



Envision[®] & Airports:

INSIGHTS, RESOURCES, & OPPORTUNITIES GUIDE
(ENVISION AIRO GUIDE)

ENVISION[®]
THE BLUEPRINT FOR SUSTAINABLE INFRASTRUCTURE



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Purpose of this Document

This **Envision & Airports: Insights, Resources, & Opportunities Guide (Envision AIRO Guide)** was developed to recognize and support the unique and variable context of airports as hosts to robust, critical infrastructure. Envision framework has seen dramatic growth as project teams and stakeholders look to achieve sustainable processes and outcomes in infrastructure development, including at airports. Recognizing the growing interest of airports to use Envision to guide more sustainable development, ISI previously released an [*Envision for Airports Executive Brief*](#) which provides a high-level overview of Envision and how Envision can benefit airports. This AIRO Guide goes beyond the Executive Brief as it provides more detailed information on how to facilitate and optimize the use of Envision in

the context of airports, considering the many distinctive challenges and questions that arise within an airport setting. Example strategies based on past applications are also included. This document supplements the Envision Guidance Manual and other ISI resources by providing additional clarity on how to apply Envision to airport infrastructure projects.

While the Envision AIRO Guide can be used by all airports¹, it was developed with U.S. airports in mind (e.g., those subject to the Federal Aviation Administration [FAA] and National Environmental Policy Act [NEPA] requirements) and thus certain elements may not apply to operators outside of the U.S.



¹ “Airports” is used as a general term to encompass airport owners/operators as well as the consultants and contractors working on airport projects.

Overview of Envision

Envision® is a holistic sustainability framework and rating system that guides and assesses the sustainability and resilience of all types of infrastructure, including airport projects. It is the only comprehensive tool in North America that can assist lead agencies, consultants, contractors, operators, and/or tenants in co-creating and delivering public and private infrastructure that can tackle climate change, prioritize public health and safety, cultivate environmental justice, spur economic benefits, and so much more.

Envision is an airport's playbook to achieve these outcomes via a peer-reviewed scorecard to assess infrastructure project's impacts and benefits among 64 sustainability indicators (called 'credits') across five overarching categories². Within each credit, there are up to five Levels of Achievement with associated points and criteria recognizing advancements in sustainability: Improved, Enhanced, Superior, Conserving, and Restorative.

ENVISION CATEGORIES



Quality of Life (Wellbeing, Mobility, Community)



Leadership (Collaboration, Planning, Economy)



Resource Allocation (Materials, Energy, Water)



Natural World (Siting, Conservation, Ecology)



Climate & Resilience (Emissions, Resilience)



² This document is based on Envision version 3 (Envision v3).

Why Use Envision at Airports?

Envision is uniquely advantageous for airports given the complexity and variety of airport infrastructure projects such as runway, taxiway, and apron reconstructions/renovations (airside/airfield projects); roadway improvements and expansions and other landside projects; automated people movers; drainage projects; and terminal area developments with enabling and connecting infrastructure. Envision is a tool that can be used to promote the development of high-performing, efficient, and resilient infrastructure, and is a means by which airports can demonstrate their contributions to local, regional, and global sustainability.

Envision-verified projects have many opportunities to share their sustainability story with support from ISI. These include co-development of case studies and press releases, potential to be featured in ISI webinars and other materials, and invitations to present at ISI's annual virtual conference.

TELLING A SUSTAINABILITY STORY

- Envision helps demonstrate an organization's commitment to social, economic, and environmental outcomes.
- Envision strengthens the credibility of sustainability efforts and provides enhanced transparency.
- Envision facilitates sustainability or Environmental, Social, & Governance (ESG) reporting.
- Envision builds stakeholder transparency, involvement, and confidence in decision-making.
- Envision may be able to facilitate access to sustainable finance and funding.
- Envision can be, and often is, used in conjunction with or to supplement other sustainability standards, frameworks, and methodologies.

STREAMLINED MANAGEMENT AND COLLABORATION

- Envision can lead to higher performance and innovation.
- Envision can drive better project management.
- Envision helps build improved sustainability skills and capabilities.

FLEXIBILITY, PERFORMANCE, AND RESILIENCE

- Envision facilitates a consistent, yet flexible, approach to sustainability.
- Envision integrates with and supports sustainability performance goals.
- Envision strongly emphasizes resilience and risk reduction.

How Envision can be used at airports

Envision can provide several benefits to airports including, but not limited to, assessing and verifying specific projects. The framework can be used for educational purposes, programmatic approaches to integrating sustainability into capital planning and projects, criteria for design guidelines, master planning, and more. Fundamentally, Envision is about supporting higher sustainability performance through better choices and decision-making in infrastructure development. To that end, Envision supports not just “doing the project right,” but also “doing the right project.” Educating leadership, staff, and contractors on the principles and intent of Envision will support better sustainability management of all airport development over the long term in addition to singular projects.

This section addresses the variety of ways that Envision can be used to enhance sustainability and resilience at airports. In all cases, users should set up a free account/login on the ISI website, which will allow them to link to various additional resources, including the Envision Guidance Manual, the Pre-Assessment Checklist, example project submittals, and more. All Envision references are provided at the end of this document, along with a complete list of Envision-verified airport projects at the time of publication.

ISI membership opens the door to additional educational resources, networking opportunities, and reduced fees. See [*Become A Member - Institute for Sustainable Infrastructure*](#)

SUSTAINABILITY COMMITMENT, LEADERSHIP, AND EDUCATION

For the past several years, the ISI community has been focusing on industry adoption of Envision, and in equipping infrastructure professionals to use the framework. Individuals who complete ISI’s Envision training program and pass the exam earn the Envision Sustainability Professional (ENV SP) professional credential, signaling their understanding of the principles of sustainability using the Envision framework. Training staff and other stakeholders involved in projects can empower agencies and organizations to achieve better outcomes. If airports reevaluate their current methodologies and concentrate on long-term positive impacts, they can enhance human health, protect the environment, and bolster local and regional economies. See information on credentialing here:

[*Envision Sustainability Professional \(ENV SP\) - Institute for Sustainable Infrastructure.*](#)

Often, given the scale of operations and the multitude of priorities airports are juggling, it can be challenging to get leadership, staff, and stakeholders on the same page regarding their sustainability commitments and ambitions. In 2021, ISI released a [*“Sustain or Explain Toolkit”*](#). The toolkit focuses on guidance for advocacy around sustainable infrastructure priorities, and it provides messaging and examples that can be powerful for achieving top-down and bottom-up “buy-in” around sustainability

and the use of Envision in supporting sustainability commitments.

Holding Envision ‘lunch-and-learns’, workshops, and training sessions can further engage and educate airport staff, consultants, and other airport stakeholders. These activities can support the goal of a comprehensive and consistent approach to integrating sustainability and resilience into project conception, design, construction, and maintenance.

MASTER PLANNING, DECISION-MAKING, AND AIRPORT-WIDE ADOPTION OF ENVISION

While the Envision framework focuses on infrastructure projects, its guidance, and associated resources can be consulted during airport master planning and other alternative analyses. For example, Envision can be consulted when reviewing airport development alternatives to determine the option that best meets facility requirements while considering stakeholder needs and environmental priorities. Envision can likewise be used to review and prioritize projects in an airport's capital improvement program (CIP) and may even unveil opportunities to phase projects strategically to maximize material reuse, achieve cost efficiencies, and align engagement and outreach efforts. The Envision Pre-Assessment Checklist is a helpful reference for such activities, and the Envision Guidance Manual provides additional context and detailed criteria to factor into such analyses.

Increasingly, airports are using the Envision framework on a broad scale, e.g., applying Envision to multiple projects identified in an airport's master plan and/or CIP. Some airports have adopted Envision by setting a policy that requires all infrastructure projects, or all projects of a certain size or type, to be developed using Envision. This approach can be valuable in several ways:

- Empowering project owners to maximize efficiencies, including cost efficiency.
- Enabling robust and continued education of both internal staff and consultants/contractors on the planning, design and construction practices that should be implemented on all of the airport's projects.

- Providing consistency and transparency of expectations for how capital improvement is carried out at the airport.

In addition, an airport-wide approach allows for the establishment of policies, standards, and other requirements that can be applied to any project, making it possible for documentation to support an Envision assessment to be leveraged across multiple Envision credits and/or projects.

Many public agencies are establishing criteria for sustainability achievements, or policies regarding which projects to use Envision on.

The City of Philadelphia Division of Aviation (DOA) established a policy for Envision use on all infrastructure projects over \$2 million.

INCORPORATING ENVISION INTO DESIGN STANDARDS, GUIDELINES, AND SPECIFICATIONS

Increasingly, airports are integrating Envision into their design standards and guidelines. In some instances, these documents are where airports include requirements to use Envision. Some have incorporated the intent, guidance, and specific credit references into these documents or even into their specifications, e.g., incorporating Envision-aligned construction and demolition waste management requirements and tracking into their standard specifications. Specific examples are discussed below.

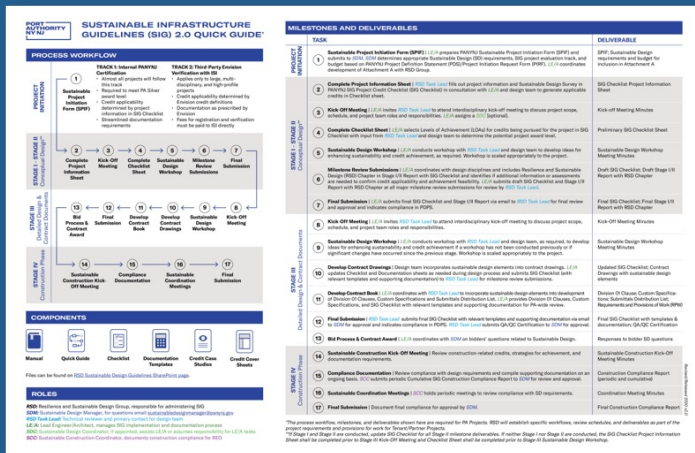
Hartsfield-Jackson Atlanta International Airport (ATL) - Atlanta, Georgia

ATL developed a comprehensive set of Planning and Development (P&D) Sustainability Standards that are applied across all projects within the airport's multi-billion-dollar capital improvement program, ATLNext. Alongside the use of LEED and Parksmart, ATL's P&D Sustainability Standards require that all civil infrastructure projects meet the minimum achievement level in either the Envision or SITES rating systems.

Port Authority of New York and New Jersey (PANYNJ)

The PANYNJ's Resilient and Sustainable Design (RSD) group administers four sets of design guidelines for all Port Authority capital projects as well as for most tenant projects. These include:

1. Sustainable Building Guidelines (2017)
2. Sustainable Infrastructure Guidelines (2021)
3. Climate Resilience Guidelines (2018)
4. Green Infrastructure Design Manual (2021)



PANYNJ's *Sustainable Infrastructure Guidelines* include a custom Envision approach for the Port Authority's unique can follow a track for internal Port Authority certification or a formal third-party Envision verification with ISI. The Guidelines and supporting resources include a manual, quick guide, checklist, documentation templates, credit case studies, and credit cover sheets.

PANYNJ's Sustainable Infrastructure Guidelines

| Project Type | Green Building Rating System |
|--|--|
| Ground-up Construction | LEED for Building Design & Construction (BD+C)* Gold or higher |
| Major Renovation | LEED for Building Design & Construction (BD+C)* Gold or higher |
| Interior Fit-Out | LEED for Interior Design & Construction (ID+C) Gold or higher |
| Stand-Alone Parking Structure | ParkSmart Gold or higher (projects that include a building and parking should use LEED BD+C for the joint project) |
| Stand-Alone Sitework | Envision Silver Level or higher (projects that include a building and sitework should use LEED BD+C for the joint project) |
| Infrastructure (e.g., Central, Water Treatment Plant) | Envision Gold Level or higher |
| * LEED for Core & Shell (CS) may be used instead of LEED BD+C when leased space in a project exceed 60% of gross square footage. | |

San Francisco International Airport (SFO) – San Francisco, CA

SFO’s Sustainable Planning, Design & Construction Standards have also integrated Envision into infrastructure and stand-alone site project requirements.

ALIGNING ENVISION WITH THE REGULATORY LANDSCAPE

Airport projects subject to the National Environmental Policy Act (NEPA) or state-equivalent requirements—such as the California Environmental Quality Act [CEQA]³—can align or leverage the associated efforts with Envision by:

1. Using Envision during the upstream planning stage and/or for alternatives evaluation, informing these processes for more sustainable and resilient project selection. This will ultimately improve the chances of Envision verification as well.
 - a. When used in this way, Envision is particularly helpful to inform engagement and outreach activities.
 - b. Using NEPA approvals documenting that certain environmental resources are not present on a project site (e.g., maps submitted showing the lack of floodplains) to demonstrate a credit is Not Applicable
 - c. Incorporating summaries of stakeholder engagement and public outreach conducted for NEPA purposes into relevant Envision credit pursuits/submittals.
2. During the pursuit of Envision verification:
 - a. Leveraging the assessments, analyses, and documentation from the NEPA assessments to demonstrate contributions to relevant Envision credits. This may include applying the write-ups prepared for a NEPA document (Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement) and/or the resource-specific studies completed for NEPA to Envision credit pursuits/submittals.

³ Refer only to NEPA throughout this section however, the content will likely apply to most state-equivalent requirements.

Completing a NEPA study will not necessarily fulfill the criteria and documentation requirements for a given Envision credit, but may point favorably in that direction. The table below shows how different NEPA environmental impact categories potentially line up with Envision credit categories.

| NEPA Environmental Impact Category | Most Relevant Envision Credit Category | | | | |
|--|--|------------|---------------------|---------------|----------------------|
| | Quality of Life | Leadership | Resource Allocation | Natural World | Climate & Resilience |
| Air Quality | X | | | | X |
| Biological Resources | | | | X | |
| Climate | | | | | X |
| Coastal Resources | | | | X | X |
| Section 4(f) | X | | | | |
| Farmlands | | | | X | |
| Hazardous Materials, Solid Waste, and Pollution Prevention | X | X | X | X | |
| Historical, Architectural, Archeological, and Cultural Resources | X | | | | |
| Land Use | X | | | X | |
| Natural Resources and Energy Supply | | | X | | |
| Noise and Noise-Compatible Land Use | X | | | | |
| Socioeconomics | X | X | | | |
| Environmental Justice | X | | | | |
| Children’s Environmental Health and Safety Risks | X | | | | |
| Visual Effects | X | | | | |
| Water Resources | | | X | X | |

ENVISION AND OTHER SUSTAINABILITY RATING SYSTEMS

There are many sustainability tools, resources, and rating systems available to airports, for example:

1. Leadership in Energy and Environmental Design (LEED) is intended for designing, constructing, and maintaining sustainable buildings.
2. WELL takes that a step further to address the health and wellbeing of the people in the buildings.
3. Parksmart provides specific guidance and credits related to multi-level parking facilities.
4. Envision applies to all types of civil infrastructure in an airport — landside or airside. A few examples: terminals, airfield pavement reconstructions/rehabilitations, roadways and other landside projects, drainage improvements, automated people movers, intermodal transportation facilities, etc.

In addition to the specific roles these rating systems play, many can work together to contribute to similar goals. For example, these rating systems can help with an airport's commitments to the [*Airports Council International's \(ACI\) Airport Carbon Accreditation Program*](#) by reducing greenhouse gas emissions (GHGs) and establishing effective engagement with stakeholders. Furthermore, many of the rating systems offer beneficial alignments pertaining to important issues like addressing climate change and conserving natural resources that can bolster an airport's overall pursuit and achievement of sustainability goals. Several airports have proven that Envision can be used in conjunction with other

rating systems such as LEED and Parksmart. For example, large terminal development projects that include both buildings and infrastructure and surface parking lots or parking garages. While the project boundaries may differ, there are typically certain areas that will be included in both rating systems. In such cases, establishing standardized tracking requirements and forms can help reduce effort and provide consistency for project teams who are pursuing third-party verification.

ASSESSING AND VERIFYING AIRPORT PROJECTS

Perhaps the best-known use of Envision is for the assessment and verification of specific infrastructure projects. In this instance, airports will use the Envision Guidance Manual, along with the Envision Pre-Assessment Checklist to identify and implement strategies to optimize the sustainability and resilience of a capital improvement project or significant upgrade/retrofit project. Additional resources include the Guide to Envision Verification for Applicants, which is intended to further support Envision users, though not intended to duplicate or replace the Guidance Manual.

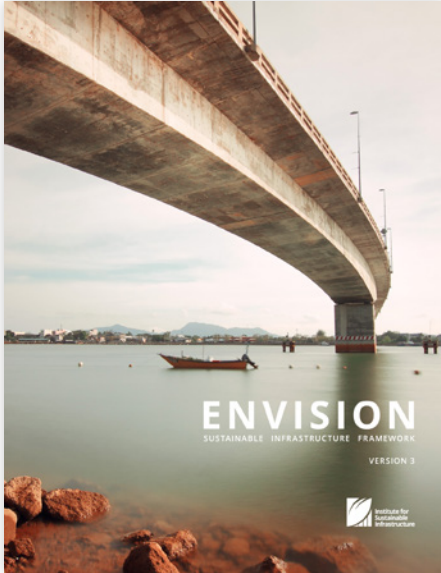
YOUR ISI ACCOUNT: ENVISION APPLICANT RESOURCES

The screenshot displays a 'Resources' dashboard with two main columns of links. The left column is titled 'ENVISION' and includes links for 'Envision Guidance Manual (v3) 24.02 MB', 'Envision Marco de Infraestructura Sostenible v3 3.99 MB', 'Manuel de référence Envision v3 9.34 MB', 'Envision Checklist (v3) 0.41 MB', 'ENVISION V2 (LEGACY)', 'MEMBERSHIP RESOURCES', 'CREDENTIALING RESOURCES', and 'POLICIES' with 'Privacy Policy 0.53 MB' and 'ISI Policies 0.22 MB'. The right column is titled 'VERIFICATION RESOURCES' and includes links for 'Verification Submittal Quality Assurance Checklist 0.11 MB', 'Envision Verification Guide for Applicants 0.75 MB', 'Credit Amendments (v3) 0.75 MB', 'Envision Example Coversheets (v3) 0.37 MB', 'Envision Coversheets (v3) 5.97 MB', 'COVID-19 Challenges and Opportunities document 0.25 MB', 'Envision v3 Credit Calculators-RA2.x Energy 0.09 MB', and 'README_Example Envision Project Submission: Berryessa Transit Center 0.24 MB'. A 'PRESENTATIONS AND BROCHURES' section is partially visible at the bottom right. Several items are highlighted with red boxes: 'Envision Guidance Manual (v3) 24.02 MB', 'Envision Checklist (v3) 0.41 MB', 'ISI Policies 0.22 MB', and the entire 'VERIFICATION RESOURCES' column.

The above resources are available to Envision users, and shown in the dashboard of users' accounts, but ISI also offers other services to support project teams with Envision, including:

- The Envision Verification Applicants Course (check the Applicants Course page for the most up-to-date courses: [Applicants Course - Institute for Sustainable Infrastructure](#))
- Complimentary and advanced review of two Envision credit submittals outside of the verification process (available once a project is registered with ISI to pursue verification), and
- Preliminary Assessments for specific projects where ISI and the project team review the project scope, boundary, project description, Envision Pre-Assessment Checklist, and more.

Additionally, if an airport has several projects slated for verification, they should reach out to ISI about potential portfolio/bulk purchase options, which can offer cost savings and other benefits.



PRELIMINARY ASSESSMENTS

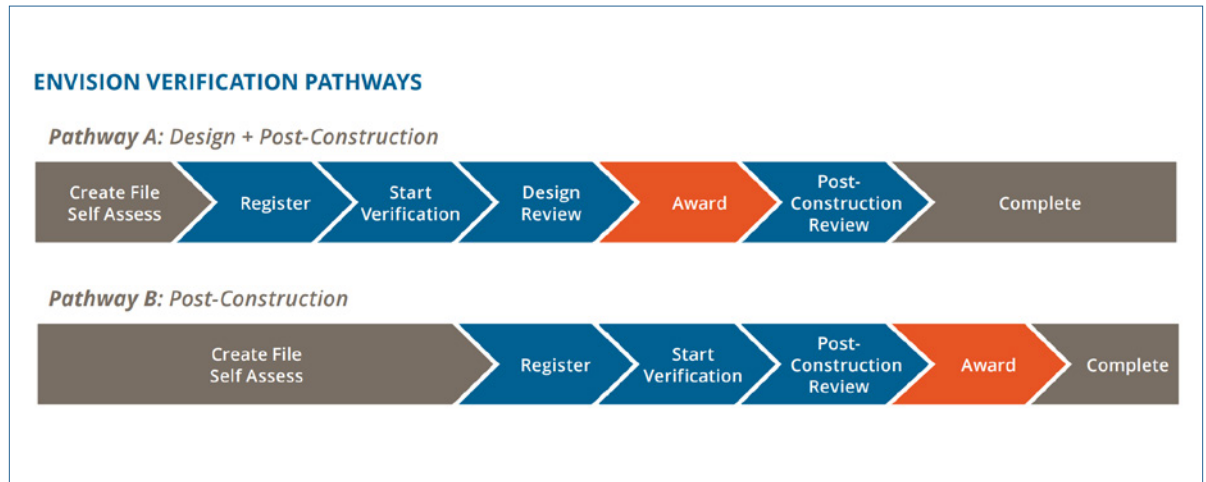
ISI offers Preliminary Assessments as an option for Envision users, a service that is particularly beneficial for those new to Envision. The purpose of these assessments is to review the project scope, boundary, description, Envision Pre-Assessment Checklist that has been completed by the project team, via a series of web-based meetings. The web-based meetings provide the opportunity to:

Review the evaluation criteria and documentation requirements contained in the Envision Guidance Manual (see references on p.28) to help the project team ascertain potential Levels of Achievement for each credit.

- Discuss documentation requirements to support the project team’s desired levels of achievement for Envision credits.
- Review key concepts and considerations for each credit in the Envision system and point out typical “pain points” so the project team can avoid these and other common pitfalls.
- Identify any credits that may be deemed Not Applicable to the project.
- Discuss technical challenges and limitations and address questions.
- Facilitate discussion and dialogue amongst members of the project team.
- Discuss programmatic/high-level documentation requirements (e.g., organizational policies, plans, and assessments) and project-specific documentation requirements.

Typically, these assessments involve eight web-based meetings including a kick-off call. A summary report is then provided to the project team.

Projects intending to pursue verification will need to follow one of two Verification Pathways as shown below:



Refer to the [Guide to Envision Verification for Applicants](#) for additional information regarding the pathways. To receive recognition, projects must achieve a minimum percentage of the total applicable Envision points.

Projects can be recognized at four award levels:

| Verified | Silver | Gold | Platinum |
|----------|--------|------|----------|
| 20% | 30% | 40% | 50% |

The project team must include an Envision Sustainability Professional (ENV SP) to guide the process. Ensuring that multiple members of the design team are familiar with Envision will further facilitate a successful process.

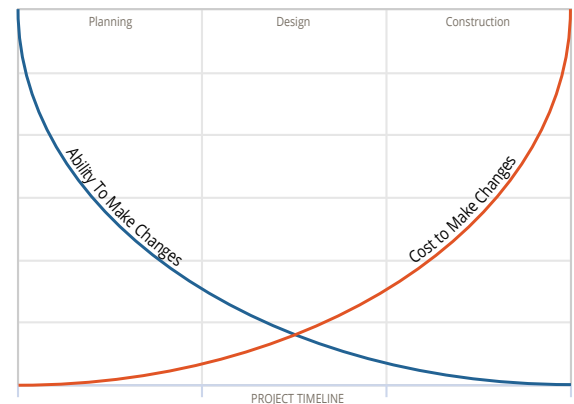
For infrastructure projects, one way that airports can “bake in” the role of Envision is through Requests for Proposals/Qualifications (RFPs/RFQs). Incorporating Envision into RFQs/RFPs can help ensure that prospective consultants prioritize sustainability in a consistent way throughout project planning, environmental reviews, design phases, and construction. ISI’s “Sustain or Explain Toolkit” offers a few example templates for incorporating Envision into RFPs/RFQs.

COST OF ENVISION VERIFICATION

For projects pursuing Envision verification, there is a flat registration fee of \$2,000 plus a variable verification fee based on total project cost as described here: [Verification Fees - Institute for Sustainable Infrastructure](#). Like similar certifications (LEED, ACA participation, etc.), these fees are not eligible for reimbursement under the FAA's Airport Improvement Program (AIP), nor are the consultant hours for preparation of credit submittals specific to the verification pursuit. However, many of the efforts that relate to the Envision guidance and that will contribute to the project's pursuit of Envision verification are likely eligible costs for AIP projects such as stakeholder engagement, design charrettes, alternatives assessments, benefit/cost analyses, and general sustainability integration. The costs for these efforts and the time to prepare credit submittals for verification will depend on a number of factors, including the project scale/scope, the existence of previously established sustainability requirements or supporting documentation, the consultant's familiarity with the client's programs/policies, and the timing of incorporating Envision.

The following guidance may help maintain reasonable costs:

- Initiate the process early in the project, ideally at the planning stage or ahead of 30 percent design development.
- If using a consultant, engage one with experience administering Envision on infrastructure projects, ideally on airport projects.
- Make available relevant programs/policies/documentation that will support the integration of sustainability and pursuit of verification.
- Communicate to the project team the importance of integrating sustainability and resilience into the project design and construction so this is not an add-on service.
- Develop tracking tools and documentation templates/examples for project team use.



The figure above shows the cost to make changes to a project (e.g., to improve its sustainable performance) decreases as the project timeline progresses. Therefore, using Envision early in the project timeline can help keep project costs reasonable without compromising sustainability goals.

Airport verification insights

PROJECT BOUNDARY

Setting the boundary for the project is a consequential early step in verification that will shape what types of credits the project team elects to pursue. The Envision boundary will likely be unique from the airport property boundary but should cover all elements, areas, and activities related to the project. It is important to clearly define what is and is not included, and the boundary must be consistently applied across all credit submittals. For example, if a project includes the reconfiguration of an airport access road and the airport is installing a piece of art at the roadway entrance, the art piece cannot only be counted towards credits where it may be beneficial to do so, e.g., QL3.3 Enhance Public Views & Local Character. If it is included in the project boundary it must be consistently applied across all credits, so the materials used, the land used, and the planning and coordination involved in that element of the project must all be considered.

While Envision focuses on infrastructure projects, in some cases it may be appropriate or even necessary to include facilities within the Envision boundary. For example, if an airfield project includes a new electrical vault building or another supporting facility, this should be incorporated into the Envision boundary. Again, all associated materials, land used, and planning and coordination involved with this component must be incorporated into the Envision submittal.

ISI does not dictate what project boundaries are appropriate for Envision verification; rather, ISI and its team of verifiers rely on the project team to clearly define the project boundary. A site map and project description must be included in the Envision submittal indicating the boundary and all project elements. Unlike some other rating systems, the project site does not have to be contiguous. For airports with multiple projects occurring at once across the campus, it is particularly important to be clear, both in the Envision submittal and with the various project teams, about the delineation of and any overlaps in boundaries.



COMMUNITY AND STAKEHOLDERS

Understanding community needs and issues, and stakeholder engagement are crucial aspects in the Envision framework. The terms community and stakeholders are included in many credits throughout the framework. It is, therefore, crucial for airports to define the project's community and stakeholders for any Envision pursuit.

Airports often define community as the patrons, vendors, and workers associated with operations. For Envision, community is defined in two ways:

- Host Community: The community in which the project is located.
- Affected Community: Any community that may experience positive or negative effects from the project's design, planning, construction, operation, or demolition. This may include communities beyond the host or benefited communities.

Stakeholder can have many definitions. For Envision, a stakeholder is a person, group, or organization that has a direct (primary) or indirect (secondary) stake in an organization because it can affect or be affected by the organization's actions, objectives, and/or policies. For airport projects, these may include airlines, cargo operators, Air Traffic Control, community members impacted by the project's construction or operation, and more.



APPLICABILITY OF ENVISION CREDITS AND COMMON CREDIT PURSUITS FOR AIRPORT PROJECTS

Applicability

The Envision framework's inherent flexibility is invaluable for airports that host a unique range of infrastructure projects. Envision-verified airport projects have included small taxiway improvements as well as larger projects incorporating terminal buildings, garages, and/or other transportation infrastructure. Airports often ask about the "applicability" of Envision credits in airport settings. While Envision has a N/A option for credits, it is important for airport project teams to understand that although credits may not be relevant to pursue for a given project, that does not mean they should be considered N/A within the framework.

Only whole credits can be deemed N/A, i.e., not one or more evaluation criteria included in the credit. The option within Envision should be reserved for cases where the credit's indicator does not exist for the project. Project teams should refer to the Applicability section of each credit in the Envision Guidance Manual if considering deeming a credit N/A.

The following reasons are not acceptable reasons to deem a credit N/A:

- The scope does not involve efforts that would be required to meet the credit's criteria.
- Achieving the criteria would be too expensive, difficult, or time-consuming.
- The strategies or actions that would fulfill the criteria are prohibited by local laws or regulations.

- The project owner does not have decision-making authority to pursue the associated strategies or actions.
- The credit does not reflect a stakeholder priority.

Based on ISI's experience, there are several credits that airports often **incorrectly** believe are Not Applicable.

For example:

QL1.5 Minimize Light Pollution

Airports commonly submit this credit as Not Applicable, particularly for airfield lighting projects, given the strict requirements for airport lighting. While the strict lighting requirements may limit the ability of such projects to pursue this credit, the credit is in fact applicable. Airport project teams are encouraged to seek other non-airfield opportunities to reduce light pollution.

NW3.1 Enhance Functional Habitats

Though airports are typically aiming to reduce wildlife and associated hazards, the credit is still applicable since it is an important sustainability indicator. Airport project teams may look at mitigation options, but these need to occur on-site. Innovative approaches have included pollinator gardens.

QL2.3 Improve Access and Wayfinding

This credit is not limited to public access (commonly submitted as the reason the credit should be deemed Not Applicable). Airport project teams may be able to address access and wayfinding for operations, emergency personnel, and even aircraft/pilot wayfinding.

QL3.4 Enhance Public Space and Amenities

This credit is applicable to all publicly accessible projects or that impact, adjoin or otherwise connect to public spaces or amenities.

QL3.3 Enhance Views and Local Character

It is important to consider what viewsheds the project impacts, even if the project area itself is not publicly accessible. Airport project teams may consider taking advantage of their unique assets to support views, such as providing viewing areas for people to watch aircraft take off and land.

ISI conducted an analysis of airport projects that have successfully pursued Envision verification and earned an Envision Award to determine which credits are often deemed Not Applicable, and which credits are most commonly scored at the highest Levels of Achievement. Given the number of airport projects that pursued Envision verification under the previous version of Envision (v2), the findings presented in this section are based on an analysis of those projects, but the results are similar for projects using the current version of Envision (v3).

Credits within the Envision framework that may be excellent opportunities for airport project teams to consider Not Applicable are:

- QL3.2 Preserve Historic and Cultural Resources
- NW1.3 Preserve Prime Farmland
- NW3.3 Maintain Floodplain Functions
- CR2.1 Avoid Unsuitable Development

For these and/or any other credits to be accepted as Not Applicable, airport project teams must submit documentation explaining and demonstrating why the credit does not apply to the project.

Common Credit Pursuits

While all 64 Envision credits should be reviewed for each project, airport project teams may find it helpful to understand which credits are commonly pursued at the highest Levels of Achievement. Based on ISI's analysis of Envision-verified airport projects, the most common credits that earn the highest Level of Achievement are:

- LD1.1 Provide Effective Leadership and Commitment
- LD2.3 Plan for Long-Term Monitoring and Maintenance
- RA2.4 Commission and Monitor Energy Systems

PENDING CREDITS

Airport project teams pursuing Envision verification Pathway A: Design + Post-Construction have the ability to mark credits as “pending”. This gives project teams the ability to receive their Envision award following design as opposed to waiting until construction is complete. Credits are marked as pending if some of the documentation necessary to demonstrate achievement will only be available or complete at the post-construction review stage. The pending status is generally reserved for credits, or criteria within credits, where the project team will be making use of construction or contractor-related documentation. The following credits are likely to be considered pending during the design phase reviews in Pathway A: Design + Post-Construction (not intended to be an exhaustive list):

- QL1.3 Improve Construction Safety
- QL1.6 Minimize Construction Impacts
- RA1.1 Support Sustainable Procurement Practices
- RA1.2 Use Recycled Materials
- RA1.4 Reduce Construction Waste
- RA2.2 Reduce Construction Energy Consumption
- RA3.3 Reduce Construction Water Consumption

When it is not possible to provide the full documentation necessary to demonstrate achievement of the credit criteria until after construction completion, the project team must do the following during the design review stage:

- Mark the credit as “pending”.
- Select a Level of Achievement.
- Provide documentation that credit requirements will be met during construction (e.g., submit relevant construction specifications, targets, and policies).
- Identify and explain any additional documentation that will be available and provided in the post-construction review to demonstrate achievement.

As an example, many airports have developed their own sustainable construction goals within their specifications accompanied by construction tracking templates to be used on all airport projects; these documents would be used as pending documentation for credits such as RA1.1, RA1.2, RA1.4, and RA1.5. The completed tracking forms would then be included in the final post-construction review submittal.

CATEGORY- AND CREDIT-SPECIFIC INSIGHTS

Quality of Life (QL)

There are several airport-specific conditions that can affect the pursuit of QL credits. While the following is not an exhaustive list, these items may support airports pursuing Envision:

1. Safety and security – Many of the requirements that public-use airports in the U.S. (and in particular Part 139 airports) are subject to will directly contribute to Envision credits. A higher Level of Achievement may be achieved by incorporating an expanded set of considerations into Construction Safety and Phasing Plans (CSPPs) and other standard documents.
2. Noise – The same can be said of noise. Noise is one of many environmental aspects assessed under NEPA and thus many airport projects will have gone through at least the minimum level of assessment for noise-related impacts. One common pitfall, however, is that these assessments do not typically consider vibration; QL1.4 specifically calls for minimizing noise and vibration. Expanding the noise assessment to consider vibration can help bolster the Envision pursuit while benefiting surrounding communities and stakeholders.
3. Views and public space/amenities – It would be a mistake to automatically consider these elements as irrelevant to certain airport projects like those occurring on the airfield. Even for an airfield project, it may be important to consider the view of passengers from the vantage point of roads/walkways, the terminal itself, and even a taxiing plane. Regarding public space/amenities, an airport may choose to implement or expand upon an existing pedestrian walking path around the perimeter of the airport (outside of the secure area) or offer employees and the traveling public a greenspace for eating or recreating.
4. Mobility – Depending on the project type, airports should consider how the project may impact mobility for the community/region by increasing connectivity or expanding alternative modes of transportation.

Leadership (LD)

The Leadership category significantly differentiates Envision from other rating systems. It promotes collaboration, engagement, and strategic decision-making to maximize sustainable outcomes.

Historically, many airports have limited outreach and engagement to meeting requirements of environmental or other regulations. However, such activities are opportunities to demonstrate the value of the project (e.g., economic impact or increased mobility) and to showcase the sustainable approach undertaken, potentially helping airports build or strengthen relationships with their host communities. Airports should review the associated Envision credits as early as possible in the project (ideally at the planning stage) to avoid missed opportunities and inform the design and construction process.

Credit LD1.3 Provide for Stakeholder Involvement focuses on establishing a sound and meaningful stakeholder engagement plan, beginning with stakeholder identification and prioritization. Building a strong stakeholder engagement plan will assist the project team with many Envision credits as stakeholder engagement is a common theme throughout

Envision and this credit provides guidance on how to approach stakeholder engagement, develop an effective plan, and implement it.

The table below presents just a few examples of stakeholder engagement explicitly referenced in other Envision credits.

| Credit | Focus of Engagement |
|---|---|
| QL1.1 Improve Community Quality of Life | Engaging affected communities in a meaningful way to identify how the project can best meet community needs and goals and ensure stakeholder satisfaction that the project addresses these needs and mitigates negative impacts. |
| QL1.4 Minimize Noise and Vibration | Engaging stakeholders on potential noise and vibration impacts during project operations, appropriate mitigation strategies, and target levels. |
| QL1.6 Minimize Construction Impacts | Incorporating feedback mechanisms and performance monitoring into the project's construction management plan to receive and respond to public and stakeholder concerns during construction and to inform impacted stakeholders on project performance in addressing construction impacts. |
| QL2.1 Improve Community Mobility and Access | Obtaining input from the community and other key project stakeholders regarding mobility and access issues and working with the community to expand mobility and access options. |
| QL3.1 Advance Equity and Social Justice | Ensuring the stakeholder engagement process considers the historical context of equity and social justice within affected communities. And, in cases where the project impacts sovereign peoples, especially indigenous peoples, ensuring the process specifically addresses and prioritizes engagement of these stakeholders based on a relationship of respect and mutual understanding that supports the autonomy, authority, and rights of these communities. |
| QL3.2 Preserve Historic and Cultural Resources | Engaging the community as well as required regulatory and resource agencies to identify historic and cultural resources and working with these stakeholders to develop a sensitive design and approach. |

One helpful technique airports have used to engage stakeholders is to hold sustainable design charrettes (workshops) at the outset of the project to identify the project's priorities, challenges, and opportunities and to prioritize strategies that offer sustainability and resilience benefits. An example agenda for a sustainable design charrette is provided in the image below.

*Example agenda from Port Authority of New York and New Jersey (PANYNJ) Sustainable Design Workshop:

1. Confirm project evaluation track and associated requirements;
 2. Review Sustainable Design Survey responses and confirm applicable credits (See Section 5.1);
 3. Evaluate target Level of Achievement for applicable credits;
 4. Discuss additional credits to be included and target Level of Achievement;
 5. Identify strategies for key credits;
 6. Identify required documentation;
 7. Identify person(s) responsible for key strategies and/or documentation;
 8. Confirm schedule for completion of action items.
-

The example agenda shown above for a Sustainable Design Charrette, included in the Port Authority of New York and New Jersey's (PANYNJ) Sustainable Infrastructure Guidelines V2.1 (2022)⁴

User Tip:

Use this [opportunity] to think broadly about the project. What are you trying to achieve? Can things be done differently to reduce waste, increase efficiencies, and accommodate stakeholder needs? Are you designing based on historical conditions without considering the changing climate, shifts in customer expectations or habits, and new technologies? Asking such questions early on will help determine the right project before setting off on the design.

As another resource, the U.S. General Services Administration developed a Sustainable Facilities Tool, which includes additional guidance on Integrative Design Processes. This can be accessed here: <https://sftool.gov/plan/261/integrative-design-process>

The following are additional considerations that can support airports in achieving Leadership credits:

- Sustainability Management Plan (SMP) – An airport's existing SMP may be relevant to this credit if the project is considered or there is documentation showing how the SMP is being applied to the project. An existing Environmental Management System (EMS) may be applied in a similar way.
- Economy credits – Airports have a major role to play in economic development, tourism, and the creation of local jobs. LD3.1 Stimulate Economic Prosperity & Development and LD3.2 Develop Local Skills & Capabilities allow airports to take credit for these outcomes while promoting additional outreach to expand the workforce and address gaps that currently or may exist in the future. Many established airport efforts such as local and diverse business programs may be used towards fulfillment of these credits.

4 <https://www.panynj.gov/content/dam/port-authority/about/environmental-initiatives/-clean-construction/Sustainable-infrastructure-guidelines.pdf>, Section 4.4, p7

Resource Allocation (RA)

The Resource Allocation credits cover topics that are commonly associated with sustainable development such as waste management, water conservation, energy management, and the use of recycled materials. In the context of airports, the following particularities are worth bearing in mind when considering these common sustainable development areas:

- Use of recycled materials - The use of Full Depth Reclamation (FDR), for example, is not only a cost-effective solution for taxiway and runway reconstruction projects but also more sustainable as the full thickness of the existing asphalt is pulverized and blended with base and/or subbase to provide a uniform and upgraded material. This method is an effective way of reusing/repurposing existing materials which is recognized and rewarded in the Resource Allocation credit category.
 - Waste management – Airports often have decentralized waste management systems where tenants procure and contract their own services, resulting in difficulties in influencing operational waste management practices. However, the project may be an opportunity to align practices and perhaps use the design to maximize efficiencies/synergies such as providing additional space for recycling receptacles/infrastructure.
 - Energy consumption/production – While airfield projects, for example, may not include on-site renewable energy generation as part of the project, the sourced energy to run the project may come from other on-site renewables, which can apply to the renewable energy credit.
 - See also the credit calculators available for the energy credits under “Verification Resources” within the ISI portal (see figure Envision Applicant Resources).
- Water resources – A given airport might identify different sustainability-related goals around water use in a terminal building. In an airfield project, given the often minimal amount of landscaping involved, the potential to reduce potable water use may appear limited. But even in those contexts, airports may consider strategies such as specifying seed mixes that require no irrigation; establishing operational procedures or incorporating design features to reduce foreign object debris (FOD), thus minimize water used to dispel this from airport pavements; and, the reuse of collected stormwater for construction activities like dust control.



Natural World (NW)

This category includes several credits that may be deemed Not Applicable to airport projects, but only if the resources they focus on are not present within the project site and it was not reasonable to evaluate alternatives where the resource may have existed (e.g., a runway reconstruction project). Specifically, this may be the case for:

NW1.2 Provide Wetland & Surface Water Buffers

NW1.3 Preserve Prime Farmland

NW2.1 Reclaim Brownfields

NW3.3 Maintain Floodplain Functions

Climate and Resilience (CR)

Envision's Climate and Resilience credits provide valuable guidance related to 1) reducing emissions (mitigating climate change and addressing local air quality), and 2) identifying, assessing, preparing for, and adapting to climate-related and other risks and hazards. Given that airports are critical to the resilience of their host communities as well as the overall transportation system, the Envision framework can be beneficial for both airport-wide and project-specific planning.

Emissions-Related Envision Credits

For most airport projects subject to NEPA, CR1.2 Reduce Greenhouse Gas Emissions and CR1.3 Reduce Air Pollutant Emissions require similar considerations of a project's impacts on climate and local air quality. However, these credits call for actions to reduce these impacts even if mitigation is not required by NEPA. As the aviation industry is increasingly looking at ways to reduce its GHG emissions, identifying and implementing measures to reduce operational emissions⁵ through the planning and design of major infrastructure projects are key steps to achieving measurable outcomes. Such measures may include reconfiguring airfield geometry to reduce aircraft taxiing times, installing software in parking facilities or on roadways to optimize vehicle

traffic, upgrading energy and water management systems to reduce waste and better detect leaks/faults, etc. These measures may help airports achieve commitments outside of the project's Envision pursuit such as those made by airports participating in the [*Airports Council International's \(ACI\) Airport Carbon Accreditation Program.*](#)

CR1.1 Reduce Net Embodied Carbon, which looks at the emissions associated with the production, transportation, replacement, repair, and refurbishment of materials on the project, may be a newer concept to airports. However, ISI has already seen aviation projects successfully navigate this sustainability challenge by including the use of low-carbon concretes and in-situ carbon dioxide mineralization in concrete production to reduce overall embodied carbon. Given the scale of

⁵ Construction emissions are covered in other Envision credit categories.

airport infrastructure projects and the volumes of materials used, this credit is important to consider early on in project planning.

Resilience-Related Envision Credits

While each credit in the Envision framework must be prepared as a stand-alone credit submittal, each with its own credit coversheet and supporting documentation, the CR2.2 – CR2.5 series of credits should ideally be examined as a group since each credit in this series builds upon the prior.

For example, CR2.2 Assess Climate Change Vulnerability requires a comprehensive climate change vulnerability assessment for the project. This assessment can be considered an important subcomponent for the broader multihazard risk and resilience evaluation that is required for CR2.3 Evaluate Risk and Resilience. For CR2.3, the project team must look at both acute shocks (e.g., hurricanes, heat waves, health epidemics, terrorism, the possibility of infrastructure failure/collapse, etc.) and chronic stressors (e.g., aging population, growing population, sea level rise, global warming, increased pollution/contamination over time,

overtaxed/inefficient infrastructure, etc.). Climate change factors into many of these shocks and stressors, hence the importance of looking at the two credits together. Likewise, CR2.3 Evaluate Risk and Resilience forms the foundation for credit CR2.4 Establish Resilience Goals and Strategies. Then CR2.5 Maximize Resilience implements the goals and strategies identified in CR2.4.

The verification team will look to make sense of these credits as a collective. If relevant risks are identified in one credit, but then overlooked in another, or if the resilience goals and strategies or mitigation plans for the project do not align with the identified risks and vulnerabilities, this will raise red flags for the verification team and point to inadequacies in any climate and resilience plans for the project.

For airports, reviewing these credits in conjunction with existing emergency plans, risk management systems, and procedures may provide opportunities to integrate a broader set of previously unconsidered risks and hazards into airport operations and planning.



DOCUMENTATION STRATEGIES

Clear documentation for an Envision project submittal is critical to an efficient and accurate review and verification process. This can be time-consuming for the project team if not planned for and organized in a consistent and streamlined approach.

The [*Guide to Envision Verification for Applicants*](#) provides directions for preparing credit submittals: the credit coversheets and supporting documentation. The following are a few examples of this guidance to remember when preparing credit submittals.

- Cover sheets are required for each credit submittal. Use the coversheet narrative to describe how the project is meeting the credit requirements for each Level of Achievement.
 - Be specific and clear when referencing documents in the coversheet (bold or underline the references) and include page numbers directing the verifiers to relevant information in the documentation.
 - Highlight and/or annotate relevant information within the supporting documentation.
 - Be sure to review Envision Credit Amendments for any credits being pursued, as these may provide further clarity on documentation requirements.
 - If a credit is “Pending,” provide clear descriptions of what documentation will be provided for the post-construction review and how this documentation will demonstrate achievement.
- documents, etc., that may be used for multiple credits and projects. Reference these resources within the tracking sheet.
 - Document as you go. Do not wait until late in the project to assemble required documentation. It will always be hard to track this down later.
 - Have a team member do a quality control check on the submittal by reviewing the coversheets and references prior to submittal.
 - If a credit is “Pending,” provide existing supporting documentation to show how the pending documentation will demonstrate achievement during the post-construction review (for example, contractor specifications, requirements within bid documents, etc.).

The following are some additional documentation tips and tricks that may be beneficial to airports:

- Begin planning for documentation early. Include a discussion around documentation requirements and procedures during the project kick-off.
 - Utilize a tracking sheet that lists credits, planned Level of Achievement to be pursued, responsible team member, and documentation that will be required.
 - If the airport has pursued or plans to pursue multiple Envision projects, create a central folder for files/plans/policy
- The airport can mark documentation as confidential as another level of assurance that the materials are sensitive.
 - The airport can redact compromising information or limit pages submitted to relevant summaries.
 - The airport can submit an executive summary and provide a comprehensive description of the relevant information within the coversheet.
 - Verifiers can be asked to sign Non-Disclosure Agreements (NDAs), if needed.

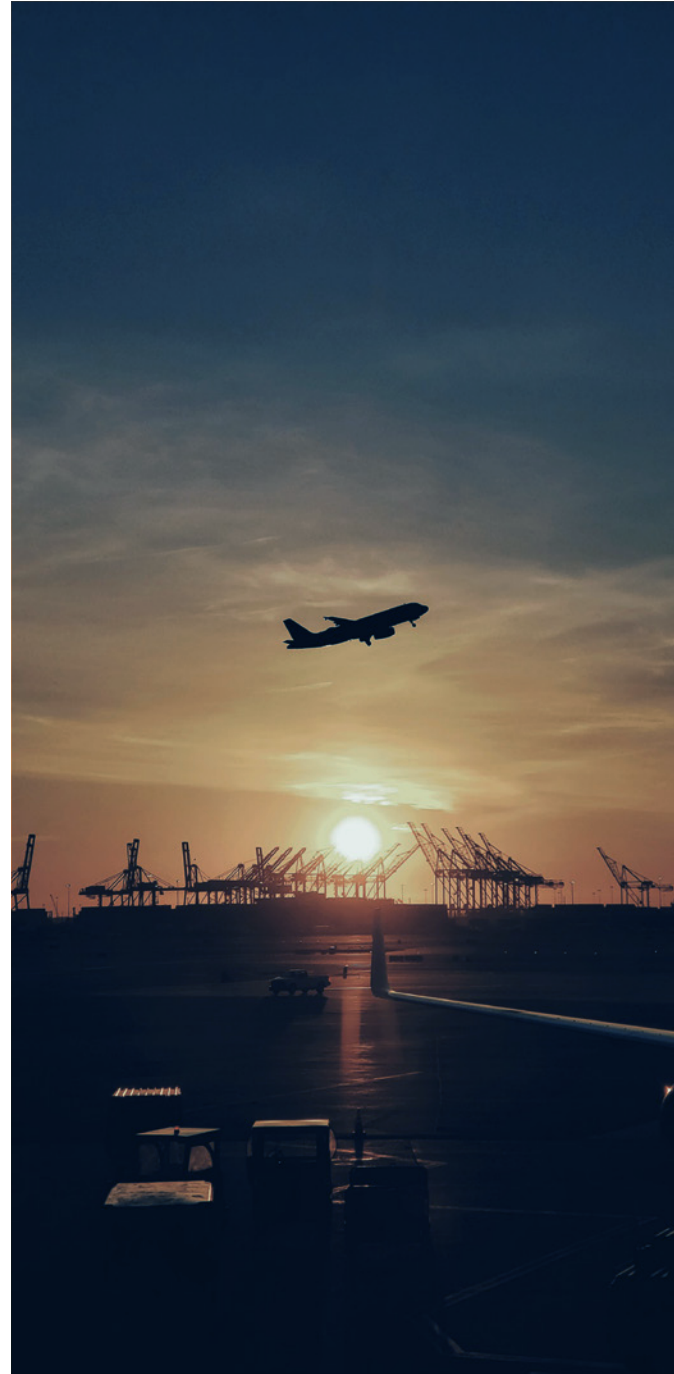
What's on the horizon?

With the 2020s bringing new challenges and exciting opportunities for the aviation industry, the Envision framework is an invaluable tool for airports planning, developing, maintaining, and operating a wide range of infrastructure types with the goal of advancing sustainability and resilience. To maximize its value, expand accessibility to new users, and address existing challenges, an Envision & Airports Working Group was launched in December 2022. This Working Group (led by practitioners with ISI participation) brings together airports and consultants currently using or planning to use the Envision framework. If interested in joining, reach out to Kari Hewitt at Kari@HewittSustainability.com or Carly Shannon at Carly@Linxstrat.com.

In addition to the Working Group, ISI intends to continue discussions with the FAA and other agencies/organizations focused on sustainability and resilience to align efforts where sensible. Such collaboration is vital given the urgency of climate change and other major disruptors like workforce shortages.

ISI is always seeking ways to better support Envision users via new services and resources (many of which are discussed in this Envision AIRO Guide), additional promotion of Envision-verified projects, and expansive educational offerings including its annual virtual conference held in November of each year. To stay up to date on all activities, subscribe to ISI's newsletter here:

[Home - Institute for Sustainable Infrastructure](#)



ISI References

The foregoing text of the **Envision & Airports: Insights, Resources, & Opportunities Guide (Envision AIRO Guide)** highlighted numerous Envision resources. See below for a summary of these references.

For the Envision Sustainable Infrastructure Framework Guidance Manual (v3), log in to your ISI account and download a copy. A free account can be created at this link: <https://v4.sustainableinfrastructure.org/register>

For information on becoming a member of ISI, visit: <https://sustainableinfrastructure.org/membership/become-a-member/>

For information on becoming an ENV SP, visit: <https://sustainableinfrastructure.org/credentiaing/envision-sustainability-professional-env-sp/>

For the “Sustain It or Explain It Toolkit, visit: <https://sustainableinfrastructure.org/soe-advocacy-communications-toolkit/>

And for the Envision for Airports Executive Brief, visit: <https://sustainableinfrastructure.org/wp-content/uploads/2022/03/Airport-Executive-Brief.pdf>

Other references

For the Port Authority of New York and New Jersey Sustainable Infrastructure guidelines, visit: <https://www.panynj.gov/content/dam/port-authority/about/environmental-initiatives/clean-construction/Sustainable-infrastructure-guidelines.pdf>

For the San Francisco International Airport (SFO) Sustainable Planning, Design & Construction Standards <https://www.sfoconnect.com/sites/default/files/2021-12/SFO%20Sustainable%20PDC%20Standards%2012-13-21.pdf>

For any NEPA resources, refer to: <https://www.epa.gov/nepa>

For the *California Environmental Quality Act*, visit: <https://oag.ca.gov/environment/ceqa>

For the Airports Council International’s Airport Carbon Accreditation Program, please visit: <https://www.airportcarbonaccreditation.org/>

For the “Integrative Design Process” section of the U.S. General Services Administration’s Sustainable Facilities Tool, visit: <https://sftool.gov/plan/261/integrative-design-process>

Envision-Verified airport projects

| Project Name | Owner |
|---|---|
| San Diego International Airport Green Build Project (2016) and Terminal 2 Parking Plaza (2019) | San Diego County Regional Airport Authority |
| T.F. Green Airport Runway 5 Extension | Rhode Island Airport Corporation |
| Detroit Metropolitan Wayne County Airport Runway 4L/22R and Associated Taxiways Reconstruction (2016) and Runway 3L/21R and Associated Taxiways Reconstruction (2019) | Wayne County Airport Authority |
| Nashville International Airport Water Source Geothermal System | Metropolitan Nashville Airport Authority (MNA) |
| General William J. Fox Airfield Runway Reconstruction | County of Los Angeles Department of Public Work |
| LaGuardia Airport Central Terminal Building Replacement | Port Authority of New York and New Jersey |
| Eagle Creek Airpark Taxiway B | Indianapolis Airport Authority |
| Hartsfield-Jackson Atlanta International Airport Taxiway and Runway 9L Pavement Replacement | City of Atlanta Department of Aviation |
| Phoenix Sky Harbor International Airport Sky Train Phase | City of Phoenix Aviation Department |
| Portland International Airport Rental Car Quick Turnaround Facility | Port of Portland |
| Indianapolis International Airport Runway 5R-23L & Taxiway D Strengthening and Capacity Enhancement Project | Indianapolis Airport Authority |
| LAX Automated People Mover | Los Angeles World Airports (LAWA) |



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