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INTRODUCTION

The Sustainable Airport Manual (SAM) Planning Chapter is intended to address the conceptual planning of the airport’s physical environment to facilitate implementation of design, construction, and/or operation and maintenance in a sustainable manner. The Planning chapter also addresses operational guidance by outlining procedures for the airport’s compliance with federal, state, and local standards, codes, and mandates, as well as daily operational best management practices. Planning is an ongoing pursuit that establishes qualitative and quantitative goals for all projects of all sizes and scopes at the earliest stage based on stakeholder input, collaboration and commitment.

Planning begins at the earliest stages of a project and thereby becomes part of the sustainable fabric and vision that influences later stages of design, construction, and operation for all projects, large and small. With the integration of sustainability into every aspect of airport functions, the consideration of sustainability will become more routine. Moreover, the inclusion of sustainability considerations at the planning stage will result in greater benefits and lower costs than the addition of sustainability features at a later date. Understanding the needs and limitations of airport stakeholders and system conditions is also an important part of planning in order to achieve long term effectiveness.

The Planning chapter outlines a broad integrated approach, customizable to organizational and system conditions and shaped by input from stakeholders. Once system conditions (and options) are defined and understood, the airport can then look to one or more sustainability strategies for inspiration and development of specific goals. The Chapter provides guidance and support in developing, maintaining, or increasing the performance of sustainable initiatives within the overall framework of each airport planning project. It considers sustainable design concepts throughout the planning of airport development projects and programs from inception, thereby increasing the ability of each project to meet and to hopefully exceed various initiatives based on each airport’s optimal conditions.

The approach to sustainability planning outlined in this chapter strives to collectively elevate everyday planning to proactively address environmental issues beyond minimum standards and embrace sustainability as an important achievement. Many airports often struggle with the daily reality of their economic and social concerns, like balancing limited budgets or satisfying customer demands, where sustainability opportunities can be overlooked. Through this process, all the required elements of the standard planning process can be achieved, while embracing sustainable practices that can potentially reduce the environmental impact of the built environment while at the same time creating financial and operational benefits for a project, and social benefits for the community at large.

The sustainable planning path outlined here will help to define the airport’s sustainability goals and objectives for each project based on system conditions and unique situations. From there, the key stakeholders collectively develop the project’s “Sustainability Schematic,” which is an overall plan outlining the measurable sustainability targets and goals for the project that, when finalized, will become part of the official plan for the project, such as a Project Definition Document (PDD) and/or Capital Improvement Program (CIP) Application, or other applicable planning documentation.
APPLICABILITY

All projects begin with the development of a plan. That plan may be a major program, such as an airport master plan, or it may be a relatively small improvement, such as the addition of a new jet bridge or an update to an airport’s Stormwater Pollution Prevention Plan. Just like cost estimates and schedules, sustainability considerations and goals need to be integrated into the planning process for all projects, regardless of size and scope. Integration of sustainability considerations into the planning process sets the groundwork for inclusion of sustainability features as a project proceeds through the design, implementation, and operational stages.

Planning projects that would be applicable to this SAM Planning Chapter include, but are not limited to the following:

- Master Plan
- Maintenance Plan
- Utilities Plan
- Operations Plan
- Construction Plan
- Deconstruction Plan
- Asset Maximization Plan
- Facilities Plan
- Existing Facility Optimization Plan
- Terminal Renewal/Improvement Plan
- Facility Re-Use Analysis
- Land Use Plan
- Noise Compatibility Plan
- Regulatory/Code Requirements
  - Title V Permit Application or Update
  - Air Quality State Implementation Plan (SIP) Update
  - NPDES Permit Application or Update
  - Stormwater Pollution Prevention Plan (SWPPP) Update
  - USACE 404 Permit Application
- Other Projects or Strategic Initiatives
  - Demand Driven Projects
  - Customer Service Projects
  - Revenue Opportunities
The process of sustainable airport planning as described in this SAM Planning Chapter involves the creation of an overall plan outlining the measurable sustainability targets and goals for the project that, when finalized, will become part of the official plan for that project, function, or activity. This is to be accomplished primarily through the development of a “Sustainability Schematic.” The sustainable airport planning process can be summarized by reviewing an outline of the credits included in the Chapter:

1. **Define Sustainability Vision Statement** *(SAM Credit PL.2.1 Prerequisite 1)*
2. **Determine Key Stakeholders and hold Initial Project Meeting to Discuss Sustainability Goals** *(SAM Credit PL.2.2 Prerequisite 2)*
3. **Sustainability Baseline Assessment and Cost/Benefit Analysis** *(SAM Credit PL.2.3 Prerequisite 3)*
   Requires the completion of a preliminary sustainability baseline assessment and the completion of a preliminary cost/benefit analysis for all project alternatives, including the no-project alternative. The cost/benefit analysis enables a comparison of initial versus longer term operational and maintenance costs, while also considering the potential environmental and social impacts that may occur as a result of the project.
4. **Develop a Draft Sustainability Schematic** *(SAM Credit PL.2.4 Prerequisite 4)*
   Requires the development of a Sustainability Schematic which outlines the steps for sustainability considerations in planning any project or activity, and addresses the following major considerations:
   a. Identify and establish sustainability objectives, target goals, and minimum thresholds
   b. Identify sources of funding
   c. Provide for and conduct education and public outreach initiatives
   d. Plan for the integration of SAM guidelines into the specific project elements, as appropriate to the size and scope of each project
   e. Plan for sustainable operation and maintenance of completed projects/programs/facilities
   f. Establish plan to close the feedback loop
5. **Project Meeting to Finalize Sustainability Schematic** *(SAM Credit PL.2.5 Prerequisite 5)*
6. **Close the Feedback Loop at Project Completion** *(SAM Credit PL.2.6 Prerequisite 6)*

Within the Chapter’s main body, each sustainable planning “Credit” has five subsections: Intent, Requirements, Submittals, Technology/Strategy, and Case Studies, as described below:

- **Intent**: The primary motivations for any sustainable practice.
- **Requirements**: Specifies institutional, operational, and functional elements that satisfy the intent. The prerequisites must be achieved; other credits are optional, but contribute to the overall sustainable planning process for the project.
• **Submittals**: Required and supporting documentation and/or information required to achieve applicable prerequisites or credits. This documentation indicates how the requirements are being met.

• **Technology/Strategy**: Highlights specific ways of meeting the recommendations within the scope of each specific credit. Case studies where available, are presented to help guide the application of sustainable credits to planning projects and efforts.

• **Case Study**: Examples of credit intent “in action” at airports and/or other industry facilities.

While not all strategies will be applicable to every project, planners are highly encouraged to think creatively and to consider the intent of each issue throughout the decision process. In all cases, it is the responsibility of the planning team to evaluate and review with the appropriate CDA managers any anticipated cost or schedule impact.

### THRESHOLDS AND GUIDANCE

For all planning projects involving CDA owned, operated, or leased facilities and for all planning projects involving resources for which CDA has regulatory responsibilities, CDA encourages the targets or goals listed in the following table, as appropriate and applicable to the size and scope of each project. Although the targets or goals included in the following table might be above and beyond the thresholds established by the other chapters of this Manual, the CDA strives for them to be attainable and therefore, encourages innovation and forward-thinking in order for their achievement.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description and/or Example Measure(s)</th>
<th>Encouraged Target or Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Selection</td>
<td>Locate near mass transit (bus, CTA rail lines, Metra, etc.) and carpooling. Protect and restore site, while minimizing wildlife attractants.</td>
<td>Encourage employees and visitors to utilize mass transit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protect natural resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimize attraction of wildlife</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Minimize impervious surfaces, incorporate vegetated roofs, curb breaks and bioswales. Harvest rainwater for reuse.</td>
<td>Slow, intercept and encourage infiltration (landside only), reuse, protect and treat stormwater whenever possible to minimize contamination and runoff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recover and recycle deicing fluid</td>
</tr>
<tr>
<td>Topic</td>
<td>Description and/or Example Measure(s)</td>
<td>Encouraged Target or Goal</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reduction of Heat Islands, roof and non-roof</td>
<td>Examples include, but are not limited to green roofs, green walls, white roofs, and shading. Minimize paved surfaces. Use light colored/high-albedo materials for pavements, roadways, parking lots, sidewalks and plazas.</td>
<td>Integrate into all projects involving structures (occupied and unoccupied) and extensive pavements</td>
</tr>
<tr>
<td>Water Efficiency</td>
<td>Use low-flow, high-efficiency plumbing fixtures (USEPA WaterSense). Recycle vehicle washwater and reclaim water from cooling towers. Use native, drought tolerant landscaping to minimize maintenance and irrigation needs.</td>
<td>Reduce use of potable water resources by 40%</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>Improve airfield and landside – design for efficiency. Provide pre-conditioned air and 400 Hz power at aircraft gates, and hydrant fueling. Utilize natural daylighting, heat, absorption cooling and ventilation. Minimize building energy loss. Incorporate efficient lighting, HVAC, and human-demand controls, such as occupancy sensors</td>
<td>Reduce total project energy use by 50%</td>
</tr>
<tr>
<td>Equipment and Appliances</td>
<td>Optimize energy performance, provide high efficiency, motors, pumps, systems and equipment</td>
<td>100% ENERGY STAR compliant</td>
</tr>
<tr>
<td>Generation and/or Integration of Renewable Energy</td>
<td>Examples include, but are not limited to solar applications, wind turbines, geothermal.</td>
<td>Consideration of onsite renewable energy options for at least 5% of total energy usage – dependent upon life cycle costs and benefits achieved</td>
</tr>
<tr>
<td>Green Power</td>
<td>Utilization of green resources such as biomass, solar, wind, and water to generate electricity.</td>
<td>Encourage development and use of grid-source, renewable energy technologies on a net zero pollution basis, as applicable and appropriate</td>
</tr>
<tr>
<td>Topic</td>
<td>Description and/or Example Measure(s)</td>
<td>Encouraged Target or Goal</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Materials and Resources</td>
<td>Utilize pre-existing buildings and resources.</td>
<td>Reuse and salvage existing resources and materials whenever possible</td>
</tr>
<tr>
<td></td>
<td>Use low-embodied carbon materials</td>
<td>Use low-embodied carbon materials wherever possible and in support of Life Cycle Analysis</td>
</tr>
<tr>
<td>Waste Management and Recycling</td>
<td>Divert waste from landfill disposal</td>
<td>100% diversion of recyclable, reusable, or compostable waste from landfill disposal</td>
</tr>
<tr>
<td></td>
<td>100% of soils kept onsite (Balanced Earthwork Plan)</td>
<td>100% of soils kept onsite (Balanced Earthwork Plan)</td>
</tr>
<tr>
<td>Recycled Content of Materials</td>
<td>Use materials and products that incorporate recycled content materials, therefore reducing impacts resulting from extraction and processing of new virgin materials</td>
<td>All products contain some percentage of recycled content where applicable</td>
</tr>
<tr>
<td>Use of Local/Regional Materials</td>
<td>Use materials and products that are extracted and manufactured within the region, thereby supporting the regional economy and reducing the environmental impacts resulting from transportation</td>
<td>100% usage of materials and products that are extracted and manufactured within in a 250 mile radius from the site</td>
</tr>
<tr>
<td>Alternative Fuels/Vehicles</td>
<td>Examples include, but are not limited to electric, hybrids, CNG, Biodiesel, Propane</td>
<td>100% usage of alternative fuels/alternatively fueled vehicles in all vehicles used on airport property unless no reasonable alternatively fueled vehicle option exists</td>
</tr>
</tbody>
</table>

**SUBMITTALS**

Incorporation of sustainable elements into planning efforts is tracked using the SAM checklist provided in Appendix PL-A – Planning Checklist along with any paperwork and documentation required for each SAM Credit.

**IMPLEMENTATION AND REVIEW PROCESS**

The SAM and its supporting documentation are administered by the Sustainable Review Panel (SRP), which currently consists of representatives of the CDA Management Staff and Airport Planners actively
involved in CDA projects. The composition of the SRP is intended to be dynamic depending on each project’s unique needs.

The SRP is responsible for the review of submittals with respect to sustainability and provides technical support to the each project in relation appropriate to sustainable practices. The SRP is responsible for review of every checklist and for the awarding of “Green Airplane Certification” ratings based on the extent of incorporation of sustainable practices as outlined in this Manual and as documented on the submitted SAM Checklist(s).

Other responsibilities of the SRP include preparation and review of sustainable design related specifications, technical memoranda, and miscellaneous documents, as necessary. In addition, the SRP is responsible for presentations and training to project team members with respect to the application of this Manual. The primary tasks of the SRP are to oversee the application of the Manual and review submittals for their compliance with the Manual.

All projects conducted by or under management of the CDA will follow these procedures. For any and all sustainability-related questions and/or submittals, please use the following email address to submit forms electronically (preferred method): SAMdocs@cityofchicago.org.

For comments, case studies, lessons-learned, new technologies or for any and all project submittal forms, please email:

SAMdocs@cityofchicago.org
1.0 ADMINISTRATIVE POLICY & PROCUREMENT

1.1 Prerequisite 1 – Green Meetings

Required

INTENT

Green meeting practices are intended to guide meeting hosts, planners, and attendees toward more eco-friendly meetings. A few extra efforts to incorporate environmental considerations into planning and conducting meetings will help to minimize the negative impact on the environment and educate all participants regarding sustainable meetings.

Green meeting practices are intended to:

- Conserve resources
- Reduce environmental impacts
- Save money
- Support Chicago’s commitment to environmental stewardship

REQUIREMENTS

Whenever applicable, follow the green meeting practices outlined below, or your existing corporate sustainability policy, whichever is more stringent.

SUBMITTALS

Include descriptive narrative on the SAM Checklist and if following your own corporate sustainability policy, please include with submittal for this section.

TECHNOLOGY/STRATEGY

Meeting Planning

Meeting hosts should consider the following when planning for a meeting:

Reduce the number of copies produced by:
- Sharing meeting materials
- Digitizing materials and distributing presentations via email prior to meetings
- Placing materials on the wall (one large print or presented with projector equipment)

If handouts are needed at the meeting, produce handouts:
- Locally
- Double-sided
- Using high post-consumer recycled content paper
Exhibits and presentation materials:
- Same suggestions as handouts above
- Reuse display boards, utilize both front and back sides
- Use low-emitting materials for exhibit displays
- Recycle cardboard and other packaging materials

For participants not in the building: can they participate by internet/phone?
- Contact the expected meeting participants ahead of time and present them with the option of a video/phone conference via the internet/phone, if appropriate. Costs associated with technical support may still be less than travel/fuel costs in some cases.

What if travel cannot be avoided?
- Can attendees carpool/carshare?
- Provide attendees with mass transit options, such as CTA or Pace Bus, including directions.
- Encourage walking and biking by selecting accessible venues, including directions.
- If overnight stays are involved, suggest hotels nearest the meeting venue that are the most environmentally friendly (www.greenhotels.com). Consider moving the meeting to the hotel if majority of participants are staying at the same hotel, reducing the need for transportation to and from the hotel.

If the meeting is all day or multiple days in a row, how can it be catered in an environmentally friendly way?
- Serve drinks from pitchers, reusable utensils and dishes, and request local produce to cut down on waste when catering for large groups.
- Utilize condiments in bulk dispensers to reduce waste.
- Plan for the pick-up and compost or donation of leftover food to reduce waste.

What if the meeting is held annually?
- Plan for annual meetings at times of the year when temperatures are less extreme to reduce energy consumption due to the use of air conditioning/heat.

Meeting Room
- Use the recycle bins for recyclable items at the end of the meeting.
- Collect reusable business card holders/name tags in a bin after last meeting.
- Collect presentation materials that are not needed by the attendees that can be donated to local schools, reused or recycled.
- Have attendees fill out an online survey allowing for feedback about the meeting and vendors for future reference and improvement.
- Follow up after the meeting with participants to share green success stories and lessons-learned including statistics from the meeting, such as quantities of recycled materials. Also include a summary document that provides details of the green meeting.
- Help to ensure the lights are turned off as attendees leave the meeting room.
Additional details if conducting off-site meetings, such as a conference or workshop...

- Ensure that off-site meeting locations accommodate opportunities for recycling.
- Recycle newspapers, cans, and glass, including those from your guest room, in marked containers in the conference area.
- Participate in the hotel's water, energy, and detergent conservation efforts by following the instructions posted in your room.
- Note the conference's efforts to reduce the use of paper by limiting conference handouts at registration, using folders or handouts printed on high post-consumer recycled content paper, using vegetable-based ink, and encouraging presenters to limit handouts.
- Thank the hotel or off-site location host for providing recycling opportunities, reusable utensils and dishes for breaks, etc.

IMPLEMENTATION

1. Make certain that all appropriate recycling bins are located in public meeting areas and conference rooms.
2. Develop message boards for conference rooms, meeting areas, and copy/production areas. (see following pages)
3. Provide routine reminders of green meeting practices and during annual team meetings.
1.0 ADMINISTRATIVE POLICY & PROCUREMENT

1.2 Corporate Sustainability Policy

1 Point

INTENT

In keeping with the spirit and intent of this Manual, it is strongly encouraged that companies working in support of CDA on any project establish and adopt their own corporate policy on sustainable practices.

REQUIREMENTS

The company providing the design services for the project shall establish and adopt a Corporate Sustainability Policy.

SUBMITTALS

Provide an electronic copy or website link to the company’s Corporate Sustainability Policy.

NOTE: If available, please provide an electronic copy of your annual sustainability report documenting any new measures and results.

CASE STUDY

Starbucks Global Social Impact

Starbucks

The corporation has undertaken actions to reduce their environmental impact and share in their customer’s commitment to the environment. An annual environmental stewardship report is produced to highlight the company’s efforts and successes. At the store level, energy and water conservation and other green building strategies are key priorities. Starbucks strives to elevate their partners, customers, suppliers and neighbors to create positive change. This is being accomplished by offering high-quality, ethically purchased and responsibly produced products; investing in paths to opportunity through education, training and employment; minimizing their environmental footprint and inspiring others to do the same; while offering Starbucks as a place for public conversation and elevating civic engagement through service and promoting voter registration.

https://www.starbucks.com/responsibility
1.0 ADMINISTRATIVE POLICY & PROCUREMENT

1.3 Green Procurement Policy

1 to 4 points

INTENT

Reduce the environmental impact of products and services by developing a Green Purchasing Program.

REQUIREMENTS

Purchase green products meeting third-party environmental and sustainability standards. Refer to the U.S. EPA Greener Products and Services listing at www.epa.gov/greenerproducts/identify-greener-products-and-services for more information. Some common product certifications include:

- UL EcoLogo
- Electronic Product Environmental Assessment Tool (EPEAT)
- Green Seal®
- EPA Safer Choice.

Points for this credit will be awarded based on the number of green products, procured for general day-to-day office use by the designer of record of the project. The party completing the checklist should only count green products procured for the local office, as opposed to a global level corporate policy.

Points are awarded as follows:

<table>
<thead>
<tr>
<th>Number of Green Products Procured</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>1</td>
</tr>
<tr>
<td>3-5</td>
<td>2</td>
</tr>
<tr>
<td>6-11</td>
<td>3</td>
</tr>
<tr>
<td>12+</td>
<td>4</td>
</tr>
</tbody>
</table>

Example: An firm responsible for the planning of a terminal space uses, in their own office, 100% recycled fiber bathroom tissue and toilet paper that are both EcoLogo certified and glass cleaner meeting the GreenSeal certification. These three items meet the requirements of the credit, therefore, two points would be achieved for this credit based on the table above.

SUBMITTALS

Include descriptive narrative in the SAM Checklist of items purchased and used.

NOTE: If available, please provide an electronic copy of your green procurement policy.
TECHNOLOGY/STRATEGY

Introduce environmentally conscious purchasing into company practices. The policy needs to clearly define an objective and establish a sustainability claims verification procedure that can be replicated as necessary. Verification procedures may rely on product certifications such as Green Seal and ENERGY STAR. Evaluate the items that are purchased, identify more environmentally friendly alternatives, and establish a policy to purchase these alternatives when economically feasible. Work with suppliers to identify sustainable products that meet the company’s needs.

Standard Practice

None

Recommended Practice

- Purchase items with the minimum content levels specified in the U.S. EPA Greener Products and Services listing at [www.epa.gov/greenerproducts/identify-greener-products-and-services](http://www.epa.gov/greenerproducts/identify-greener-products-and-services)
- Purchase items in bulk to reduce packaging, transportation impacts and costs
- When using a company-developed policy, the following resources can be used to create a Procurement Policy. Resources include but are not limited to:
  - U.S. Environmental Protection Agency’s Comprehensive Procurement Guidelines (CPG) – The CPG includes an index of products and their recommended recycled content. More information can be found on the associated website: [www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program](http://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program)
  - U.S. Environmental Protection Agency’s Water Sense – The partnership program by promoting water efficiency and enhancing the market for water-efficient products, programs and practices. More information can be found on the associated website: [www.epa.gov/WaterSense/](http://www.epa.gov/WaterSense/)
  - DOE’s Alternative Fuels and Advanced Vehicles Data Center – The data center provides a wide range of information and resources to enable the use of alternative fuels, in addition to other petroleum reduction options such as advanced vehicles, fuel blends, idle reduction and fuel economy. More information can be found on the website: [www.afdc.energy.gov/afdc/](http://www.afdc.energy.gov/afdc/)
  - Fair Trade Products – Purchase fair trade products instead of regular products in order to build equitable and sustainable trading partnerships. Examples of some fair trade products include; coffee, bags, boxes, artwork, chocolate, sugar, etc. More information can be found on the Fair Trade Federation’s website: [www.fairtradefederation.org](http://www.fairtradefederation.org)
  - USDA’s BioPreferred Designated Products – The program aims to increase the purchase and use of renewable, environmentally friendly biobased products while providing “green” jobs and new markets for farmers, manufacturers and vendors. More information can be found on the associated website: [www.biopreferred.gov/BioPreferred/](http://www.biopreferred.gov/BioPreferred/)
CASE STUDY

Sustainable Purchasing Policy
Vancouver International Airport – Vancouver, British Columbia, Canada

Sustainability is a corporate priority for the Vancouver Airport Authority. One of their goals is to embed sustainability into our purchasing decisions and ensure meaningful consideration of social and environmental criteria when selecting suppliers, products, and services. Their purchasing decisions will drive innovation, improve workplace and environmental outcomes, and support their commitment to be accountable to the communities that they serve. In evaluating suppliers and their subcontractors, the Airport Authority will include sustainability as a weighted component of the evaluation criteria, to address sustainability risks and capitalize on opportunities. In the procurement of goods and services, for both operating and capital spending, their consideration of sustainability gives priority focus to issues pertaining to their four pillars of sustainability; environment, social, economic, and governance.

1.0 ADMINISTRATIVE POLICY & PROCUREMENT

1.4 Recycled Content Paper

1 to 3 points

INTENT

Reduce the need for virgin materials, energy, and waste associated with the production of paper by promoting the use of recycled content paper.

REQUIREMENTS

For all office paper purchased for routine daily business administration and operations of the company providing planning services, point values will be assigned based on the recycled content of the paper. Up to 3 points are available by using paper with the following attributes:

<table>
<thead>
<tr>
<th>SAM Credit</th>
<th>Post-consumer recycled content</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.1</td>
<td>30%</td>
<td>1</td>
</tr>
<tr>
<td>1.4.2</td>
<td>50%</td>
<td>2</td>
</tr>
<tr>
<td>1.4.3</td>
<td>100%</td>
<td>3</td>
</tr>
</tbody>
</table>

Calculate post-consumer recycled content of office paper using a weighted average based on estimated usage. If the paper is chlorine-bleached, for the purposes of the calculation, it shall be assumed that the post-consumer recycled content is 0% regardless of what it actually is.

Example: Annually, an office uses 50 boxes of chlorine-free paper with a post-consumer recycled content of 30%, 50 boxes of chlorine-free paper with a post-consumer recycled content of 90%, and 20 boxes of chlorine-bleached paper with a post-consumer recycled content of 100%. The weighted average of all the paper used is 50% and therefore 2 points would be awarded for this credit. Note that the 20 boxes of chlorine-bleached paper are assumed to have 0% recycled content for the purposes of the calculation.

\[(50/120)(30\%) + (50/120)(90\%) + (20/120)(0\%) = 50\% \text{ recycled content}\]

SUBMITTALS

Include descriptive narrative on the SAM Checklist.
TECHNOLOGY/STRATEGY

The purchase and use of recycled paper assist in closing the recycling loop by utilizing paper that is made from recovered waste paper.

This credit is intended to:

- Conserve natural resources
- Save energy
- Reduce environmental impacts
- Reduce pollution
- Reduce paper waste

Standard Practice

None

Recommended Practice

- Whenever applicable, purchase and utilize recycled office paper in daily business administration and operations.

Best Available Practice

None
2.1 Prerequisite 1 – Define Sustainability Vision Statement

Required

INTENT

The Project Manager shall define in writing, a project description and sustainability vision statement for the project.

REQUIREMENTS

Regardless of project size, scope, or scale, create a project description outlining what is to be improved, retrofit, upgraded, replaced, enhanced, or corrected as a result of the project completion. The description of the project should be as comprehensive as possible, and include as appropriate, regulatory, guidance, and operational documents.

Define in writing, the vision statement, which at a minimum, clearly states the project’s sustainability goals, objectives and opportunities. Whenever possible, specific measures should be listed (e.g., incorporation of solar) including goals and targets (e.g., 50% energy use reduction over standard practices). The vision statement will be unique to every project and situation. It can be simple and goal oriented, or more detailed with thoughts on achieving both goals and specific measures (e.g., to be LEED certified).

SUBMITTALS

1. Project Description
2. Sustainability Vision Statement
2.2 Prerequisite 2 – Determine Key Stakeholders and Hold Initial Project Meeting to Discuss Sustainability Goals

Required

INTENT

Determine key stakeholders for the planning project and hold an Initial Project Meeting to discuss project sustainability goals. The meeting with key stakeholders will provide a forum for discussion regarding the overall sustainability goals for the project as initially defined in the Sustainability Vision Statement for the project, while capturing innovative ideas and concepts, and resolving any potential conflicts. As a result of the meeting, it is anticipated that the method and required inputs for the cost/benefit analysis will be determined (see SAM Credit PL.3 Prerequisite 3 – Sustainability Baseline Assessment and Cost/Benefit Analysis), as well as the necessary environmental approvals, permitting requirements, and any other additional approvals that would be needed as part of the project. All of this information will factor into the development of the project’s Sustainability Schematic as described in SAM Credit PL.4 Prerequisite 4 – Develop a Sustainability Schematic. In addition, as a result of this meeting, the project vision statement (SAM Credit PL.1 Prerequisite 1 – Define Sustainability Vision Statement) may require modification pursuant to the sustainability targets and goals identified for the project.

REQUIREMENTS

Early in the project, hold an initial project meeting with CDA Project Manager, SRP, and all additional key stakeholders involved in planning, design, construction, and daily operation/maintenance, as well as local sustainability leaders, community leaders, schools, and businesses that could potentially be affected by the end result of the overall project effort. Each project is unique and therefore, each stakeholder group will have a unique composition. The intent is to include members who may have an interest in the outcome of the project. Enable members to utilize conference calls, net-meetings, webinars, etc. when unable to attend in person. The purpose of the meeting with key stakeholders is to determine the overall sustainability goals for the project, capture innovative ideas and concepts, resolve any potential conflicts (to the greatest extent possible), determine the method and required inputs for cost/benefit analysis, and to determine the necessary environmental approvals, permitting requirements, and any other additional approvals that would be needed as part of the project.

SUBMITTALS

1. Include a descriptive narrative in the SAM Checklist
2. List of stakeholders, including name, title, and role and/or special interest in project – noting key stakeholders who did not attend and provide evidence that a separate meeting(s) was held for those who were unable to attend initial meeting
3. Meeting Agenda
4. Meeting sign-in sheet including name, company, title, contact information, and role on project
5. Meeting Minutes and Meeting materials (presentations, handouts, etc.)
CASE STUDY

Sustainable Master Plan
Ithaca Tompkins Regional Airport – Ithaca, New York

Ithaca Airport has designed its latest master plan update with sustainability in mind. The Federal Aviation Administration agreed to fund this sustainable master plan as the first in the U.S. The project was the first to integrate sustainability directly into the entire master planning process, instead of having a stand-alone sustainability plan. This approach was chosen so that there would be consistency and alignment between projects and policies arising from the traditional aspects of a master plan as well as the sustainability considerations.

Significant changes to a traditional master plan included performing baseline assessments of 12 sustainability categories and developing goals and targets for improvement. Because the most sustainable projects are the ones that are never built, the project team looked to meet identified facility needs by maximizing existing infrastructure instead of immediately resorting to new construction. When new construction was deemed necessary, policies were put in place to ensure projects are built as sustainably as possible.

The project commenced with an advisory committee kickoff meeting in September 2009 and progressed through the phases of the project with frequent input from committee members.

A concerted effort was made to increase the diversity of viewpoints on the advisory committee beyond the traditional makeup.

The project team reached out to leaders of local sustainability not-for-profits as well as academic experts from nearby Cornell University and Ithaca College. Public outreach efforts also included a project website with downloadable documents and project updates, online passengers, business, and pilot surveys, and involvement with students at both local universities.

Innovative efforts to increase participation in project-related online surveys included using a donation to the Tompkins County Society for the Prevention of Cruelty to Animals (SPCA), which is a neighbor to Ithaca Tompkins Regional Airport and is the first LEED-Certified animal shelter in the country.

Source: Case Study text and photos provided by, and used with the permission of, C&S Companies and Ithaca Tompkins Regional Airport.

2.3 Prerequisite 3 – Sustainability Baseline Assessment and Cost/Benefit Analysis

**Required**

**INTENT**

Perform a preliminary sustainability baseline assessment to represent the no-project alternative for comparison purposes. Perform a preliminary cost/benefit analysis for all project alternatives, including the no-project alternative, in order to compare life cycle costs with the range of potential environmental and social impacts as a result of the project, in order to be able to select the alternative that is the most desirable as measured by the appropriate balance of environmental, social, and financial impacts of the project.

**REQUIREMENTS**

Complete a preliminary sustainability baseline assessment to represent the no-project alternative. The sustainability baseline assessment could include the following, at a minimum, as appropriate to the size and scope of the project; with the level of analysis within each appropriately tailored to the size and scope of the project:

- Emissions inventory
- Greenhouse gas inventory
- Electrical usage
- Water usage
- Stormwater discharges
- Waste disposal volumes and destinations
- Recycling programs
- Indoor environmental quality
- Cleaning and maintenance programs

Because every project is different, the specific methods of conducting the analysis are not specified here, but left open for definition and refinement based on the nature of the project. The end result of the analysis is intended to inform decisions on the manner in which the project will or will not proceed, particularly relative to sustainability measures. Some examples of considerations that may be helpful to inform the decision making process may include, but are not limited to the following:

- Comparison of initial project costs with and without sustainability initiatives
- Comparison of longer-term costs for operation and maintenance, with and without sustainability initiatives (i.e., utilities, staffing, cleaning, replacing)
- Any other associated cost benefit received not in O&M (i.e., less fees paid, reduced permitting costs)
- Selection of the lowest embodied carbon alternative
- Anticipated environmental benefits to be realized
- Consideration of applicable grant incentives, rebates and tax credits that may be available
Using a method, model and/or software deemed appropriate by the key stakeholders and project planning team, perform a preliminary cost/benefit analysis of all project alternatives, including the no-project alternative.

As part of this assessment, it is required to research and identify the potential sources of funding for the project. In addition to airport fund sources, there are many opportunities for grants, rebates, tax incentives and credits available from Federal, State and private sources. For example, [www.dsireusa.org](http://www.dsireusa.org) is a comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency. eCivis® Grants Network™ ([www.ecivis.com](http://www.ecivis.com)) provides grants management software for accurate grants information, reporting, and management used by governments and community organizations.

**SUBMITTALS**

- Results of the sustainability baseline assessment, representing the no-project alternative
- A copy of the cost/benefit analysis calculations or the report produced by the selected method software
- A brief narrative describing the results of the cost/benefit analysis for each project alternative considered
- Recommendations of the preferred alternative and the principal reasons for selecting it, based on the results of the cost/benefit analysis

**TECHNOLOGY/STRATEGY**

Each project is unique, and therefore a particular method of conducting the cost/benefit analysis in not prescribed. The details of the analysis are defined as part of the planning process by the stakeholder group and the project planning team. Examples for cost/benefit analyses include, but are not limited to the following:

- The Environmental Valuation and Cost Benefit Analysis web site: [www.costbenefitanalysis.org/](http://www.costbenefitanalysis.org/)
- Life Cycle Cost Analysis (LCCA) of project alternatives considered in accordance with the method described by the following, or similar.


Federal Highway Administration: [www fhwa dot gov/infrastructure/asstmgmt/lcca cfm](http://www fhwa dot gov/infrastructure/asstmgmt/lcca cfm)
• Life Cycle Assessment (LCA) of project alternatives considered in accordance with the method described by the following, or similar.

ISO 14040, Environmental Management Life Cycle Assessment Principles and Framework:
www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=37456


• If applicable, provide analysis of Greenhouse Gas (GHG) Emissions, Global Warming Potential (GWP) or Ozone Depleting Potential (ODP) of project alternatives, using metrics or indices as described by the following, or similar.

EPA GHG Site: www.epa.gov/ghgemissions
EPA GWP Site: www.epa.gov/ghgemissions/understanding-global-warming-potentials
EPA ODP Site: www.epa.gov/ozone-layer-protection

Stockholm Environment Institute (SEI):
www.co2offsetresearch.org/aviation/MetricsIntro.html

CASE STUDY

Sustainability Baseline Assessment
Albuquerque International Sunport – Albuquerque, New Mexico

The Baseline Assessment provides an inventory and review of Albuquerque International Sunport’s current sustainability performance as determined by its related activities, policies, and procedures. This evaluation is an important first step in the development of the Sunport’s long-term sustainability strategy that will support the economic vitality of the Sunport, ensure the efficient use of limited resources, reduce negative environmental impacts, and enhance the social well-being of the community. It will also enable the Sunport to measure, through existing and new metrics, its overall sustainability performance over time as well as the impact of individual initiatives.

PL PLANNING

2.4 Prerequisite 4 – Develop a Sustainability Schematic

Required

INTENT

Integrate sustainability into the earliest possible stage of a project. By using a sustainability schematic, the CDA can utilize or organize various internal and external processes to work together toward the same goal of sustainability. A process or processes may be applicable to different organizations at different times for different projects, but when used within a sustainability schematic, synergies are more easily identified and realized. When finalized, the Sustainability Schematic will become part of the official plan for the project, such as the Project Definition Document (PDD) and/or Capital Improvement Program (CIP) Application, or other planning parameter documentation depending on the type of project.

REQUIREMENTS

For all projects, develop a sustainability schematic that addresses the following major principles:

I. Identify and establish sustainability objectives, target goals, and minimum thresholds
   a. Project Alternatives (including no-project) and innovations
   a. Procedures and incentives for Stakeholder involvement
   b. Sustainability baseline assessment results
   c. Cost/Benefit Analysis results for each project alternative (including the no-project alternative)
   d. Environmental Approvals required as part of the project
   e. Permits required as part of the project
   f. All other additional approvals required as part of the project
   g. Use of additional tools and resources to provide supplemental information, as deemed appropriate
      i. Examples tools and resources may include, but are not limited to:
         1. Design for the Environment (DFE)
         2. Ecological Footprinting (EF)
         3. Sustainability Management Systems (SMS)
         4. Sustainable Airport Guidance Alliance (SAGA)
         5. ACRP Sustainability reporting and guidance
   h. Establish measurable sustainability goals, targets, and quantifiable metrics for the project, as appropriate as a way of tracking and reporting the success/failure of the project.
      i. Examples include, but are not limited to:
         1. Percent reduction in energy use per square foot of facilities or on a per passenger or customer basis
         2. Percent increase of renewable energy
         3. Percent reduction in water use
4. Reduce number of pollutant exceedances and concentration of pollutants at the “end of the pipe” (e.g. SADF, pH, TDS, petroleum sheens)
5. Identify and reduce sources of pollutants
6. Reduce percentage of failed BMPs
7. Reduce number of noise complaints received and incompatible land uses authorized in adjacent cities
8. Reduce the volume of solid waste generated from sources airport-wide
9. Increase volume of recycled waste generated from sources airport-wide
10. Reduce volume of hazardous waste generated
11. Increase procurement of environmentally-friendly products

II. Identification of Funding Sources
   i. Grants
   ii. Rebates
   iii. Tax Credits
   iv. Other

III. Provide for and conduct Education and Public Outreach Initiatives
   i. Examples include, but are not limited to:
      i. Environmental Stewardship Training (“Eco-Training”) for employees, contractors, tenants, concessionaires
      ii. Implement or require training programs as part of tenant leasehold
      iii. Provide educational materials to passengers and visitors in public terminal areas, gate holdrooms, parking areas, vehicle roadways/toll plazas
      iv. Use kiosks and informational displays to inform and generate interest
      v. Develop short educational videos for passengers to watch on ATS and/or shuttle buses to/from remote parking area

IV. Plan for the integration of SAM guidelines into the following specific project elements, as appropriate to the size and scope of each project:
   a. Energy use and carbon emissions inventory
   b. Air quality enhancement strategies
   c. Fleet and vehicle operations
   d. Material and resource use
   e. Heating and cooling systems
   f. Lighting systems
   g. Construction and administrative procedures
   h. Indoor quality of life
   i. Waste management and recycling
   j. Landscape and natural resource management
   k. Noise abatement
   l. Surface transportation management
m. Water efficiency, quality, and conservation  
n. Green building and asset management

V. Plan for sustainable operation and maintenance of completed projects, programs or facilities  
(see Operations and Maintenance Chapter and Concessions and Tenants Chapter of SAM)

VI. Feedback Loop

a. Plan for original project team and key stakeholders to meet upon full project completion  
in order to gauge and/or determine:

i. Was the Sustainability Schematic useful? Why or why not?
ii. Was the Sustainability Schematic accurate? Why or why not?
iii. Was the Sustainability Schematic reasonable? Why or why not?
iv. Were the sustainability measures planned implemented? Why or why not?
v. Were additional sustainability measures implemented that were not originally identified?
vi. Were sustainability goals and targets met? Why or why not?
vii. Were the anticipated benefits achieved? Why or why not?
viii. Describe tracking and reporting of results.
ix. Provide overall “lessons learned” through the project
x. Recommend improvements to the process for enhancements to SAM Planning  
Chapter for future planning projects

SUBMITTALS

- Present Sustainability Schematic to CDA Project Manager and Sustainable Review Panel (SRP)  
  for review and comment.
- Descriptive narrative in the SAM Checklist.
PL PLANNING

2.5 Prerequisite 5 – Project Meeting to Finalize Sustainability Schematic

Required

INTENT

Upon completion of the Sustainability Schematic, hold a project meeting to finalize the document and prepare it for inclusion in the official Project Definition Document (PDD) and/or Capital Improvement Program (CIP) Application, or other planning documentation as may be applicable.

REQUIREMENTS

Upon completion of the Sustainability Schematic, hold a project meeting(s) with CDA Project Manager, SRP, and all additional key stakeholders involved in planning, design, construction, and daily operation/maintenance of facility, as appropriate and applicable. Enable members to utilize conference calls, net-meetings, webinars, etc. when unable to attend in person. The meeting(s) purpose is to finalize the project’s Sustainability Schematic and prepare it for inclusion in the official Project Definition Document (PDD) and/or Capital Improvement Program (CIP) Application, or other applicable planning documentation.

SUBMITTALS

1. Descriptive narrative in the SAM Checklist
2. Sustainability Schematic
3. Meeting Agenda
4. Meeting sign-in sheet including name, company, title, contact information, and role on project
5. Meeting Minutes
6. Meeting Materials (presentations, handouts, etc.)
7. If revisions are made to the Sustainability Schematic as a result of this meeting, provide the revised Final Sustainability Schematic (complete document), a summary of changes made, and a signature sheet for key stakeholders affirming agreement and acceptance of changes.
8. If subsequent follow-up meetings are held, provide items 2-7 for each additional meeting

TECHNOLOGY/STRATEGY

Provide the Sustainability Schematic to CDA Project Manager, SRP, and additional key stakeholders well in advance of the meeting. Request that all parties review and bring comments to the meeting. It is anticipated that one meeting would be held to finalize the Sustainability Schematic. However, if revisions are made to the Sustainability Schematic as a result of this meeting, subsequent follow-up meetings may be warranted. If that is the case, allow stakeholders ample review time of revised Sustainability Schematic in advance of each meeting.
PL PLANNING

2.6 Prerequisite 6 – Close the Feedback Loop at Project Completion

Required

INTENT

Due to the dynamic nature of the aviation industry, airport projects lend themselves to continual planning and renewal. The intent of this Prerequisite is to effectively close the feedback loop at project completion in order to determine if key performance indicators, targets, and goals were met as planned, exceeded plan, or were under plan, and the reasons why or why not. This “lessons learned” information can then be compiled and used as valuable background information on future projects. This information can also be used to inform similar project analyses, enhance, and improve the SAM Planning Chapter.

REQUIREMENTS

Examples of the types of information, analyses and comparisons suggested to review as part of the informative process for closing the feedback loop are included in Section VI. Feedback Loop of the Sustainability Schematic described in PL.4 Prerequisite 4 – Develop a Draft Sustainability Schematic.

Create a plan for as many of the key stakeholders as possible to meet upon final project completion, or at a point when the information outlined in the Sustainability Schematic (see Prerequisite 5 – Project Meeting to Finalize Sustainability Schematic) can be reasonably evaluated and measured with actual data. The purpose of the meeting will be to close the feedback loop by determining whether key performance indicators, targets, and goals were met as planned, exceeded plan, or were under plan, and the reasons why or why not. This “lessons learned” information can then be compiled and used as valuable background information on future projects, and ultimately to improve the overall process.

SUBMITTALS

1. Descriptive narrative in the SAM Checklist
2. Meeting Agenda
3. Names, titles, contact information, and role on project for key stakeholders and others involved in development of the Sustainability Schematic
4. Name, title, contact information and role on project for designated person and back-up person who will be responsible for keeping an up-to-date list of contact information for all key stakeholders and others involved in the development of the Sustainability Schematic (see Prerequisite 5).
5. Detailed descriptions of lessons-learned relative to the overall process and the Sustainability Schematic, as well as recommendations for enhancements to this SAM Planning Chapter.