

Case Study:

Tri-County Metropolitan Transportation District of Oregon - Engaging INVEST for a Light Rail Project Oregon

Lead Agency: Tri-County Metropolitan Transportation District of Oregon (TriMet)

INVEST Modules: Project Development and Operations and Maintenance

TriMet engaged INVEST 1.0, a sustainable highway tool, to evaluate the Portland Milwaukie Light Rail (PMLR) transit project. Given the absence of a singular, exhaustive set of metrics or indicators for the transit industry, the INVEST 1.0 tool for evaluating highway projects offered a worthwhile opportunity to use a federally-tested set of metrics to understand, improve on, and communicate about transportation infrastructure.

PMLR is a 7.3-mile light rail corridor providing access for residents of Portland and Clackamas County. TriMet believes that good transit service is crucial to protecting quality of life. To that end, the agency strives to build and operate a transit system in the most sustainable way possible, from construction projects to daily operations. Through innovative policies and technologies, TriMet emphasizes using “green” construction practices, fuel conservation, emissions reduction, and alternative energy sources like solar, wind, and regenerative braking technologies. At the same time, sustainable practices focus on protecting and enhancing the environment, providing safe, comfortable, and direct multimodal options for all users, and communicating those efforts to the public it serves. The INVEST 1.0 tool provides a comprehensive framework for TriMet to assess the effectiveness of its sustainability strategies and their integration into the PMLR project.

Project Development Module

TriMet utilized the INVEST 1.0 Project Development (PD) module custom scorecard to evaluate and score the PMLR project. They built upon the required 19 core criteria and added 7 more criteria to provide a more rigorous and well-rounded analysis of the PMLR project and to better reflect the goals, achievements and gaps in a transit project.

Because TriMet used the custom scorecard, no formal achievement level was assigned. However, based upon scoring for paving, basic rural, extended rural, basic urban, and extended urban scorecards, **PMLR achieved a 67, or Gold,**

achievement level in the PD module. The INVEST 1.0 PD custom scorecard provided enough flexibility to allow TriMet to adapt parallel sustainability metrics with similar criteria in cases where the scoring criteria within the custom scorecard were not directly applicable to the PMLR project.



The light rail project piloted the use of “eco-track”, which employs a planted trackway instead of paving. Similar in form and function to a green roof, the sedum plants in the trackway provide runoff capture, as well as aesthetic benefits and insect habitat.

As an example of TriMet's scoring, for PD-10 Pedestrian Access, TriMet scored the maximum number of points and provided strong evidence: Existing pedestrian facilities were upgraded, such as the rebuilt pedestrian/bicycle crossings over Powell Boulevard and Union Pacific Railroad; and new pedestrian access and safety features were added including 14-foot-wide shared use paths on the new river bridge and the new Kellogg Creek Bridge, as well as new station access with a pedestrian crossing over Park Avenue connecting to a park and ride. PMLR will include more than \$40 million in bicycle and pedestrian facilities on nearby streets.

Operations and Maintenance Module

TriMet used the Operations and Maintenance (OM) module to conduct a preliminary evaluation of its internal sustainability policies and practices in operation, selecting 7 of the 14 criteria for specifically assessing future operations and maintenance practices for PMLR. Unlike the PD module, the criteria are not weighted. In this instance, only 7 criteria were selected because several were not relevant, or the data were not yet available as the project is still under construction. **PMLR scored 77, or Bronze**, achievement level in the OM module. The value of this exercise was both in selecting the criteria and in assessing the available data, all of which point to prospective future steps TriMet will be able to take to assess project performance over time.

As an example of TriMet's scoring, the agency scored 13 out of 15 points on OM-04 Recycle and Reuse based on their recycling and reuse goals, plan, tracking, and results for both maintenance and administrative facilities. In 2007, TriMet created Sustainability Coordinators, a network of employee environmental advocates at each of TriMet's facilities. Coordinators serve as the key contacts at their facilities for sustainability and environmental efforts. This network has helped TriMet step up an already successful recycling program. In addition to the used bottles and cans, printer paper and cartridges, computers, monitors and other electronics generated from administrative offices, the efforts of the Sustainability Coordinators are also enabling TriMet to successfully recycle or reuse a wide range of materials from maintenance facilities, including:

- Motor oil—re-refined off-site for reuse
- Oil filters—burned for energy recovery and the metal recycled into rebar
- Antifreeze—recycled for reuse
- Paint and other chemicals—inventoried materials recycled or disposed of off-site
- Paint thinner—recycled on-site for reuse in our body and paint shop
- Non-hazardous parts cleaning solvent—re-refined with used oil
- Bus and train washwater—reused and then treated to remove oil and grime
- Shop towels—laundered off-site and reused
- Scrap metal—recycled into other metal products
- Aerosol cans—punctured and recycled as scrap metal
- Small device batteries—recharged on-site or recycled
- Large bus and train batteries—sent back to the manufacturer and recycled
- Light bulbs, tubes and ballasts—metals are separated from glass and both are recycled
- Tires—recycled into other rubber products
- Wooden pallets—refurbished and reused or recycled, depending on condition
- Corrugated cardboard—recycled into new cardboard
- Shrinkwrap and bubblewrap—reused on-site

Key Outcomes of Using INVEST

Using INVEST's prioritized criteria has reinforced TriMet's efforts to guarantee institutional goals for sustainability through measurable, achievable metrics. As a result of using the INVEST 1.0 tool in its analysis of the PMLR project, TriMet has identified several key factors for application to future projects:

- **Utilize INVEST in synergy with other sustainability evaluation tools.** INVEST works well with other tools that TriMet has used in its ongoing efforts to push sustainability practices beyond standard requirements, meeting the challenges of climate change, livability, and economic vitality.
- **Apply the INVEST tool early in the process.** Early application of the tool, together with continual evaluation throughout the project, helps ensure accurate data, and lays the groundwork for implementation of sustainable practices throughout the lifecycle of future projects.
- **Coordinate efforts to use and document criteria for different sustainability metrics** (such as Envision, Sustainable Sites, LEED, etc.). Careful coordination will help to avoid redundancy and/or gaps and ensure consistency of policy and implementation.
- **Identify other, future opportunities for pilot projects** that can be measured, evaluated and improved/expanded to system-wide implementation within the agency, as well as serving as regional and national examples.
- **Embed RFQ and RFP process with sustainability language/ expectations** and scoring mechanisms, and establish related contract language. This will help to ensure contractor (prime and sub) compliance with goals, measurements, standards, and analysis by stating requirements up front, including the use of an independent environmental tracking manager.
- **Engage a broad spectrum of agency and contractor participation.** Through contractual language, agency policies, and training at project inception, work to build collaboration that will help guarantee that data are collected, distributed, and interpreted in a way that is consistent, meaningful, achievable, and duplicable.
- **Ensure that INVEST scoring is sufficiently flexible** to include or allow for additional criteria and documentation of project goals or elements that are appropriate or specific to non-highway projects in order to garner more meaningful evaluations. For example, alternative energy savings aside from the use of LED light fixtures, or the reduction, reuse and recycling of materials that may not be pavement and/or road focused.

These outcomes will help guide the agency in its ongoing sustainability efforts, provide valuable lessons learned for other transportation planners, and offer productive feedback to FHWA—helping to improve the ease and dissemination of the INVEST tool for non-highway projects, ensuring more accurate scoring and meaningful results.