the creek until the trail's end in Forest Grove. The proposed trail's proximity to water combined the lack of surveys conducted within the project area suggest a moderate potential for precontact archaeological resources. The presence of several structures including the early townsite of Hillsboro on the 1852 GLO map and subsequent USGS maps indicate a high likelihood of encountering historic archaeological deposits.	

Project name:	Cully Boulevard/ 57th Avenue Complete Street Project
Applicant:	Portland Bureau of Transportation
Amount requested:	$7,643,201
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	This project is generally low risk, as it is well-defined through existing project development, only affecting an already urban cross section without environmental complexities and will only require right-of-way from one adjacent parcel. There are some risks around parking removal and design around a major waterline.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate to High. There are no sites recorded within the project area and very few archaeological resources recorded in the broader vicinity. The project area is not situated on a landform that suggests a high probability for encountering precontact archaeological resources. However, the proposed project area has never been previously surveyed in entirety, and historic development in the vicinity increases the probability of encountering historic archaeological sites.

Project name:	Emerald Necklace Trail Master Plan	
Applicant:	Forest Grove	
Amount requested:	$200,000	
Source requested:	Either	
Project phase(s):	Planning	
Risk overview:	Key risks focus on scope development, the number of complexities that arise from the length of this project, and whether the budget will be appropriate for the large scope of this project. The RFFA risk score is higher due to the additional coordination needed with ODOT for ODOT project delivery.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium-High	High
Archaeological Probability	Moderate to High. Very few archaeological sites have been documented in the area, but this likely reflects the lack of formal surveys rather than an actual absence of sites. The project area spans nearly 10 kilometers, crossing/bordering at least three creeks including Gales and Council Creek. Precontact sites are likely to be found on higher ground adjacent to these streams. Additionally, the proposed trail surrounds the heavily developed city of Forest Grove crossing both modern roads and historic, unnamed roads (GLO 1852), thus increasing the probability of encountering historic archaeological sites.	

Project name:	Fanno Creek Trail Project Development: Bonita Road to Durham Road
Applicant:	Tigard
Amount requested:	$1,606,705
Source requested:	RFFA
Project phase(s):	Planning
Risk overview:	There are inherent project complexities due to proximity of this project to riparian zones/waterways. The project scope and budget accounts for these risks appropriately, the request is only for project development funds to help mitigate these risks further, and there has been significant work on the project to this point already, making this a low risk project.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate to High. The project area is located near Fanno Creek and there are several previously recorded precontact sites in the vicinity along the Creek and the Tualatin River, which increases the probability of encountering additional sites in similar environments. Historic structures are also mapped adjacent/within the project area in the early 20th century maps. Interestingly, the only previous survey to intersect a portion of the proposed project location did not encounter archaeological resources, possibly indicating that only the areas outside the historic channel route retain a higher archaeological probability.

Project name:	Gresham-Fairview Trail: Halsey to Sandy
Applicant:	Gresham
Amount requested:	$4,232,978
Source requested:	Trails Bond
Project phase(s):	Construction
Risk overview:	This is a low-risk project. The inherent risks, which include minor permits, the need to do more direct outreach to abutters, and coordination with ODOT and the railroad, have been accounted for appropriately in the budget.
Risk ratings:	**Trails Bond**
Risk Score	Low
Archaeological Probability	High. The proposed trail location is within the floodplain of the Columbia River, near an ethnographic village. Additionally, the general area contains many precontact sites. The historic map review indicates the potential for historic archaeological deposits as well.

Project name:	I-205 Multi-Use Path Gap Refinement Plan
Applicant:	Clackamas County
Amount requested:	$1,094,858
Source requested:	RFFA
Project phase(s):	Planning, Project Development
Risk overview:	The risk assessment team found this project to be well scoped and further project development will consider risks before construction. Risks include outside involvement and budget contingency. The project will require significant outside agency involvement, including significant involvement by ODOT, who has provided their commitment to be a partner in this project development project. The project budget includes contingency for some but not all tasks.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate. The project area is located in an area that has undergone extensive historic-era development, and there are several archaeological sites documented in the nearby vicinity, which increases the probability of encountering historic archaeological resources. Additionally, the project location has never been surveyed in entirety. Precontact resources in the vicinity are predominately located along one of the local drainages, away from the project location, and the area has seen substantial past development, resulting in a low likelihood of encountering precontact resources.

Project name:	Lakeview Boulevard – Jean Road to McEwan Road
Applicant:	Lake Oswego
Amount requested:	$450,036
Source requested:	RFFA
Project phase(s):	Project Development
Risk overview:	The overall cost estimate seems sufficient but there is no activity break down provided, which poses a risk because the project may not sufficiently fund each task. There is some risk in whether cost overages will be able to be sufficiently covered by the City. There is some risk that future phases of this project will face neighborhood opposition due to right-of-way impacts and roadway character changes and there is some risk in the lack of coordination with ODOT. However, this does not pose a risk to the project as scoped, as the project is only requesting funding through 30% design and may be able to mitigate this risk through this project development process by coming up with a neighborhood supported design.
Risk ratings:	**RFFA**
Risk Score	Medium-Low
Archaeological Probability	Moderate to High. The proposed project area is located less than 0.2 mile from the Tualatin River. Precontact sites are likely to be found on higher ground adjacent to large streams, and most of the recorded precontact sites in the area have been documented on or near the Tualatin River or one of its tributaries. The project area has never been surveyed. Additionally, the proposed project is located near a historic rail line and in an area of documented historic-era development, creating a possibility of encountering historic archaeological resources.

Project name:	**Marine Drive Trail: I-205 to NE 122nd Avenue**	
Applicant:	Portland Parks & Recreation	
Amount requested:	$2,261,645 (Trails Bond)	$2,899,104 (RFFA)
Source requested:	Either	
Project phase(s):	Project Development, Construction	
Risk overview:	Key project risks include complexities related to coordination and permitting work due to proximity to the river, work on the levee, and coordination with other agencies/jurisdictions, including the US Army Corps of Engineers. There has been limited project development so far, but the project has a relatively focused scope and construction easements are secured along the entire alignment. The escalation and contingency budgeted for this project are low in comparison to comparable projects, creating some additional risk.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium-Low	Medium-Low
Archaeological Probability	High. The trail runs through a historic site 35MU158. Additionally, the location is on the south shore of the Columbia River in an area with multiple ethnographic village sites.	

Project name:	NE Martin Luther King Jr. Blvd Safety and Access to Transit (Phase 2)
Applicant:	Portland Bureau of Transportation
Amount requested:	$5,532,955
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	This project is relatively low risk due to its focused and limited scope. Complexities include minor coordination with TriMet and potential streetcar rail lines along the corridor.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate. The project area has never been surveyed in entirety, and the majority of previous surveys in the vicinity have been very small in scale. Additionally, the project is located in an area of intensive 19th century historic development, is mapped as adjacent to a historic road, and crosses an additional historic road and unnamed trail. These factors increase the probability of encountering historic archaeological sites.

Project name:	**North Portland Greenway: Columbia Boulevard to Cathedral Park (Greenways and Trails Only)**	
Applicant:	Portland Parks & Recreation	
Amount requested:	$1,858,161 (Trails Bond)	$1,926,645 (RFFA)
Source requested:	Either	
Project phase(s):	Project Development, Construction	
Risk overview:	This is a low-risk project that will make minor changes to existing streets to create neighborhood greenways and add several short segments of trail on existing Portland Parks & Recreation land. The project may require minor coordination with other agencies/organizations (PBOT and Metro).	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Low	Low
Archaeological Probability[4]	Very High. The location's proximity to the Willamette and Columbia Rivers and Smith and Bybee lakes increases the probability of encountering precontact archaeological deposits. Many large precontact sites have already been identified near the north end of the trail location. Additionally, the trail runs through St. Johns, increasing the chances of encountering historic deposits. *This archaeological probability assessment was conducted for the combination of the North Portland Greenway: Columbia Boulevard to Cathedral Park and Columbia Boulevard Bridge project.*	

[4] Evaluation performed for the combined Columbia Boulevard to Cathedral Park project, including the bridge, trails, and greenways

Project name:	North Portland Greenway: Columbia Boulevard to Cathedral Park (Columbia Boulevard Bridge Only)	
Applicant:	Portland Parks & Recreation	
Amount requested:	$2,779,340 - $5,215,708 (Trails Bond)	$2,934,002 - $5,505,841 (RFFA)
Source requested:	Either	
Project phase(s):	Project Development, Construction	
Risk overview:	This project has had significant project development, reducing the number of risks involved. There are a number of complexities, which have been addressed in existing project development and budget development, that contribute to the risk score. Those include major coordination between agencies, major utility coordination, and impact to a railroad. Other risks include minor permitting and water quality mitigation. This project is considered to be higher risk if it is anticipated to be delivered by ODOT for the lower cost estimate, as the cost may not adequately account for inflation and permitting costs, than Portland Parks & Recreation for the higher cost estimate, as this cost seems conservative in the estimation.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium-High	Medium-High
Archaeological Probability[5]	Very High. The location's proximity to the Willamette and Columbia Rivers and Smith and Bybee lakes increases the probability of encountering precontact archaeological deposits. Many large precontact sites have already been identified near the north end of the trail location. Additionally, the trail runs through St. Johns, increasing the chances of encountering historic deposits.	

[5] Evaluation performed for the combined Columbia Boulevard to Cathedral Park project, including the bridge, trails, and greenways

Project name:	North Portland Greenway: Kelley Point Park to the North Slough	
Applicant:	Portland Parks & Recreation	
Amount requested:	$3,626,632 (Trails Bond)	$4,648,824 (RFFA)
Source requested:	Either	
Project phase(s):	Project Development, Construction	
Risk overview:	There is some inherent risk with the trail's proximity to a floodplain and wetland and coordination with outside agencies like the Port of Portland.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Low	Low
Archaeological Probability	Very High. There are documented sites along and on the trail. The location's proximity to the Willamette and Columbia Rivers and Smith and Bybee lakes increases the probability of encountering precontact archaeological deposits. Many large precontact sites have already been identified along and in close proximity to the trail location. Additionally, nearby buildings appearing on maps as early as 1854 increase the chances of encountering historic archaeological deposits.	

Project name:	NE Sandy Boulevard Complete Street: Gresham City Limits to Quail Hollow
Applicant:	Multnomah County
Amount requested:	$7,870,000
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	The Segment 1 (Gresham City Limit to Quail Hollow) key risks include right-of-way impacts and impact to stream/potential wetland crossing. The budget sufficiently accounts for project risks other than escalation, and an interim design phase will further mitigate risks before this project starts.
Risk ratings:	**RFFA**
Risk Score	Medium
Archaeological Probability[6]	High. There are several archaeological sites documented in the area, including similar environments as the project location, adjacent the former wetland south of the Columbia Slough. The project area is located near several fresh water sources and has historically crossed several creeks. Precontact sites are likely to be found on higher ground adjacent wetlands, and near these water resources. Additionally, the proposed project is located in an area of historic development during both the 19th and 20th centuries and is documented as crossing both modern roads and historic, unnamed roads, increasing the probability of encountering historic archaeological sites.

[6] Evaluation performed for the combined Sandy Boulevard Complete Street project from Gresham City Limits to NE 230th Avenue

Project name:	Sandy River Greenway – Riverfront Trail and Park
Applicant:	Troutdale
Amount requested:	$1,945,800
Source requested:	Trails Bond
Project phase(s):	Construction
Risk overview:	The biggest risks to this project are the railroad undercrossing, which the team is actively mitigating through the undercrossing permitting process, and the proximity to the river, which has been accounted for through the project development process. The project is well-defined through extensive project development, and risks are documented and accounted for in the cost estimate.
Risk ratings:	**Trails Bond**
Risk Score	Medium-Low
Archaeological Probability	Moderate to High. Proximity to the Sandy River increases the probability of encountering precontact archaeological deposits. The location is on a low terrace above the river, a physical setting known to contain sites in other areas. Additionally, the trail crosses the Oregon-Washington Rail line and passes near several structures likely to be historic properties.

Project name:	Scott Creek Trail Development
Applicant:	Happy Valley
Amount requested:	$162,840
Source requested:	Trails Bond
Project phase(s):	Planning, Project Development
Risk overview:	There is risk in the budget not being sufficient for the scope: the budget is low in comparison to other similar recently completed projects and other Trails Bond/RFFA requests for a similar scope. For a low-cost project, there are considerable risks including potential federal nexus for a creekside trail (which would mean that the benefits from using Trail Bond money would be moot), inadequate budgeting, and potential community pushback for the street alignment.
Risk ratings:	**Trails Bond**
Risk Score	Medium-High
Archaeological Probability	Moderate. The proposed trail sits on a terrace along Scott Creek approximately 3 kilometers north of the Clackamas River. This location is adjacent to a permanent water source and positioned on a terrace above the flood plain, a setting with a higher probability of encountering precontact sites. Only one historic site has been identified in a 1-mile radius, but this is likely a reflection of the lack of systematic survey in the area rather than actual site distribution in the area.

Project name:	SW Taylors Ferry Road Access to Transit
Applicant:	Portland Bureau of Transportation
Amount requested:	$10,124,236
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	There are complexities regarding right-of-way impacts, environmental impacts to Woods Creek, and coordinating with BES on major project elements such as watermain and culvert relocation.
Risk ratings:	**RFFA**
Risk Score	Medium-High
Archaeological Probability	Moderate to High. Very few archaeological sites have been documented in the broader area, but this likely reflects the lack of formal surveys, especially along the minor drainages of the area where the majority of the few recorded sites are located. The project area crosses a drainage/creek and is proximal to several others. Precontact sites are likely to be found on higher ground adjacent to these water sources. The project area has never been surveyed in entirety. Additionally, the project area is located along a historic road, and is historically mapped less than 0.1 mile from several structures, increasing the likelihood of encountering historic archaeological sites.

Project name:	Tigard-Lake Oswego Regional Trail Gap: I-5 to Wall Street	
Applicant:	Tigard	
Amount requested:	$245,000	
Source requested:	Either	
Project phase(s):	Planning	
Risk overview:	The key risks include complexities due to ODOT's existing interchange and future interchange project. If it could be determined whether an alignment through the interchange is a possibility before this project kicked-off, it would allow for this project to have a much more focused scope.	
Risk ratings:	**Trails Bond**	**RFFA**
Risk Score	Medium-Low	Medium-Low
Archaeological Probability	High. The location is on higher ground with Fanno Creek to the west and Bell Creek to the south, a physical setting likely to contain precontact sites. This is also near an ethnographic village or camp. The historic map review indicates the potential for historic archaeological deposits.	

Project name:	Trolley Trail: Milwaukie Bay Park
Applicant:	North Clackamas Parks & Recreation District
Amount requested:	$651,750
Source requested:	Trails Bond
Project phase(s):	Construction
Risk overview:	The cost estimate provides a good level of detail for the project phase and most risks seem to be considered and addressed. The overall cost for constructing a trail of this length seems low because the applicant has included many related project development tasks in the larger Milwaukie Bay Park project.
Risk ratings:	**Trails Bond**
Risk Score	Medium-Low
Archaeological Probability	Very High. The historic map review and previous survey results indicate the potential for historic archaeological deposits. Additionally, proximity to the Willamette River indicates the likelihood of encountering precontact archaeological deposits.

Project name:	S Troutdale Road Complete Street and Fish Passage: SE Stark Street to Beaver Creek Lane
Applicant:	Multnomah County
Amount requested:	$1,720,000
Source requested:	RFFA
Project phase(s):	Project Development
Risk overview:	This project area has several inherent risks, as it impacts an environmentally sensitive area, will require culvert replacement on a salmon bearing stream, will trigger stormwater management requirements, and extensive permits, but the project is requesting only project development funding in order to better understand impacts and be able to mitigate risk.
Risk ratings:	**RFFA**
Risk Score	Low
Archaeological Probability	Moderate to High. The project area crosses Beaver Creek and is located near the Sandy River. Precontact sites are likely to be found on higher ground adjacent to these water sources (e.g. 35MU173, 35MU104). The project area has never been surveyed in entirety and the immediate area has also been insufficiently surveyed in the past. Additionally, historic maps indicate that the project vicinity has undergone substantial historic development in the early 20th century, and is within the footprint of a historic road, which increases the likelihood of encountering historic archaeological sites.

Project name:	Westside Trail Bicycle and Pedestrian Bridge
Applicant:	Tualatin Hills Parks & Recreation District
Amount requested:	$1,907,500
Source requested:	Trails Bond
Project phase(s):	Project Development
Risk overview:	There are quite a few complexities related to this project including major utilities, wetlands, irregular grades, limited right-of-way, and the involvement of multiple jurisdictions, agencies, and organizations. Past project development has explored many of these complexities, and this project will allow the agency to consider and address these complexities.
Risk ratings:	**Trails Bond**
Risk Score	Medium-High
Archaeological Probability	Low.

Project name:	Westside Trail: Segment 1 Planning and Design
Applicant:	King City
Amount requested:	$210,000
Source requested:	Trails Bond
Project phase(s):	Planning, Project Development
Risk overview:	Key risks include budget and project complexities. The funding request and local match are not anticipated to be sufficient for creating construction ready plans, as seems to be the intent for this project application. The City indicates having additional funding for construction, which may be useful in completing the planning and preliminary engineering stages of the project. There are multiple project complexities including major utilities (power lines and a gasoline pipeline), stormwater considerations, permits, and right-of-way needs that will need to be addressed through this project.
Risk ratings:	**Trails Bond**
Risk Score	High
Archaeological Probability	Moderate to High. The location's proximity to the Tualatin River suggests a higher probability of encountering archaeological deposits. While the previous survey that spanned the length of the trail did not encounter archaeological materials, no shovel probes were excavated, and subsurface deposits may exist. Additionally, the historic map review indicates the potential for historic archaeological deposits.

Project name:	Willamette Falls Drive Multimodal Improvement Project – 16th Street to Ostman Road
Applicant:	West Linn
Amount requested:	$3,497,580
Source requested:	RFFA
Project phase(s):	Construction
Risk overview:	Although accounted for in the budget, there are some inherent risks around coordination with outside agencies, especially ODOT for project delivery, and some inherent risk around the impact to abutters and construction easements necessary for the project.
Risk ratings:	**RFFA**
Risk Score	Medium-Low
Archaeological Probability	High. The project area has few documented sites in the vicinity, but this likely reflects the lack of formal survey in the area, especially in the south and west. The project is located adjacent the Tualatin River, near the confluence with the Willamette. Precontact archaeological sites are often found on high ground adjacent these water resources, and especially near the confluence of two rivers. The presence of a Traditional Cultural Property in the vicinity may also emphasizes the importance and history of indigenous use of the area. Additionally, the project is depicted on historic maps adjacent a rail line and in an area of early 20th century development, increasing the likelihood of encountering historic archaeological sites.

Conclusion

This risk assessment is intended to provide information about the likelihood of a project being completed on time, on budget, and as intended. Project risk should be balanced with intended project outcomes to make the decision about which RFFA and Trails Bond applications should be prioritized.

Appendix A: Risk Assessment Scoring Sheet