

Nombre de Aeropuerto: Luis Muñoz Marín International Airport (SJU) - Aerostar Airport Holdings, LLC

Responsable: Jaime Pabón, Sustainability Director

Nombre del Proyecto: Rehabilitation of Taxiway H

Resumen Ejecutivo

The Luis Muñoz Marín International Airport (SJU) is Puerto Rico's largest airport, serving as the island's crucial international gateway and link to the broader region, especially the mainland United States (US). The airport holds the distinction of being the 39th busiest commercial airport based on enplanements and the 8th largest medium-sized hub in the US. SJU is managed and operated by Aerostar Airport Holdings, LLC (Aerostar) since 2013 under a public-private partnership and 40-year lease agreement with the Puerto Rico Ports Authority (PRPA), making it the first successful airport to go through the Federal Aviation Administration's (FAA) Airport Investment Partnership (AIP) Program and the only private operator to hold a Part 139 certificate.

Starting on December 28, 2019, and progressing into 2020, Puerto Rico was impacted by a swarm of earthquakes, including 11 that were of magnitude 5 or greater, of which the largest and most damaging was a magnitude 6.4 on January 7, 2020 (intensity of VIII - Severe). Adverse effects of these incidents were felt throughout the island and also affected the surface and integrity of Taxiway H (TWY H) at SJU. TWY H serves as one of two critical pathways between the SJU Terminal and both runways, making it essential for our operations.

The Rehabilitation of TWY H Project, which was completed in February 2024, consisted of the full-width taxiway pavement rehabilitation of approximately 1,710 ft in length. It also included the pavement rehabilitation and geometry upgrades of Taxiway Connectors H2, H3, and Taxiway C, as well as a portion of Apron 4. The design considered innovation through reusing the existing concrete pavement by crushing it in situ and using it as a base material (rubblization). Such strategy resulted in cost savings of approximately \$6,899,415 USD through the reuse of existing concrete, as well as the avoidance of purchasing new construction materials or disposing 450,000 cubic feet of waste at authorized landfills. Additionally, approximately 2,800 truck hauling loads were also avoided. Senior management (Chief Infrastructure Officer) was actively involved due to the need to complete the project prior to proceeding with the Runway 08-26 closure for reconstruction.

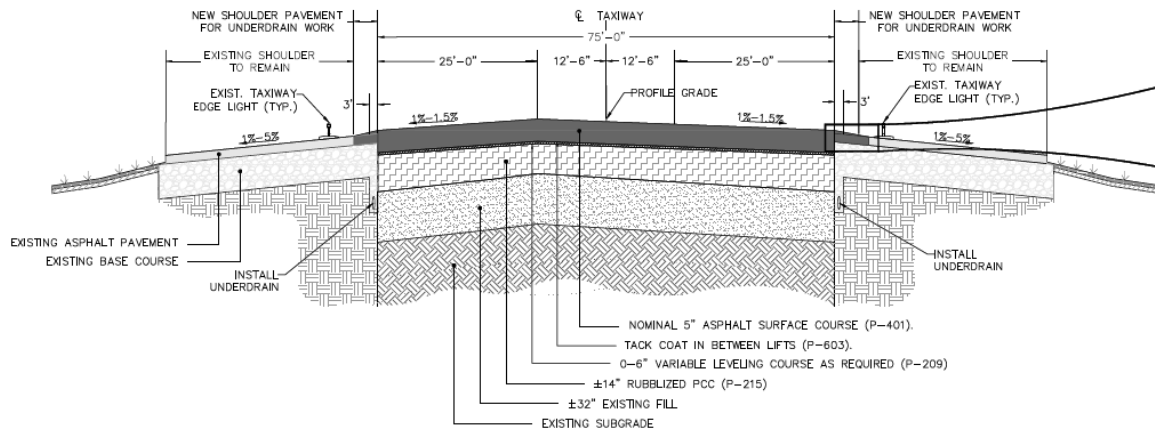
Resultados y Beneficios del proyecto

Rubblization was used as a technique to transform the existing concrete pavement (PCC) to a base material, allowing for significant waste minimization. This technique breaks the existing PCC in place into smaller diameter pieces and promotes the following key items:

- **Timing and efficiency:** Does not require removal of the existing concrete and earth base, which avoids delays due to rain and other potential subsurface issues.
- **Reduce waste generation, carbon emissions and natural resources impacts:** Avoided approximately 450,000 cubic feet of concrete to be disposed of in a landfill. The reuse of existing concrete at the site prevented the bringing in of new aggregates from quarries for concrete, fill material from quarries and fields, which avoids transportation (approximately 2,800 truck hauls for materials input and disposal) and environmental issues.
- **Reuse, repair and repurpose existing materials: Rubblization** allowed for the reuse and repurposing of the prior taxiway concrete pavement to be used as base material for the new pavement surface.
- **Cost effectiveness:** The project's final cost was \$5,100,585 USD, which resulted in a reduction of \$6,899,415 USD from the originally estimated \$12,000,000 USD.
- **Rethink through innovative design:** The inclusion of rubblization as part of the design represents engineering innovation that provided economic, timing, and sustainability benefits.

Several airport leadership members were involved with transitioning this project from traditional engineering to implementing an innovative approach that reused existing concrete as base material. Such key senior management included, but is not limited to:

1. Jorge Hernandez (CEO) – provided guidance and approvals to proceed with emergency management efforts to rehabilitate TWY H;
2. Luis Faure (CIO) – Led the Infrastructure Department project team to secure funding;
3. Amed Torres (Planning & Development Director) – Served as PM to assure engineering and schedule compliance;
4. Jaime Pabon (Sustainability Director) – Promoted understanding of environmental benefits to reinforce strategy.



NOTES:

1. DETAIL ABOVE IS TYPICAL FOR BOTH SIDES OF TAXIWAY.
2. CONTRACTOR SHALL REMOVE AND REPLACE TAXIWAY EDGE LIGHTS TO MATCH NEW OVERLAY HEIGHT. REFER TO ELECTRICAL PLANS FOR DETAILS

1 TAXIWAY H: PROPOSED TYPICAL TAXIWAY H SECTION
C-3.1 NOT TO SCALE

