PAGO PAGO SKY TRAM: PROJECT PHASE 1

FEASIBILITY, PLANNING, AND DESIGN

November 2023

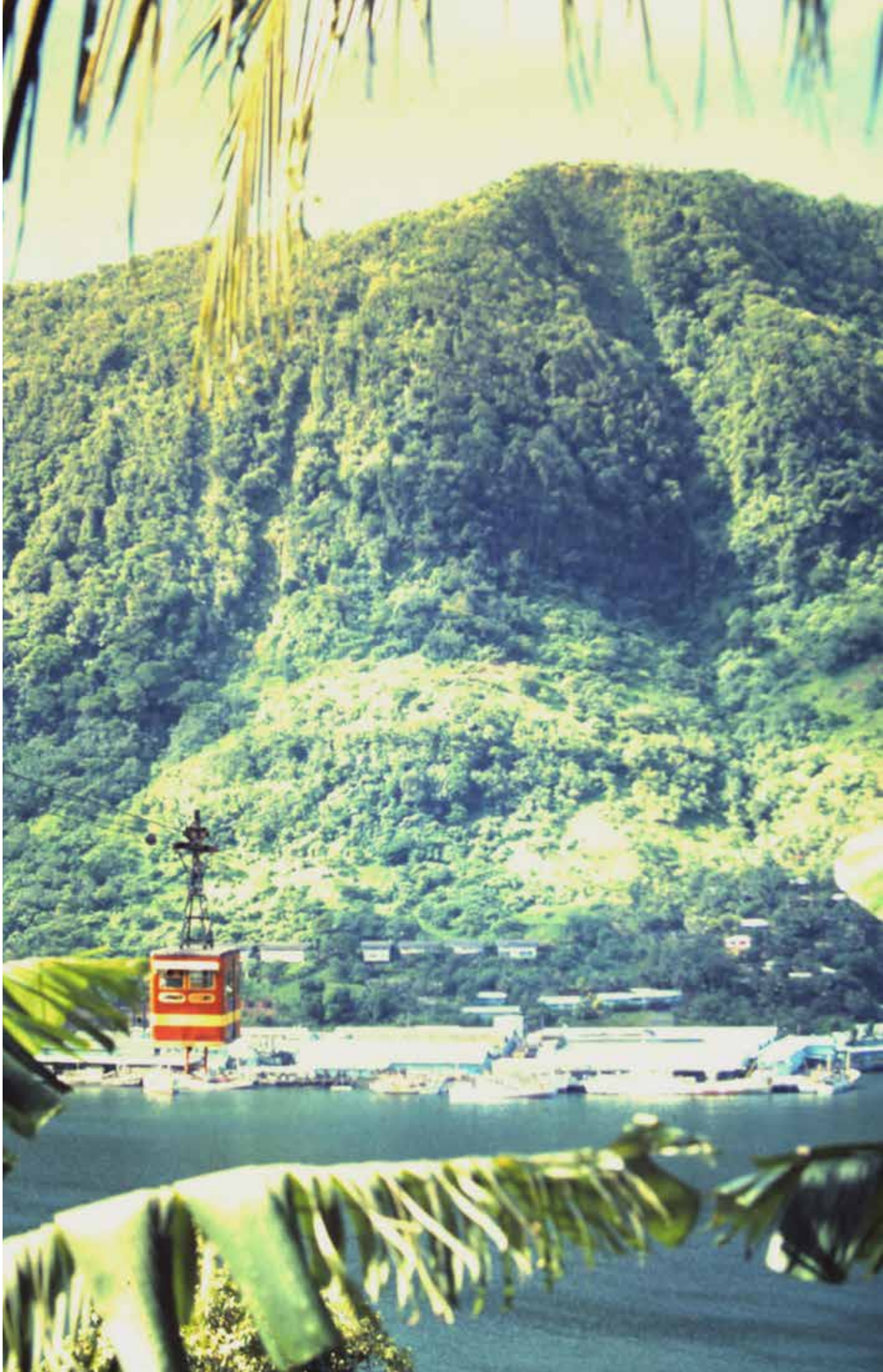
SE GROUP

LEITNER POMA

RRC

TABLE OF CONTENTS

TABLES



KEY FINDINGS

THIS STUDY DETERMINES THAT:

1. **The construction of the Pago Pago Sky Tram is physically feasible.** With proper preparation for construction, both the top and bottom sites of the former aerial tramway could accommodate a modern aerial tramway system. This system could span the Pago Pago Harbor without issue, and it would provide adequate clearance for large cruise ships and for the industrial area of the Port of Pago Pago. The system would have two tram cabins and could operate at a variety of speeds, including speeds which may accommodate 600 people per hour (pph). Access to the tram's bottom terminal would be provided via an inclined elevator, which has been also designed to accommodate 600 pph.

2. **The construction of the Pago Pago Sky Tram is expected to be environmentally feasible.** The U.S. Economic Development Administration (EDA) requires that an Environmental Narrative Report be prepared as part of applying for an EDA grant. SE Group's analysis of these requirements is outlined in Appendix A. SE Group recommends a conversation with the relevant EDA representatives to confirm assumptions and requirements prior to application. Because both the EDA and the National Park Service (NPS) would need to complete site specific analysis for the project under the National Environmental Policy Act of 1969 (NEPA), SE Group also recommends coordinating with both agencies prior to initiating NEPA to identify potential efficiencies in the NEPA process.

3. **If the American Samoa Government (ASG) can secure grant funding for the project's capital expenditures, SE Group believes that the Pago Pago Sky Tram will be financially feasible and self-sustaining.** Phase 2 (construction) is expected to cost approximately $35,039,000. This estimate includes costs for: the aerial tramway; the inclined elevator; shipping and installation of the aerial tramway and inclined elevator; top and bottom terminal landscaping and structures; environmental permitting; and demolition and reconstruction of the existing top terminal electrical equipment. Operation and maintenance costs for the aerial tramway and inclined elevator would be expected to be fully funded by revenue generated from the operation. However, operating profits are not expected to sufficiently service debt on the project's initial capital expenditure requirements. Should ASG receive grants to fund a substantial portion of the project, the project may be able to service approximately $5 million of the initial capital requirement.

Constructing the Pago Pago Sky Tram would revive the once-iconic experience of transporting riders across the world-famous Pago Pago Harbor. The project has been determined to be physically feasible and is expected to be environmentally feasible. If ASG can secure grant funding for the project's capital expense, the project would be financially feasible and self-sustaining.

SE Group recommends the funding of the Pago Pago Sky Tram.

1 INTRODUCTION

1.1 BACKGROUND

The iconic aerial tramway that formerly spanned the Pago Pago Harbor holds historical and cultural significance. Its construction in 1960 marked the beginning of American Samoa's rise as a premier travel destination in the South Pacific. This prominence did not last due to several factors, including damage to the aerial tramway. This loss of tourism infrastructure, as well as other challenges that have plagued American Samoa in recent decades, has contributed to a decline in tourism to American Samoa.

Today, American Samoa faces a different set of opportunities and challenges than it did in the 1960s and '70s. Revitalizing the travel industry after the devastating impacts of Covid-19 and sparking new, sustained growth in tourism are top priorities. ASG views the construction of a new aerial tramway—the Pago Pago Sky Tram (Sky Tram)—as a key opportunity to spark this growth, reviving the once-iconic experience of transporting visitors and locals across the world-famous Pago Pago Harbor. To conduct a "Phase 1" evaluation of this opportunity, ASG was awarded a grant from the EDA. ASG initiated this evaluation via a Request for Proposals, through which the SE Group team was selected.

1.2 MARKET STUDY

To assess current and projected visitor counts into American Samoa, and to project revenue for the Sky Tram, SE Group worked with RRC Associates to complete a market study. The study analyzes tourism trends in American Samoa since the completion of the 2010 Tourism Master Plan, tourism competition within the South Pacific region, and opportunities for tourism collaboration within American Samoa. It includes a detailed model, which uses pre- and post-Covid data to project visitation and revenue for American Samoa and the Sky Tram.

1.3 FEASIBILITY ASSESSMENTS

The physical feasibility component of Phase 1 consists of detailed engineering, siting and capacity studies, and schematic planning for the top and bottom terminal areas. To accomplish this evaluation, the following constraints were studied: site-specific construction requirements; aerial corridor clearance requirements; spatial capacity in the top and bottom terminal areas; and land ownership and access. Landscape design was also modeled for the top and bottom terminal areas in order to elevate the guest experience.

A pro forma model was developed to evaluate financial feasibility, which incorporates an analysis of total system cost, operations and maintenance costs, anticipated revenue, and capital origination. As with all pro forma analyses, a substantial quantity of key assumptions were developed. These key assumptions were informed by the market assessment, which was included in this scope of work to determine the breadth and depth of potential tram users and to estimate reasonable pricing for each user group. Assumptions are described in detail in the Financial Feasibility section of this report and intentionally err on the conservative side of estimation, where necessary (i.e., under assuming revenue and over assuming costs).

To assess the environmental feasibility of the project, an Overview of Environmental Narrative Report Requirements was prepared. This inventory will assist the EDA and the NPS in determining the level of environmental assessment required prior to the potential Phase 2 of this project.

This "Phase 1" component of the Sky Tram project provides a recommendation as to whether the EDA should fund a "Phase 2," which would entail construction of the new aerial tramway system. To inform this recommendation, Phase 1 evaluates the physical, economic, and environmental feasibility of constructing a new aerial tramway in the approximate location of American Samoa's former tramway system.

1.4 STUDY TEAM

The team that conducted this Phase 1 feasibility, planning, and design study consisted of SE Group, Leitner-Poma of America (LPOA), and RRC Associates (RRC). Within this team, LPOA provided detailed engineering for the tramway system, and RRC conducted a market assessment that included visitation and revenue forecasting. SE Group collaborated with LPOA and RRC on their respective project components, and conducted the additional project components (siting, capacity modeling, terminal area planning, financial modeling, assessing environmental feasibility, and reporting).

SE GROUP

Over SE Group's 60+ years of consulting services, it has had the opportunity to work with nearly all major manufacturers of ropeway systems. From rope tows to chairlifts, gondolas, and tramways, the SE Group team works in close collaboration with vendors to assure that planning and design efforts are aligned with mechanical, structural, and electrical criteria and that operational models align with industry best practices and guidance. Our team of planners and designers tour manufacturer facilities, attend technical seminars, and visit numerous ropeway installations to increase our understanding of these complex systems in real world operation. On an annual basis, we are involved with numerous ropeway installations. We review the placement installation of towers and terminals and ensure that site grading and installation details maintain appropriate clearances and conform to design drawings. We do not just plan ropeways: we actively work to oversee their installation.

SE Group has forged a deep relationship with Leitner-Poma of American (LPOA) and has collaborated on dozens of ropeway projects. We have crafted a project approach that starts with thoughtful planning and analysis and results in successful feasibility studies, representing the best possible outcomes given each unique client vision and goal.

LEITNER-POMA OF AMERICA

LPOA (USA) specializes in the design, manufacturing, installation, and O&M of cable-hauled ropeways for the transportation of passengers. LPOA, as a subsidiary of its parent company POMA, is part of the HTI Group, and was founded in 1981. LPOA has manufactured lifts for the American & Canadian market for over 40 years and is expanding its business to the urban environment. As a full American company, LPOA is compliant with Made in America requirements.

RRC ASSOCIATES

RRC Associates offers services in social science, mobile location data, market research, strategic analysis, economic impact, and data visualization. The company is composed of professionals with extensive experience in addressing the needs and challenges of various tourism, recreation, and planning departments. Their market assessment studies can take several forms, helping to document and analyze the feasibility of attracting visitors and residents to a destination. Each market assessment study is unique to the particular situation and to the needs of the client. RRC uses disciplined approach in this work that incorporates information from sources like the U.S. Census, state visitor organization studies, industry data, and other resources to help guide decision making, with the goal of selecting the path that has the greatest and most realistic chance of success.

2

MARKET STUDY

A market study was prepared by RRC to provide a broader understanding of the market-based opportunities and challenges associated with constructing a modern aerial tramway in American Samoa. The study presents local market demographic profiles, visitor trends and projections, and other insights into tourism in American Samoa. In doing so, the study illuminates the reciprocal relationship between the success of the Sky Tram and the growth of American Samoa's tourism industry. The study also presents revenue projections, which were used to assess the economic viability of the Sky Tram.

The key findings and market-related opportunities from the market study are noted on the following pages. The full report is provided in Appendix B

2.1 TOURISM IN AMERICAN SAMOA

OVERVIEW OF AMERICAN SAMOA TOURISM

The 2010 Tourism Master Plan, which was prepared by a team lead by Resort Consulting Associates (RCA), recommends a guiding framework to increase and improve tourism in American Samoa. The plan recommended, and assumed, aggressive growth in tourism to "jump start" the industry and create new job opportunities in the short term. To do so, RCA identified areas for improvement in tourism infrastructure and recommended a proactive approach to marketing and developing iconic offerings to attract visitors. The re-establishment of the Mount ʻAlava Tramway was considered a key opportunity in these recommendations.

In conjunction with the preparation of the 2010 Tourism Master Plan, the American Samoa Visitors Bureau (ASVB) was established in 2009 with the goal of increasing tourism marketing and visitation numbers. The ASVB worked with RCA to develop the 2010 Tourism Master Plan and continues to collect and provide valuable tourism/visitation data. As American Samoa recovers from the Covid-19 Pandemic, the ASVB is aiming to grow American Samoa's volume of annual tourists, primarily by increasing the number of cruise ship arrivals and partnerships with other destinations in the region.

Since the establishment of the ASVB and the preparation of the 2010 Tourism Master Plan, American Samoa's tourism growth has been limited, and its tourism infrastructure remains relatively unchanged. As noted in the 2010 Tourism Master Plan and in alignment with the ASVB's goals, the construction of the Pago Pago Sky Tram could help boost tourism and improve the overall economic wellbeing of American Samoa.

TOURISM COMPETITION WITHIN THE SOUTH PACIFIC

Relative to other South Pacific tourist destinations, such as Fiji, Tahiti, and Hawaii, American Samoa's tourism infrastructure is less developed. Some visitors may view this as a benefit: American Samoa's authenticity provides a sense of adventure and exploration. Others may view its limited accommodations and amenities as a drawback. American American Samoa's primary island, Tutuila, also lacks key draws that most other South Pacific destinations offer, such as extensive natural beaches.

TOURISM COLLABORATION WITHIN AMERICAN SAMOA

If marketed and "packaged" properly, the Sky Tram would complement rather than compete with American Samoa's current attractions. Here, the term "packaged" refers to presenting the Sky Tram as one component of "a day in" or "trip to" American Samoa, along with other experiences that may comprise that day or trip. These other experiences may include suggestions for dining, shopping, tours, and other activities that American Samoa presently offers tourists. Marketing material could suggest combinations of activities and clarify the expected duration of each. By creating this vision for a day or trip, packaging increases the value proposition of all attractions included.

Existing tourism offerings identified by the ASVB include sightseeing, cultural experiences, shopping, museums, and outdoor activities. These vary in convenience, duration, and sophistication; however, most can be done during part of a day in proximity to the Pago Pago Harbor, as could the Sky Tram. The success of the Sky Tram would benefit these existing attractions, as well as American Samoa's broader tourism infrastructure and overall economy.

CRUISE ARRIVALS TO AMERICAN SAMOA

Visitors to American Samoa primarily arrive via cruise ships and airplanes. Cruise ships facilitate large numbers of one-day visits that do not require infrastructure to house, feed, or entertain tourists for lengthy periods of time. The ships are typically in port for six-to-eight hours, and their passengers are likely to seek a "bucket list" experience during their day on shore. Given these factors, and the ability to scale growth of these visits through increased partnerships with cruise lines,

cruise passengers represent the greatest opportunity for the growth of tourism in American Samoa and potential visitation for the Sky Tram.

ASVB has coordinated 17 cruise arrivals for the 2023 season, which are expected to carry more than 40,000 tourists to Tutuila—substantially more than the 4,312 tourists who are projected to arrive via Pago Pago International Airport (PPG). This number indicates a strong recovery from the Covid-19 Pandemic, during which the Pago Pago Harbor was closed to cruise ships, and an increase from the 13 ships that visited in 2019.

AIR ARRIVALS TO AMERICAN SAMOA

While American Samoa's cruise ship arrival numbers have rebounded strongly since the COVID-19 Pandemic, its number of air arrivals is still significantly below pre-pandemic levels. Since it is believed that enplanement numbers for PPG will continue to rebound, 2019 enplanement data from PPG was used in the visitation projections in this report.

Using this 2019 enplanement data, 2023 air arrivals are projected to total 74,579. These travelers arriving by air include the following groups: business, visit relative, employment, in-transit, residents, crew members, and tourists. Tourist air travelers are projected to total just 4,312, or 5.8% of total air travelers. This is largely consistent with data from the American Samoa 2020 Statistical Yearbook (Yearbook), which notes that only 6%-9% of pre-Covid air travelers were tourists. Both PPG enplanement data and the Yearbook highlight that most air travelers are residents (the Yearbook states 55%-63%).

It is important to note that air travel to and from PPG is limited, with the majority of onboarded passengers traveling to independent Samoa (60%), from which they may connect to other destinations. PPG's second greatest share of onboarded passengers travel to Hawaii (36%) on a flight which is offered twice per week. This means that many of American Samoa's air travelers are bound to the island for a minimum of three to four days. These limited flight schedules may decrease the appeal of traveling to/from American Samoa via air.

ASVB has coordinated 17 cruise arrivals for the 2023 season, which are expected to carry more than 40,000 tourists to Tutuila—substantially more than the 4,312 tourists who are projected to arrive via PPG. This number indicates a strong recovery from the Covid-19 Pandemic, during which the Pago Pago harbor was closed to cruise ships, and an increase from the 13 ships that visited in 2019.

NATIONAL PARK OF AMERICAN SAMOA

The National Park of American Samoa is a unique asset that draws American tourists to American Samoa. In 2019, the park had over 60,000 visitors and estimated visitor spending of over $3.5 million, contributing significantly to the local economy. Many visitors to the Park are cruise passengers, who are bused or walk to the National Park Visitor Center, where they can purchase Park souvenirs and read informative signage about the ecological and cultural history of the area. The Sky Tram would pair well with this visitor center experience since both would be located in the vicinity of the Pago Pago Harbor and require only part of a day.

In addition to pairing well with a trip to the National Park Visitor Center, the Sky Tram would dramatically increase visitation to a scenic area of the Park that is physically challenging and time-intensive to access at present: the top of Mount ʻAlava. Lowering the barriers to accessing this area would enable many visitors to connect with the natural beauty of American Samoa in different ways than they can today, since the mountain top offers far-ranging vistas and distance from the industrial din of the Pago Pago Harbor.

Additional resources would be necessary to support the Park in its management of the increased visitation resulting from the Sky Tram's implementation. The environmental regulations that would apply to Phase 2 of project because of its relationship with the National Park of American Samoa are discussed in the Environmental Feasibility section of this report.

2.2 CASE STUDIES

To inform the visitation and revenue projections that were modeled, and to identify factors that affect the appeal of a tram/gondola experience, SE Group interviewed several individuals with knowledge of operating and managing tram/gondola systems that primarily rely on visitation from cruise ship passengers. These situations are limited, and many such systems are in Alaska. As such, SE Group gleaned insights from the following individuals throughout the spring of 2023:

1. Matt Hernandez, Director of Tram Operations & Building Maintenance for the Goldbelt Tram in Juneau, AK
2. Kirby Day, Government and Community Affairs for Princess Cruise and Holland America Group, co-manager of the City of Juneau's Tourism Best Management Practices (TBMPs)
3. Alexandra Pierce, City of Juneau Tourism Manager, co-manager of the City of Juneau's TBMPs
4. Elizabeth Arnett, Tourism Marketing Manager at Juneau Convention & Visitors Bureau
5. Mickey Richardson, Director of Marketing at Huna Totem, which operates the Sky Glider Gondola at Icy Strait Point in Hoonah, AK

INSIGHTS ON RIDERSHIP

Through conversations with these tram/gondola operators and managers, SE Group learned about the Alaskan cruise market. To apply this information to the South Pacific region, SE Group interviewed Bud Gilroy, Chairman of the South Pacific Cruise Alliance (SPCA). Comparing these Alaskan findings to knowledge of the South Pacific cruise market and Pago Pago revealed the following insights:

Insight #1: Volume of Ships and Passengers

Juneau: As one of Alaska's most popular cruise destinations, Juneau is projected to have 1.67 million cruise passenger visits over the summer of 2023.

Pago Pago: Pago Pago is projected to have just over 40,000 cruise passenger visits over the course of its 2023 cruise season.

Insight #1: The Sky Tram and its support spaces should be designed to accommodate fewer riders than the Goldbelt Tram. Because it will have fewer riders, the Sky Tram must be financially feasible with less revenue than the Goldbelt Tram.

Insight #2: Average Cruise Length and Passenger Demographic

Juneau: Most cruises that come to Juneau last seven to 10 days. Their passengers vary greatly in age, physical ability, and interests. They frequently include retirees, families, couples and honeymooners, adventure/nature enthusiasts, and culture/experience seekers.

Pago Pago: Most cruises that come to Pago Pago last 14 to 28 days. Though the passengers of these cruises do vary, many tend to be higher-income retirees who have the time and resources to partake in these lengthy excursions.

Insight #2: Pago Pago's older visitor profile aligns with the low-intensity recreation of an aerial tramway experience. This suggests that the Sky Tram would likely be ridden by a very high proportion of cruise guests.

Insight #3: Market for Passenger Excursions

Juneau: In Juneau, the Goldbelt Tram is just one of many unique excursions in a highly competitive market. Many of the excursions in the market require a full day.

Pago Pago: The market for tourist excursions in Pago Pago is significantly smaller and less competitive than that of Juneau. Many of the excursions in the market require part of a day.

Insight #3: Relative to the Goldbelt Tram, the Sky Tram would have less competition from, and more opportunities for collaboration with, other local tourism offerings. If marketed and packaged properly with these other local offerings, the Sky Tram would likely be ridden by a very high proportion of cruise guests.

These insights informed assumptions around Sky Tram ridership, which are discussed further in the Financial Feasibility section of this report, as well as RRC's market study in Appendix B.

LESSONS ON ACCESS AND PROGRAM

During conversations with Alaskan tram/gondola operators and managers, SE Group also identified factors that affect the appeal of a tram/gondola experience for both cruise lines and cruise passengers. These lessons carry significance, regardless of the tram/gondola's location and market:

Lesson #1: Bottom Terminal Convenience

A tram/gondola must be easily accessible in order to draw riders, and a thoughtful program near its bottom terminal will help disburse riders who may otherwise form long queues. The Goldbelt Tram is directly adjacent to one of Juneau's main cruise ship docks—a factor that undeniably contributes to the estimated 90% of their visitation that comes from cruise passengers. Juneau's central shopping and dining street is also a short walk from the docks, which inevitably helps to diffuse the "pulses" of ship disembarkees who may otherwise crowd the gondola.

Lesson #2: Top Terminal Value Proposition

The demand for a tram/gondola experience is significantly affected by the activities and amenities offered in its top terminal vicinity. Both the Goldbelt Tram and the SkyGlider Gondola offer a plethora of activities for riders to enjoy from their top terminals, which inevitably increases the value proposition of the entire tram/gondola experience. For example, the more trail systems, scenic overlooks, food and beverage offerings, and other attractions that can only be accessed by riding the tram/gondola, the more desirable that tram/gondola experience is deemed. Greater numbers of visitors will seek out highly desirable experiences, and the average visitor will be willing to pay a higher ticket price for a ride that unlocks other attractions of interest. Therefore, increasing the appeal of a tram/gondola's top terminal area will increase the revenue the tram/gondola system generates.

These lessons on bottom terminal convenience and top terminal value proposition informed decisions around siting, capacity, and access for the Sky Tram, which are discussed in the Physical Feasibility section of this report. They also informed the program of the bottom and top terminal areas, which is discussed in the Landscape Design section.

3 PHYSICAL FEASIBILITY

The tram engineering component of this physical feasibility evaluation considered system design, site selection and location, construction challenges, accessibility to construction sites, environmental concerns, maintenance programs, Historic Preservation Act consultations, weather, and other factors. The selected system was optimized for site selection and location, site characteristics (elevation and angle), capacity of cabin, speed or time to the top landing site, hauling system and electro-mechanical equipment, platform equipment and design, weather conditions (including high winds, high humidity, and proximity to sea water/ocean), as well as other key issues that are unique to the Pago Pago Sky Tram project. LPOA's full report can be found in Appendix C.

3.1 AERIAL TRAMWAY SYSTEM

NEED

Aerial tramway systems are used for various purposes, including the transportation of passengers and cargo in mountainous or challenging terrain. They offer passengers panoramic views of the surrounding landscape and are a popular mode of transportation in many scenic areas around the world. The Pago Pago Sky Tram would create unique opportunities for riders to enjoy the scenic views in and around the Pago Pago Harbor, and it could greatly decrease the existing barriers to access the rugged and remote top of Mount ʻAlava.

Gondolas are another form of aerial ropeway system that function similarly. This particular type of tram was selected for the Pago Pago Sky Tram instead of a gondola or a different aerial tramway system for three reasons: 1) it is well suited to the projected volume and distribution of ridership in Pago Pago; 2) it can span the harbor without towers; and 3) it is simpler to operate and maintain than other aerial ropeway systems

SITE SELECTION AND LOCATION

Prior to the site visit, SE Group and LPOA studied the available information about the top and bottom terminal sites of the former aerial tramway. Issues of access and property ownership were discussed, and alternative sites were considered.

Large structures from the former aerial tramway remain at both the top and bottom terminal sites, which require removal prior to construction. The top terminal site requires access improvements for construction equipment, which are understood to be possible with appropriate coordination with the National Park of American Samoa. For the tram to meet a minimum desired standard for guest experience, both top and bottom terminal sites require improvements to their surrounding areas. Relatedly, there is existing electrical and communications site equipment located near the top terminal site that must be removed prior to construction (and is anticipated to be replaced/updated concurrently with this project).

During the site visit, SE Group and LPOA toured the top and bottom terminal sites of the former aerial tramway, as well as their surrounding areas and the alternative sites. It was determined that the top and bottom terminal sites of the former aerial tramway remain best suited for a modern aerial tramway system. The bottom terminal site is located in Utulei, within the Eastern District of American Samoa. The top terminal site is located across the Pago Pago Harbor from the lower terminal site, atop Mount ʻAlava.

SITE CHARACTERISTICS (ELEVATION AND ANGLE)

As designed, the loading level of the bottom terminal site would be 60 meters above the Pago Pago Harbor. The unload level of the top terminal site would be 486 meters above the Pago Pago Harbor.

The maximum height of shipping containers on the Port dock was estimated to reach 25 meters above the Pago Pago Harbor. The maximum height of a ship that may berth in the Pago Pago Harbor was estimated to not exceed 65 meters above the Pago Pago Harbor. Given this, the system is designed with a 69.5-meter harbor clearance parameter. The system exceeds this requirement.

The horizontal length of the system as designed would be 1,467 meters, and its vertical rise would be 426 meters. Its maximum slope would be 53.5%. The length of the line would be approximately 1,528 meters.

CAPACITY AND TRIP TIME

The Sky Tram would be designed to accommodate 600 people per hour. This capacity is anticipated to accommodate "pulses" of visitors disembarking from one large cruise ship or two smaller ships, assuming that passengers are disbursed throughout the duration of the time that ships are in port. The ability to accommodate 600 people per hour is conservative, since there are no known dates in 2023 through 2025 in which more than one cruise ship will arrive per day.

TABLE 1. AERIAL TRAMWAY - CRUISE SHIP CAPACITY

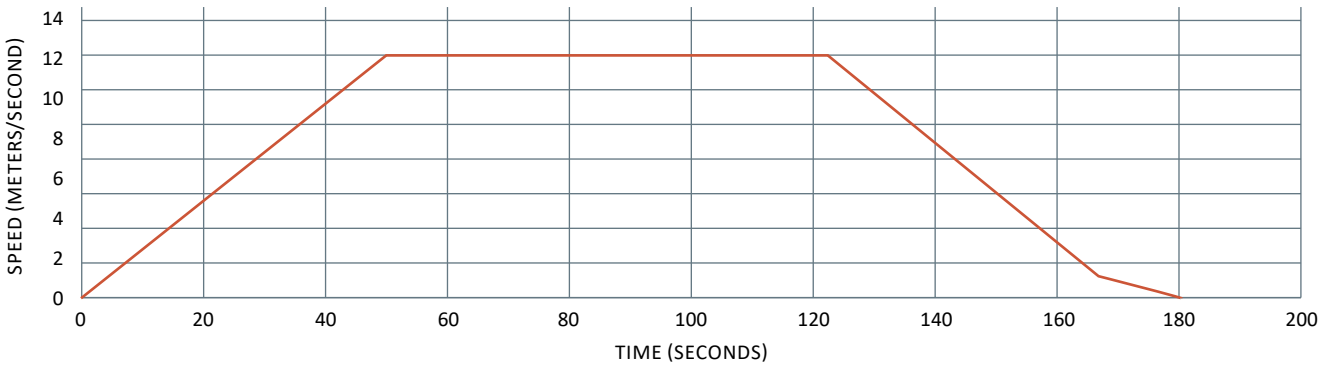
ACCOUNTING FOR CRUISE SHIP PULSES	MAX SHIP CAPACITY	POTENTIAL RIDERS*	TIME (HRS) IN PORT	TIME (HRS) AVAILABLE TO RIDE	HOURLY DEMAND
LARGEST KNOWN CRUISE PASSENGER VOLUME IN 2023	4,272	3,076	9	7	439
WHAT IF LARGER OR MULTIPLE DAILY ARRIVALS	5,800	4,176	9	7	597

*Assumes 90% ship occupancy and (of this 90%) 80% would be potential riders.

These same visitation projections were used to determine the capacity of the top and bottom terminal areas.

The speed of the tram's cabins moving through the air amounts to the tram's "travel time," and the length of time the cabins spend inside a terminal is called the tram's "dwell time." Both the tram's travel time and its dwell time can be adjusted by the tram's operator.

AERIAL TRAMWAY - CABIN ACCELERATION



The three scenarios below illustrate three different trip times that the tram could achieve.

Scenario 1: Maximum Speed, Typical Dwell Time

At maximum speed, tram cabins can travel from terminal to terminal in a travel time of approximately 2.5 minutes. The tram's "dwell time," which is the time cabins spend stopped in stations while passengers unload and load, could be set to any length.

A typical dwell time is 7 seconds per passenger. With 40 passengers, this equates to 280 seconds, which is the equivalent of 4 minutes and 40 seconds of dwell time. Using this typical dwell time and the tram's maximum travel speed, a one-way trip takes just over 6 minutes. With these parameters, each tram cabin could complete just under 10 one-way trips per hour. Ten trips at maximum cabin capacity (40 people) equates to 400 people per hour.

TABLE 2. AERIAL TRAMWAY - MAXIMUM SPEED, TYPICAL DWELL TIME

TRAVEL TIME	2.5 minutes
DWELL TIME	4.67 minutes
TOTAL TRIP TIME	Just over 6 minutes
TRIPS PER HOUR	Just under 10 trips
CABIN CAPACITY	40 people
HOURLY CAPACITY	Just under 400 people per hour

Scenario 2: Maximum Speed, Expedited Dwell Time

To accommodate 600 people per hour, the dwell time can be reduced to 1.5 minutes total, or 2.25 seconds per passenger. Using this expedited dwell time and the tram's maximum travel speed, a one-way trip would take approximately 4 minutes. With these parameters, each tram cabin would complete approximately 15 one-way trips per hour. Fifteen trips at maximum cabin capacity (40 people) equates to 600 people per hour.

TABLE 3. AERIAL TRAMWAY - MAXIMUM SPEED, EXPEDITED DWELL TIME

TRAVEL TIME	2.5 minutes
DWELL TIME	1.5 minutes
TOTAL TRIP TIME	4 minutes
TRIPS PER HOUR	15 trips
CABIN CAPACITY	40 people
HOURLY CAPACITY	600 people per hour

Scenario 3: Slower Speed, Typical Dwell Time

During less busy operating times, the tram operator may wish to slow the tram so that passengers have more time to enjoy the view. In this scenario, the operator may choose to maintain a typical dwell time of 4 minutes and 40 seconds (even though the cabin may have fewer than 40 passengers per trip) and operate the tram at a lower speed. For example, the operator may choose to lengthen the travel time to 10 minutes. Using this typical dwell time and this slower travel speed, a one-way trip takes just under 15 minutes. With these parameters, each tram cabin could complete just over 4 one-way trips per hour. Four trips at maximum cabin capacity (40 people) equates to 120 people per hour, though the tram cabins would likely not be full if run at this speed.

TABLE 4. AERIAL TRAMWAY - SLOWER SPEED, TYPICAL DWELL TIME

TRAVEL TIME	10 minutes
DWELL TIME	4.67 minutes
TOTAL TRIP TIME	Just under 15 minutes
TRIPS PER HOUR	Just over 4 trips
CABIN CAPACITY	40 people
HOURLY CAPACITY	Just over 120 people per hour

Since the Sky Tram would have two cabins which alternate transporting riders up and down, the tram's hourly capacity applies to transporting passengers both up and down. Since both the tram's travel time and its dwell time are highly adjustable, the hourly capacity of the system is as well.

TECHNICAL SUMMARY

All the components and parts of the POMA group are studied, manufactured, and controlled in accordance with the quality standard ISO 9001: 2015; ISO 14001: 2015; ISO 45001: 2018.

An aerial tramway can be designed in a variety of ways. Technical characteristics identified for the planned Pago Pago Sky Tram are summarized in the following table:

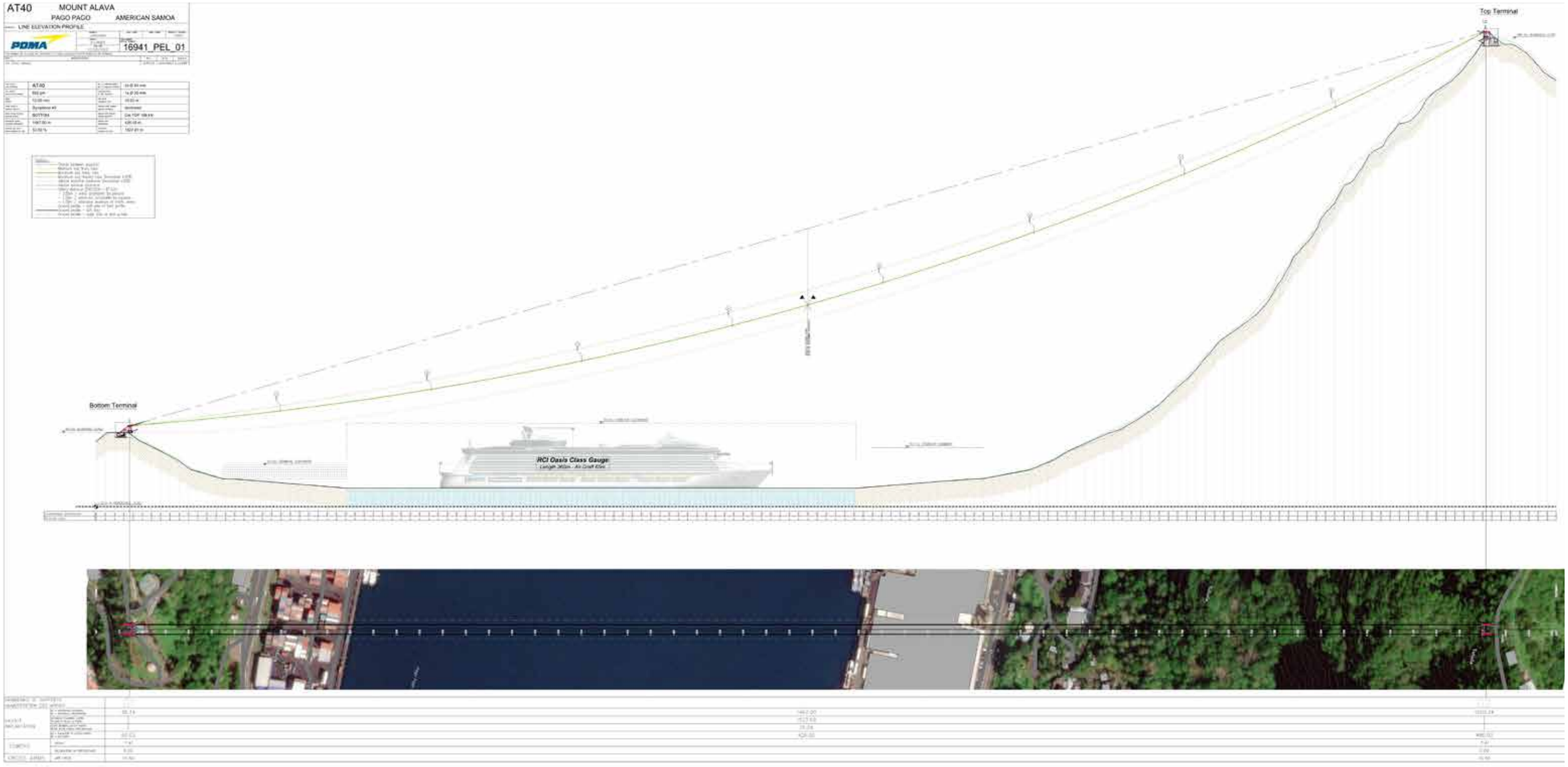
TABLE 5. AERIAL TRAMWAY - TECHNICAL CHARACTERISTICS

We used the ground profile of local topography on a geoserver of the Pacific Oceanographic Institute (PACIOOS), which depends on NOAA and is managed by the University of Hawaii.

	CHARACTERISTICS	VALUES
GENERAL	Type	AT40 jig back ropeway
	Installation nbr.	P16941
	Horizontal length	1.467 m
	Height difference	462 m
	Speed (nominal max.)	12 m/s
	Speed (loading / unloading)	Vehicle stopped
	Capacity	600 pphpd
	Use of the system	100% up – 100% down
LINE	Qty of towers	0
	Line width	10,5 m
	Track rope	2 x 44 mm per vehicle
VEHICLES	Type of vehicle	2 x gondolas SIGMA SYMPHONY
	Qty of passengers per vehicle	40 passengers
	Type of grip	Carriage of 16 wheels with clamp
BOTTOM STATION	Type	Drive
	Cover	Without
TOP STATION	Type	Return tension
	Cover	Without
DRIVE UNIT	Hauling rope	35 mm
	Type of drive	Motor + gearbox

DESIGN CONCEPTS

PROFILE ALIGNMENT



HAULING SYSTEM AND ELECTRO-MECHANICAL EQUIPMENT

Key components of the Pago Pago Sky Tram include: cabins; hauling rope; track rope; motor, drive mechanism, and power supply; a drive station and return tension station; platform equipment and design; a control system; safety features; and monitoring and maintenance equipment.

Cabins

Passengers and cargo would be transported between terminals in enclosed cabins that are suspended from a cable. These cabins could be called carriers, cable cars, vehicles, and other similar terms. At each terminal station, the cabins would stop to allow the boarding/disembarkation of passengers and/or cargo.

The Sky Tram uses a "jig-back" system in which one cabin goes up while the other goes down. The two cabins would be interconnected, so one functions as a counterweight for the other.

The two cabins would feature POMA's Symphony 3S design. They would each be equipped with 10 seats, which fold to create additional space when the cabin is fully loaded. When the cabin is at capacity, riders who are able are expected to stand for the duration of the short ride.

In addition to passengers, the Sky Tram's cabins could transport cargo when needed. Cargo that fits and does not exceed weight requirements could be transported inside the cabin; larger cargo that does not exceed weight requirements could be transported beneath, so long as it could be attached safely. An automatic weighing system ensures that cabins would not be overloaded. To increase hauling capacity of the system from both a weight and a dimensional perspective, cabins could be removed, and cargo could be attached to the carriage and hanger (from which the cabin is typically suspended) using an adaptation such as a winch. This cargo transporting functionality is anticipated to be useful for the top terminal area landscaping.

Hauling Rope

The hauling rope would be a thick, high-strength cable that is responsible for pulling the cabins between the top and bottom stations. The hauling rope would be guided and supported by deflection rollers in the terminal stations and supported by slack cabins every 150 meters. These slack cabins are typically brightly painted to ensure the line is visible to aircraft and other possible obstructors.

Track Rope

Whereas the hauling rope pulls the cabins up and down, the track ropes guide them. They do so using "track rope shoes," which facilitate the docking of cabins inside stations, among other functions.

Motor, Drive Mechanism, and Power Supply

The drive station would contain powerful motors and drive mechanisms that are responsible for propelling the hauling rope. These motors could be electric, hydraulic, or sometimes even diesel-powered, depending on the specific needs of the tramway. As designed, the primary motor for the Pago Pago Sky Tram is electric, and its backup motor relies on internal combustion (diesel) backup.

Drive Station and Return Tension Station

In aerial tramway systems, one terminal is typically the "drive" station, and the other is the "return" station. The drive station controls the movement of the cabins along the cables. As the "powerhouse" of the system, it holds the motor and gearbox, which drive the hauling rope that supports the cabins. The return station provides tension to the hauling rope and the track rope, and it houses some emergency equipment. Since the drive station houses the bulk of the machinery in the system, it is much larger than the return station, and its equipment requires maintenance on a more frequent basis.

The Sky Tram would use "bottom drive" technology, meaning that the drive station would be in its bottom terminal and the return station is in its top terminal. This technology has been selected to streamline the construction process and facilitate easier access to the maintenance of critical tram components.

Platform Equipment and Design

The bottom drive station would be comprised of metallic structures above the loading platform and supported by concrete foundations infrastructure inside the building. The traction chain and the anchoring of the track ropes would be in a room below the platform level.

The drive unit would use classic cable car machinery architecture with two double-groove bullwheels. The drive bullwheel would be fixed on a rotating shaft and the deflection bullwheel would be mounted on a fixed shaft.

The top station houses a counterweight. This is comprised of a metallic frame housing two deflection pulleys and steel ballast plates forming a platform.

Control System

A sophisticated control system would be integrated into the drive station to manage the speed, direction, and braking of the tram cabins. This control system ensures a smooth and safe ride for passengers. It would be fully automated and uses large series electrical components to guarantee durability, ease of management, and a supply of spare parts.

Safety Features

The drive station would be equipped with various safety features and backup systems to prevent accidents and respond to emergencies. These include redundancy in critical components, oversized structural components, and monitoring systems to detect abnormalities in the operation.

One such system of critical component redundancy is "integrated rescue" technology, which is designed to prevent the need for an aerial evacuation of cabins. "Integrated rescue" allows the cabins to be brought into the stations safely in the event of an emergency or equipment failure.

Monitoring and Maintenance

Regular maintenance and monitoring of the drive station would be essential to ensure the reliable and safe operation of the tramway. Maintenance personnel would regularly inspect equipment, perform repairs, and carry out preventive maintenance tasks at the drive station. Technicians in American Samoa would be able to perform routine monitoring and maintenance tasks while supervised/trained by highly specialized technicians stationed on-island for the initial years of operation.

WEATHER CONDITIONS

The Sky Tram would be designed to withstand high winds, high humidity, a maritime climate, and the uniquely unpredictable weather conditions of American Samoa. Features specifically included for these conditions include fully galvanized cables and structure, as well as "self-cleaning" architecture, which is impenetrable to water.

The Sky Tram should not be operated when there is lightning in the immediate area or during extremely high winds. The Sky Tram's wind tolerance can be described along two parameters: 1) how much wind it can withstand during operations; and 2) how much wind it can withstand once operations have ceased (with the tram cabins parked securely in the stations).

Regarding the first parameter, the tram may continue to operate until wind speeds reach 60 miles per hour. When wind speeds reach 30 to 40 miles per hour, operating speed should be reduced.

Regarding the second parameter, the tram can survive wind speeds of over 150 miles per hour when in a non-operable condition. Given this, as well as its high tolerance for moisture and precipitation, the tram may be designed to survive hurricanes/typhoons.

The Roosevelt Island Tramway in New York City, which was also designed and built by Leitner-Poma of America, is a testament to the durability of aerial tramway systems such as the Pago Pago Sky Tram. Since it was built in 1976, it has withstood earthquakes, floods, blizzards, and hurricanes. Other trams throughout the world are 80-100 years old and continue to operate.

OTHER CONSIDERATIONS

One additional consideration in the tram's design process was the incorporation of design elements that borrow from, and incorporate, the historic Mount 'Alava Tramway. This was done by matching the modern cabin colors to the red/yellow shades depicted in images of the historic tramway. Additional design elements that reference the historic tramway and American Samoa's unique history, landscape, and culture are described in the Landscape Design section of this report.

The Pago PagoSky Tram's design incorporates elements that borrow from the historic Mount 'Alava Tramway.

3.2 INCLINED ELEVATOR

NEED

During the site visit, SE Group and LPOA observed potential access challenges to the bottom terminal location. These challenges are anticipated to be most pronounced on cruise ship days, when demand for the tram would surge due to large "pulses" of cruise passengers disembarking simultaneously. SE Group's conversations with Alaska-based tram/gondola operators and managers reinforced the importance of easy tram access for cruise passengers, as described in the aforementioned Case Studies. Since cruise ship passengers are anticipated to comprise most of the tram's annual riders, it is imperative that accessing the tram be exceptionally convenient and comfortable experience for these cruise guests.

The road that presently provides access to the bottom terminal site is steep, narrow, and in moderate condition. It is used by private vehicles and provides access to private residences. The bottom terminal site sits directly (approximately 60 meters) above the dock where cruise passengers disembark, and the access road approaches the site from the opposite side.

Without supplemental methods for cruise ship passengers and other tram riders to access the bottom terminal site, this access road would experience an increased volume of traffic that it could not reasonably accommodate on days when cruise ships are in port. Residents who rely on this access road would experience challenges coming and going from their private homes on cruise ship days, and cruise ship passengers would also have a sub-optimal experience. Given the need for cruise passengers to have convenient and comfortable tram access, and to respect the needs of the nearby residents, alternative forms of bottom terminal site access were studied.

These alternative access forms included a shuttle system (using the existing access road), a staircase, and an inclined elevator (also known as a funicular). The shuttle system was deemed non-ideal due to the condition of the access road and the unpleasant nature of the shuttle experience. Sole reliance on a staircase was deemed nonviable due to its necessary length, which would dissuade and/or prevent all but the fittest cruise ship passengers from accessing the bottom terminal site. The inclined elevator was determined to be an optimal solution since its lower station could be located directly across the street from the cruise ship dock (convenience) and would not require cruise ship passengers to board a bus or climb a long stairway (comfort). Throughout this project, the inclined elevator has intermittently been referred to as the "funicular." Funiculars and inclined elevators use the same technology to serve similar purposes. Typically, the term "inclined elevator" is used to describe a smaller/shorter system (such as the one recommended for the Pago Pago Sky Tram), whereas the term "funicular" is used to describe larger/longer systems.

On cruise ship days, demand for the tram would surge due to large "pulses" of cruise passengers disembarking simultaneously, creating potential access challenges to the bottom terminal location.

DESCRIPTION

An inclined elevator is a type of vertical transportation system that operates on an inclined track or pathway. Unlike traditional elevators that move vertically between floors in a building, inclined elevators are designed to move along a steep slope, allowing them to transport people, vehicles, or cargo up and down steep slopes, hillsides, or other inclined terrain. Inclined elevators are a practical solution for overcoming challenging terrain or providing transportation in areas with significant slopes. They are often used to enhance accessibility and convenience in locations where traditional vertical elevators would not be feasible. The top and bottom load/unload area of an inclined elevator are referred to as "stations." They are analogous to the "terminals" of a tramway.

SITE SELECTION AND LOCATION

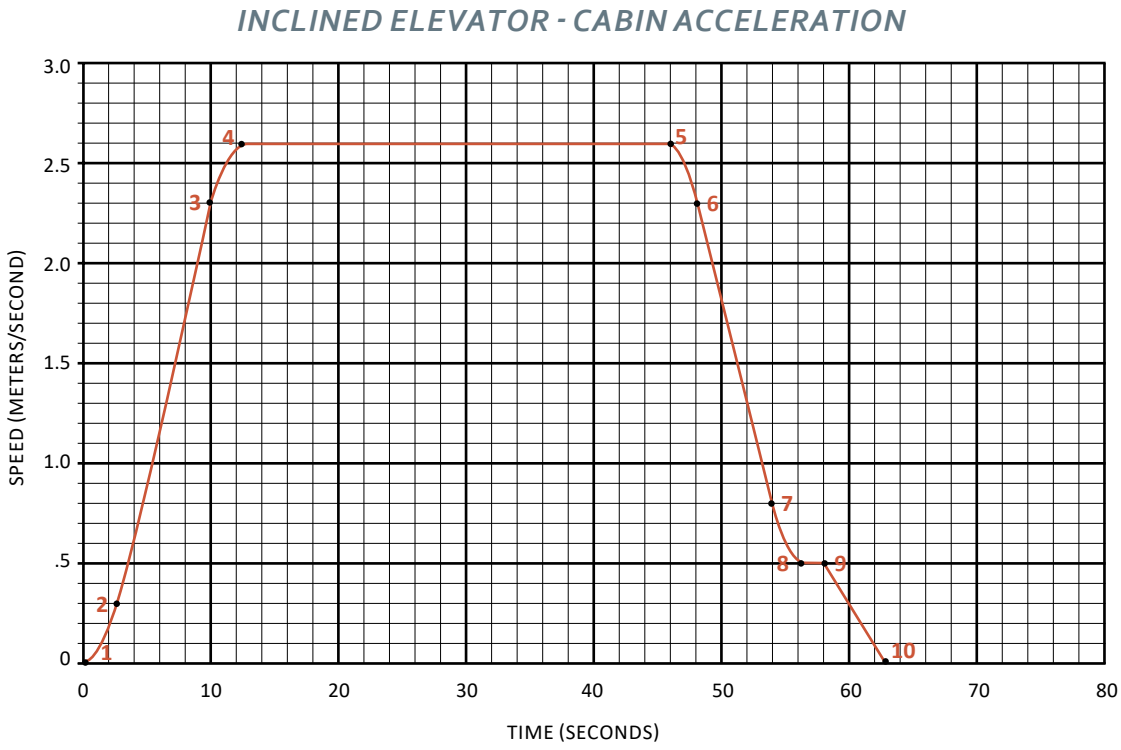
Parameters for the location of the inclined elevator's stations included proximity to the dock where cruise passengers disembark (bottom station), proximity to the Sky Tram's lower terminal (top station), and accessibility and ownership of land (both). Land access and ownership, slope gradient, vegetation, and other conditions were studied for the path between the two sites as well. As with the Sky Tram, the available information was studied prior to the site visit, and the optimal top and bottom sites were selected during the site visit.

SITE CHARACTERISTICS (ELEVATION AND ANGLE)

The inclined elevator would begin at the road adjacent to the dock where cruise passengers disembark and would rise to the bottom station of the Pago Pago Sky Tram. Its horizontal length would be 120 meters, and its vertical rise would be 40 meters. The constant slope of the incline would be 18°.

CAPACITY OF CARRIER

The capacity of the inclined elevator's cabin would be 34 passengers, or 2,550 kilograms. When necessary, the inclined elevator could transport 600 people both up and down each hour to match the capacity of the Sky Tram. Its travel time would be approximately 1 minute; the cabin would travel at approximately 2.6 meters per second. The graph below illustrates the acceleration of the aerial tramway's cabin throughout its travel time, as the cabin moves from terminal to terminal.



The system has been design such that an operator must manually send the cabin up and down the incline (i.e. via controls). Because of this, the dwell time of the cabin would be manually controlled.

SUMMARY OF TECHNICAL CHARACTERISTICS

TABLE 6. INCLINED ELEVATOR - TECHNICAL CHARACTERISTICS

	CHARACTERISTICS	VALUES
GENERAL	Type	IE34 Inclined Elevator
	Installation nbr.	P30831
	Horizontal length	120 m
	Height difference	40 m
	Speed (nominal max.)	2,6 m/s
	Speed (loading / unloading)	Vehicle stopped
	Capacity	600 pphpd
	Use of the system	100% up – 100% down
LINE	Travel time	62 s
	Line width	1,4 m
VEHICLES	Type of vehicle	1 x gondolas SIGMA SAPHIR
	Qty of passengers per vehicle	34 passengers
	Type of grip	Inclined Carriage
BOTTOM STATION	Type	End track buffer
	Cover	Without
TOP STATION	Type	Drive unit with deviation pulleys
	Cover	Without
DRIVE UNIT	Traction rope	4 x Ø 13mm
	Type of drive	Motor + gearbox
	Tension	Counterweight (no cable loop)

HAULING SYSTEM AND ELECTRO-MECHANICAL EQUIPMENT

The inclined elevator would use lift components and equipment that have proven reliable in varying climatic conditions over years. Key components include: cabins; tracks; motor, drive mechanism, and power supply; and platform equipment and design.

Cabin

The inclined elevator would feature SAPHIR cabin design. Unlike the Sky Tram, the inclined elevator would only have one cabin. It would consist of a self-supporting cabin frame, non-slip flooring, a six-part ceiling, sliding doors, glazing and ventilation, and interior fittings (such as handrails). Doors may be located on one or both sides of the cabin.

Tracks

The cabin would move on a track using roller guiding devices, which would consist of a steel structure supported by concrete pillars and slabs. It would have vibration buffering to ensure smooth, quiet movement on the track, as well as hydraulic shock absorbers in each station.

Motor, Drive Mechanism, and Power Supply

Unlike the Sky Tram, the inclined elevator would feature "top drive" technology. Like the Sky Tram, its primary motor could be electric. This drive unit, along with its power/command system and the overspeed controller, would be designed and supplied by POMA. The electrical drive and monitoring system of the elevator would be designed to carry out safety functions, like continuous speed control as used on advanced ropeways installations. This is a primary safety function of the lift automation. This grants fully controlled vehicle acceleration and deceleration, from top speed to station stopping point, and calls emergency braking whenever the vehicle pace is different from the requested one.

Platform Equipment and Design

The top station would have two levels: the upper floor (ground level), which consists of the boarding/disembarking platforms, and the lower floor (underground level), which houses the mechanical and electrical technical devices.

The bottom station would be comprised of the boarding and disembarking platforms and the vehicle pit. Its electricity will come from the transformer room in the top station, brought to this station through cable ducts and supplied to the cabin via power rails.

Both platforms would be enclosed and have doors that open and close synchronously with the doors of the cabin. When the cabin is not stopped in front of the doors, the doors will be locked by a mechanical device. Maintenance and rescue teams will be able to unlock and open them manually from the platform using a "fireman's triangle" key.

Safety Features

Safety features for the inclined elevator would be simpler than those designed for the tram, since the inclined elevator is a ground-based system. In the event that the primary motor fails, the operator has three options: 1) if there are people in the cabin, the operator can release the brakes and slowly lower passengers to the bottom station; 2) there is a small backup generator; and 3) a set of stairs run parallel to the inclined elevator's track. If necessary, the operator can manually open the cabin's door and help passengers down the stairs.

3.3 CONSTRUCTION CHALLENGES AND ACCESSIBILITY

Construction challenges and accessibility were considered in the Sky Tram's design process. Both the bottom and top terminal sites were deemed to be reasonably accessible, with certain access road modifications, for the construction vehicles and equipment necessary to construct the Sky Tram. Modifications to the existing road that accesses the top of Mount 'Alava must be conducted with appropriate coordination with the National Park of American Samoa. Where vehicles cannot provide sufficient material carrying capacity, a helicopter will be deployed.

Due to American Samoa's remote location, the aerial tramway and inclined elevator systems would be specified in modular components that can be shipped in standard shipping containers. To accommodate the top terminal's spatial constraints, certain top terminal components would be designed specifically to be heliportable. Since there are no known helicopters with sufficient load-bearing capacity on-island at present, it has been confirmed that a Black Hawk helicopter may be shipped to American Samoa with sufficient notice.

To maximize the Black Hawk's utility while on-island, it is recommended that helicopter needs for the installation of new electrical/communications equipment atop Mount 'Alava and helicopter needs for top terminal site landscaping be identified and executed sequentially with the tram's helicopter needs.

The Sky Tram would be designed to have significant load-bearing capabilities and would be expected to play a significant role in the transportation of materials and equipment for the top terminal site landscaping. At this point in time, the exact needs of the top terminal electrical/communications equipment users are unknown, but the Sky Tram may provide valuable assistance during electrical equipment reconstruction as well.

3.4 ENVIRONMENTAL CONCERNS

The construction of the Sky Tram is expected to be physically feasible, despite challenges associated with American Samoa's unique topography and remote location. Environmental concerns related to permitting are discussed in the Environmental Feasibility section of this report and in Appendix A.

3.5 MAINTENANCE PROGRAMS

The operation and maintenance of the Sky Tram's technical components was considered during the physical and financial feasibility evaluations. At present, no persons in American Samoa possess the technical skills required to operate and maintain a modern aerial tramway system. To address this, LPOA would station two experienced technicians in American Samoa for the first several years of the Sky Tram's operation. These technicians would train local employees in the specific skills required to operate and maintain the Sky Tram, thereby creating local jobs. Once sufficient knowledge transfer has occurred, the LPOA technicians would no longer be needed. Additionally, to facilitate maintenance and operations, LPOA would supply and inventory an appropriate stock of spare parts and maintenance materials.

3.6 HISTORIC PRESERVATION ACT CONSULTATIONS

Due to the tram's unique history and the cultural/historic sites located in the National Park of American Samoa near the Sky Tram's top terminal, considerations of historic preservation may be relevant to permitting, construction, and further terminal area design. Consultation for historic preservation processes and requisite review under the NEPA are discussed further in the Environmental Feasibility section of this report and in Appendix A.

4 LANDSCAPE DESIGN

The program and landscape of the top and bottom terminal areas were designed according to the aforementioned engineering plans and requirements, informed by the aforementioned Case Studies, and inspired by the history and rich culture of American Samoa.

4.1 INSPIRATION

American Samoa's history of discovery, culture and traditions, history of education, natural landscape, and vernacular building styles informed the program and landscape design of the top and bottom terminal areas. The project's goal of creating an iconic, forward-thinking visitor attraction to support the recovery, growth, and long-term development of the American Samoa tourism industry also inspired this unique design. These sources of inspiration are described further below.

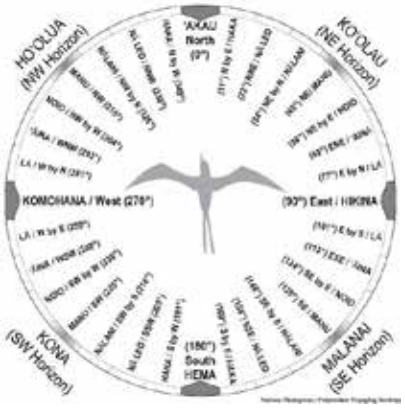
INSPIRATION: HISTORY

- American Samoa is located on the edge of the Polynesian Triangle (area of ocean settled by Polynesians who are thought to have come from Southeast Asia) and thought of as the location where long-distance ocean traveled originated.
- Long-distance ocean travel was enabled by the creation of double-hulled vessels and special ocean navigation techniques.
- There are four main methods of traditional Polynesian open ocean navigation:
    1. Daytime navigating using the sun.
    2. Nighttime navigation using the stars. This was done with a star compass and star paths (lines of constellations that guided the way to different islands).
    3. When foggy/low visibility, follow ocean currents and wave direction.
    4. When needed, follow sea birds. It was understood that a bird with food in its mouth will be flying toward land.
- This project aims to honor and promote this history by including references to this history in its plazas and lookout areas.

NAVIGATING USING THE STAR PATH - Often, songs or stories are used to remember the star paths - the sequence of stars to follow from one island to another. A journey between two islands can have more than one star path. Any star path can only be used in a particular season.

Source: http://www.canoeisthepeople.org/navigating/star_path.php

FIRST TO LONG DISTANCE OCEAN TRAVEL - DOUBLED HULLED NAVIGATION VESSELS



POLYNESIAN STAR COMPASS

ASSUMED POLYNESIAN MIGRATION PATTERN / POLYNESIAN TRIANGLE

INSPIRATION: FA'A SAMOA

- The phrase refers to the Samoan culture and traditions that color the everyday lives of many Samoan people.
- At the heart of Fa'a Samoa is 'aiga, the Samoan word for family. The definition of 'aiga includes one's wider family group, such as extended family and community.
- Reflected all throughout Samoan culture and tradition is the importance of maintaining close family and community ties.
- This project aims to create space for community and tradition.

The phrase refers to the Samoan culture and traditions that color the everyday lives of many Samoan people.

*At the heart of **fa'a Samoa** is **'aiga**, the Samoan word for family. The definition of 'aiga includes one's wider family group, such as extended family and community.*

Reflected all throughout Samoan culture and tradition is the importance of maintaining close family and community ties.

Source: familysearch.org/en/blog/samoan-culture-faa-samoa

INSPIRATION: EDUCATION

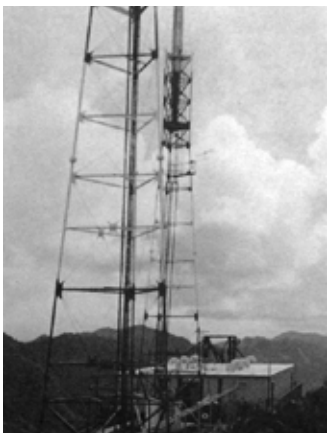
- As the first modern remote learning environment, it is inspiring to see the how much effort went into creating an education system on American Samoa.
- This includes the building of the original tram, building remote transmission towers and a control center on top of Mount 'Alava, and the construction of a number of new schools to support education efforts.
- This project aims to celebrate this remarkable history and promote education in its design.

Prior to modern roadways being brought to the island, the steep volcanic terrain made it difficult for villagers to move to access education.

The original tramway was constructed to build and maintain transmission towers at the top of Mt. . Alava to allow for one of the world's first remote learning experiments.

ORIGINAL AERIAL TRAMWAY USED FOR CONSTRUCTION AND TOURISM

TRANSMITTER CONTROL AT TOP OF MT ALAVA



NEWLY BUILT TRANSMISSION TOWERS

1 OF 22 ELEMENTARY SCHOOLS CONSTRUCTED FOR THE ETV PROGRAM

AN ETV CLASSROOM

INSPIRATION: LANDSCAPE

- The stunning beauty of American Samoa is something that project aims to highlight. This will be done through focusing views, planting native species, and creating spaces for education about the island's flora and fauna.

The raw beauty of the American Samoa landscape should be celebrated and protected.

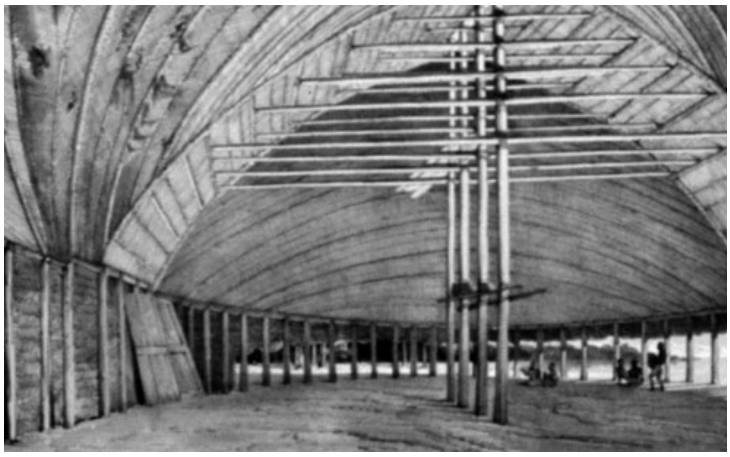
FLYING FOX

RAINMAKER MOUNTAIN (MT PIOA)

NATIVE FLOWERS

INSPIRATION: VERNACULAR BUILDING STYLES

- The traditional Samoan architecture is unique and inspiring. Traditional means of building are still practiced.
- This project aims to showcase traditional building techniques and make contemporary modifications for the construction of the tram and the inclined elevator.



INSPIRATION: FORWARD THINKING AND ICONIC

- As described in the goals for the project, this project aims to recover, grow, and sustain American Samoa's tourism industry.
- To do so, the design must be forwarded thinking, unique, and iconic.

GRAND CANYON SKYWALK, ARIZONA

GARDENS BY THE BAY, SINGAPORE

MEDELLIN BOTANICAL GARDEN, COLOMBIA

MONTEVERDE CLOUD FOREST, COSTA RICA

4.2 BOTTOM TERMINAL AREA

Existing Conditions

Today, the bottom terminal area is primarily undeveloped except for the remnants of the old tram station. Other site features include a fale located at the high point of the site overlooking the Pago Pago Harbor, a small parking area, a memorial statue, and large water tank and associated pump house. The site also serves as a trailhead for the WWII heritage trail, although this purpose is not well marked. The site slopes down very steeply on the sides facing the harbor, and it provides fantastic views towards Rainmaker Mountain and Mount ʻAlava.

There are also several private residences and associated driveways coming off the main access road. It is SE Group's understanding that vehicular access would need to be maintained to the private residences adjacent to the bottom terminal site at all times. The bottom terminal area would be designed with this in mind.

Vision and Program

The proposed design for the bottom terminal aims to create spaces that honor the tradition and culture of American Samoa. This is done through the creation of spaces that encourage performance, the sharing of local knowledge, and cultural and historical education, while simultaneously celebrating the amazing natural landscape, traditional building techniques, and providing a space for local markets and vending.

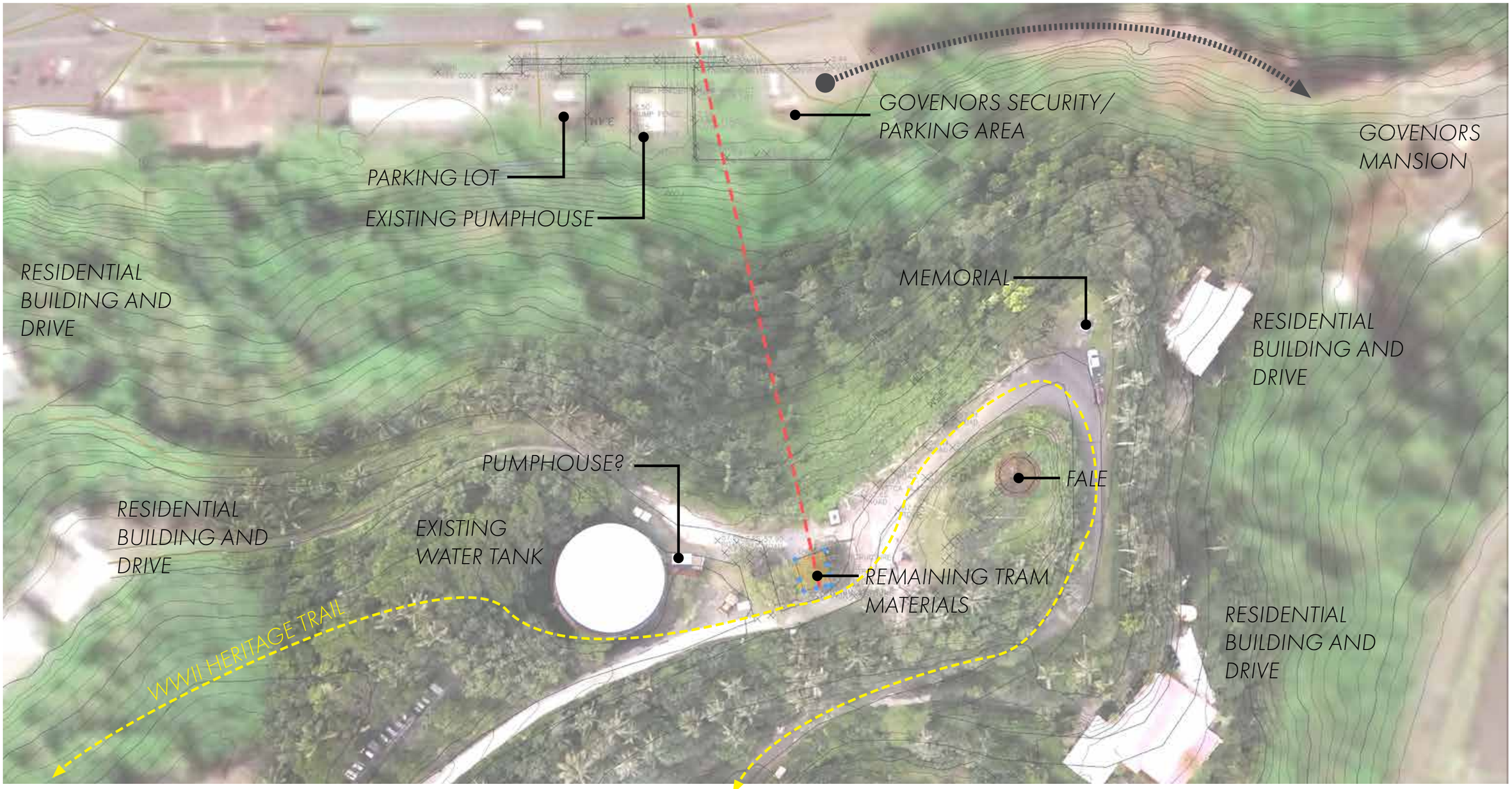
Specific programmatic elements include:

- An open-air structure for the tram's bottom terminal.
- An open-air structure for the inclined elevator's top terminal.
- Space for community gatherings, education, and performances.
- Rentable vendor stalls (shown in purple).
- A new fale in the location of the current fale – this could be leased or concessioned to a local food and beverage vendors. Within this analysis, it is not anticipated that the project would undertake the establishment of a food and beverage operation, but rather would partner with a local business to operate in the fale location.
- Restrooms, shown behind the open-air tram structure (this is at the bottom of the path to the existing fale – the path to the new fale is shown in a different location).
- A visitor information center and ticket building, shown next to the open-air tram structure. This could also serve as a museum of sorts.
- An inclined elevator to facilitate easy access to the bottom terminal area.
- A staircase that will parallel the inclined elevator.
- A Star Path and Star Compass design incorporated into plaza paving.
- A new mural on the existing water tank.
- Native plants that benefit local wildlife.

As illustrated by these programmatic elements, the bottom terminal area would be intended to serve the community and local businesses, in addition to air tourists and cruise ship passengers. Elements of history, education, and design would be incorporated into the structures and plazas. The design of this bottom terminal setting capitalizes on the unique views of Mount ʻAlava and Rainmaker Mountain, and it provides a valuable venue for locals and visitors to relax while overlooking the Pago Pago Harbor.

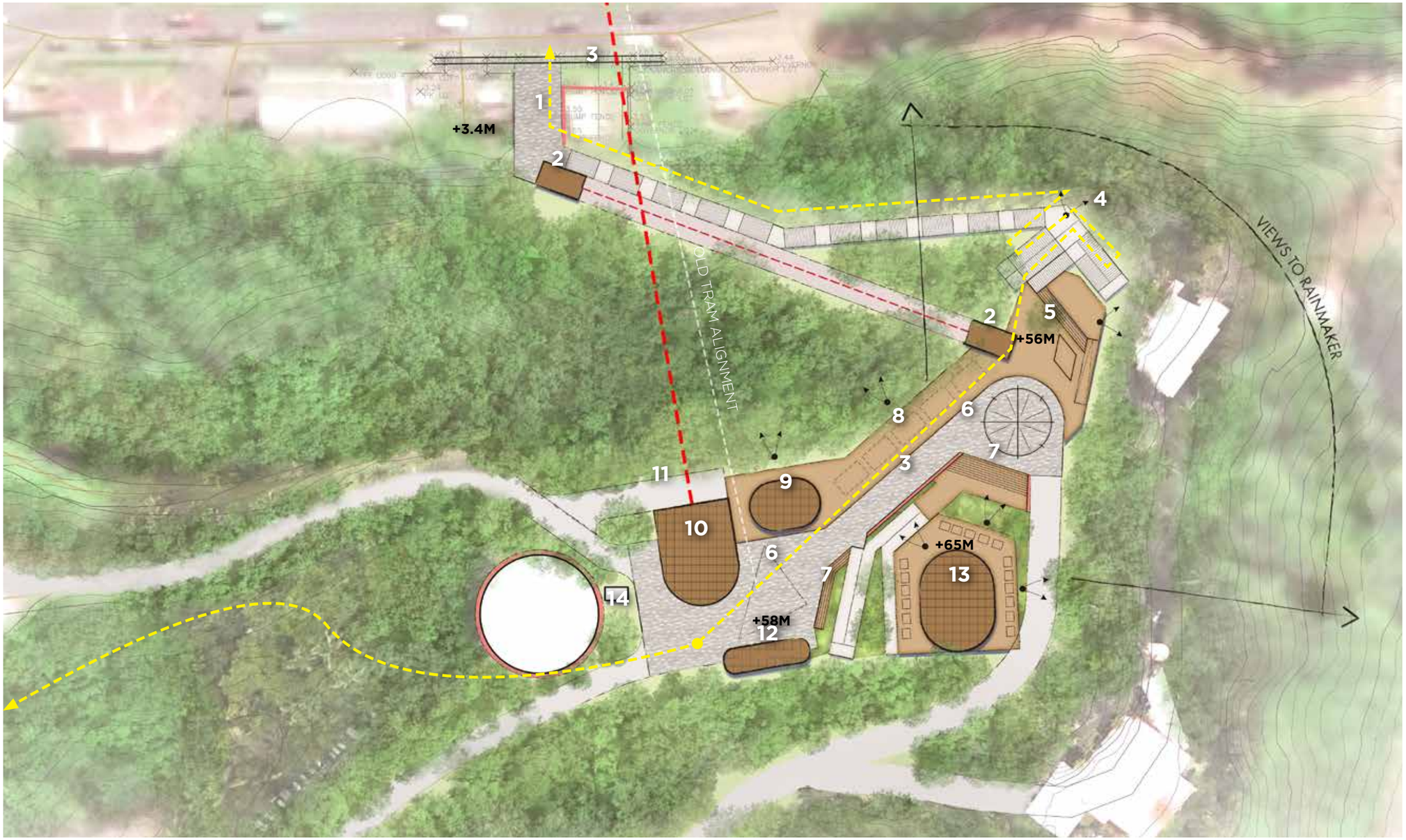
DESIGN CONCEPTS - BOTTOM TERMINAL

EXISTING CONDITIONS



DESIGN CONCEPTS - BOTTOM TERMINAL

PROPOSED SITE PLAN



N 0 M 5 M 10 M 20 M

1. FUNICULAR PLAZA
2. FUNICULAR TERMINAL
3. NEW MURAL ON FENCE/WALL
4. STAIRS / WWII TRAIL IMPROVEMENTS
5. ENTRY PLAZA WITH PERFORMANCE SPACE AND LOOKOUT
6. EDUCATIONAL / CULTURAL PAVING
7. AMPITHEATRE SEATING
8. OVERLOOK DECK / VENDOR SPACE
9. MUSEUM / VISITOR CENTER
10. WAYFINDER TRAM STATION
11. VEHICLE ACCESS TO TRAM
12. BATHROOM / INFO KIOSK / TRAILHEAD
13. RAINMAKER CAFE
14. PAINTED WATER TANK WITH MURAL

PROPOSED BOTTOM TERMINAL

VIEW 1 - NEW TERMINAL AND PLAZA OVERLOOKING RAINMAKER MOUNTAIN

PROPOSED BOTTOM TERMINAL

VIEW 2 - NEW INCLINE ELEVATOR AND CULTURAL PLAZA

4.3 TOP TERMINAL AREA

Existing Conditions

The usable area at the top terminal is a small strip of land roughly 20 feet-wide by 400 feet-long. The space is anchored on one end by the remnants of the original tram structure and by a small fale on the other. In between is a medley of aging buildings and electrical equipment. The areas that are more open are supported by retaining walls that are assumed to have been built during construction of the original tram. At present, the top terminal area is still used as American Samoa's primary hub for communication transmissions. However, much of the communications infrastructure at the top of Mount ʻAlava is in poor condition and in need of repair, most notably the damaged (and rapidly deteriorating) but still operable transmission towers.

To access the top terminal, one must either hike or drive up the Mount ʻAlava Ridge trail that was built for the construction of the original tram, or hike one of the steep historical trails managed by the National Park. The Mount ʻAlava Ridge trail arrives at a small clearing below the top terminal and transmission equipment. To reach the top guests must climb an ageing set of metal stairs with several missing or loose steps (these were marked by bricks during SE Group's site visit in March of 2023). On a clear day, visitors have outstanding views in all directions. In some areas, vegetation has grown high enough to block these views.

Vision and Program

As with the lower terminal, the vision for the top terminal aims to celebrate the culture, history, and landscape of American Samoa and its native peoples, as well as achieve the project goals of being unique and forward thinking. To do so, the intent of top terminal design is to create an accessible network of boardwalk paths that move beyond the edge of Mount ʻAlava.

Anchoring this network would be four main viewing platforms offering interpretive signage explaining the four main methods of traditional Polynesian ocean navigation. The platforms would align with the four cardinal directions (north, south, east, west) and display historical star paths used to reach destinations in those in those directions (across the ocean). They would also feature additional educational and interactive displays. The four methods of ocean navigation are:

1. Daytime navigating using the sun.
2. Nighttime navigation using the stars.
3. Following ocean currents and wave direction.
4. Following sea birds.

The viewing platforms would comprise one part of the overall top terminal area experience. The top terminal area's full program would include:

- An open-air structure for the tram's top terminal, which would also contain restrooms.
- A new accessible two-story fale, in the location of the current fale.
- Four viewing platforms.
- Primary pathways for wandering, which are connected by an accessible boardwalk system that extends over the sides of Mount ʻAlava.
- Secondary on-grade pathways, which bring guests through native botanical gardens.
- An open-air pavilion space.

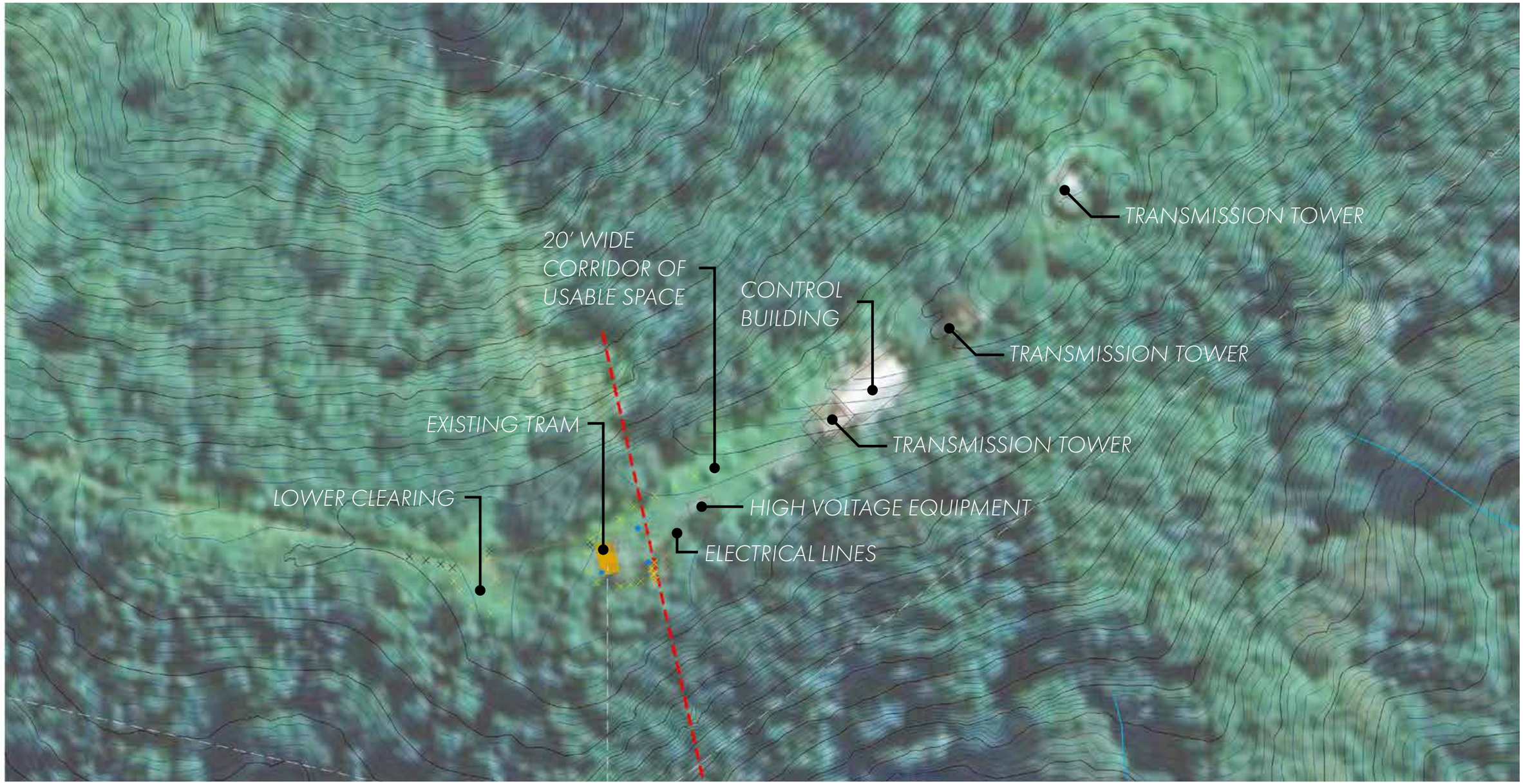
The new fale and the open-air structure for the tram's top terminal would anchor each end of the top terminal area. In this vision, the fale has a second story to enable guests to experience the stunning views that can be seen from above the dense canopy. In addition to making the top terminal experience unique and memorable, the extensions to the primary pathways would provide the extra space necessary to achieve the capacity requirements discussed in the Physical Feasibility section

of this report. The central, open-air pavilion space could be used for education and gathering, in addition to shelter during inclement weather. As with the bottom terminal area, local building techniques will be used wherever possible.

There would be new hiking trails that extend the experience beyond the top of Mount ʻAlava and into the National Park of American Samoa. Preliminary costs for the construction of these trails are included in the capital expenditures for this project, but funds for their maintenance are not. These trails would be designed with guidance from the National Park, and their maintenance would be conducted in partnership with National Park representatives. To preserve these trails and to manage the increased visitation that would result from the construction of the Sky Tram, increased resources would be necessary to support the National Park of American Samoa.

DESIGN CONCEPTS - TOP TERMINAL

EXISTING CONDITIONS



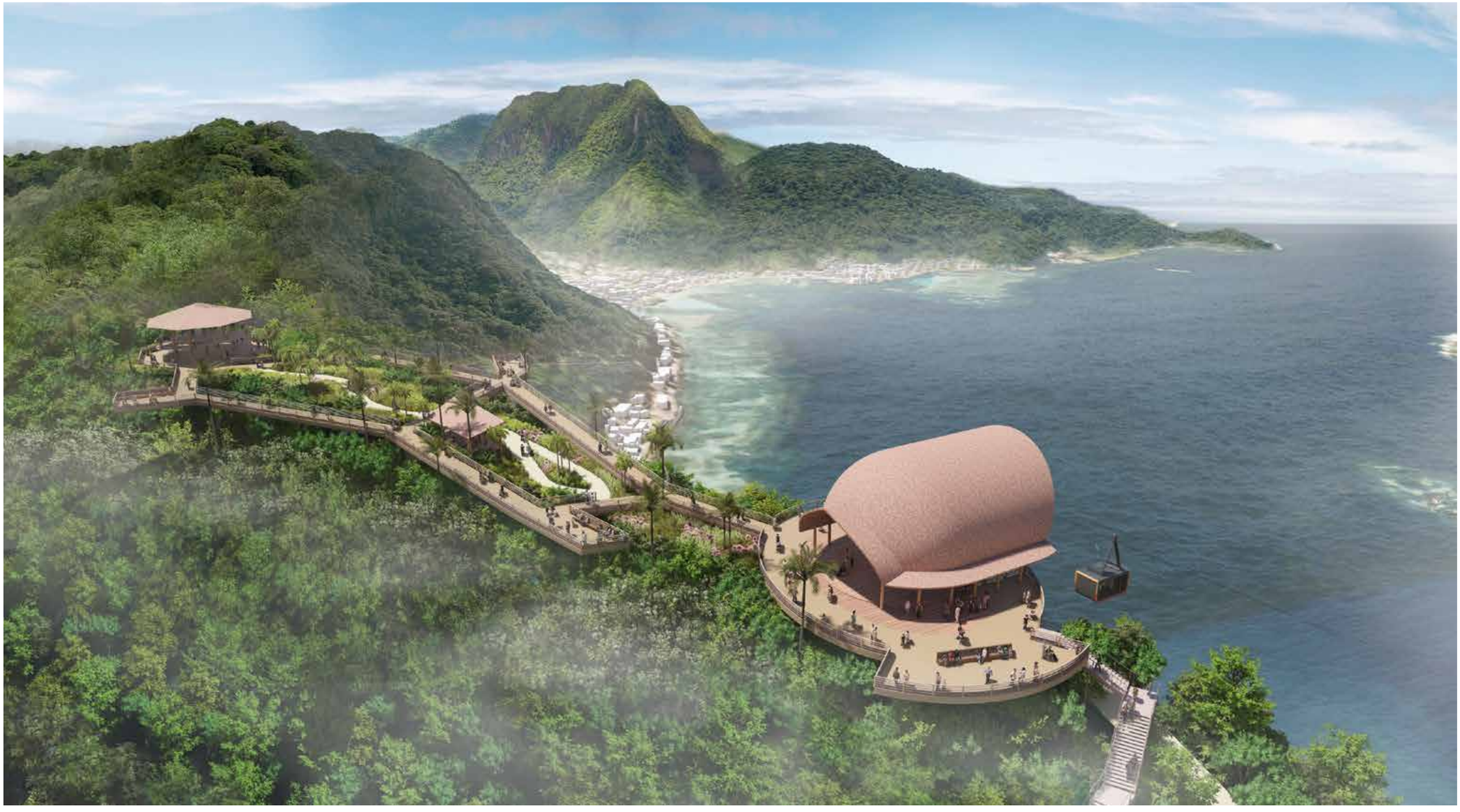
DESIGN CONCEPTS - TOP TERMINAL

PROPOSED SITE PLAN

1. IMPROVED TRAIL HEAD
2. STAIRS TO TRAM TERMINAL
3. VEHICLE ACCESS TO TRAM
4. WAYFINDER TRAM STATION
5. ACCESSIBLE PATH / BOARDWALK
6. SECONDARY PATH / BOTANICAL WALK
7. PROPOSED HIKING TRAILS
8. VIEWING PLATFORM WITH STAR PATH INTERPRETIVE SIGNAGE
9. COVERED PAVILION / VENDOR SPACE
10. EDUCATIONAL NATIVE PLANTINGS
11. IMPROVED FALE WITH ACCESSIBLE SECOND FLOOR VIEWING PLATFORM
12. INTERPRETIVE TRAIL LOOP

PROPOSED TOP TERMINAL

VIEW 1 - NEW TERMINAL AND FALE OVERLOOKING RAINMAKER MOUNTAIN



PROPOSED TOP TERMINAL

VIEW 2 - NEW TERMINAL AND FALE LOOKING TOWARD PAGO PAGO

PROPOSED TOP TERMINAL

VIEW 3 - SOUTHERN OVERLOOK WITH EDUCATIONAL SIGNAGE

5 FINANCIAL FEASIBILITY

This project emphasizes financial viability as a precondition to accomplishing the project's primary goal of driving tourism growth. A thorough examination of capital costs; visitation and revenue opportunity; and operations and maintenance (short-term and long-term) requirements concludes that the Sky Tram would be financially feasible and self-supporting over the long-term. This financial feasibility is predicated upon the initial capital investment (approximately $35 million) being provided by grants or other sources of funding not requiring repayment. If the project is burdened with a requirement to repay the initial capital cost of development, it would not be financially viable.

If necessary, the financial performance of the project likely has the ability to serve a small portion (approximately $5 million) of its initial capital expense. The remaining capital expense (approximately $30 million) would not be sustainable by the net operating of the project.

Throughout SE Group's analysis, assumptions intentionally err on the conservative side of estimation, where necessary (i.e., under assuming revenue and over assuming costs). Costs were calculated using data obtained during the summer of 2023.

5.1 CAPITAL COSTS

Development of the Pago Pago Sky Tram project would be expected to cost approximately $35,039,000. This estimate includes costs for: the aerial tramway; the inclined elevator; shipping and installation of the aerial tramway and inclined elevator; top and bottom terminal landscaping and structures; environmental permitting; and demolition and reconstruction of the existing top terminal electrical equipment. Local material and labor costs were used in the modeling process, when available. Details are provided in the following table, in the approximate sequence that costs would be incurred:

TABLE 7. CAPITAL COSTS

DESCRIPTION	COST
ENVIRONMENTAL PERMITTING	$350,000
DEMOLITION & RECONSTRUCTION OF EXISTING ELECTRICAL EQUIPMENT	$500,000
TOP TERMINAL LANDSCAPE COSTS	$5,263,000
BOTTOM TERMINAL LANDSCAPE COSTS	$7,591,000
INCLINED ELEVATOR COSTS	$2,550,000
AERIAL TRAMWAY COSTS	$13,534,000
SHIPPING AND INSTALLATION OF TRAM & INCLINED ELEVATOR	$4,900,000
O&M STARTUP COSTS	$350,000
TOTAL	**$35,039,000**

Exact costs would be determined upon final design/architecture/engineering. Furthermore, appropriate contingency funds have been included in the capital costs calculation.

Environmental Permitting

The estimated $350,000 for environmental permitting includes::

- Labor costs for the ASG to undergo the required EDA & NPS NEPA processes
- Fees for a consultant to facilitate the process

Demolition & Reconstruction of Existing Electrical/Communications Equipment

The estimated $500,000 for the demolition and reconstruction of the existing electrical/communications equipment atop Mount ʻAlava includes:

- Estimated costs for demolishing the existing electrical/communications equipment
- Estimated costs for reconstructing the electrical/communications equipment, expected to be physically and financially synergistic with the construction of the tram's top terminal

For the purposes of this capital costs exercise, a conservative estimation of $500,000 was chosen to encompass the costs of this demolition and synergistic reconstruction. It should be noted that this $500,000 does not include costs for "housing" the equipment; however, the tram's top terminal will be enclosed in a large structure that may be designed with "housing" needs for this equipment in mind.

Prior to reinstallation of this equipment or design of this "housing" space, American Samoa's future electrical/communication needs should be studied, and alternative technological solutions should be considered. The construction of any "housing" space needed will be in addition to this $500,000.

Top Terminal Landscape Costs

The estimated $5,263,000 for top terminal landscape costs includes:

- Paving
- Decking
- Stairs
- Site improvements (guardrails, benches, binoculars, interpretive panels)
- Architecture (tram building with restroom, pavilion, fale with accessible second story)
- Utilities
- Landscaping

Additional design and engineering services are estimated at 10% of the above top terminal landscape costs. They are included in the estimated $5,263,000, as is a 10% contingency reserve and a 10% markup on all top terminal costs to account for the remote site access conditions.

Bottom Terminal Landscape Costs

The estimated $7,591,000 for bottom terminal landscape costs includes:

- Removal of the existing tram structure
- Paving
- Decking (food and beverage deck, vendor deck, amphitheater seating)
- Stairs (inclined elevator stairs, concrete stairs at the plaza)
- Retaining walls
- Site improvements (guardrails, benches, binoculars)
- Architecture (tram building, food and beverage fale, visitor center, restroom)
- Utilities
- Landscaping

Additional design and engineering services are estimated at 10% of the above bottom terminal landscape costs. They are included in the estimated $7,591,000, as is a 10% contingency reserve.

Inclined Elevator Costs

The estimated $2,550,000 for the inclined elevator includes costs for the full system, as designed.

Aerial Tramway Costs

The estimated $13,534,000 for aerial tramway includes costs for the full system, as designed

Shipping and Installation of Tram/Inclined Elevator

The estimated $4,900,000 for the shipping and installation of the tram/inclined elevator includes full construction costs for the project. Fees for leasing a Black Hawk helicopter, as described in the Physical Feasibility section of this report, are included.

O&M Startup Costs

The estimated $350,000 for operations and maintenance startup costs includes staff training, a radio system, tooling, uniforms, and a Computerized Maintenance Management System.

5.2 OPERATIONS & MAINTENANCE

Annual operations and maintenance expenses include three primary components: labor, parts for the tram and the inclined elevator, and operating costs. Together, they amount to $1,457,000.

Labor

Labor costs to operate and maintain the full tram/inclined elevator system amount to $718,000 per year. They were calculated using the number of required employees, their projected annual working hours, hourly wages, and burden. Wages for local employees have been set at a premium rate for American Samoa ($8.00 per hour for on-site employees and $10.00 per hour for administrative employees). Planned positions include 21 on-site and two administrative employees. Planning for labor positions purposefully avoided areas where automated technology could be deployed in place of a staff member (i.e., a digital ticketing kiosk as opposed to a staffed ticketing window) to maximize the employment opportunities created by the project. These positions are intended to be filled by residents of American Samoa and will therefore help to support the local economy.

In addition to the on-site local employees, there would be two on-site LPOA technicians—one for the Sky Tram's top terminal and one for its bottom. As described in the Physical Feasibility section of this report, these technicians would additionally be tasked with training local employees in the specific skills required to operate and maintain the Sky Tram. Once sufficient knowledge transfer has occurred, the LPOA technicians will no longer be needed on-island. Wages and burden specific to these LPOA employees have been included in cost estimates.

Parts for the Tram and the Inclined Elevator

An Inventory of parts necessary for annual maintenance to the tram/inclined elevator system have been budgeted at $193,000. This includes parts for the Sky Tram's cabins, terminals, and line, as well as parts for the inclined elevator. It also includes an annual budget for rope shortening and rope inspection.

Operating Costs

Operating costs for the tram/inclined elevator system are anticipated to amount to $546,000. They include anticipated costs for utilities and electricity (including American Samoa's unique power rates), banking fees, insurance, a marketing and sales budget, and a reserve for buildings and grounds maintenance.

Note that additional capital maintenance reserves for the tram/inclined elevator and all other grounds and facilities related to the project have been allocated separately from annual operating costs. These are to be used for the long-term overhauls required by the system and its supporting areas.

5.3 RIDERSHIP AND REVENUE

The 2010 Tourism Master Plan recommended, and assumed, aggressive growth in tourism; these goals were not achieved. To test the ridership potential and model the revenue that may be achieved by the Sky Tram under more conservative conditions, RRC's market study assumes smaller year-over-year growth rates in visitation to American Samoa.

Using these conservative visitation projections, RRC forecasted revenue for the Sky Tram through the first 10 years of its operation. Additional details about ridership and revenue projections can be found in RRC's Market Assessment, which can be found in Appendix B.

RIDERSHIP PROJECTIONS - YEAR 1

Ridership projections for Year 1 of the Sky Tram's operation were determined individually for each type of potential rider using assumed utilization rates. These projections were then summed to estimate the tram's total annual ridership for its first year of operation.

Rider Types and Sub-Types

Ridership projections for the Sky Tram are modeled by "rider type." There are two main rider types: "inbound travelers" and "non-traveling residents. " Both have several sub-types.

Within "inbound travelers" rider type, there are eight sub-types. Of these, one encompasses the inbound travelers arriving via ship: cruise passengers. The other seven sub-types comprise the inbound travelers arriving via airplane: business, visit relative, employment, in-transit, residents, crew members, and tourists. These seven sub-types were included in PPG enplanement data.

Within the "non-traveling residents" rider type, there are three sub-types: relatives, returning residents, and air tourists. This rider type encompasses the ratio of residents of American Samoa who are expected to ride the tram with three of the "inbound traveler" rider sub-types: visit relative, residents, and tourists.

Rider Utilization Rates

Utilization rates for each rider type were determined using research, the aforementioned Case Studies, and conversations between RRC and SE Group. They are as shown in Table 8.

Since cruise data is based on ship capacity rather than true occupancy counts, a "rate of occupancy" factor was created to model future cruise passenger visitation to American Samoa. This factor is not needed for travelers arriving via air, since historic PPG arrival data was used rather than capacity data. The aforementioned Case Studies, as well as conversations with the SPCA (discussed in the Market Study section of this report), informed the assumed 90% rate of cruise ship occupancy. Of this 90%, it is assumed that 80% of passengers would ride the Sky Tram.

The percentage of inbound travelers arriving via airplane that are projected to ride the Sky Tram varies by traveler type. As shown, it is assumed that one resident would ride the tram with each visiting relative, one resident would ride the tram with every four residents returning to American Samoa, and one resident would ride the tram with every 10 air non-resident visitors to Pago Pago. An example of this latter circumstance could be a resident who is conducting business with a group of non-residents taking the business group on a tram ride during their visit to American Samoa.

Ridership Totals - Year 1

Ridership for Year 1 of the Sky Tram's operation was calculated for each rider sub-type by month, then summed to project total annual ridership, as shown in Table 8.

TABLE 8. RIDERSHIP PROJECTIONS: UTILIZATION RATES		*YEAR 1*	
RIDER TYPE	RIDER SUB-TYPE	PERCENT OF VISITORS RIDING TRAM	EXPECTED RIDERS
INBOUND TRAVELERS	Cruise Passengers (assume 90% rate of ship occupancy)	80%	29,150
	Business (Air)	60%	1,794
	Tourist (Air)	60%	2,587
	Visit Relative (Air)	60%	5,501
	Employment (Air)	20%	1,491
	In-Transit (Air)	10%	167
	Residents (Air)	2%	972
	Crew (Air)	10%	38
			41,700
NON-TRAVELING RESIDENTS	RIDER SUB-TYPE	RESIDENTS RIDING TRAM PER VISITOR	EXPECTED RIDERS
	Returning Residents	1.00	5,501
	Air Tourists	0.25	243
	Non-Traveling Residents Riding Tram	0.10	259
			6,003
			47,703

RIDERSHIP PROJECTIONS – YEARS 2 THROUGH 10

Ridership projections were also determined for Years 2 through 10 of the Sky Tram's operation. These ridership projections assume annual growth in visitation to American Samoa, which the Sky Tram would be expected to instigate.

Ridership Growth Assumptions

An annual growth rate was assumed for each of the "inbound traveler" rider sub-types. The growth rate for cruise passengers is highest, since the Sky Tram is expected to catalyze additional cruise ship bookings. Next, the Sky Tram would be expected to prompt growth in business travelers and air tourists since the project aims to stimulate American Samoa's economy by energizing the tourism industry. Growth in the other inbound traveler rider sub-types is also expected as a natural result of this momentum.

As described, the three "non-traveling resident" rider sub-types relate to three of the "inbound traveler" subtypes. Because of this, their growth is mirrored: the 3% growth in "Relatives" correlates to the 3% growth in "Visit Relative (Air)"; the 3% growth in "Returning Residents" correlates to growth in "Residents (Air)"; and the 5% growth in Air Tourists correlates to growth in "Tourists (Air)."

TABLE 9. RIDERSHIP PROJECTIONS - GROWTH RATE

RIDER TYPE	RIDER SUB-TYPE	ASSUMED GROWTH RATE
INBOUND TRAVELERS	Cruise Passengers	10%
	Business (Air)	5%
	Tourist (Air)	5%
	Visit Relative (Air)	3%
	Employment (Air)	3%
	In-Transit (Air)	3%
	Residents (Air)	3%
	Crew (Air)	3%
	Inbound Travelers Riding Tram	3 - 10%
NON-TRAVELING RESIDENTS	Returning Residents	3%
	Air Tourists	5%
	Non-Traveling Residents Riding Tram	3 - 5%
	Non-Traveling Residents Riding Tram	3 - 5%
	Total Annual Riders	
	Average Daily Riders (assumes 4 operating days per week)	**365**

These growth projections were informed by discussions with ASG and the ASVB, as well as research completed by RRC. As noted, they are intentionally conservative relative to the growth assumptions in the 2010 Tourism Master Plan.

Ridership Totals – Years 2 through 10

Growth in ridership for each rider sub-type was also projected by month. The sum of the monthly ridership growth projections amounts to the Sky Tram's total annual projected ridership.

In this table, Year 1 is the same as it was in section 5.3.1. Growth rates are applied by rider sub-type starting in Year 2.

As shown, projected tram ridership is primarily correlated with American Samoa's number of cruise ship bookings, since cruise passengers comprise approximately 61% of projected riders during the Sky Tram's first year of operation. This percentage is expected to increase, since the Sky Tram is anticipated to catalyze further growth in cruise ship traffic. The Sky Tram is also expected to increase visitation via air travelers; however, growth in this arrival type is expected to have a smaller impact on the Sky Tram's overall visitation volumes since it comprises a smaller share of current visitation to American Samoa.

PROJECTED RIDERSHIP TOTAL BY YEAR

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
29,150	32,065	35,271	38,799	42,678	46,946	51,641	56,805	62,485	68,734
1,794	1,884	1,978	2,077	2,181	2,290	2,404	2,524	2,651	2,783
2,587	2,717	2,852	2,995	3,145	3,302	3,467	3,640	3,822	4,014
5,501	5,666	5,836	6,012	6,192	6,378	6,569	6,766	6,969	7,178
1,491	1,536	1,582	1,629	1,678	1,728	1,780	1,833	1,889	1,945
167	172	177	183	188	194	200	206	212	218
972	1,001	1,031	1,062	1,094	1,127	1,161	1,196	1,231	1,268
38	39	40	41	42	44	45	46	48	49
41,700	45,079	48,768	52,797	57,198	62,008	67,266	73,017	79,307	86,190
5,501	5,666	5,836	6,012	6,192	6,378	6,569	6,766	6,969	7,178
243	250	258	266	274	282	290	299	308	317
259	272	285	300	314	330	347	364	382	401
6,003	6,188	6,380	6,577	6,780	6,990	7,206	7,429	7,659	7,897
47,703	**51,268**	**55,148**	**59,374**	**63,978**	**68,998**	**74,472**	**80,446**	**86,966**	**94,086**
159	**140**	**151**	**163**	**175**	**189**	**204**	**220**	**238**	**258**

OPERATING ASSUMPTIONS

Operating Days

To keep the tram's operating and maintenance costs to a reasonable level, it is assumed that the tram's default operating schedule would be four days per week. Operating the tram seven days per week would increase staffing costs and expedite the required replacement of critical tram components.

The four days were selected based on PPG's existing flight schedule. At present, there are two flights between Honolulu and Pago Pago each week, arriving/departing on Monday and Thursday nights. Because of this flight schedule, many inbound travelers arriving via air are on Tutuila for three or four days: either Tuesday, Wednesday, and Thursday; or Friday, Saturday, Sunday, and Monday.

Two days were selected from each part of the week so that travelers on either flight schedule will have a minimum of two opportunities to experience the tram while on-island. From the first part of the week, Wednesday and Thursday were selected; from the second, Saturday and Sunday. These days can change as necessary to suit the needs of ASG and prospective tram riders.

Existing cruise bookings fall on all days of the week. If a ship is scheduled to arrive on a day that the tram would not be regularly scheduled to operate, then ASG may decide to operate the tram that day in addition to or instead of its regularly scheduled operating days. Residents and other visitors may choose not to ride the tram on days when cruise ships are in port—especially if it is a large ship carrying a high number of potential tram riders. To manage demand and the expectations of other potential riders, ASG may notify residents and other visitors in advance of a cruise ship's arrival.

Ticket Pricing

Ticket pricing for visitors is comparable to that of other tram/gondola experiences around the world: $45 is the recommended window ticket price. This was determined via research and the aforementioned Case Studies. It is anticipated that tram tickets pre-sold to cruise passengers would include a premium for third parties, such as tour operators and cruise lines. These premiums may increase the price cruise passengers pay to $50 or $55, which would be on-par with other tram/gondola excursions in which cruise passengers regularly partake.

Ticket pricing for residents would be the same as it was in 1967, adjusted for inflation. This historic pricing is noted on an informational sign at the tram's historic bottom terminal site: $1.25 for adults. Today, this equates to approximately $11. This reduced window ticket price for residents would be intended to allow locals to enjoy the tram alongside visitors.

In the future, different pricing tiers may be considered for various user groups. This could include discounts for children, seniors, military personnel, and/or others.

Fares in 1967 were:

$2.50	*Tourist and Contract personnel*
$1.25	*Adults*
$0.50	*Children*
$1.25	*weekly High School Children*
$1.00	*Armed Forces*

Ticket pricing for visitors is comparable to that of other tram/gondola experiences around the world. This was determined via research and the aforementioned case studies. It is anticipated that tram tickets pre-sold to cruise passengers will include a premium for tour operators, and potentially the cruise lines as well. These premiums may increase the ticket price to $50 or $55, which is on-par with other tram/gondola excursions in which cruise passengers partake.

REVENUE PROJECTIONS – YEAR 1

Ridership projections were used to calculate revenue projections for Years 1 through 10 of the Sky Tram's operation. Ticket sales comprise the Sky Tram's primary source of revenue; cargo hauling and rent from vendor stalls (as described in the Landscape Design section of this report) could provide small secondary revenue sources.

No additional revenue is anticipated to be collected from the tram's top and bottom terminal areas (food and beverage or retail offerings, as examples). These areas would be intended to be used by local vendors without fee to stimulate the local economy.

Ticket Sales

Ticket sales comprise the tram's primary source of revenue.

TABLE 10. REVENUE PROJECTIONS - TICKET SALES - YEAR 1

REVENUE PROJECTIONS			EXPECTED REVENUE - YEAR 1
RIDER TYPE	RIDER SUB-TYPE	REVENUE PER TICKET	ANNUAL
INBOUND TRAVELERS	Cruise Passengers	$ 45.00	$ 1,311,746
	Business (Air)	$ 45.00	$ 80,730
	Tourist (Air)	$ 45.00	$ 116,424
	Visit Relative (Air)	$ 45.00	$ 247,563
	Employment (Air)	$ 45.00	$ 67,086
	In-Transit (Air)	$ 45.00	$ 7,520
	Residents (Air)	$ 11.00	$ 10,693
	Crew (Air)	$ 45.00	$ 1,697
	Revenue from Inbound Travelers		**1,843,459**
NON-TRAVELING RESIDENTS	Relatives	$ 11.00	$ 60,515
	Returning Residents	$ 11.00	$ 2,673
	Air-Tourists	$ 11.00	$ 2,846
	Revenue from Non-Traveling Residents		$ 66,035
	Total Projected Revenue from Ticket Sales		$ 1,909,493

Ticket sales are expected to generate approximately $1,909,493 of revenue during the Sky Tram's first year of operation. Of the total $1,909,493, approximately $1,311,746 (69%) is anticipated to come from cruise passengers. This percentage is anticipated to grow each year as the Sky Tram increases Pago Pago's appeal as a port of call.

Cargo Hauling

As discussed in the Physical Feasibility section of this report, the tram could be designed (and would be engineered) to be able to carry cargo. This hauling capability is anticipated to play a key role in transporting construction materials and equipment up to the top terminal area to implement the top terminal area landscaping, as shown in the renderings and described in the Landscape Design section of this report. The Sky Tram's cargo hauling capabilities could also be used for the construction and/or maintenance of the top terminal electrical/communications equipment and other top terminal area infrastructure. It is assumed that this hauling would take place outside of the Sky Tram's regularly scheduled operating hours.

It is assumed that the Sky Tram would provide free hauling for the materials and equipment necessary to complete the top terminal area landscaping. Beyond these free services for completion of the tram terminal, it is anticipated that the tram could haul 5,000 pounds of material and equipment annually for a fee.

Based on RRC's research, an appropriate hauling rate could be $1.00 to $7.00 per pound. In this model, the cargo hauling rate is set to $4.00 per pound. Using this rate and an annual hauling amount of 5,000 pounds, this Sky Tram's cargo hauling capabilities are expected to yield $20,000 in revenue per year.

ANNUAL HAULING AMOUNT (LBS)	5,000
RATE PER POUND	$4.00
TOTAL ANNUAL HAULING REVENUE	$ 20,000

During subsequent modeled years, it is assumed that the tram would continue to haul 5,000 pounds per year. Hauling fees are escalated 3% per year to account for inflation.

Vendor Stalls

Conversations with ASG revealed that vendors at the existing marketplace pay $400 per month to rent their stalls. Since the four stalls in the Sky Tram's bottom terminal area would be more desirable, $500 was determined to be an appropriate monthly rate. In financial modeling, this rate is set to escalate 5% year over year, given inflation (3%) and the assumption that the stalls will become more desirable as visitation to American Samoa and tram ridership increase (2%).

TABLE 11. TOTAL REVENUE PROJECTIONS - YEARS 1-10

REVENUE SOURCE	RIDER SUB-TYPE	YEAR 1	YEAR 2	YEAR 3
TICKET SALES TO	Cruise Passengers	$1,311,746	$1,442,921	$1,587,213
	Inbound Travelers	$80,730	$84,767	$89,005
	Tourist (Air)	$116,424	$122,245	$128,357
	Visit Relative (Air)	$247,563	$254,990	$262,640
	Employment (Air)	$67,086	$ 69,099	$71,172
	In-Transit (Air)	$ Z,520	$ 7,745	$7,977
	Residents (Air)	$10,693	$ 11,014	$11,345
	Crew (Air)	$1,697	$ 1,747	$1,800
	Sub-Total: Inbound Travelers	**$ 1,843,459**	$1,994,528	$2,159,508
TICKET SALES TO NON-TRAVELING RESIDENTS	Relatives	$60,515	$62,331	$64,201
	Ticket Sales to	$2,673	$2,754	$2,836
	Non-Traveling Residents	$2,846	$2,988	$3,138
	Sub-Total: Non-Traveling Residents	**$66,035**	$68,073	$70,175
CARGO HAULING		$20,000	$22,510	$23,185
VENDOR STALLS		$2,000	$2,100	$2,205
	TOTAL ANNUAL REVENUE	$1,931,493	$2,085,300	$2,253,106

Revenue Totals – Year 1

The Sky Tram's anticipated total revenue would be comprised of revenue from ticket sales (inbound travelers and non-traveling residents), cargo hauling, and vendor stalls. Of these, ticket sales to non-traveling residents generate the vast majority of revenue (87%). The Sky Tram is anticipated to generate $1,931,493 during its first year of operation.

Revenue Projections – Years 2 through 10

By Year 10 of its operation, the Sky Tram is anticipated to generate $ $3,948,360 in revenue.

	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
	$1,745,934	$1,920,528	$2,112,581	$2,323,839	$2,556,223	$2,811,845	$3,093,029
	$93,455	$98,128	$103,034	$108,186	$113,595	$119,275	$125,239
	$134,775	$141,514	$148,590	$ 156,019	$163,820	$172,011	$180,612
	$270,519	$278,634	$286,993	$295,603	$304,471	$313,605	$ 323,014
	$73,307	$75,506	$77,771	$0,104	82,507	$84,983	$87,532
	$8,217	$8,463	$8,717	$8,979	$ 9,248	$9,525	$ 9,811
	$11,685	$12,035	$12,396	$12,768	$13,151	$13,546	$13,952
	$ 1,854	$41,909	$,967	$2,026	$2,086	$2,149	$ 2,214
	$42,339,746	$2,536,718	$2,752,049	$2,987,524	$3,245,103	$3,526,940	$3,835,403
	$66,127	$68,111	$70,154	$ 72,259	$74,426	$76,659	$78,959
	$2,921	$3,009	$ 3,099	$ 3,192	$3,288	$3,386	$3,488
	$ 3,295	$ 3,459	$ 3,632	$ 3,814	$4,004	$ 4,205	$ 4,415
	$72,343	$74,579	$ 76,885	$ 79,264	$81,719	$ 84,250	$ 86,862
	$ 21,855	$22,510	$ 23,185	$ 23,881	$24,597	$25,335	$26,095
	$ 42,315	$ 2,431	$2,553	$ 2,680	$2,814	$ 2,955	$3,103
	$2,433,943	$2,633,807	$2,852,120	$3,090,670	$3,351,419	$3,636,525	$3,948,360

TABLE 12. OVERALL FINANCIAL PERFORMANCE - YEARS 1-10

ANTICIPATED PERFORMANCE	YEAR 1	YEAR 2	YEAR 3
Total Revenue	$1,931,000	$2,083,000	$2,251,000
Operating Expenses	**$1,457,000**	$1,530,000	$1,606,000
Operating Margin	**$474,000**	$553,000	$644,000
Operating Margin %	25%	27%	29%
Capital Maintenance Reserve - Tram and Funicular	$130,000	$140,000	$152,000
Capital Maintenance Reserve - All Other Facilities	$97,000	$104,000	$113,000
NET OPERATING INCOME	$248,000	$309,000	$380,000
Capital Expense	**$35,039,000**		

5.4 RESULTS

As noted, capital costs for the overall development and construction of this project are budgeted at $35,039,000. This estimate includes costs for: the aerial tramway; the inclined elevator; shipping and installation of the aerial tramway and inclined elevator; top and bottom terminal landscaping and structures; environmental permitting; and demolition/removal of the existing top terminal electrical/communication equipment. Annual operations and maintenance costs are anticipated to amount to $1,457,000. These are anticipated to be fully funded by revenue generated from the operation.

Revenue in the Sky Tram's first year of operation is estimated at $1,931,493. This yields a gross operating margin of $474,000, or 25%. Over the 10-year pro forma model, this operating margin is projected to increase to $1,688,000, or 43%. Subsequently subtracted from the gross margin are capital maintenance reserves for the long-term maintenance of the aerial tramway and inclined elevator (LPOA budgeted $130,000, which has been escalated 8% year over year in the model) and all other facilities (5% of total revenue annually). After these two maintenance reserves are accounted for, it is anticipated that the aerial tram would yield Net Operating Income of approximately $248,000 in its initial year of operation. Relying upon developed projections of growth in visitation and revenue, it is anticipated that annual Net Operating Income would increase to approximately $1,231,000 in the tenth year of operations.

Despite a positive operating margin, profits are not expected to be sufficient to accommodate the full capital expense ($35,039,000) required to develop the project. Should ASG receive grants or capital not requiring repayment to fund a substantial portion of the project, the project may be able to service a small amount of debt. No debt service has been included in the model presently. As detailed above, the NOI in the first year is approximately $248,000 and increases to $1,231,000 in the tenth year. If the project were burdened with an annual debt service payment of approximately
$400,000, this would support the funding of roughly $5 million of the initial capital requirements of the project (assumed AA rated bond at 4.5% for 20 years – October 2023 rates).

	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
	$2,434,000	$2,634,000	$2,852,000	$3,091,000	$3,351,000	$3,637,000	$3,948,000
	$1,687,000	$1,771,000	$1,860,000	$1,953,000	$2,050,000	$2,153,000	$2,260,000
	$747,000	$863,000	$992,000	$1,138,000	$1,301,000	$1,484,000	$1,688,000
	31%	33%	35%	37%	39%	41%	43%
	$164,000	$177,000	$191,000	$206,000	$223,000	$241,000	$260,000
	$122,000	$132,000	$143,000	$155,000	$168,000	$182,000	$197,000
	$462,000	$554,000	$659,000	$777,000	$911,000	$1,061,000	$1,231,000

6 ENVIRONMENTAL FEASIBILITY

An environmental feasibility study was prepared by SE Group and is included in full form in Appendix A. It specifically summarizes the following: 1) the requirements of NEPA through both the EDA and NPS to identify the different steps that must be taken for each agency and where they overlap; and 2) the specific items required for the Environmental Narrative Report for the EDA and how they relate to other required components of NEPA. The construction of the Sky Tram is anticipated to be environmentally feasible, assuming that all forthcoming environmental requirements are met and the appropriate coordination with the National Park of American Samoa is conducted.

6.1 WILDLIFE AND BOTANICAL SPECIES OF POTENTIAL CONCERN

At this time, there are an estimated seven species of wildlife with current spatial range believed to, or known to, occur in American Samoa. Of these seven, the most likely to be impacted by the project is the tree snail (Eua zebrina), which is on the U.S. Environmental Protection Agency's "Threatened and Endangered Species" list. However, no recent surveys have been conducted in American Samoa for the Eua zebrina. Therefore, it is possible that the Eua zebrina is far more prevalent than the prior range of minor surveys indicate. It is anticipated that the project could employ appropriate mitigation and avoidance practices to minimize the impact to Eua zebrina. Although not currently listed under the Endangered Species Act, the Samoan flying fox (Pteropus samoensis samoensis) is also a species of concern for the area. No federally-listed botanical or other botanical species of concern have been identified at this time.

6.2 PUBLIC ENGAGEMENT

The NEPA process requires public engagement. As a portion of the feasibility analysis, ASG has initiated an active dialogue with key community stakeholders. It is anticipated that this would continue and increase measurably as a portion of the design and permitting phase of the project. In addition, there would be a variety of public engagement opportunities throughout the upcoming NEPA process, such as designated scoping periods and/or comment periods. Conversations with the ASG and SE Group's site visit observations suggest the Sky Tram is strongly supported among the local population and may result in lower levels of community controversy than seen in many other projects of this nature.

6.3 PRELIMINARY QUESTIONS FOR THE EDA

Ultimately, ASG will be responsible for submitting an Environmental Narrative Report to the EDA summarizing the environmental impacts of the proposed project, as well as a Project Proposal Letter to the NPS, to initiate the NEPA process with both federal agencies. SE Group recommends a conversation with the relevant EDA representative to confirm assumptions and requirements prior to submission. The following is a summary of preliminary questions that should be discussed with the EDA:

- Anticipated category of NEPA required (CE vs EA vs EIS).
- Whether cultural resource surveys and preparation of a cultural resources report would be necessary prior to submission to the Environmental Narrative Report.
- Whether natural resource surveys and associated reporting for wetlands and streams, wildlife species, and botanical species would need to occur prior to submission of the Environmental Narrative Report.
- How the presence of a Coastal Zone Management Area (CZMA) may or may not affect the project NEPA process.

6.4 POTENTIAL EFFICIENCIES IN THE NEPA PROCESS

Because both the EDA and NPS will need to complete site-specific analysis for the project under NEPA, SE Group also recommends coordinating with both agencies prior to initiating NEPA to identify potential efficiencies in the NEPA process. Because of SE Group's familiarity with the Sky Tram, Environmental Narrative Report requirements, and extensive experience in conducting NEPA analyses, SE Group is able to provide additional assistance with the discussion with these agencies, the preparation of the Environmental Narrative Report, and subsequent NEPA process as required.

7 PHASE 1 CONCLUSION

The project has been determined to be physically feasible and is expected to be environmentally feasible. If ASG can secure the necessary project construction capital through grants or other sources not requiring the project to repay, the project would be financially feasible over the long-term. **Based on the extensive analysis conducted and the results modeled, SE Group recommends the funding of the Pago Pago Sky Tram.** Should ASG concur and decide to pursue the project, next steps would be proceeding to Phase 2 where construction level design/engineering would be initiated/completed as well as undertaking the aforementioned environmental applications and analysis requirements to obtain necessary agency authorizations. SE Group is available to assist in these steps and would be very pleased to have the opportunity to continue to assist ASG with this exciting project.

APPENDIX A

OVERVIEW OF ENVIRONMENTAL NARRATIVE REPORT REQUIREMENTS

This page intentionality left blank.

OVERVIEW OF ENVIRONMENTAL NARRATIVE REPORT REQUIREMENTS

FOR THE

PAGO PAGO SKY TRAM PROJECT

JULY 2023

Prepared for:

Office of Procurement
American Samoa Government
Tafuna, American Samoa 96799

Prepared by:

SE GROUP

1. INTRODUCTION AND PURPOSE OF THIS DOCUMENT

This report has been prepared to address Item 3 of the September 2022 Request for Proposals (2022 RFP) 065-2022 for a potential New Aerial Tramway System ("Pago Pago Sky Tram" or "Sky Tram") Project – Phase 1 (Feasibility, Planning and Design). Item 3 is to identify information/data gathering that will be required for the Environmental Narrative Report, which the American Samoa Department of Commerce (AS-DOC) will submit to the U.S. Economic Development Administration (EDA) to determine whether an Environmental Assessment (EA) or Environmental Impact Statement (EIS) through the National Environmental Policy Act of 1969 (NEPA) is required prior to Phase 2 of this project. Because the Sky Tram will also require NEPA analysis through the National Park Service (NPS), this document also summarizes NEPA requirements for the NPS as they relate to this project. This document specifically summarizes the following: 1) the requirements of NEPA through both the EDA and NPS to identify the different steps that must be taken for each agency and where they overlap; and 2) the specific items required for the Environmental Narrative Report for the EDA and how they relate to other required components of NEPA.

This document has been structured to serve as a guide for entering the NEPA process for both the EDA and NPS and intentionally uses the future tense to indicate what a future Environmental Narrative Report will contain for the EDA.

2. STRUCTURE OF NEPA ANALYSIS FOR THE PAGO PAGO SKYTRAM PROJECT

A. OVERVIEW OF APPLICATION PROCESS AND PROJECTS INCLUDED

This section of this document summarizes how NEPA applies to the Sky Tram as well as the steps required to begin the NEPA process for the project. Because of the presence of the National Park of American Samoa (Park) adjacent to the project as well as the necessity of grant funding from the EDA, both agencies will need to perform NEPA to approve this project.

Federal agencies are required by law under NEPA to assess the impacts of any proposed federal action, including the provision of federal EDA grant money to projects. SE Group understands that AS-DOC will be applying for an EDA grant as part of Phase 2 of this project, which would provide funding for site design, permitting, and construction should a grant be awarded. The EDA requires that an Environmental Narrative Report be prepared as part of applying for an EDA grant. The specific requirements of this Environmental Narrative Report are discussed in additional detail in Section 3 of this document. The EDA will review all documentation submitted and will proceed through NEPA analysis to assess whether and how the project may affect the environment. The EDA Environmental Officer will need to approve the project through a NEPA decision document before an EDA investment is possible. Because EDA funding would likely be required for all components of the project regardless of the land ownership they

would occur on (e.g., bottom terminal, top terminal, access road upgrades, etc.), all would be subject to NEPA review through the EDA.

Although all lands within the Park are locally owned by the seven villages in the vicinity of the Park, the NPS has a fifty-year lease from the American Samoa Government to use these lands for Park purposes.[1] Because these lands are under the jurisdiction of the NPS, the NPS would be required to review any actions for the Sky Tram project located on this land. For this project, potential impacts would be limited to necessary access improvements/use to access the top terminal site (the bottom and top terminals of the Sky Tram would not be located within the Park). The NPS is also required to assess Connected Actions, which included actions that cannot or will not proceed unless other actions are taken previously or simultaneously (40 CFR § 1508.25 Scope). Because the Sky Tram could not be constructed without use and improvement of the access road, construction of the Sky Tram is considered a Connection Action and would be considered as part of the NEPA process with the NPS. To initiate NEPA with the NPS, a Project Proposal Letter (PPL) would need to be submitted to the Park superintendent. This PPL will be a modified version of the environmental narrative report submitted to the EDA. This PPL will identify that the 1997 National Park of American Samoa General Management Plan Environmental Impact Statement and Record of Decision (1997 General Management Plan) has previously programmatically reviewed and approved the replacement of the Sky Tram. The EIS concluded that "all major construction… will take place on lands already disturbed and containing no natural resource values."[2] No surface archeological features were known to exist at the construction sites. The 1997 General Management Plan also specifically stated that "The aerial tramway that now crosses above Pago Pago Harbor to the top of Mt. Alava is to be replaced with a new system to be used to bring national park visitors into the Tutuila unit. Use of the tramway is part of NPS's and the public's access rights under the lease agreement. NPS believes the tramway provides an ideal way to bring large numbers of visitors into the Tutuila unit without adversely affecting park resources - that is, no new roads will need to be built within the national park to access prime scenic views and park resources."[3] The NPS site-specific NEPA analysis can tier to the 1997 General Management Plan EIS.

This preliminary assessment of the Sky Tram project and associated agency jurisdiction indicates that NEPA review of the project will be necessary by both the EDA and NPS. NEPA regulations specify that "*to the extent practicable, if a proposal will require action by more than one Federal agency and the lead agency determines that it requires preparation of an environmental assessment, the lead and cooperating agencies should evaluate the proposal in a single environmental assessment and, where appropriate, issue a joint finding of no significant impact.*" (40 CFR § 1501.7) Therefore, when the Environmental Narrative Report is submitted to the EDA, SE Group recommends that AS-DOC requests a joint meeting between the EDA and NPS to discuss lead and cooperating agency determinations to allow for an efficient NEPA review of the Sky Tram project. It is also possible that one agency may perform the

[1] https://www.nps.gov/npsa/learn/management/upload/npsagmp1997textop.pdf, 1997 General Management Plan, p.5
[2] https://www.nps.gov/npsa/learn/management/upload/npsagmpeis1997textop.pdf, 1997 General Management Plan EIS, pp. 177-178
[3] https://www.nps.gov/npsa/learn/management/upload/npsagmp1997textop.pdf, 1997 General Management Plan, p. 33

NEPA analysis as the lead agency and the other does not request cooperating agency status, but subsequently adopts the environmental analysis and issues its own decision document.

B. ANTICIPATED LEVEL OF NEPA ANALYSIS

This section provides a brief summary of the anticipated NEPA process for both the NPS and EDA. NEPA analysis occurs through three main categories of documentation: categorical exclusions (CEs); Environmental Assessments (EAs); or Environmental Impact Statements (EISs). Because no substantial resources of concern have been identified at this point, it is possible that NEPA analysis could proceed through a CE or EA; however, the 2022 RFP indicated the EDA would review the Environmental Narrative Report to determine if an EA or EIS was necessary. Therefore, although this document summarizes the difference between a CE and an EA process, it is understood that an EIS could be required, and more detail could be provided regarding EIS analysis if necessary. A CE process typically takes six to twelve months and involves a single comment period, development of field surveys and preparation of technical reports for resources of concern, and the development of a Decision Memo that documents the absence of Extraordinary Circumstances or why there is no uncertainty that the degree of effect is not significant. An EA process typically takes nine to eighteen months and involves the following steps: a scoping comment period introducing the project to the public; development of field surveys and preparation of technical reports for resources of concern; development of a Draft EA and comment period; development of a Final EA, Response to Comments document, and Draft Decision Notice based on public comment and any revisions to resource analysis; discussion and resolution of objections submitted on the Draft Decision Notice; and issuance of the Final Decision Notice.

As indicated by the 2015 NPS NEPA Handbook, projects can be analyzed through a categorical exclusion if they have been found to have no potential for individual or cumulative significant environmental impacts under ordinary circumstances, but whose potential for environmental impacts warrants some level of analysis and formal documentation. [4] The authority for categorically excluding an action rests with the park unit's superintendent. The following NPS categories have been identified as applicable to the project (note that category C.9 would likely only apply to the road improvements portion of the project):

- Section 3.3, Category A.9: At the direction of the NPS Responsible Official, actions where NPS has concurrence or co-approval with another bureau and the action is a categorical exclusion for that bureau.
- Section 3.3, Category C.8: Replacement in kind of minor structures and facilities with little or no change in location, capacity, or appearance.
- Section 3.3, Category C.9: Repair, resurfacing, striping, installation of traffic control devices, repair/replacement of guardrails, etc., on existing roads.
- Section 3.3, Category C.18: Construction of minor structures, including small improved parking lots, in previously disturbed or developed areas.

[4] https://www.nps.gov/subjects/nepa/upload/NPS_NEPAHandbook_Final_508.pdf

- Section 3.3, Category F.3: Grants for replacement or renovation of facilities at their same location without altering the kind and amount of recreational, historical, or cultural resources of the area, or the integrity of the existing setting.

The 2015 NPS NEPA Handbook indicates that an EA would need to be prepared if the proposal has no applicable CE, is not an action that normally requires the preparation of an EIS, and is unlikely to result in significant adverse environmental impacts. This document does not summarize the NPS EA process in detail but that notes a summary of that process is available in Chapter 4 of the 2015 NPS NEPA Handbook.

At this time, a description of NEPA procedures for the EDA was not available online. It is SE Group's understanding that following submission of the Environmental Narrative Report (discussed in detail in Section 3 of this document) alongside the grant proposal, AS-DOC would discuss the proposal and upcoming NEPA process with the EDA Regional Environmental Officer or designated Economic Development Representative.

Note that the Fiscal Responsibility Act of 2023 (HR 3746) modified provisions under the NEPA process, such as by limiting the scope of administrative review of major federal actions and allowing the adoption of another agency's CE for proposed agency actions.[5] The implications of this bill will need to be considered prior to initiating NEPA.

3. SYNOPSIS OF INFORMATION REQUIRED FOR ENVIRONMENTAL NARRATIVE REPORT

This section of this document summarizes the various components required for the Environmental Narrative Report for the EDA, how this information will be used in the future NEPA process for the project, and how this information interacts or overlaps with information necessary for NEPA required for the NPS. The outline in this document follows the Environmental Narrative Report template available on the EDA website.[6]

In general, this section summarizes what research and information gathering will be necessary to complete an Environmental Narrative Report. Where feasible, detail has been added to each section that will be used to support the Environmental Narrative Report itself.

A. PROJECT DESCRIPTION

The project description in the Environmental Narrative Report will discuss beneficiaries of the project, proposed construction, need and purpose, and alternatives to the proposed project, as required by the

[5] https://www.congress.gov/bill/118th-congress/house-bill/3746
[6] https://www.eda.gov/archives/2021/files/programs/eda-programs/Environmental-Narrative-Template-and-Application-Certification-Clause.docx

template. Beneficiaries of the project include "any existing businesses or major developments that will benefit from the proposed project, and those that will expand or locate in the area because of the project."

Construction of the project will be described in "detailed, quantifiable terms." Review of the Environmental Narrative Report template indicates that the description of the proposed construction can be limited to a paragraph or two and must include project location, proposed construction methods, schedule, anticipated disturbance estimates, project lengths and widths, and other relevant details. This information will be summarized from materials produced by SE Group and Leitner-Poma of America during Task 2 (Siting, Capacity, and Costing) and Task 3 (Design Engineering and System Costing) of SE Group's proposal responding to the 2022 RFP. The section on alternatives to the proposed project must include a "detailed description of alternative actions that were considered during the project planning but were not selected (e.g., alternative locations, designs, other projects having similar benefits, and a 'no project' alternative)."

Need and purpose of the project will be based on information contained in the RFP, Comprehensive Economic Development Strategy (2018-2022), 2010 Tourism Masterplan, 1997 General Management Plan, and 1965 Park Proposal. The need and purpose will identify that the project would address the separate needs of both the NPS and AS-DOC. The 1997 General Management Plan identifies that "visitor access to the national park's natural and cultural attributes is to be developed in ways that do not adversely affect park resources or unduly interfere with existing village activities, including traditional subsistence uses. In providing for visitor access to the national park, every attempt will be made to take advantage of existing facilities"[7] while the 2022 RFP indicates that there is a need to "develop a unique visitor attraction to support the recovery, growth, and long-term development of the American Samoa tourism industry." The Sky Tram would provide a unique way to support tourism in American Samoa and would allow visitors enter the Park without adversely affecting Park resources. The information developed regarding the feasibility, including economic feasibility, of this project during Phase 1 will be used to add additional detail to support the need and purpose of the project.

Specific exhibits required include a topographical map of the project area and a site map displaying the project location and boundaries, existing and proposed project components and location of all sites and/or companies benefitting from the proposed project. These exhibits will be produced to accompany the Environmental Narrative Report.

This same information will be used in the project proposal to the NPS as well as throughout the NEPA process as a summary of the proposed projects and the purpose and need for the project.

B. HISTORIC/ARCHEOLOGICAL RESOURCES

The Environmental Narrative Report must identify "any known historic/archeological resources within the project site(s) or area of potential effect that are either listed on the National Register of Historic Places or considered to be of local or State significance and perhaps eligible for listing on the National Register" as well as "an Area of Potential Effect (APE) for the project." An APE is the geographic area

[7] https://www.nps.gov/npsa/learn/management/upload/npsagmp1997textop.pdf, 1997 General Management Plan, p. 26

where the proposal may cause physical disturbance or changes in the character or use of historic properties. For the context of this project, the APE is considered the location of the top and bottom terminals and the area of the road improvements. This APE will be delineated spatially based on final project design by SE Group and LPOA.

This component of the Environmental Narrative Report would typically involve 1) desktop review of previously identified historical resources through the State Historic Preservation Office online database, 2) field survey of the APE to identify historical resources, 3) and preparation of a historical/archeological resource report for submission to the State Historic Preservation Office. The instructions indicate that at least the first two of these steps should be completed prior to submission of the Environmental Narrative Report; however, because of the sensitive nature of historic and archeological resources in the project area, SE Group recommends engaging the EDA to discuss this component and what is specifically required prior to the submission of the Environmental Narrative Report. Should historic resource review and reporting be needed prior to submission of the grant application, a historic/archeological resource specialist will need to be identified for surveys and reporting writing. Any information related to historic/archeological resources, as well as discussion with the EDA, will be summarized here.

Note that the 1994 Resource Management Plan states: "cultural resources of the park are unknown. No cultural resource inventories for any areas of the park have been conducted. There are neither any LCS listed sites nor places on the National Register within the park. Still, we speculate that the park is rich in archaeological sites."[8]

The desktop analysis, field surveys, and reporting are typical components of the NEPA process and would be used as the historical/archeological analysis for NEPA.

C. AFFECTED ENVIRONMENT

The Environmental Narrative Report must summarize "potential direct and indirect impacts from proposed project activities and specify proposed measures to mitigate probable impacts" for all resource areas identified below. This document provides a summary of what will be included for each resource area as well as what supporting information is required.

AFFECTED AREA

This section must describe the general project area, topography, historic land usages, unique geological features, and economic history. A description of wildlife and vegetation in the project area, as well as the anticipated removal of vegetation, should be included. This information will be described from existing published resources on the Park (including the 1997 General Management Plan EIS and 2002 Long-Range Interpretive Plan), information gathered during Phase 1 of this project by SE Group and LPOA, and general understanding of individuals from the NPS and AS-DOC.

[8] https://www.nps.gov/npsa/learn/management/upload/nasa94rmpweb.pdf, 1994 Resource Management Plan, p. 36

The Park is the only designated area in the project area. There are no State parks, National Wildlife Refuges, National Game Preserves, Wilderness Areas, or Wild and Scenic Rivers within or in the vicinity of the project area.

Relevant site photographs will be included in this section.

COASTAL ZONES

The Environmental Narrative Report will indicate whether the project is located within a designated coastal zone and whether the project is compliant with the Coastal Zone Management Act (CZMA). Review of National Oceanic and Atmospheric Administration materials indicate that the entire Territory of American Samoa is considered a coastal zone.[9] The relevant shoreline of Pago Pago Harbor will be identified on a Coastal Zone map and any coastal zone restrictions will be discussed with the Coastal Zone Management team of the AS-DOC, as this is the agency responsible for implementation the CZMA for American Samoa. SE Group understands that the Pago Pago Harbor was designated a Special Management Area (SMA) by the American Samoa Coastal Management Act of 1990 because of its "unique and valuable characteristics" and the "imminent threat from development pressures" (ASCA § 24.0503). The 1997 General Management Plan EIS states that "under the provisions of the [CZMA], all federal government activities in American Samoa must be reviewed and approved by the Coastal Zone Management Program, which performs a [Project Notification and Review System (PNRS)] review of federal projects. Before they are initiated, all development proposals identified in the general management plan for the national park will be submitted for PNRS Board review and approval."[10] Although there would be no effects to the SMA of the Pago Pago Harbor because no infrastructure would be placed within the harbor, the AS-DOC will need to review the project via the PNRS prior to initiating the project.

Discussion of compliance with the CZMA will be disclosed in the PPL to the NPS as well as any future NEPA analysis documents.

WETLANDS

All wetlands will be identified within or adjacent to the project site as well as all direct and indirect effects to these wetlands present. Review of the U.S. Fish and Wildlife Service (USFWS) Wetlands Mapper indicates that there is no mapping of wetlands and other Waters of the U.S. available for American Samoa through this program.[11] A wetland specialist would typically survey the project area for wetlands and other waters of the U.S. and delineate the boundaries of any resources present. A calculation of wetland disturbance would then be estimated by comparing proposed project disturbance and delineated wetland boundaries. At this time, no wetlands have otherwise been identified in the project area and it is assumed that there would be no disturbance to wetlands; however, SE Group recommends that a wetland specialist survey the road area for wetlands and streams as well as areas where a culvert or other drainage needs to be improved. If no wetlands are found in the survey, a description as to why no

[9] https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf
[10] https://www.nps.gov/npsa/learn/management/upload/npsagmpeis1997textop.pdf, 1997 General Management Plan EIS, p. 143
[11] https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper

wetlands would be affected will be provided, such as that all disturbance would be limited to previously disturbed or developed areas where vegetation is not present or there are no wetlands in the project area. Should there be no disturbance to wetlands, this section will indicate that the project would be compliant with EO 11990 Protection of Wetlands.

Should field surveys occur for streams and other water resources in the project area (refer to the Water Resources section), it is recommended that surveys for wetlands also occur at that time.

The information generated related to wetlands will also be included in PPL to the NPS and would be summarized in any NEPA document for both agencies.

FLOODPLAINS

The report will indicate whether the project is located within a mapped 100 or 500 year floodplain. Preliminary review of the Federal Emergency Management Agency (FEMA) Flood Map Service Center indicates that the project area is outside of a floodplain given the base elevation of the bottom terminal location. [12] The floodplain map relevant to the Pago Pago area has been downloaded and is attached to this document. This floodplain map will be submitted alongside the Environmental Narrative Report when provided to the EDA. In addition, the spatial boundaries of the floodplains in the Pago Pago area will be downloaded from the website and included on a map alongside "the project location and boundaries, existing and proposed project components, and location of all sites and/or companies benefiting from the proposed project." The report will also indicate whether the applicant's community participates in the National Flood Insurance Program. Review of the FEMA National Flood Insurance Program website indicates there is one insurance provider, First Insurance Company of Hawaii, that participates in the National Flood Insurance Program in American Samoa.[13] Compliance of the project with EO 11988 Floodplain Management will be noted due to lack of effects to floodplains.

ENDANGERED SPECIES

The Environmental Narrative Report will provide a list of all threatened, endangered, and candidate species located in or near the project area. A GIS shapefile of the project area will be uploaded to the USFWS Information, Planning, and Conservation System (IPaC) website and a report generated indicating what federally-listed species could occur or have habitat in the project area.[14] A summary of preliminary qualitative potential direct and indirect effects to these species will be provided by stating what type of disturbance (e.g., grading and other ground disturbance, limited tree and shrub removal, noise disturbance, etc.) would occur and how it would affect these species.

To assess effects to federally-listed species in a NEPA analysis, the following steps typically occur: surveys to determine presence/absence of these species as well as migratory birds and other species of local interest; documentation of the results of these surveys as well as a summary of the affected environment, environmental consequences, and cumulative effects of the project in a Wildlife Biological

[12] https://msc.fema.gov/portal/home
[13] https://www.floodsmart.gov/flood-insurance-provider?field_femaflsm_ip_states_value=American%20Samoa%20-%20AS&items_per_page=10
[14] https://ipac.ecosphere.fws.gov/

Assessment (BA). Correspondence with the USFWS, including the submission of the Wildlife BA, will be required to address the requirements of Section 7 of the Endangered Species Act. Because the instructions for the Environmental Narrative Report do not specify which of these steps must be completed prior to submittal the report to the EDA, SE Group recommends that the AS-DOC discuss these steps with the EDA to determine which should be pursued first. Should wildlife surveys and a Wildlife BA need to be prepared prior to submission of the Environmental Narrative Report, a wildlife specialist or subcontractor would need to be identified for use for the project. Note that the development of the future Wildlife BA can be tiered to the Programmatic BA that the NPS is currently under consultation with the USFWS.

At this time, there are an estimated seven species of wildlife with spatial current range believed to or known to occur in American Samoa.[15] This includes the friendly ground-dove (*Gallicolumba stairi*), mao (*Gymnomyza samoensis*), Pacific sheath-tailed bat (*Emballonura semicaudata semicaudata*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), and two species of snails (*Ostodes strigatus*; *Eua zebrina*). Although not currently listed under the ESA, the Samoan flying fox (*Pteropus samoensis samoensis*) is also a species of concern for the area.

No federally-listed botanical or other botanical species of concern have been identified at this time; therefore, it is assumed that botanical surveys and review will not be necessary as part of this report. To confirm this, SE Group recommends that the American Samoa Government discuss botanical resources with the EDA and NPS. If there are federally-listed botanical species that occur in the area, these species would need to be included in consultation with the USFWS. Botanical surveys by a botanical specialist would need to occur. Boardwalks would be used at the top terminal to reduce ground disturbance and because of the narrow ridgeline. Temporarily disturbed areas would also be revegetated with native species where feasible.

The fieldwork and reporting component would serve as the basis for the wildlife and/or botanical analysis for any NEPA document.

LAND USE AND ZONING

This section will describe the present formal zoning designation and current land use of the specific project site and adjacent land parcels, as well as whether the project is located entirely within a city limit. Review of the American Samoa Government website indicates that zoning information is unavailable and further discussion with the American Samoa Government will be necessary to adequately complete this section. SE Group understands the land ownership and associated zoning within American Samoa is complicated; however, because the Sky Tram would be constructed in the general area as the previous tram and because both areas are located on previously disturbed ground, it is assumed that the proposed Sky Tram is consistent with any relevant land use specifications. The report will also indicate whether the area is designated as "prime/unique agriculture lands." Review of the Natural Resource Conservation Service Web Soil Survey indicates that the project area is not located in prime farmland.[16] A map

[15] https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=AS&stateName=American%20Samoa&statusCategory=Listed
[16] https://websoilsurvey.nrcs.usda.gov/app/

depicting the prime farmland classifications for the project area, which indicates the area is not prime farmland, is attached to this application.

Discussion of land use and zoning is often included in NEPA documents during a discussion of other permits required and this information would be included there.

SOLID WASTE MANAGEMENT

This section will indicate the following information: types/quantities of solid waste to be produced; local solid waste collection and disposal methods; expected useful life of disposal facility, and whether recycling is currently being used or will be used in the future. This information will be discussed with staff of the American Samoa Government. It is anticipated that solid waste disposal from the bottom terminal would be integrated with the existing solid waste disposal system in place for the area and waste from the top terminal would be managed via on-site self-composting toilet systems. Trash collected at the top terminal would be transported down to the bottom terminal via the Sky Tram.

HAZARDOUS OR TOXIC SUBSTANCES

This section will describe the toxic, hazardous, or radioactive substances that will be utilized or produced by the project and the manner in which these will be stored, used, and/or disposed. At this time, there are no toxic, hazardous, or radioactive substances that have been identified as necessary for use in the project.

The Applicant Certification Clause, included as an appendix to this document, will be signed by the applicant (AS-DOC).

WATER RESOURCES

The Environmental Narrative Report will discuss the surface and underground water resources at or near the project site and any impacts of the project on these water resources. Typically, analysis of water resources involves field surveys to identify perennial, intermittent, and ephemeral streams in the project area and preparation of an assessment of stream health and watershed conditions (baseline, existing, and proposed). This information is often included in a technical report of hydrology resources. Given that there are minimal stream channels in the project area, SE Group recommends that AS-DOC discuss water quality and streams channels in the project area with relevant NPS staff familiar with the area. This information will be summarized in this section of the report. Should surveys for water resources be necessary, a hydrology/stream specialist would need to be identified for fieldwork and reporting.

There are no discharges to surface waters anticipated to occur as a result of this project; however, a construction stormwater permit through the National Pollution Discharge Elimination System (NPDES) will be needed as more than one acre of ground disturbance will occur for the project.[17]

As indicated by the U.S. Environmental Protection Agency How's My Waterway website,[18] there are no waterbodies assessed in the Tutuila Island-Frontal South Pacific Ocean watershed; however, additional detail on water quality in American Samoa is available in the Territory of American Samoa Integrated

[17] https://www.epa.gov/npdes/stormwater-discharges-construction-activities
[18] https://www.epa.gov/waterdata/hows-my-waterway

Water Quality Monitoring and Assessment Report (2020).[19] Information from this document will be reviewed and summarized briefly in this section. In addition, review of the map of Sole Source Aquifer Locations indicates that the project area is not within a Sole Source Aquifer. [20] There is no anticipated usage of groundwater as no wells would be constructed for the project. Water for the bottom terminal would be provided via integration with the existing municipal supply system and would be transported to the top terminal site. Although there would be an increase in impervious surface from the proposed plazas and boardwalks adjacent to both the top and bottom terminals, the design of the plazas during Phase 2 will consider measures like stormwater swales and/or permeable pavement to reduce stormwater runoff. Furthermore, mitigation measures will be identified in Section 4 as well as in the NEPA process to minimize stormwater runoff. Therefore, there would be no induced changes in local surface water runoff patterns.

This information will also be included in the proposal to the NPS and would serve as the foundation for analysis of hydrology resources in any NEPA document.

WATER SUPPLY AND DISTRIBUTION SYSTEM

This section will "indicate the source, quality, and supply capacity of local domestic and industrial/commercial water resources, and the amount of water that project facilities and primary beneficiaries are expected to utilize." Water would be supplied to the bottom terminal of the Sky Tram from existing water lines adjacent to site. Existing water supply is adequate to support the water demand that is expected to occur from the project. Because any increased visitation to Tutuila will likely be short-term (i.e., a few hours for cruise ship visitors and few days for those who fly to the island), it is not expected that demand for water in the project area would measurably increase. Water for the top terminal would be transported to the area via either the tram or by vehicle up the access road. This water would support a small potable water receptacle at the top for limited drinking and hand washing. Should additional information be necessary to address this section, these items will be discussed with the American Samoa Government.

This information will be included in the description of the proposed project in the PPL to the NPS as well as in the description of the Proposed Action in any associated NEPA document.

WASTEWATER COLLECTION AND TREATMENT FACILITIES

The Environmental Narrative Report will describe wastewater treatment facilities available for processing the additional effluent, including design capacities, current loading, and adequacy of the current system. The section will also discuss "all domestic class or process wastewater or other discharges associated with the project facilities and its primary beneficiaries, and the expected composition and quantities to be discharged either to a municipal system or to the local environment. Indicate all discharges that will require on-site pre-treatment." Based on review of other similar Environmental Narrative Reports, this section will provide a high-level summary of the existing wastewater treatment facilities that would be

[19] http://www.epa.as.gov/sites/default/files/documents/public_notice/2020%20Draft%20IR%20for%20Public%20Comment%202021%2003%2016.pdf
[20] https://www.epa.gov/dwssa/map-sole-source-aquifer-locations

used to serve the proposed project. Any unknown information, such as design capacity and current and estimated loading, will be identified at that time.

It is anticipated that wastewater collection for the bottom terminal will be through the existing wastewater system and the associated Tafuna Wastewater Treatment Facility and Utulei Sewage Treatment Plant, which have adequate capacity to handle any wastewater and sewage associated with visitation to the project area. Review of NPDES permits AS0020010 for the Tafuna Wastewater Treatment Facility and AS0020001 for the Utulei Sewage Treatment Plant indicates that the facilities are in compliance with the provisions of the Clean Water Act and are authorized to discharge treated wastewater from the plant to receiving waters[21] Composting toilets would be used at the top terminal to address wastewater treatment needs.

This information will be included in the description of the proposed project in the proposal to the NPS as well as in the description of the Proposed Action in any associated NEPA document.

ENVIRONMENTAL JUSTICE

This section will describe compliance with EO 12898, which directs agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. The project would not disproportionately affect low income or minority populations because these populations would still have the same access to all sites (e.g., bottom terminal, top terminal, and areas within the Park) that would be affected by the project. Furthermore, access to the Park by all members of the public would be improved through installation of the Sky Tram, as residents and visitors alike could travel directly to the top of Mt. Alava and proceed to enter the park instead of driving or hiking the currently unmaintained road to the area. Access on the Sky Tram for residents of the island would be provided at a reduced cost relative to the general public. In addition, this section will summarize the economic benefits that are estimated to occur to American Samoa as a result of this project. These will be quantified at a high level during the Phase 1 analysis that is currently occurring and will include a brief discussion of employment, town revenue, and visitor spending.

Compliance with EO 12898 and evidence supporting this conclusion will need to be disclosed in any future NEPA documentation.

TRANSPORTATION (STREETS, TRAFFIC, AND PARKING)

The project will maintain or improve transportation patterns and traffic flow in the project area. Because it is anticipated that a substantial portion of the use of the Sky Tram would occur from visitors to the island arriving from cruise ships who would not be renting a vehicle, no substantial changes in traffic patterns are expected. To address concerns regarding transportation patterns from the project, cruise ship passengers would be transported from the elevation of the harbor up to the bottom terminal of the tramway by a funicular (inclined elevator). It is not anticipated that vehicular shuttles would be necessary. All roads to the bottom terminal site are currently paved and in adequate condition to support the construction phase and incidental passenger drop off. There would be no additional vehicular access to the top terminal site because the access road would be allowed for use by authorized vehicles only. No

[21] https://www.epa.gov/npdes-permits/american-samoa-npdes-permits

additional parking would be necessary for the project as there would be no increase in passenger vehicles from tourists. It is anticipated that there would be sufficient existing parking within walking distance to the funicular and Sky Tram for residents (e.g., parking along Route 001 or Route 118); should parking or transportation be identified as a concern in the future, a parking and transportation management plan could be developed. Note that as the American Samoa Tourism Master Plan continues to be built out, additional parking will also likely become available.[22]

This section will include the visitation estimates provided during Phase 1 of the analysis and will identify whether other land uses in the vicinity—such as residential, hospital, schools, or recreation—will be affected by any anticipated changes in traffic patterns resulting from the project.

This information would be disclosed in any future NEPA documentation.

AIR QUALITY

Because the Clean Air Act only gives Class I designation to national parks larger than 6,000 acres, the Park is not a Class I Airshed.[23] Construction and operation of the proposed project (including short-term construction-related activity) as well as increases in visitation could result in localized impacts to air quality as well as greenhouse gas (GHG) emissions from the generation of electricity by diesel generators to power the Sky Tram and by cruise ships or planes traveling to the area. Diesel generators emit relatively high levels of nitrogen oxides, carbon monoxide, particulate matter and sulfur and could increase concentrations of these pollutants in the project area; however, because the increase in electricity generation would be small relative to the overall electricity demand, it is not likely that the project would contribute to a decrease in air quality.

The EPA Green Book website was reviewed for nonattainment areas for criteria pollutants and no areas of nonattainment in proximity to Pago Pago were identified. [24]

There are no local topographical or meteorological conditions that hinder the dispersal of air emissions. Because the project area is surrounded by air currents of the Pacific Ocean, all emissions disperse rapidly from the project area.

A permit from the American Samoa Environmental Protection Agency may be required depending on the source of energy generation, such as a new diesel generation source.[25] The source of electricity will be discussed during Phase 2 planning and further identified at that time.

Effects to air quality and compliance with the Clean Air Act will need to be disclosed in any future NEPA documentation.

[22] http://investinamericansamoa.com/wp-content/uploads/2017/05/AS-Tourism-Master-Plan-2010.pdf
[23] https://www.nps.gov/subjects/air/class1.htm#:~:text=Class%20I%20Areas,are%20%E2%80%9CClass%20I%E2%80%9D%20areas
[24] https://www.epa.gov/green-book
[25] http://www.epa.as.gov/air-quality

NOISE

The project would result in a moderate increase in noise from the operation of the Sky Tram and funicular as well as the anticipated increase in visitors to the area. This increase in noise would be most noticeable at the bottom terminal, where the Sky Tram and funicular would be powered, and may be perceptible to residents directly adjacent to the bottom terminal. The Sky Tram itself would create minimal audible disturbance, as the terminal would be electric and would not require power generation such as a generator adjacent to the bottom terminal. Operation of the funicular and other associated activities (e.g. visitor noise, cable car movement) may be audible from buildings and houses adjacent to the Sky Tram; however, it is noted that this project would be constructed adjacent to an active shipping harbor and any increases in noise would likely be negligible. There would be minimal disturbance from noise at the top terminal as there are no sensitive receptors near the top terminal and there would be minimal equipment required to operate the top terminal. This noise would primarily occur during the daylight hours when the Sky Tram is operating.

Note that there would also be a short-term increase in noise during the construction period at both the top and bottom terminals as well as along the access road. This increase in noise would end when construction ends.

This information would be disclosed in any future NEPA documentation.

PERMITS

This section will identify any Federal, State, or local permits of an environmental nature needed for the project. Below is a preliminary list of additional permits that will need to be acquired prior to construction of the project. This list will be reviewed in detail with the American Samoa Government. The list of additional permits includes:

- USACE, Clean Water Act, Section 404 Permit
- USEPA NPDES permit for construction stormwater discharge
- American Samoa EPA Air Quality Permit
- American Samoa Land Use and/or Zoning Permits

PUBLIC NOTIFICATION/CONTROVERSY

This section will provide evidence of public engagement for the project to fulfill instructions specifically stating “the community’s awareness of the project, such as newspaper articles or public notification and/or public meetings, as applicable. If a formal public hearing has been held, attach a copy of the minutes. Fully describe any public controversy or objections which have been made concerning this proposed project and discuss steps taken to resolve such objections.”

As a portion of the feasibility analysis, AS-DOC has initiated an active dialogue with key community stakeholders. It is anticipated that this will continue and increase measurably as a portion of the design and permitting phase of the project. In addition, there will be a variety of public engagement opportunities throughout the upcoming NEPA process, such as designated scoping periods and/or comment periods.

Tribal involvement and consultation in the NEPA process is dictated by a variety of laws and regulations, including Section 106 of the National Historic Preservation Act (NHPA), Sections 1501.2 and 1501.7 of the CEQ Regulations, Executive Order (EO) 13175 – Consultation and Coordination with Indian Tribal Governments, and the NPS NEPA Handbook. Although review of the Bureau of Indian Affairs website indicates that there are no federally recognized tribes in American Samoa and therefore official government-to-government consultation will not need to occur for this project, AS-DOC will proceed with detailed engagement with each of the villages that own land pertinent to the project.[26] At this time, no substantial controversy has been identified for the project.

CUMULATIVE EFFECTS

This section will list all projects both public and private that have occurred or will occur in the past, present, and future adjacent to the project area that could result in cumulative impacts when considered with the current project. This section will identify which resources, ecosystems, and human communities are affected by the direct and indirect impacts associated with the resources discussed previously. This list will need to be compiled in coordination with the American Samoa Government to include all construction projects, development, and tourism projects that have occurred in the past or are anticipated for the future. A summary of how these projects have affected or will affect the natural resources of the area will be included in this section.

Cumulative effects analysis is required for all resources considered in NEPA analysis; therefore, the list of projects and their associated cumulative effects would be included in any future NEPA document.

D. OTHER RESOURCES NOT DISCUSSED IN THE ENVIRONMENTAL NARRATIVE REPORT OUTLINE

Although not specifically identified in the EDA Environmental Narrative Report template, SE Group has identified that the following resources will also likely require analysis through the NEPA process.

SCENERY

Development of proposed project would result in a change in the scenic characteristics of the project area by introducing additional infrastructure on the sides of and across the Pago Pago Harbor. The NPS or EDA may request the development of foreground visual simulations that will show what the Sky Tram would look like across the harbor and/or what the bottom terminal/funicular area would look like. The project would need to be compliant with relevant NPS visual management guidelines, which will be discussed with NPS staff prior to and following the submission of the PPL. Should detailed scenery analysis need to occur, such as through visual simulations, a specialist capable of developing these visual simulations would need to be found. SE Group can provide these visual simulations if they are required.

RECREATION AND USE OF THE PARK

The proposed project has the potential to change recreational and visitor use patterns to the Park as well as to American Samoa in general. Although not necessary for this proposal, analysis will likely need to be

[26] https://www.bia.gov/service/tribal-leaders-directory/federally-recognized-tribes

conducted to estimate changes to recreation and visitor use patterns (e.g., increases in visitation to Pago Pago, increases in use of Park services, indirect increases in use of other recreation areas on American Samoa).

4. MITIGATION

This section will describe the methods to be employed to reduce impacts to any and all adverse impacts identified in Section 4.C. This section should be developed in coordination with the American Samoa Government and with NPS staff to identify typical mitigation measures that are used for projects in the Park. Furthermore, SE Group can assist with preparing mitigation measures based on final site design as well as from other similar projects. These mitigation measures can include the following:

- Construction Management: Project timelines, project contracts, disturbance boundaries, grading and site plans, staging and parking areas, construction access, and any required survey information.
- Erosion Control and Drainage Management: Erosion control and drainage management activities.
- Post-Construction Revegetation and Restoration: Methodology, locations, vegetative mixes, and soil amendments.
- Noxious Weed Management: Weed control methodologies including equipment cleaning, pretreatment, and post-construction monitoring and treatment.
- If undocumented historic and/or prehistoric properties are located during ground disturbing activities or planning activities associated with approved construction activities, all construction in the immediate vicinity shall cease in accordance with 36 CFR § 800.11.

It is acknowledged that mitigation measures are typically refined and expanded throughout the NEPA process as analysis proceeds so this list can be updated as needed.

5. CONCLUSION

This report addresses Item 3 of the September 2022 RFP for the Pago Pago Sky Tram and identifies information/data gathering that will be necessary for the Environmental Narrative Report for the EDA as well as other necessary steps to begin the NEPA process for both the EDA and NPS. Ultimately, the AS-DOC will be responsible for submitting an Environmental Narrative Report to the EDA summarizing the information discussed previously as well as a PPL to the NPS. SE Group recommends a conversation with the relevant EDA representative to confirm assumptions and requirements prior to submission. The following is a summary of preliminary questions that should be discussed with the EDA:

- Anticipated category of NEPA required (CE vs EA vs EIS)
- Whether cultural resource surveys and preparation of a cultural resources report is necessary prior to submission to the Environmental Narrative Report

- Whether natural resource surveys and associated reporting for wetlands and streams, wildlife species, and botanical species need to occur prior to submission of the Environmental Narrative Report
- How the presence of a CZMA may or may not affect the project NEPA process

Additional questions regarding the content of the Environmental Narrative Report itself (e.g., project description, water supply, etc.) are included throughout this document but are not summarized here. Because both the EDA and NPS will need to do site specific analysis for the project under NEPA, SE Group also recommends coordinating with both agencies prior to initiating NEPA to identify potential efficiencies in the NEPA process. Because of SE Group's familiarity with the Sky Tram, Environmental Narrative Report requirements, and NEPA requirements, SE Group can provide additional assistance with the discussion with these agencies, the preparation of the Environmental Narrative Report, and subsequent NEPA process as required.

APPENDIX B

MARKET ASSESSMENT

This page intentionality left blank.

American Samoa

Pago Pago Sky Tram

Market Study Report

PREPARED BY:
RRC ASSOCIATES
303-449-6558
www.rrcassociates.com

PREPARED FOR:

The

American Samoa

Government

Table of Contents

Executive Summary and Key Findings

This section provides overall highlights from the Report for The Pago Pago Sky Tram ("Aerial Tramway"). Please see the main body of the Report for more detail on these and other topics.

- Air Arrival Type and Volume. American Samoa is yet to recover to their pre-Pandemic levels. Around 75,000 air arrivals were recorded for American Samoa in 2019, though as of 2022 this number is only around 16,000. The air arrivals recorded in 2019 were largely residents (64%), with only 6% being tourists. This share of tourists traveling by air is notable, as it is the result of a 29.6% decrease in the arrival type from 2010 to 2019. While the share of tourists have been trending lower and lower in recent years, the ASVB has also identified arrivals that are visiting relatives, business travelers, and residents coming back to American Samoa as potential visitors for the Pago Pago Sky Tram.

  Cruise Arrival Volume and Opportunities. The Pago Pago harbor expects **more than 40,000 cruise passengers in 2023, passengers whose potential interests align well with the low-intensity recreation of the Aerial Tramway.** With some cruise ships having carrying capacities as large as a full month of air travel to the Pago Pago airport. The 2023 cruise season is also expected to mark a number of major cruise lines having fully recovered from Covid-19, making full capacity cruise ships more likely, and future years of destination travel to American Samoa more promising. As more cruise liners plan their stops at American Samoa, this market segment will only grow in importance for tourism in the area. Cruise tourists do not require the normal infrastructure to house, feed, or entertain for lengthy periods of time. American Samoa will want to leverage this promising visitor type by establishing partnerships with the cruise liners. This can be done through discounted Aerial Tramway ticket pricing and other exclusive deals that cruise passengers can take advantage of, as the majority of these tourists will likely be seeking something to check off their bucket list before departing.

- National Park of American Samoa. At its peak year of visitation in 2017, the National Park of American Samoa had more than 69,000 visits. Given the large share of visitors, **there is opportunity while American Samoa develops the Aerial Tramway to coordinate this effort with the national park so that visitors could enjoy both on a single day.** This is an especially promising relationship because it would allow visitors to ascend to the top of the terminal located in a private inholding within the National Park of American Samoa, an otherwise complicated and challenging endeavor that would deny many (especially older or less physically able) visitors an incredible experience at the National Park of American Samoa. This, in turn, would help both the Aerial Tramway and the National Park of American Samoa.

- Aerial Tramway Key Considerations. Using the Goldbelt Tram, which is largely impacted by its own seaport visitation, as a case study, has illustrated that there are a number of considerations that should be addressed in the operation of an Aeriel Tramway at Pago Pago. Namely, **tourists from cruise ships are expected to have limited time in the area (typically 6-8 hours). As such, the Aerial Tramway is likely to receive heavy pulses of use as passengers disembark from their cruise ships.** To spread out these pulses, the American Samoa Government should coordinate and create partnerships with other attractions and organizations. This will reduce the wait time for the tram, particularly in the hours immediately following the disembarkation of a large cruise ship.

- Ridership Volume Expectations. Given the expectation of these heavy pulses with more than 4,000 tourists disembarking at once and the limiting timeframe, building capacity with these pulse considerations will be important. Outside of days in which cruise ships arrive in American Samoa, it is likely that tram ridership will be quite low and thus require strategic operating schedules to concentrate the number of days open per week. This may include consideration of air-based arrivals and mountain top infrastructure servicing requirements.

- Overall Assessment. While there are several barriers that currently exist to building the Aerial Tramway, there is also a great deal of positive sentiment and cultural significance expected of the Aerial Tramway. Furthermore, given the work of the American Samoa Visitor Bureau (ASVB) in securing more than 40,000 seaport tourists coming out of the Covid-19 Pandemic, there is a promising work being done to increase tourism in American Samoa. As the American Samoan Government further develops their plans for the Aerial Tramway, they should consider working with other attraction collaborators to "package" the Aerial Tramway experience. This packaging will be important to stagger the scheduling of Aerial Tramway rides and increase the overall appeal of a day in American Samoa for tourists. **Overall, there are encouraging trends, particularly with the growing share of cruise passengers, that American Samoa can build upon for the launch of the Aerial Tramway.**

Introduction

This Report summarizes research conducted by RRC Associates in coordination with SE Group, on behalf of the American Samoa Government.

The goal of this report is to provide the American Samoa Government ("The Government") with a broader understanding of the market-based opportunities and challenges associated with the reestablishment of an Aerial Tramway spanning the Pago Pago harbor. This Aerial Tramway would be similar to the one built in 1965 that took travelers to the top of Mt. Alava before it was destroyed in an air show accident in 1980. the Aerial Tramway was later rebuilt, but in December 1991, Tropical Cyclone Val struck American Samoa and damaged the Aerial Tramway beyond repair. As an opportunity to bring back an incredible attraction and scenic views of American Samoa, there is a great deal of enthusiasm around the rebuild from the government and other partners such as the ASVB.

This Report presents visitor trends and projections, local market demographic profiles, revenue projections for the Aerial Tramway, and other insights into the visitor market of American Samoa. This Report is intended to serve as a framework for discussions to assist the Government in making strategic decisions around the opportunities for future planning and development scenarios as they relate to the proposed Aerial Tramway. Results can be used to inform what types of opportunities and gaps exist in American Samoa's tourism market.

Research and findings rely on a combination of professional experience and secondary research. Secondary research sources include reports and data gathered by the U.S. Census Bureau, The Statistical Yearbook of American Samoa, The ASVB, RRC Associates in-house data, and other sources.

Local Economy and Demographics

American Samoa Economy

In 2020, The Government generated $351.6 million in revenue and incurred $348.1 million in expenses, resulting in an operations surplus of $3.5 million. From 2010 to 2020, the government's financial statements have consistently reflected a positive cumulative year-end fund balance of $47 million as of 2020. This financial stability was largely attributed to two significant bond sales in 2015 and 2016 that generated approximately $79 million.

Federal funds accounted for 67.6% of the total funds received by the American Samoan Government in 2020, amounting to $237.6 million, while local revenues comprised the remaining 32.4% at $114.1 million. Income and excise taxes contributed $77.4 million, with $12.1 million from charges for services, $8.1 million from fines and fees, $5.1 million from indirect cost, and the rest from other local sources. The government allocated 31.9% of the funds towards Health and Welfare, 23.3% on Education and Culture, 25.8% on General Government, and 5.1% on Economic Development.

In 2020, the estimated current employment was 16,399, which was a decrease of 2.3% from the previous year's estimate. Government jobs accounted for 40.3% of all employment, while the private sector jobs, including the Cannery, comprised 59.7%. The number of government jobs has been increasing over the past five years.

The minimum wage in American Samoa increases by $0.40 per hour every three years, with the most recent increase occurring in 2021. The minimum wage rate will continue to rise until it reaches the rate applicable in the U.S., which is currently $7.25 per hour. Current wage rates (as of September 30, 2021) vary depending on the industry but all fall within the range of $5.38 - $6.79. Workers in the Tour and Travel Services industry fall near the center of this range at a rate of $6.18 as of September 30, 2021.

American Samoa Demographic Characteristics

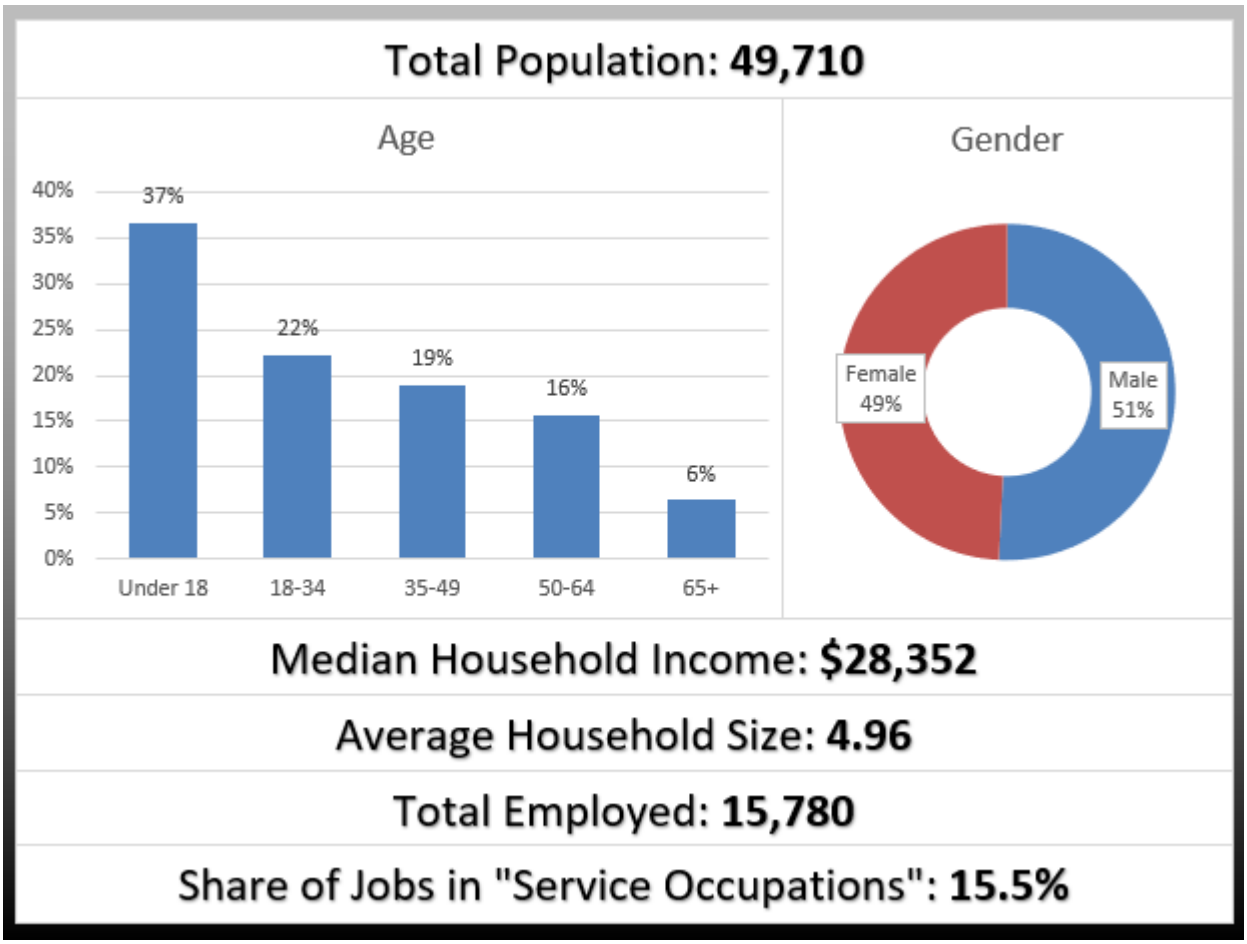
The demographic characteristics of American Samoa are available through the *American Samoa 2020 Statistical Yearbook,* a collection of statistics and trends of demographic, social, and economic characteristics of the territory from censuses, surveys, and administrative records. With more recent data on demographic characteristics coming from the U.S. Census 2020 Decennial Census of Island Areas.

As reported in the *American Samoa 2020 Statistical Yearbook,* most recent census count of American Samoa indicates a decline in population from 55,519 in 2010 to 49,710 in 2020, a loss of 5,809 persons. However, there is reason to believe this decline in population is less significant than these numbers suggest. Despite historic natural growth and travel statistics indicating higher population estimates, recent censuses did not undergo thorough scientific-demographic assessments for complete counts. The Covid-19 Pandemic and associated restrictions also impacted the house-to-house personal interviewing in 2020, causing a three-month halt.

The U.S. Census Bureau has since come out with more data on American Samoa through the 2020 Decennial Census of Island Areas survey. This 2020 census provides the most recent detailed characteristics of the population. In 2020 the median age was 27.7 years. About 36% of the resident population was foreign-born, with just under 3,000 born in the United States.

In 2020, the median household income was $28,352, with 56% of the population 16 years and over in the labor force. The industries with the greatest share of American Samoan workers are educational services, and health care and social assistance (22%), manufacturing (19%), public administration (12%), and retail trade (11%). More than half (53%) of the population 25 years and over are high school graduates (or equivalency), with 89% being high school graduates or a higher degree.

Figure 1. American Samoa Demographic Overview, 2020



Source: U.S. Census 2020 Decennial Census of Island Areas

Overview of American Samoa Tourism

Establishment of the ASVB

As a means to revitalize tourism in American Samoa, legislation was passed in 2009 that authorized the creation of the ASVB, governed by an independent Board of Directors, but with funding provided by government appropriations. Resort Consulting Associates (RCA) worked closely with the ASVB to garner the local and regional insights and so that there was a joint-effort in developing the elements of a Tourism Master Plan published in 2010[1].

Since its establishment in 2009 and moving into the present day, the ASVB has self-reported that their primary goals focused around increasing ASVB marketing and visitation/tourism numbers. In the 2010 Tourism Master Plan, the ASVB was given more form and direction through a suggested organizational structure from RCA. One of the big successes of this Master Plan was considered to be this structure that helped formalized the ASVB.

As American Samoa comes out of the Covid-19 Pandemic, the ASVB has stated that they are focused on growing the number of annual tourists to the area, primarily through increasing the number of cruise ship arrivals and partnerships with other destinations in the region.

ASVB Goals and 2010 Projections

In the 2010 Tourism Master Plan, RCA created projections relative to the estimated level of visitation and then estimated the impact on the inter-related tourism support structures such as lodging, rental cars, restaurant seats, and ancillary spending. In creating these projections, the RCA based their underlying assumption on a more aggressive growth rate for tourism and associated crew members needed to provide for this influx of tourists.

Table 1. Assumption of % Change in Volume of Annual Air/Sea Arrivals by Travel Purpose

Travel Purpose	CAGR 2005-09	Y1 2010	Y2 2011	Y3 2012	Y4 2013	Y5 2014	Y6 2015	Y7 2016	Y8 2017	Y9 2018	Y10 2019	Y11 2020	Y12 2021
Resident	3.9%	2.0%	2.0%	2.0%	2.0%	2.0%	1.5%	1.5%	1.0%	0.8%	0.8%	0.8%	0.8%
Transit	7.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%
Crew	-	10.0%	11.0%	11.0%	11.0%	4.0%	14.0%	14.0%	12.0%	12.0%	10.0%	10.0%	10.0%
Business	9.9%	-7.0%	4.0%	4.5%	4.5%	4.5%	5.0%	5.0%	5.0%	5.5%	5.5%	5.5%	5.5%
Employment	5.8%	4.0%	4.0%	4.0%	4.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Tourist	-2.0%	7.0%	9.0%	13.0%	17.0%	0.0%	25.0%	25.0%	30.0%	28.0%	25.0%	25.0%	20.0%
Visit Relative	-5.0%	5.0%	5.0%	6.0%	6.0%	2.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%

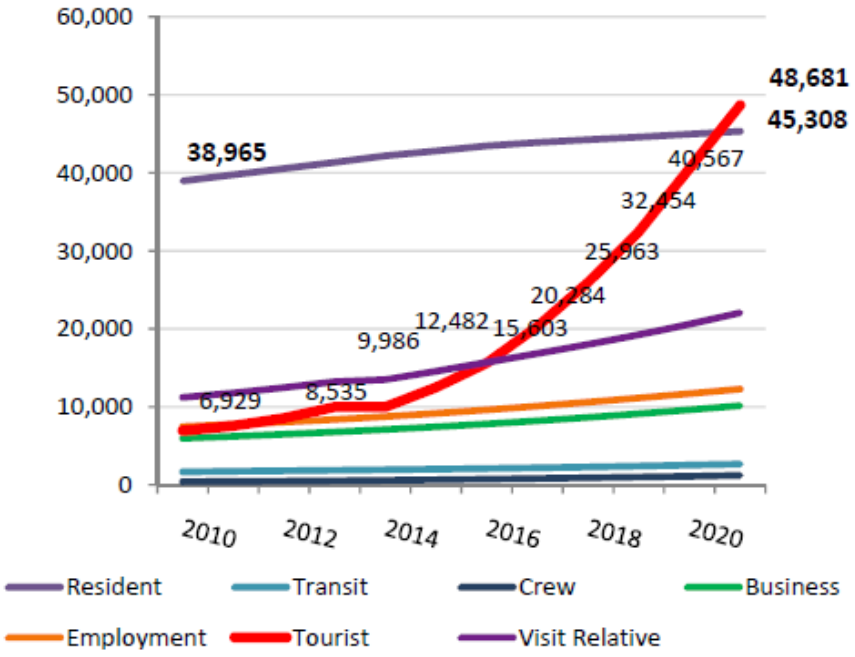
Source: 2010 American Samoa Tourism Master Plan

The underlying assumption is that rather than pursue a “slow and steady” growth in tourism, which would likely have imperceptible results for many years, American Samoa

[1] Resort Consulting Associates, LLC, *American Samoa Tourism Master Plan,* June 2010: http://investinamericansamoa.com/wp-content/uploads/2017/05/AS-Tourism-Master-Plan-2010.pdf

will “kick-start” its tourism growth with aggressive marketing and thereby generate significant, short-term results. This assumption was based on the perception of a need for new job opportunities to replace former cannery positions, which fell dramatically from 4,633 employees in 2007, to 1,553 employees as of the publication of the Tourism Master Plan in 2010. This loss of jobs was one of the driving forces behind recommending the more aggressive approach for developing tourism in the territory.

Figure 2. Projected Air/Sea Travelers by Purpose



Source: 2010 American Samoa Tourism Master Plan

RCA identified numerous ways in which the ASVB could build out their tourism infrastructure, identifying areas of improvement in lodging, dining, recreation, infrastructure, and more. These current and potential assets of American Samoa were expected to be one part of their tourism effort, a type of “Build it and They will Come” approach that largely is based on the idea that better tourism infrastructure will inevitably lead to more visitation. In addition to this method of boosting tourism, RCA recommended that American Samoa would also need to “jump-start” their tourism offerings. Marketing their future assets and creating new, iconic offerings well in advance of when the visitor demand would typically justify their development.

The tables below serve as direct Year-over-Year comparisons to the optimistic projections that RCA built into their models. With Table 2 referencing the growth as a year-over-year percentage and Table 3 giving further context with the full air arrival numbers from 2010 through 2020.

As illustrated below, growth across most sections of American Samoa’s visitors has lacked an overall direction. While **overall travel to American Samoa did increase by**

12% from 2010 to 2019, this was primarily the result of a steady growth in visitation from residents, not tourists which decreases 29.6% in the same timeframe. Visits by tourists decreased by nearly one-third in the same time period.

Table 2. Year-over-Year Change in Share of Air Arrivals by Travel Purpose, 2010 - 2020

Year	2010 v. 2019	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	**12.09%**	**-0.06%**	**0.75%**	**-8.56%**	**4.67%**	**3.02%**	**4.99%**	**2.25%**	**5.63%**	**-0.43%**	**-85.28%**
Residents	29.48%	1.71%	2.50%	-9.71%	4.60%	6.06%	6.74%	4.89%	10.29%	0.42%	-86.17%
In-Transit	253.28%	33.83%	52.92%	-5.99%	-42.53%	-15.30%	18.51%	20.00%	122.54%	19.19%	-93.42%
Crew	-14.12%	-42.60%	109.13%	9.11%	28.17%	26.87%	-32.30%	-0.32%	-21.24%	-24.14%	544.03%
Business	-49.09%	-7.82%	1.77%	-24.46%	-2.88%	-1.95%	-12.69%	-6.50%	9.68%	-15.73%	-90.13%
Employment	15.91%	0.67%	-11.38%	-5.86%	6.61%	14.05%	19.38%	-5.17%	-7.52%	8.41%	-85.16%
Tourist	-29.61%	-7.25%	-3.75%	-6.20%	-6.20%	-3.43%	8.69%	10.45%	-13.25%	-10.91%	-95.29%
Visit Relative	-3.53%	1.91%	-1.86%	0.11%	14.86%	-7.86%	-2.23%	-4.28%	-1.06%	-1.69%	-97.26%

Source: American Samoa 2020 Statistical Yearbook

Table 3. Year-over-Year Change in Share of Air Arrivals by Travel Purpose, 2010 - 2020

Year	2010 (2010 v. 2019)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	**67,513 (12.09%)**	**67,470 (-0.06%)**	**67,979 (0.75%)**	**62,157 (-8.56%)**	**65,059 (4.67%)**	**67,025 (3.02%)**	**70,370 (4.99%)**	**71,952 (2.25%)**	**76,002 (5.63%)**	**75,676 (-0.43%)**	**11,143 (-85.28%)**
Residents	37,540 (29.48%)	38,182 (1.71%)	39,136 (2.5%)	35,335 (-9.71%)	36,961 (4.6%)	39,202 (6.06%)	41,843 (6.74%)	43,890 (4.89%)	48,405 (10.29%)	48,606 (0.42%)	6,720 (-86.17%)
In-Transit	473 (253.28%)	633 (33.83%)	968 (52.92%)	910 (-5.99%)	523 (-42.53%)	443 (-15.3%)	525 (18.51%)	630 (20%)	1,402 (122.54%)	1,671 (19.19%)	110 (-93.42%)
Crew	439 (-14.12%)	252 (-42.6%)	527 (109.13%)	575 (9.11%)	737 (28.17%)	935 (26.87%)	633 (-32.3%)	631 (-0.32%)	497 (-21.24%)	377 (-24.14%)	2,428 (544.03%)
Business	5,873 (-49.09%)	5,414 (-7.82%)	5,510 (1.77%)	4,162 (-24.46%)	4,042 (-2.88%)	3,963 (-1.95%)	3,460 (-12.69%)	3,235 (-6.5%)	3,548 (9.68%)	2,990 (-15.73%)	295 (-90.13%)
Employment	6,431 (15.91%)	6,474 (0.67%)	5,737 (-11.38%)	5,401 (-5.86%)	5,758 (6.61%)	6,567 (14.05%)	7,840 (19.38%)	7,435 (-5.17%)	6,876 (-7.52%)	7,454 (8.41%)	1,106 (-85.16%)
Tourist	6,126 (-29.61%)	5,682 (-7.25%)	5,469 (-3.75%)	5,130 (-6.2%)	4,812 (-6.2%)	4,647 (-3.43%)	5,051 (8.69%)	5,579 (10.45%)	4,840 (-13.25%)	4,312 (-10.91%)	203 (-95.29%)
Visit Relative	10,630 (-3.53%)	10,833 (1.91%)	10,632 (-1.86%)	10,644 (0.11%)	12,226 (14.86%)	11,265 (-7.86%)	11,014 (-2.23%)	10,543 (-4.28%)	10,431 (-1.06%)	10,255 (-1.69%)	281 (-97.26%)

Source: American Samoa 2020 Statistical Yearbook

Current Tourism Infrastructure

As of their 2010 Tourism Master Plan, American Samoa has a total of 256 lodging units readily available. These units were referenced by their lodging property in the Master Plan and when discussed with the ASVB recently, this number has only increased slightly, remaining somewhat below the threshold of 300 lodging units.

RCA identified the general characteristics of these lodging units, stating that the 2010 inventory followed these themes:

- Limited Inventory – less than 260 total rooms
- Small scale limited-service lodges or motels, no full-service resort-style hotels
- Mostly 2-star or 3-star facilities, no high-end four-star or five-star properties

- Outdated tele-communications facilities (e.g., no in-room Internet in most rooms)
- No on-line reservations (except via 3rd party distribution sites such as Expedia)
- Local brands, with no flagged or branded hotels
- Basic architectural style, with minimal Polynesian-type design
- Most of the smaller lodges require capital upgrades

These characteristics are largely consistent with present day, illustrating that the tourism infrastructure of American Samoa has not had much notable growth from 2010 to today.

Figure 3. Existing Lodging Inventory in American Samoa, 2010

Lodging Property	# Rooms
Evalani Motel	14
Le Falapule - B&B	5
Maliu Mai Beach	4
Moana Osina B&B	10
Pago Airport Inn	19
Sadie Thompson Inn	4
Sadies by the Sea	50
Ta'aloolo Lodge	5
Tessaria's	9
Tisa's - Algea Beach	2
Tradewinds	100
Turtle & Shark	6
Sub-Total Tutuila	**228**
Asaga Inn - Ofu/Olosega	9
Va'oto Lodge - Ofu	8
Mauga's - Ta'u	4
Meli's - Ta'u	7
Grand Total	**256**

Source: ASVB and NPS, Jan 2010

This slow growth in lodging infrastructure is mirrored by the current state dining venues. Observations from a recent site-visit to American Samoa by team members from SE Group suggests continued consistency with the 2010 findings of RCA.

RCA highlighted the existing dining resources in American Samoa as:

- Limited up-scale restaurants or unique offerings
- Lack of waterfront restaurant and bar venues
- Limited commercial offering of Polynesian foods and local dishes
- Limited availability of fresh vegetables and healthier food options
- High proportion of fast-food style dining options

Beyond those assets that are already in place in American Samoa, RCA discusses the Aerial Tramway as an opportunity to be an iconic symbol of American Samoa and a prime attraction for cruise ship visitors, destination and regional visitors, as well as an

enjoyable activity for residents. This sentiment was reflected in a recent discussion with the ASVB, where they discussed how the Tramway would be a cultural benefit and something to be utilized by both tourists and many of the other travel segments that arrive in American Samoa (visiting relatives, business trips, locals, etc.)

In their 2010 report RCA estimated that a system with 2, 20-person trams configured in a jig-back manner would cost approximately $5.6 million, including shipping and installation. The overall cost including additional built infrastructure and capital costs ranged from $6.5 to $8 million.

Using RCA's preliminary review, the 2010 Tourism Master Plan projected that annual ridership for an aerial tramway would be between 40,000 and 55,000 through 2021. As previously discussed, these projections were very aggressive in their anticipated growth rate.

Tourism Attractions within the South Pacific

The South Pacific region boasts a variety of tourist destinations for travelers seeking to enjoy beaches, unique landscapes, and the varied cultures throughout the region. American Samoa finds itself among a very competitive landscape, one with competitors who have tourism infrastructure that is built out well beyond American Samoa's current infrastructure.

Samoa, a group of islands in the South Pacific which entices travelers to the region with its natural beauty and warm hospitality. The islands boast rainforests, waterfalls, and beaches, making for a vacation that allows both relaxation and cultural immersion. Visitors can explore traditional villages, witness fire knife dances, and partake in kava ceremonies to embrace the Samoan way of life. High-quality resorts in Samoa offer a blend of luxury and local charm. Examples include Coconuts Beach Club Resort & Spa and Taumeasina Island Resort, both providing comfortable accommodations and a range of activities (island tours, waterfall excursions, and other nature-based tours) to discover the pristine beauty and culture of Samoa.

Bora Bora entices visitors with its turquoise lagoon, overwater bungalows, and tropical scenery. Its calm waters create a perfect environment for an array of water activities, including snorkeling, scuba diving, and swimming with wild rays, providing unique opportunities to explore vibrant coral reefs and encounter diverse marine life. Adventurers can also embark on a hike up Mount Pahia or Mount Otemanu, granting scenic views of the island's beauty. High-quality resorts like The St. Regis Bora Bora Resort and Four Seasons Resort Bora Bora offer overwater villas, top-notch amenities (dining, spa, etc.), and other discovery tours allowing visitors to feel immersed in the nature and culture of the area.

The Fiji Islands are renowned for their warm hospitality and a blend of cultures. With the island nation being made up of 333 islands, there are plenty of tourist attractions to draw in visitors. Denarau Island has luxury resorts, golf courses, and a variety of water sports. The Yasawa Islands offer white-sand beaches and coral reefs, for island

hopping and snorkeling. Among the high-quality resorts in Fiji, Likuliku Lagoon Resort in the Mamanuca Islands offers overwater bures and a horizon-edge pool, while Nanuku Auberge Resort in Pacific Harbour on the main island caters to guests with their culinary, cultural, and adventure-based experiences.

Tahiti, the largest island in French Polynesia, holds a unique allure with its lush landscapes, cascading waterfalls, and vibrant culture. The capital city of French Polynesia, Pape'ete, serves as a cultural hub, inviting travelers to explore the Pape'ete market and historical sites. Tahiti offers a blend of relaxation and cultural experiences. The Brando, located on Tetiaroa Atoll, is an example of the resorts that one could find in the area, offering an eco-luxury escape with private villas and a focus on sustainability and conservation. The Brando offers experiences ranging from private expeditions and guided excursions around the area to cultural experiences on Polynesian art and culture.

Beyond the island destinations that make up the competitive landscape surrounding American Samoa are larger countries, such as Australia and New Zealand. In *Australia* tourists flock to scenic locations like the Great Barrier Reef, where visitors can enjoy colorful coral reefs and diverse marine life. Though Australia also offers attractions similar to the Pago Pago Sky Tram in the form of the Skyrail Rainforest Cableway, a tram ride over the world's oldest continually surviving tropical rainforest.

In *New Zealand* there is Queenstown, a getaway for adventure seekers and nature enthusiasts alike. Known for its year-round outdoor activities, the region offers experiences like bungee jumping, skydiving, jet boating, and even has the Skyline Queenstown Gondola which carries visitors high above Queenstown to the Skyline complex.

The South Pacific region showcases an array of tourist destinations, offering a variety of activities that are distinct to what the region has to offer. With high-quality resorts and tourism infrastructure of these destinations built to elevate the travel experience, American Samoa will need something to separate itself from the multitude of options in the region competing for both the cruise liners, and ultimately, the tourist's attention. The Pago Pago Sky Tram would be one such attraction to separate American Samoa from the rest of the Pacific South, as the only aerial tramways that currently operate in the area are offering scenic views of rainforest and mountainous views. **The Pago Pago Sky Tram would offer a unique panoramic view that could not be seen anywhere else in the region.**

Other Tourist Attractions within American Samoa

As The Government moves forward with their work on the Aerial Tramway, it should consider the current state of the American Samoa tourism market. As it is possible that points of competition and/or opportunities for collaboration that might occur given the limited time that most visitors have at American Samoa. The ASVB has listed a number of experiences, tours, and activities that visitors to American Samoa could take part in

during their time on the island. It will be important to think about how the Aerial Tramway fits into this landscape and what opportunities there are to build out packaged excursions or similar experiences. Currently ASVB has identified the following recreational opportunities for visitors at American Samoa:

Figure 4. Current Tourism Attractions by Category

Sightseeing and Tours	Beach and Nature Experiences	Cultural and Traditional Experiences	Shopping and Local Markets	Cultural and Historical Museums	Outdoor Activities
Take a pre-booked tour of Maugaoali'i Government House, the official residence of the Governor and First Lady	Have lunch at Utulei Beach and enjoy the spectacular view of Pago Pago Harbor and Rainmaker Mountain	Experience traditional Samoan food like palusami and taro found in local eateries and at the farmers' marketplace in Fagatogo	Go shopping for American and international goods at prices cheaper than anywhere else in the world, with no sales tax	Visit the Jean P. Hayden Museum in Fagatogo and view the exhibit of American Samoa's link to the Apollo Moon Missions, complete with moon rocks	Take a trip to the Manu'a Islands, located a half-hour flight east of Tutuila Island
Visit the National Park of American Samoa on Tutuila and the Manu'a Islands	Visit Ofu Beach in the Manu'a Islands, voted one of the most beautiful undiscovered beaches in the world	Hop on a local bus with a map in hand and explore picturesque villages	Purchase traditional Samoan garments like puletasi (a two-piece long fitted blouse and skirt) and Samoan Island shirts		Drive up to the mountain village of Aoloau and take in the grand views of the Tafuna Plain below and the northern Pacific Ocean
Drive from Pago Pago Harbor to the village of Vatia and enjoy the breathtaking view of the harbor below	Take a short trip to Aunu'u Island by catching a local alia boat and hike to the quicksand lake	Visit a local church on a Sunday morning and enjoy the rousing sermons and melodic singing			Experience the thrill of catching big game fish like tuna, marlin, and sailfish on a half-hour boat trip from shore
Drive towards the west and visit the National Marine Sanctuary of American Samoa at Fagatele Bay		Take a ride in a traditional 'Fautasi' or long boat with 40+ paddlers			

Source: Americansamoa.travel

Given the wide range of activities that visitors could take part in on their trip to American Samoa, The Government should consider those activities that could be complimentary to or in opposition to the Aerial Tramway. Ultimately, whether an activity will be a competitor to the Aerial Tramway will be determined largely by how that activity is marketed to visitors. There are few, if any, visitor activities at American Samoa that would take up all the time visitors have on the island, making a trip on the Aerial Tramway feasible regardless of the additional interests of the visitor. Because of this, The Government can work with the cruise industry, third-party tour operators, and small businesses to promote and create packaged opportunities for visitors to enjoy the Aerial Tramway alongside some of the other activities that American Samoa has to offer.

Potential Assets

RCA, working with the ASVB, identified the following key selling points of American Samoa in the 2010 Tourism Master Plan:

- An undiscovered paradise in the center of the Pacific Ocean
- Not a mainstream Pacific Island holiday destination
- A chain of unspoiled islands

- Nature haven of dramatic mountain ranges and islands covered in tropical rainforests
- Natural deep-water harbor and pristine surrounding ocean waters
- Islands steeped in thousands of years of culture and history
- Where our living culture that's thousands of years old – Fa'a Samoa is still practiced to this day
- Where Christianity forms the basis of family values and life
- Small 100 percent locally owned tourism industry and a strong commercial retail and business sector
- Safe and secure destination

RCA assessed tourism development and marketing options for the ASVB and evaluated the degree to which each option would be able to meet the stated goals and objectives in the Tourism Master Plan, as well as the natural fit with the environment, expectations for consumer demand, ease of implementation, and financial feasibility.

These potential tourism attractions have been grouped into four categories: Day Trip Tours, Recreation, Cultural and Entertainment, and Lodging & Dining.

Figure 5. Tourism Attraction Opportunities by Category

Day Trip Tours	Recreation	Cultural & Entertainment	Lodging & Dining
Cultural Village Tour	Water Sports at Utulei Beach	Jean P. Hayden Museum	Rainmaker Hotel Site
Scenic Boat Rides	Snorkeling at Fagatele Bay	Kava Ceremony	Water-front Dining
Whale Watching	Snorkeling on Ofu Island	Tisa's Barefoot Bar – Umu	Nightclub/Dancing
Agri-Tourism/Culinary	Sport Fishing Charter Trips	Fia Fia Celebrations	Resort at Maotu Bay
Bird Watching	SCUBA Diving Trips	Cooking Classes	Hotel at Larson's Bay
Aunu'u Island Tour	Golf Course Redevelopment	Dinner Cruise	Lodge/B&B at Ofu Beaches
Pola/Cockscomb Island Tour	Zipline and Canopy Tours	Shopping – handicrafts	B&B at Olesega Beach
Sliding Rock & Leone Falls	Hiking	Festivals and Events	
Blunt's Point & Historic Tour	Mountain Biking	Fautasi Boat Races/Displays	
Turtle & Shark Site	Bike/Rollerblade/Walking Trails	Botanical Garden	
Governor's Mansion Tour	Aerial Tramway	Concerts and Shows	
Scenic Helicopter Tours	Pago Pago Marina	Spa Services	

Source: 2010 American Samoa Tourism Master Plan

Tourism Trends

American Samoa

International travel plunged by 85% in 2020. The Covid-19 Pandemic caused an unprecedented disruption to international travel, with a massive fall of international tourism demand amid widespread lockdowns and travel restrictions put in place by countries in order to attempt to contain the spread of the virus. This resulted in huge economic and social impacts, placing direct travel related jobs at risk especially micro, small, and medium sized enterprises.

Air Arrivals

Pago Pago (PPG) is one of three airports operated by the Department of Port Administration in American Samoa, the others being smaller airports at Ofu (OFU) and Fitiuta (FAQ). PPG is American Samoa's primary commercial service airport as identified by the National Plan of Integrated Airport Systems (NPIAS). PPG provides international service to Western Samoa and Honolulu. The frequency of use by Samoa and Honolulu are illustrated below along with the more frequently used arrival airports over the last five years for Pago Pago.

The enplanement data reviewed includes PPG by destination airport, domestic v. international, monthly and yearly back to the 90s, load factor, revenue by year by destination, and a few other metrics. The data provided shows that **American Samoa experiences peak travel via the PPG in June to August**, with 8,000 to 10,000 monthly arrivals before the Pandemic, and 4,000 to 6,000 in the off-season. December to January was somewhat higher this off-season at 6,000 to 8,000 monthly arrivals. Current monthly air arrivals are around 1,000 to 2,000 as of September 2022 for the previous 12 months, with total 2022 air arrivals (as of August 2022) being 16,253. As a point of comparison, the pre-Pandemic annual onboards for 2019 were 77,786 total arrivals which had been steadily growing since 2008.

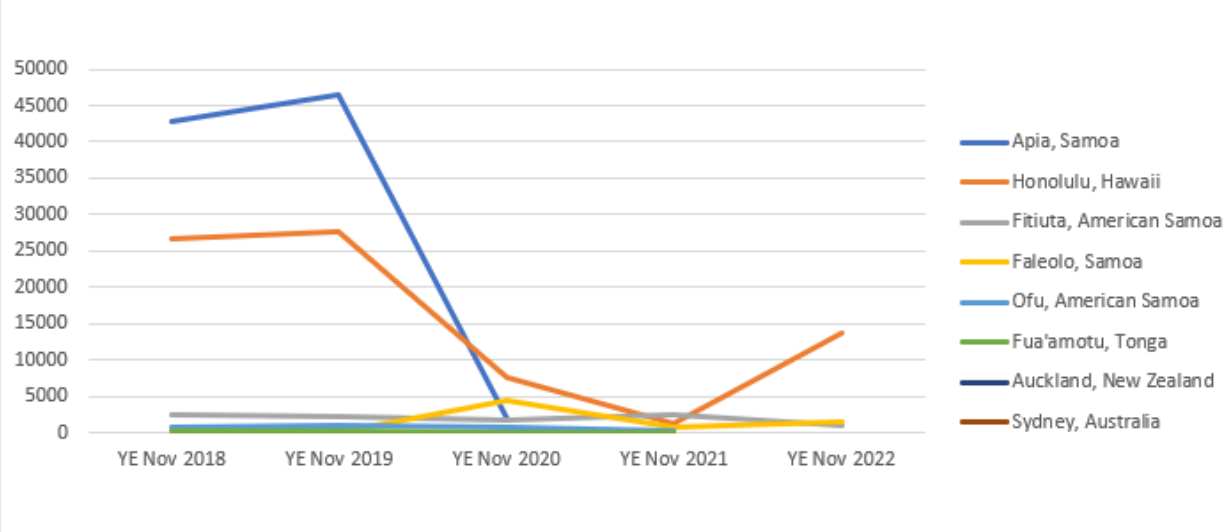
In 2019 when PPG saw these higher travel rates, passengers were traveling between American Samoa and Samoa, Tonga, Hawai'i, Australia, or locally within American Samoa. By far, the greatest share of onboarded passengers traveled between American Samoa and Samoa, making up 46,416 (60%) onboards with most coming from travel to and from the Fagali'i Airport. Following this was travel to and from the Daniel K. Inouye International Airport in Hawai'i, which made up 27,700 (36%) of onboards. Travel within American Samoa (3,253) and from Tonga (317) or Australia (101) followed distantly in their onboards.

The number of plane departures in 2019 were largely consistent with the share of onboardings by airport. Travel between American Samoa and Samoa took place over a total of 4,611 flight departures (an average 4.2 departures a day), with notably fewer departures for all other airports. While travel between American Samoa and Hawai'i resulted in a large sum of onboards, this was done over only 123 plane departures, or one departure every three days. Specifically, the current flight schedule between

Hawai'i and American Samoa shows the three days of travel are Tuesday, Thursday, and Friday[2]. This is notable as it severely impacts any would be tourists that wanted to travel to American Samoa, as they would be required to plan their trip around the availability of flights into and out of American Samoa. This complicates travel for these visitors and makes the trip to American Samoa all the more challenging to make by air.

Key Finding: PPG is the primary commercial service airport in American Samoa. **The airport's peak travel occurs in June to August with 8,000 to 10,000 monthly arrivals and is primarily made of American Samoa's Visit Relative visitor segment.** Pre-Pandemic, annual onboarding rates were as high as 77,000, but it's now just above 16,000 in 2022.

Figure 6. Sum of Onboards for PPG's Top Arrival Destination, 2018 - 2022

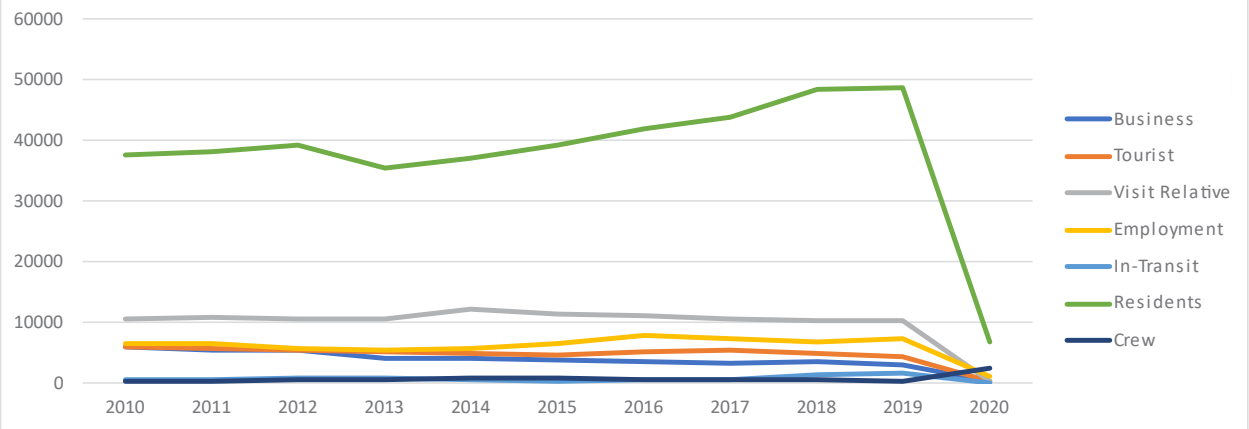


Source: Cirium Aviation Dataset

Data was also collected from the American Samoa Statistical Yearbook to better understand the types of visitors that come to American Samoa. Based on the American Samoa 2020 Statistical yearbook, **only 6%-9% of pre-Covid travelers were tourists, with the majority being residents (55%-63%)**. The US made up most of the tourist travel from 2010 to 2014, then being overtaken by New Zealand until the Pandemic. While the statistical yearbook makes little mention of the type of visitor (cruise, plane, etc.), their total numbers provided are largely consistent with total enplanement numbers collected for the PPG.

[2] FlightRadar24.com, Pago Pago International Airport (PPG/NSTU) routes and destinations, https://www.flightradar24.com/data/airports/ppg/routes

Figure 7. Visitor by Visitor Type, 2010 - 2020



Source: American Samoa 2020 Statistical Yearbook

While the share of tourists has been, and remains, a relatively small share of the overall visitor arrivals to American Samoa, the ASVB discussed the opportunities that American Samoa has in capitalizing on non-tourist groups listed above. Namely, those arrivals that are visiting relatives, business travelers, and even residents coming back to American Samoa are all of interest based on discussions with ASVB.

Cruise Arrivals

After not having cruise ships make port at American Samoa from 2020 through 2022 due to Covid-19 travel restrictions, 2023 marks that relaunch of the ASVB's attempts at reclaiming tourists and building back up their visitation numbers. This year American Samoa expects to have a total of 18 cruise ships make port, slightly higher than the 13 ships that visited prior to the Pandemic in 2019.

Of the 18 ships in 2023, there are no large waves of back-to-back cruise ships arriving. The largest ship holding the greatest occupancy for the 2023 season comes in late October 2023 with a carrying capacity of up to 4,272 total possible passengers. **Over the 2023 season, there are currently just over 40,000 total cruise passengers expected to travel to American Samoa**. The ASVB is hopeful in continuing to increase this number through active participation in cruise conferences and discussions with other nearby destinations to better market cruise visit opportunities.

As a point of comparison, Samoa is expecting to have 19 cruise ships dock at their Port of Apia in 2024 for 29,840 total cruise passengers. The type of cruise is largely similar to those seen in American Samoa, one-day docked at the port out of a multi-week excursion across the area. While this illustrates that American Samoa is largely in line with what Samoa is seeing cruise arrivals, other neighboring islands are recording different trends. For instance, Bora Bora will be seeing more cruise ships in 2024 at a total of 102, but the total cruise passengers expected will only be around 50,000 indicating a higher quantity of smaller cruises. Additionally, more of these cruises fall within the 7-14 day range as compared to the lengthier cruises going to American

Samoa that are typically more than 14 days. This is of note because it shows that there are a variety of cruise experiences that are taking place in the South Pacific region, meaning that beyond the long-haul cruise-goers that have 14 or more days to travel, **there's a market that American Samoa can tap into of shorter length cruise goers that are seeking get the most out of their vacation**. More frequent cruise arrivals with fewer passengers would also allow for the Pago Pago Sky Tram to be operated comfortably without forcing visitors to wait multiple hours due to capacity issues.

As the cruise industry continues to move out of their slump from Covid-19, executives from major cruise lines are speaking optimistically about the load factors they expect. It was not uncommon for the cruise ships of larger companies to have a load factor of or greater than 100%. This is possible because the maximum occupancy referenced by a cruise ship only assumes that two people will stay in a given room, so having a surplus of vacationers with three or more people to a room would push a cruise ship over its perceived "maximum." **Norwegian Cruise Line, Royal Caribbean Group, and Carnival Corporation have all forecasted a return to their typical occupancy rates in summer 2023.**

Much of the travel expected from the cruises in 2023 to American Samoa are planned outside of their heightened periods of air travel, with the majority of 2023 cruises scheduled to arrive from March to May and September to December. This is due to the nature of long-haul cruises where in the summer months they're typically in use for glacier watching in northern locations, the is spent in southern areas like Australia, New Zealand, or South America, and the remaining time in spring and fall is spent in the Pacific South.

Given the remote location of American Samoa and its distance from other nearby American ports, the overall length of these cruises excursions typically are on the higher end. These excursions to the South Pacific might depart from ports in the U.S., Australia, New Zealand, Canada, or other port of note with the total time at sea being around a month. Given the immense time commitment to leisure that visitors must invest to make it to American Samoa by cruise ship, the typical visitor profile of a cruise goer is likely to skew toward **higher income retirees that have the time and resources to go out on these lengthy excursions**.

While there is an expectation that, as part of a packaged excursion opportunity, the cruise liner will want to purchase aerial tram tickets at a wholesale price, the benefits of these partnerships are significant. Cruise partnerships allow for large numbers of one-day visits that do not require the normal infrastructure to house, feed, or entertain for lengthy periods of time. Rather, given the length of stay at American Samoa for these cruises is only one day (6-8 hours at port), the majority of these tourists will likely be seeking something that they can check off their bucket list before heading out. Even if tickets are discounted for the purpose of increasing cruise liner buy-in, the benefits are likely to far outweigh the costs.

Key Finding: There is generally positive sentiment from the cruise industry that its full recovery to pre-Pandemic levels will be taking place in 2023. With the ASVB having coordinated 18 cruise arrivals, more than 40,000 tourists, whose visitor profile largely align with the low-intensity recreation of an aerial tramway, are expected to arrive in American Samoa. **Increasing cruise arrivals and the capacity to accept these large groups is expected to be the most efficient way to increase visitation to American Samoa.**

National Park of American Samoa

Visitation

The National Park of American Samoa seems to experience higher visitation outside of the typical heightened enplanement dates, with peak park visits usually occurring around October/November and March through May. The park's peak visitation year was in 2017, with a total of 69,468 visits, 11,494 of those visits coming in October 2017. In 2019, the park also experienced heightened visitation during the same months, although not as high as in 2017 and more spread out through the October/November and March through May range. However, the Covid-19 Pandemic had a severe impact on the national park's visitation and spending numbers, with a decrease in visitation in 2020 and 2021.

Despite the Pandemic's effects, the ASVB is actively working to attract more visitors to the island via increased frequency of cruise ship arrivals, which are more in line with the peak months of park visitation. This is expected to be very helpful to both the National Park of American Samoa and American Samoa as these cruise tourists are expected to make up a large share of these visitors to the area. This assumption is based on the average duration, or Recreation Visitor Hours, that were spent in the National Park of American Samoa as compared to the total Recreation Visits. Visitor use data[3] shows that for every visit to the National Park of American Samoa in the last 5 years, the average time spent was only around 2 hours. Indicating that visits to the park are short either due to the limited time tourists have on American Samoa when they visit as part of a cruise, or the National Park of American Samoa is not maintaining the interest of visitors that have more time in their day.

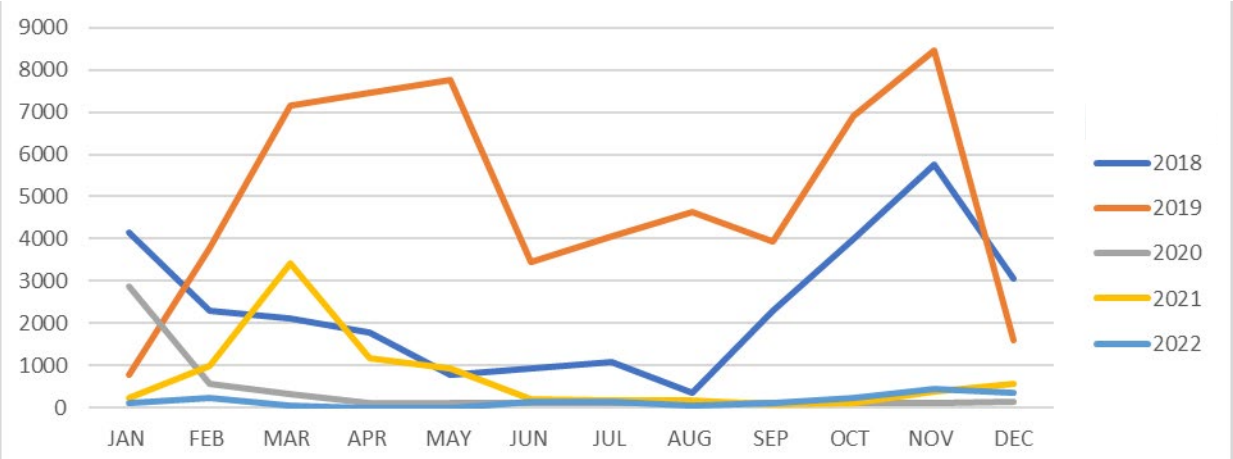
As for the later of these two scenarios, air travel, as previous discussed, limits travelers to the area due to the infrequency of departures from American Samoa to other airports. These visitors have markedly more time in American Samoa than their cruise counterparts, and if they were to only spend an average of 2 hours at the National Park

[3] National Park Service Integrated Resource Management Applications, Summary of Visitor Use by Month and Year, 2018 – 2022, Stats Report Viewer (nps.gov)

of American Samoa, there would be a need to fill that time between flights with more attractions. The Pago Pago Sky Tram is one such attraction that could capitalize on this captive audience, providing an additional attraction overall, but also allowing these air travel visitors to explore new section of National Park of American Samoa by dropping them off near the top.

As American Samoa continues to come out of the Pandemic, the National Park of American Samoa is expected to attract more travelers interested in experiencing the park's unique natural and cultural heritage. The park's tropical rainforests, coral reefs, and Samoan culture provide a one-of-a-kind experience that many visitors are seeking.

Figure 8. National Park of American Samoa Monthly Visitation, 2018 - 2022



Source: NPS Integrated Resource Management Applications

Table 4. Year-over-Year Visitation to National Park of American Samoa, 2002 - 2022

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Total	Change From Previous Year
2022	102	238	60	0	0	142	149	59	106	238	438	355	1,887	-77.80%
2021	233	985	3,433	1,180	940	205	164	184	92	112	398	569	8,495	76.30%
2020	2,869	564	326	120	120	120	120	120	100	96	116	148	4,819	-92.00%
2019	792	3,772	7,152	7,452	7,772	3,464	4,059	4,650	3,933	6,900	8,456	1,604	60,006	109.60%
2018	4,144	2,308	2,119	1,768	772	944	1,090	358	2,303	4,002	5,766	3,052	28,626	-58.80%
2017	4,788	3,817	4,838	7,496	4,666	5,180	6,090	4,421	4,218	11,494	7,666	4,794	69,468	140.40%
2016	374	466	2,103	1,677	1,855	1,512	1,256	4,107	4,876	2,383	3,589	4,694	28,892	108.00%
2015	1,564	992	1,530	1,130	1,982	1,282	1,272	1,346	1,306	822	213	453	13,892	-0.40%
2014	1,178	1,392	1,480	2,072	917	680	1,230	582	960	1,236	1,222	1,004	13,953	-22.10%
2013	1,231	1,440	1,594	2,026	1,906	1,575	1,600	1,193	2,451	859	1,136	908	17,919	71.60%
2012	536	380	662	582	304	528	696	624	661	1,150	2,409	1,908	10,440	19.80%
2011	272	986	385	292	1,090	324	742	432	2,284	763	758	388	8,716	190.00%
2010	141	135	181	276	510	291	183	101	79	217	401	491	3,006	-7.30%
2009	281	281	281	281	281	358	308	522	423	0	113	113	3,242	-12.00%
2008	259	338	113	202	200	138	1,125	135	132	275	153	613	3,683	-45.60%
2007	674	687	923	619	619	664	619	619	305	219	154	672	6,774	446.70%
2006	59	59	56	146	97	77	45	86	61	313	108	132	1,239	
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	-100.00%
2002	169	113	135	168	157	312	164	161	193	90	138	138	1,938	

Source: NPS Integrated Resource Management Applications

Furthermore, the ASVB's efforts to increase tourism to American Samoa may result in a boost in the park's spending numbers in the future. As travelers become more aware of the island's attractions and amenities, the park may see increased visitation, particularly during peak travel seasons.

Spending

The National Park of American Samoa, like many other travel destinations around the world, has been heavily impacted by the Covid-19 Pandemic. Since the Pandemic started in early 2020, the park has seen a significant decline in visitation and spending, with many people choosing to cancel their travel plans. This has had a major impact on the local economy, as the park is one of the main tourist attractions in American Samoa.

As the park looks to recover from the Pandemic, it is expected that visitation and spending estimates will be closer to what the park saw in 2019. In that year, the park had just over 60,000 visitors and total estimated visitor spending of over $3.5 million. These numbers are notable because the total enplanement arrivals in 2019 were just over 75,000, which means that a very high percentage of visitors to American Samoa made the National Park of American Samoa a priority on their travel itineraries.

The economic impact of the park is also notable. In 2019, the total economic output of the park was over $4.5 million, with nearly $3 million in total value added. This means that the park plays a major role in supporting the local economy and providing employment opportunities for people in the region.

Table 5. National Park of American Samoa Spending Summary Table, 2019 & 2021

	Total Recreation Visits	Total Visitor Spending ($000s)	Jobs	Labor Income ($000s)	Value Added ($000s)	Economic Output ($000s)
2021	8,495	$553	6	$258	$463	$713
2019	60,006	$3,569	40	$1,659	$2,967	$4,590

Source: National Park Visitor Spending Effects 2021 & 2019 Reports

Key Finding: As the National Park of American Samoa continues to recover, **American Samoa should consider how to work with the National Park to best coordinate efforts related to the Aerial Tramway**. This could be incorporating the Aerial Tramway as part of the experience or a coordinated effort to reduce wait times at both attractions when large groups of tourists arrive looking for something to do.

Case Study

Built in Juneau, Alaska with a similar reliance on cruise ship arrivals to what is expected of The Sky Tram, the Goldbelt Tram is an Aerial Tramway that will take you 1,800 feet to alpine meadows above the rainforest. Allowing visitors to get an aerial view of Alaska's Capital City, Stephens Passage to the south, and the Chilkat Mountains to the north. Due to the similarities in its location being largely remote with a heavy reliance on seaport tourism, an interview was conducted with the Director of Operations and Maintenance for the tram.

With 1.1 million visitors to Juneau annually, the Goldbelt Tram is catering to a markedly larger visitor segment than what is expected to be built for American Samoa. Of these 1.1 million visits, the operators of Goldbelt sold around 300,000 tickets, **or 27% of the total visitor population**. The typical audience of the Goldbelt Tram is interested cruise passengers that saw the Aerial Tramway on their way into port, with **around 90% of their ticket sales coming from these cruise passengers**. As such, the Goldbelt Tram is heavily tied to the cruise industry, its passengers, and the number of cruise ships that are expected to make port in Juneau over the course of a season.

the Goldbelt Tram is typically the second thing that visitors will do once they get off the cruise ship, typically coming to enjoy the scenic views and the amenities at the top of the Goldbelt Tram. The more exclusive amenities that are at the top of the Goldbelt Tram route make the ride all the more worthwhile, as Juneau has restaurants, shops, and hiking trails that are conveniently accessible on the other side of the tram ride. An issue that Goldbelt operators must deal with on a regular basis, not unlike American Samoa, is the pulse of cruise arrivals that will only be spending 6-8 hours in the area before leaving that same day. These passenger pulse issues mean that the Pago Pago Sky Tram will need to consider what the maximum pulse might be as cruise visitor disembark to avoid lengthy lines and visitors losing interest. Goldbelt operators also mentioned adjusting the speed slightly on the Goldbelt Tram to address this pulse issue but made note that the tram can only be sped up so much to help with this, indicating that it is a larger issue that requires a more thoughtful approach.

Key Finding: While Juneau currently has a larger visitor population than American Samoa there are few anecdotal considerations for the Pago Pago Sky Tram:

1) How will cruise tourists access the tram once they've docked?
2) Does the tramway system have capacity to accommodate the "pulses" of riders that correlate to these cruise ship arrivals?
3) Do the top and bottom terminal areas have capacity to accommodate and entertain tourist waiting to ride up and down the tram?

Projections and Estimates

Growth Projections

The future growth of American Samoa is uncertain following the severe impact Covid-19 had on the island as well as the low visitor growth rates experienced pre-Pandemic. Given this uncertainty, the below table illustrates three scenarios for year-over-year compound growth across the visitor types for American Samoa.

This table starts with data provided in the 2020 statistical yearbook just prior to the shut-down following Covid-19 along with the maximum occupancy rates of the cruise ships the ASVB has secured starting in the 2023 season. The table also uses air travel data from the Cirium Aviation Dataset to describe the total visitors in 2021 and 2022 where there were no cruise ships that made port in Pago Pago and no statistical yearbook data to reference. These three scenarios work under the assumption that air travel fully rebounds to its 2019 numbers in 2023 before increasing at the specified rate for the remaining years listed.

Table 6. Projected Year-Over-Year Growth, 2019 – 2030

1% YOY growth estimates									
Year	**Total**	Cruise Capacity	Business	Tourist	Visit Relative	Employment	In-Transit	Residents	Crew
2030	**125,341**	43,406	3,238	4,669	11,105	8,072	1,809	52,633	408
2029	**124,100**	42,977	3,206	4,623	10,995	7,992	1,792	52,112	404
2028	**122,871**	42,551	3,174	4,577	10,886	7,913	1,774	51,596	400
2027	**121,655**	42,130	3,143	4,532	10,778	7,834	1,756	51,085	396
2026	**120,450**	41,713	3,111	4,487	10,671	7,757	1,739	50,580	392
2025	**119,257**	41,300	3,081	4,443	10,566	7,680	1,722	50,079	388
2024	**118,077**	40,891	3,050	4,399	10,461	7,604	1,705	49,583	385
2023	**116,908**	40,486	3,020	4,355	10,358	7,529	1,688	49,092	381
2022	**16,253**	-	-	-	-	-	-	-	-
2021	**4,932**	-	-	-	-	-	-	-	-
2020	**11,143**	-	295	203	281	1,106	110	6,720	2,428
2019	**75,665**	-	2,990	4,312	10,255	7,454	1,671	48,606	377
3% YOY growth estimates									
Year	**Total**	Cruise Capacity	Business	Tourist	Visit Relative	Employment	In-Transit	Residents	Crew
2030	**145,643**	49,793	3,788	5,462	12,991	9,443	2,117	61,573	478
2029	**141,401**	48,342	3,677	5,303	12,612	9,167	2,055	59,779	464
2028	**137,282**	46,934	3,570	5,149	12,245	8,900	1,995	58,038	450
2027	**133,284**	45,567	3,466	4,999	11,888	8,641	1,937	56,348	437
2026	**129,402**	44,240	3,365	4,853	11,542	8,390	1,881	54,706	424
2025	**125,633**	42,952	3,267	4,712	11,206	8,145	1,826	53,113	412
2024	**121,974**	41,701	3,172	4,575	10,880	7,908	1,773	51,566	400
2023	**118,421**	40,486	3,080	4,441	10,563	7,678	1,721	50,064	388
2022	**16,253**	-	-	-	-	-	-	-	-
2021	**4,932**	-	-	-	-	-	-	-	-
2020	**11,143**	-	295	203	281	1,106	110	6,720	2,428
2019	**75,665**	-	2,990	4,312	10,255	7,454	1,671	48,606	377
5% YOY growth estimates									
Year	**Total**	Cruise Capacity	Business	Tourist	Visit Relative	Employment	In-Transit	Residents	Crew
2030	**168,760**	56,968	4,418	6,371	15,151	11,013	2,469	71,813	557
2029	**160,723**	54,255	4,207	6,067	14,430	10,489	2,351	68,394	530
2028	**153,070**	51,672	4,007	5,778	13,743	9,989	2,239	65,137	505
2027	**145,781**	49,211	3,816	5,503	13,088	9,513	2,133	62,035	481
2026	**138,839**	46,868	3,634	5,241	12,465	9,060	2,031	59,081	458
2025	**132,228**	44,636	3,461	4,992	11,871	8,629	1,934	56,268	436
2024	**125,931**	42,510	3,296	4,754	11,306	8,218	1,842	53,588	416
2023	**119,934**	40,486	3,140	4,528	10,768	7,827	1,755	51,036	396
2022	**16,253**	-	-	-	-	-	-	-	-
2021	**4,932**	-	-	-	-	-	-	-	-
2020	**11,143**	-	295	203	281	1,106	110	6,720	2,428
2019	**75,665**	-	2,990	4,312	10,255	7,454	1,671	48,606	377

Source: American Samoa 2020 Statistical Yearbook, Cirium Aviation Dataset, & https://cruisedig.com/ports/pago-pago-american-samoa

Revenue Projections

Along with current and future visitor projections, a model has been developed to explore potential revenue of a tram from travelers visiting American Samoa. The model is built out using the American Samoa 2020 statistical yearbook to better understand the possible revenue generated by the Aerial Tramway. This model uses visitor information from 2019 broken out by air travel arrival type as specified by the American Samoa Statistical Yearbook, coupled with the maximum capacity of cruise ships expected to make port in Pago Pago in 2023.

Utilization rates shown are currently presented as illustrative examples that can be manipulated as needed. Base assumptions have been set using anecdotal information from the Aerial Tramway operators and the ASVB. Please see the accompanying excel file to explore changing assumptions and the degree to which outputs are sensitive to the assumed values. Key assumptions that dictate the revenue projections include:

- Rate of Occupancy of cruise ships. We apply an assumption of 90% occupancy (also known as load factor) as a conservative default. Cruise line expectations suggest this number may increase closer to 100%. Economic conditions will influence this occupancy. As occupancy increases, the number of available visitors increases accordingly.
- Percent of arrivals taking the tram. While the tram would be a primary attraction of the area, not all visitors will take part. We expect tourism-based visitor groups to ride at the highest rates. This assumed value is perhaps the greatest influence on expected revenues. The default is 80% for cruise passengers, business travelers by air, tourists by air, and those visiting relatives by air. Meanwhile, we expect much lower rates for those arriving via air for employment (20%), in-transit (10%), flight crews (10%), and returning residents (2%). It is assumed that any service technicians for the Aerial Tramway, TV transmission, or other technical work atop Mount ‘Alava fall within those traveling by air and categorized as “employment”.
- Non-Travelling Residents. Additionally, there is a chance that some non-travelling residents will also take the tram with those visiting American Samoa. We expect this rate of additional non-travelling resident ridership to be the highest for those with visiting relatives (base assumption in excel assumes 1 local per every arrival who is visiting relatives), and lowest rate of additional non-travelling resident ridership for air tourists (base assumption in excel assumes 1 local per every 10 air tourist arrival. This is based on the expectation that locals may be showing their friends and relatives around the island. We do not assume any residents to be riding with cruise ship riders. These resident riders are added into the tool as “Non-Traveling Residents”.
- Cost per ticket. Given the previously described economic/employment conditions of residents in American Samoa, we expect that Tram tickets for residents will necessarily need to be rather low in order to be affordable. As such, the ticket price for the American Samoa Aerial Tramway in 1991 was adjusted for inflation,

setting the ticket price to a default rate of $11, with the expectation that the range will be from $10-$15. Meanwhile non-resident rider ticket costs are expected to be more in line with traditional Aerial Tramway tickets of this type. Final values should account for expected operating costs and the overall experience provided. Where the activities or opportunities provided at the top are increased, we expect demand for the Aerial Tramway to increase, and thus the price to increase. This ticket price may also differ by traveler type, as cruise passenger tickets are likely to be sold at a 5-10% markup, which is typical for the cruise/tour operator industry. Our expected range of ticket cost is broad, at $40-$60, with a default rate of $45.

- Total Monthly Revenue. The results of the assumptions above and the known data inputs yields an expected monthly revenue.
- Average Daily Revenue. Dividing the total monthly revenue by the expected operating days per month yields an expected daily average revenue.
- Additional Considerations. As previously discussed, large portions of potential Tram riders will be cruise ship travelers. These riders will arrive in large pulse across only a few days a year. As such, capacity considerations should be accounted for in order to accommodate these riders.
    - Daily Capacity: Adjustable cells in the associated excel file allow for adjustment of: passengers per cabin, number of cabins, turns per hour and operating hours per day.
    - Monthly Capacity: It is likely that the Aerial Tramway will not operate a full seven days a week every month. Cells may be adjusted in the excel sheets to identify scenarios in which fewer days per month are operating (default is set to 17.381 based on an expected 4 days/week runtime). This may be done to identify the potential number of riders still able to be hosted, as well as an input to the average daily revenue. It is recommended that these be compared to expected daily operating costs.

Table 7 below highlights the demonstrated outputs given the default assumptions below (highlighted in the Yellow Cells). Here, the expected peak month of October and the annual total are shown. The associated excel sheets contain the expected outputs for each month. As can be seen below, the annual revenue from these assumed riders is $1,581,557, with a peak average daily revenue occurring in October at $13,767. October is currently expected to welcome four cruise ships ranging in capacity of 1,718 to 4,272 (the largest 2023 arrival) passengers.

Table 7. Estimated Aerial Tramway Utilization Rate and Revenue

Rider Utilization Rates				
	Traveler Type	**Percent of Arrivals Taking Tram**	**Oct**	**Annual**
Inbound Travelers	Cruise Passengers	80%	8,329	29,150
	Business (Air)	60%	193	1,794
	Tourist (Air)	60%	211	2,587
	Visit Relative (Air)	60%	679	5,501
	Employment (Air)	20%	112	1,491
	In-Transit (Air)	10%	11	167
	Residents (Air)	2%	73	972
	Crew (Air)	10%	3	38
	Sub-Total Traveler Riders		**9,610**	**41,700**
Non-Traveling Residents	Residents riding with visitors:	Residents per visitor		
	Relatives	1.00	679	5,501
	Returning Residents	0.25	18	243
	Air Tourists	0.10	21	259
	Sub-Total Non-Traveling Riders		**718**	**6,003**
	Total Riders		**10,328**	**47,703**
	Daily Average (Based on operating days per month)		**594.23**	**228.71**

Revenue Projections				
	Traveler Type	**Cost Per Ticket**	**Oct**	**Annual**
Inbound Travelers	Cruise Passengers	$ 45.00	$ 374,803	$ 1,311,746
	Business (Air)	$ 45.00	$ 8,694	$ 80,730
	Tourist (Air)	$ 45.00	$ 9,477	$ 116,424
	Visit Relative (Air)	$ 45.00	$ 30,537	$ 247,563
	Employment (Air)	$ 45.00	$ 5,049	$ 67,086
	In-Transit (Air)	$ 45.00	$ 473	$ 7,520
	Residents (Air)	$ 11.00	$ 804	$ 10,693
	Crew (Air)	$ 45.00	$ 140	$ 1,697
	Sub-Total Traveler Revenue		**$ 429,977**	**$ 1,843,459**
Non-Traveling Residents	Residents riding with visitors:			
	Relatives	$ 11.00	$ 7,465	$ 60,515
	Returning Residents	$ 11.00	$ 201	$ 2,673
	Air Tourists	$ 11.00	$ 232	$ 2,846
	Sub-Total Non-Traveler Revenue		**$ 7,897**	**$ 66,035**
	Total Monthly Revenue		**$ 437,874**	**$ 1,909,493**
	Average Dailly Revenue		**$ 25,193**	**$ 9,155**

It is important to note here that these revenue expectations are built upon visitors to American Samoa, with limited additional ridership by residents. It should be expected for a strong initial interest from residents in taking an Aerial Tramway ride. Though that will then quickly diminish to relatively small values.

Additional considerations permitted in the excel file are an exploration of the daily and hourly average demands if larger ships arrive or multiple arrive in one day. Again, yellow cells may be adjusted to explore the potential impacts and demands.

Table 8. What if Scenario for Larger or Multiple Cruise Ships

Accounting for Cruise Ship Pulses	Passengers	Potential Riders	Time (hrs) In Port	Time (Hrs) Available to Ride	Hourly Demand
Largest Known Cruise Passenger Volume in 2023	4,272	2,307	9	7	330
What if larger or multiple daily arrival	6,000	3,240	9	7	463

Beyond the typical uses for the Aerial Tramway, it offers some additional utility to the island and to the workers, opening access for service equipment hauling to the top of Mount ‘Alava. Given the remote location of American Samoa and the further removed location at the top of Mount ‘Alava, the Aerial Tramway could feasibly charge a rate of $1.00 to $7.00 per pound for the hauling of goods to and from the top of Mount ‘Alava. These goods could be the removal of the aging infrastructure that is currently at the top of the mountain, new TV transmission equipment or similar infrastructure, or the hauling of construction materials for walkways, overlooks, and other components that would be used in the design of the top terminal area.

It is expected that the Aerial Tramway will have heavy initial use for these hauling services with more use at a lower rate as the need for other hauling services come up. Given that there is a limit in the amount of hauling that could be done up and down Mount ‘Alava, the total revenue generated through this would be largely consistent for as many years as there are good to be hauled, with a dramatic fall-off once the majority of hauling services have been completed. Again, yellow cells may be adjusted to explore the potential impacts and demands.

Table 9. What if Scenario for Freight Hauling Goods

Accounting for Additional Freight Hauling Revenue	Weight of Goods (lbs)	Rate per Pound	Maximum Weight Capacity (lbs)	Number of Trips Required	YOY Change in Use	Total Revenue
	50,000	$4.00	6000	9	-5%	$ 200,000

Conclusion

The ASVB was created in 2009 to boost tourism in American Samoa. In 2010, RCA collaborated with the ASVB to create a Tourism Master Plan that projected visitation levels and identified assets and opportunities for the region. The plan assumed an aggressive tourism growth rate over the next decade. American Samoa was unable to achieve these rates of growth and instead saw decreases in their tourism by air travel decrease 29.6% from 2010 through 2019. These decreases, coupled with the drastic impacts over the last few years from Covid-19, show that the ASVB has much work ahead of them in growing tourism in American Samoa.

Based on trends over recent years, travel to American Samoa is expected to be largely spread throughout the year, with peak air arrivals of 8,000 to 10,000 monthly arrivals in June to August before the Pandemic and seaport arrivals March to May and September to December. While air arrivals are largely residents or those visiting relatives, seaport arrivals are comprised almost entirely of tourists for American Samoa. These seaport tourists typically will only have a few hours to see and experience American Samoa, so working with the cruise industry, third-party tourism operators, and other large draw attractions (i.e., National Park of American Samoa) will be crucial. Additionally, given the profile of seaport tourists, the lack of need for infrastructure to house or feed these visitors, and the ability to scale growth of these visits through cruise partnerships, seaport tourists represent the greatest opportunity for the growth of American Samoa and the Aerial Tramway.

Given this heavy reliance on seaport tourism, The Pago Pago Sky Tram is expected to be somewhat like the Goldbelt Tram. The Goldbelt Tram illustrates potential issues that American Samoa will need to address in the development of their Aerial Tramway. American Samoa should consider what partnerships, coordinated efforts, or other packaged opportunities tourists might take advantage of while at American Samoa. These might be logistical (shuttle services to nearby attractions while the Aerial Tramway wait time is long), infrastructural (building an attraction near the end point of the Aerial Tramway), or some other partnership that would ensure tourists have ample reason and opportunity to enjoy the scenic views of American Samoa.

The future growth of tourism in American Samoa is somewhat uncertain but given the seaport tourists already lined up in 2023 by the ASVB, the post-Covid recovery is already underway. As American Samoa continues to recover from Covid and works towards the development of the Aerial Tramway, it should consider the reciprocal relationship between the success of the Aerial Tramway and the overall growth of American Samoa's tourism industry. The Pago Pago Sky Tram is expected to be one large part of what will have to be a larger investment into the tourism infrastructure in American Samoa. There are many opportunities in the Pacific South that might draw would be tourists away, but as American Samoa improves their tourism infrastructure to work alongside the tourism boost expected from the Aerial Tramway, tourists are sure to consider their next trip to be one out to American Samoa.

APPENDIX C

ENGINEERING DESIGN

BUDGET

POMA

Pago Pago, American Samoa

SKY TRAM Cable Car

AT40 P16941 / IE P30831

Rev.	Date	Pages	Description
01	14/06/2023	36	Including description of the Inclined Elevator
00	02/06/2023	22	First edition – Budgetary estimation

Dear Sirs,

The POMA group thanks you for the trust you have placed in us with your request for a proposal of a cable car in the city of Pago Pago in American Samoa.

Our technical and commercial team has analyzed your needs in order to provide you with the solutions of products and services that best meet your specifications.

Good reading and feel free to contact us for more information on this proposal; It will be a pleasure to answer your concerns.

Sincerely,

Guillaume PLOYON
Sales manager
POMA S.A.S

Summary

1. Presentation of the Project

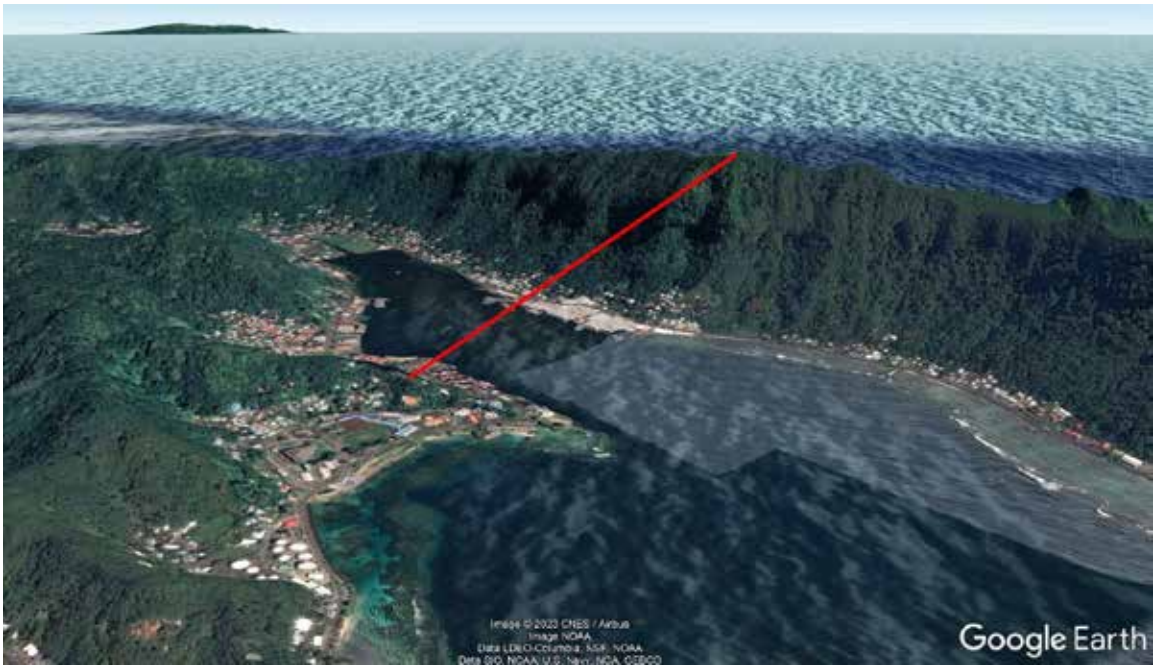
1.1 Pago Pago / Mount Alava

This project connect the cruise port to the Mount Alava. The top of the tram is touristic mirador point of view on the Pago Pago bay!

This document pretends to present a proposal with the best options for this ropeway.

1.2 Route

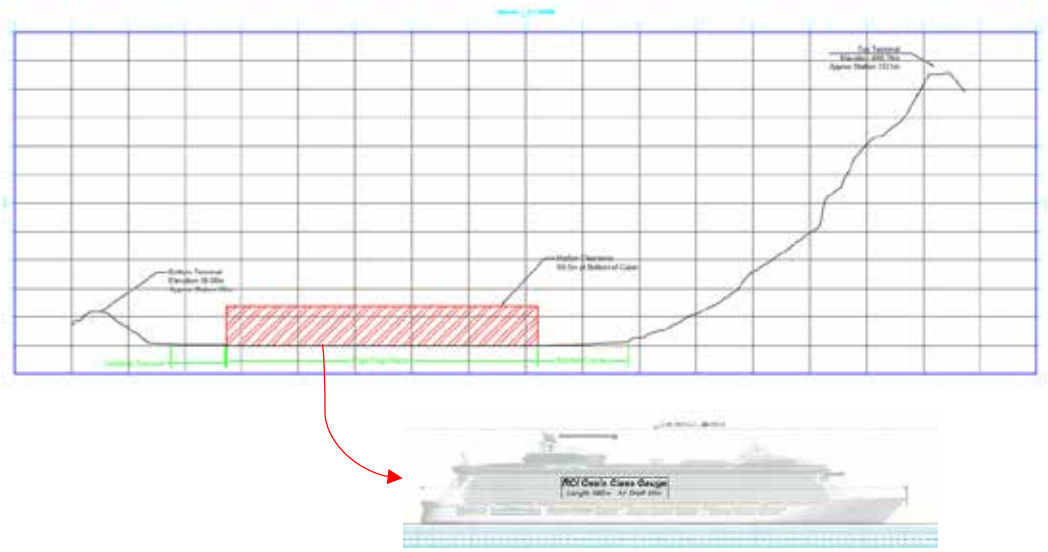
The route of the Aerial Tram (in red) is the same as the old existing one. In order to access the departure platform of the tram, the project includes an Inclined Elevator (in orange) of about 100m long with 50m height difference.



1.3 References Documents

The reference documents received for this Budget offer are:

- Aerial Tramway: DWG ground profile incl. a vertical clearance of 69,5m for Cruise



- Inclined Elevator: Google earth profile in pink (alternative parallel to the AT -- -- -- --)

The information included in this Budget offer (pictures and illustrations) are not contractual and could be modified without prior notice.

1.4 Customer Requirements

The configuration of the ropeway, object of the request, has been carried out in accordance with the following requirements:

- Install a **sustainable and environmentally friendly** system
- Work in **Quality** with the **Serenity and Sustainability** of a certified first-rate ropeway manufacturer
- Trust in the **long term** with the **proximity** of the manufacturer

2. Presentation of the POMA Solution

2.1 Technical Characteristics – **Aerial Tramway** AT40

We used the ground profile of local topography on a geoserver of the Pacific Oceanographic Institute (PACIOOS), which depends on NOAA and is managed by the University of Hawaii.

	Characteristics	**Values**
General	Type	AT40 jig back ropeway
	Installation nbr.	P16941
	Horizontal length	1.467 m
	Height difference	462 m
	Speed (nominal max.)	12 m/s
	Speed (loading / unloading)	Vehicle stopped
	Capacity	600 pphpd
	Use of the system	100% up – 100% down
Line	Qty of towers	0
	Line width	10,5 m
	Track rope	2 x 44 mm per vehicle
Vehicles	Type of vehicle	2 x gondolas SIGMA SYMPHONY
	Qty of passengers per vehicle	40 passengers
	Type of grip	Carriage of 16 wheels with clamp
Bottom Station	Type	Drive
	Cover	Without
Top Station	Type	Return tension
	Cover	Without
Drive unit	Hauling rope	35 mm
	Type of drive	Motor + gearbox

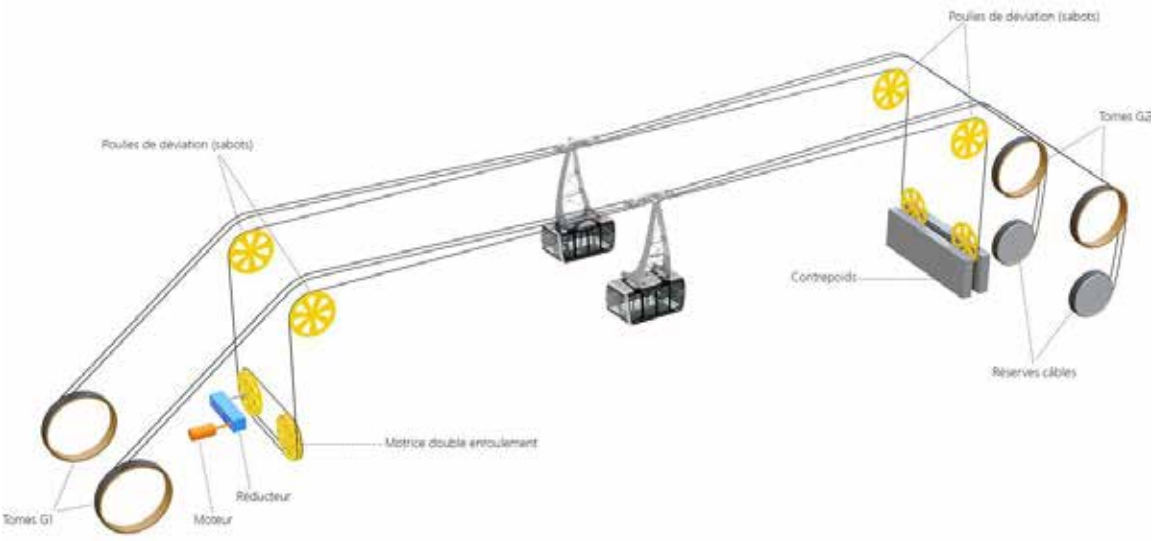
2.2 Technical Characteristics – **Inclined Elevator** IE34

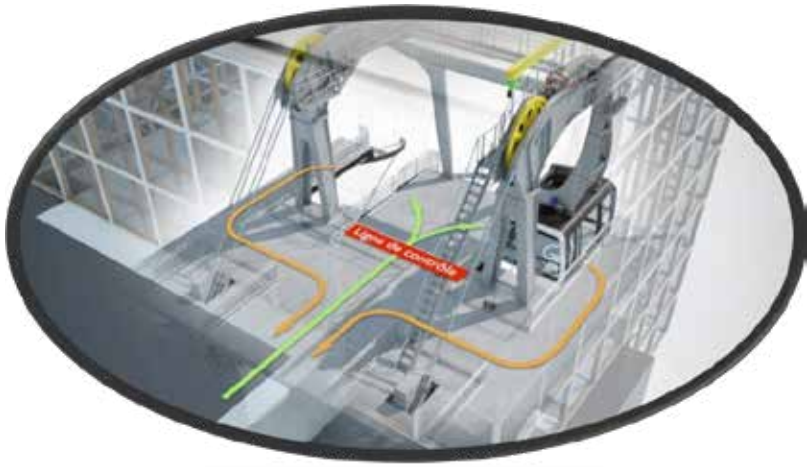
	Characteristics	**Values**
General	Type	IE34 Inclined Elevator
	Installation nbr.	P30831
	Horizontal length	120 m
	Height difference	40 m
	Speed (nominal max.)	2,6 m/s
	Speed (loading / unloading)	Vehicle stopped
	Capacity	600 pphpd
	Use of the system	100% up – 100% down
Line	Travel time	62 s
	Line width	1,4 m
Vehicles	Type of vehicle	1 x gondolas SIGMA SAPHIR
	Qty of passengers per vehicle	34 passengers
	Type of grip	Inclined Carriage
Bottom Station	Type	End track buffer
	Cover	Without
Top Station	Type	Drive unit with deviation pulleys
	Cover	Without
Drive unit	Traction rope	4 x Ø 13mm
	Type of drive	Motor + gearbox
	Tension	Counterweight (no cable loop)

2.3 Description of the **Aerial Tramway** POMA Solution

The type of system proposed is an aerial cable car AT40 configured in order to respond to the technical criteria of the previous table of characteristic. The system is a **jig-back cable car** with 2 fixed track ropes anchored in both extremity stations and 1 hauling rope driven by the bottom station and tensioned in top station.

Both vehicles have a capacity of **40 passengers**. At each station, the gondolas are stopped in order to allow the boarding / disembarkation of the passengers.

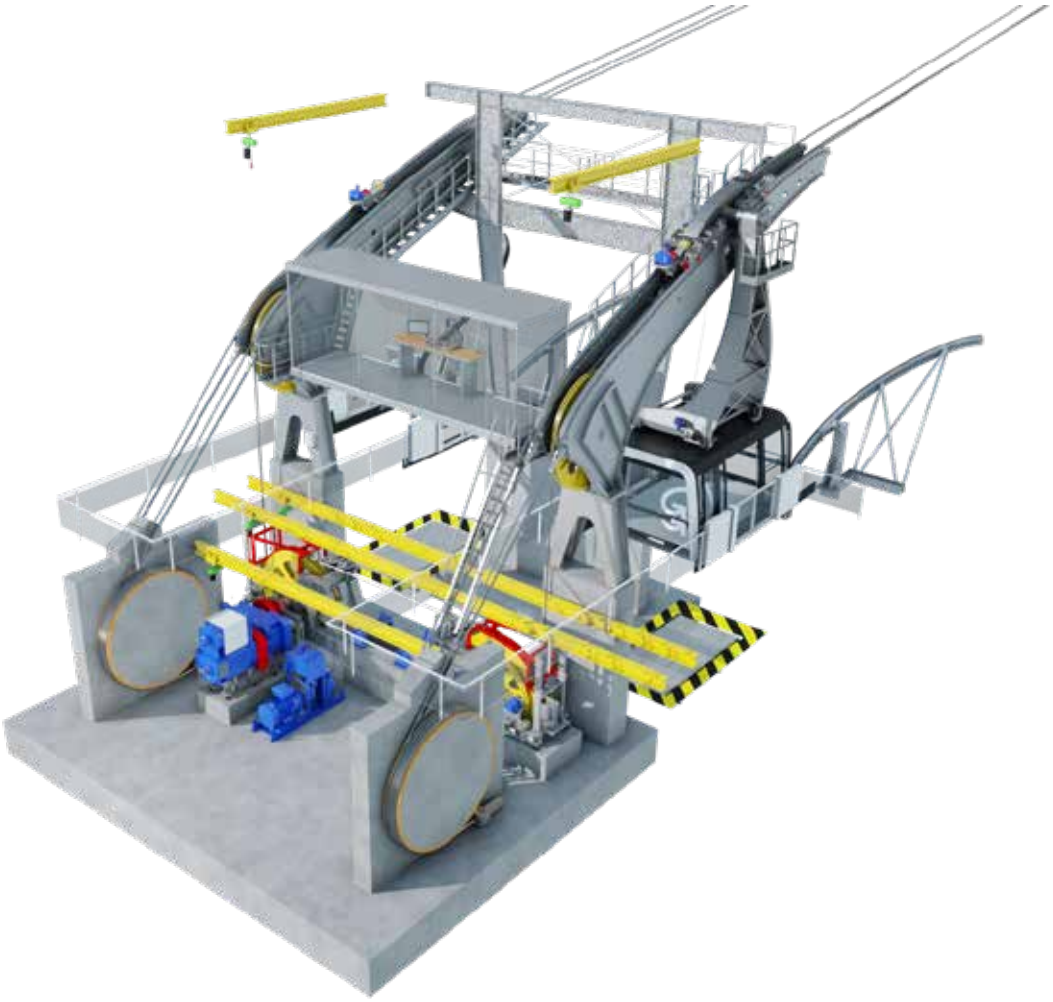




2.3.1 Drive Station (bottom)

The installation is made of metallic structures above the loading platform, the most as refined as possible, and supported by concrete foundations infrastructure inside the building. The **traction chain** and the **anchoring of the track ropes** are located in a room below the platform level.

A crossing structure between the two shoes allows the support of the closed-covered driving room. This overhanging location allows an easy view of the platform, as well as the line and the docking of the carriages on the station shoes.



The drive unit is based on a classic cable car machinery architecture with **two double-groove bullwheels**. The drive bullwheel is fixed on a rotating shaft, the deflection bullwheel is mounted on a fixed shaft. The two bullwheel assemblies are equipped with double rotation on bronze bushings, and two levels of electrical insulation. The plate of each bullwheell is monitored, as well as the setting in motion of the double-rotations, and the non-slip of the fixation of the driving bullwheel.

The drive bullwheel ensure the **L0 "main drive"** mode and the **L1 "emergency drive" mode**, and the deflection bullwheel ensure the **L2 "integrated recuperation" mode**.

The compact asynchronous **electric motor** of the TT-ELECTRIC brand guarantees maintenance-free and wear-free operation. In addition, asynchronous technology is better suited to the speed variation inherent in jig back cable cars, with total availability of torque even when stationary.

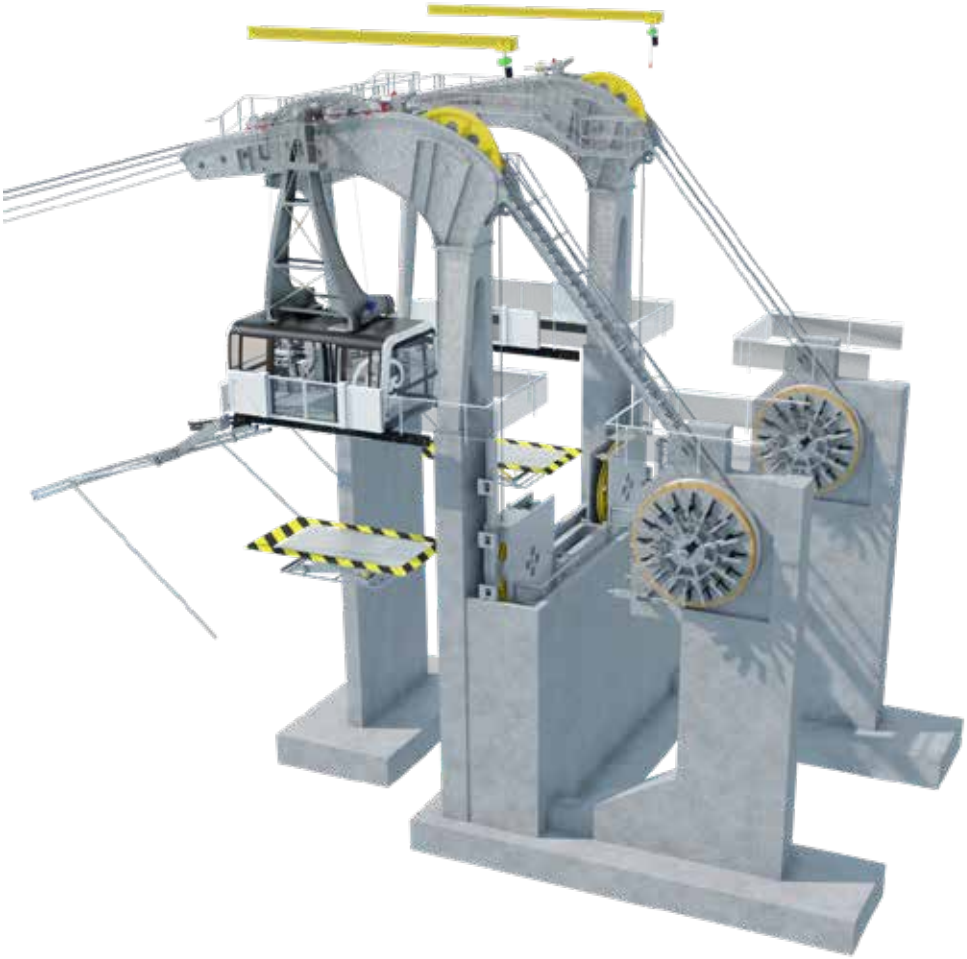
The main motorization is based on a parallel gear **gearbox** from SEW, FLENDER or equivalent. The gearbox is fitted with an oil heating resistor. The coupling between the drive bullwheel and the gearbox is ensured by a coupling with elastic pads guaranteeing the required level of electrical insulation. A splined release ring allows the drive bullwheel to be uncoupled from the gearbox by operating a lever.

The L1 and L2 emergency mode are based on slow POCLAIN hydraulic motors, which can be connected with the ring gear present on each bullwheel. This hydraulic motor is powered by an electric motor pump unit. The asynchronous motor of this motor pump is itself powered by a generator, provided with braking resistors.

2.3.2 Return tension Station (Top)

In the **return station**, the principles of the driving station are maintained:

- overhead metallic structures
- return and tensioning unit of the hauling rope
- anchoring of the track ropes in the lower level



The **counterweight** is located at the top station. It is based on a metallic frame housing two deflection pulleys and steel ballast plates forming a framework, all circulating in guide rails installed in the Civil Engineering of the station.

2.3.3 Track rope Shoes, Hauling rope deflection rollers and slack carriers

Track rope Shoes ensure the functions of guiding and deflecting the track ropes on line. Inside the stations, they guide and deflect towards the anchorages, and also support and docking of vehicle carriages.

The hauling rope is guided and supported by **deflection rollers**. These 440mm diameter rollers come from our multi-cable standard (AT, 2S, 3S). They are provided with double electrical insulation at the level of the tire and the assembly of the axis, making it possible to guarantee the level of availability of the cable insulation, whatever the climatic conditions. Their location guarantees fine control of the load applied to the rollers in order to optimize their lifespan, taking into account the tension present in the traction cable, the diameter of the cable and the speed of the installation.

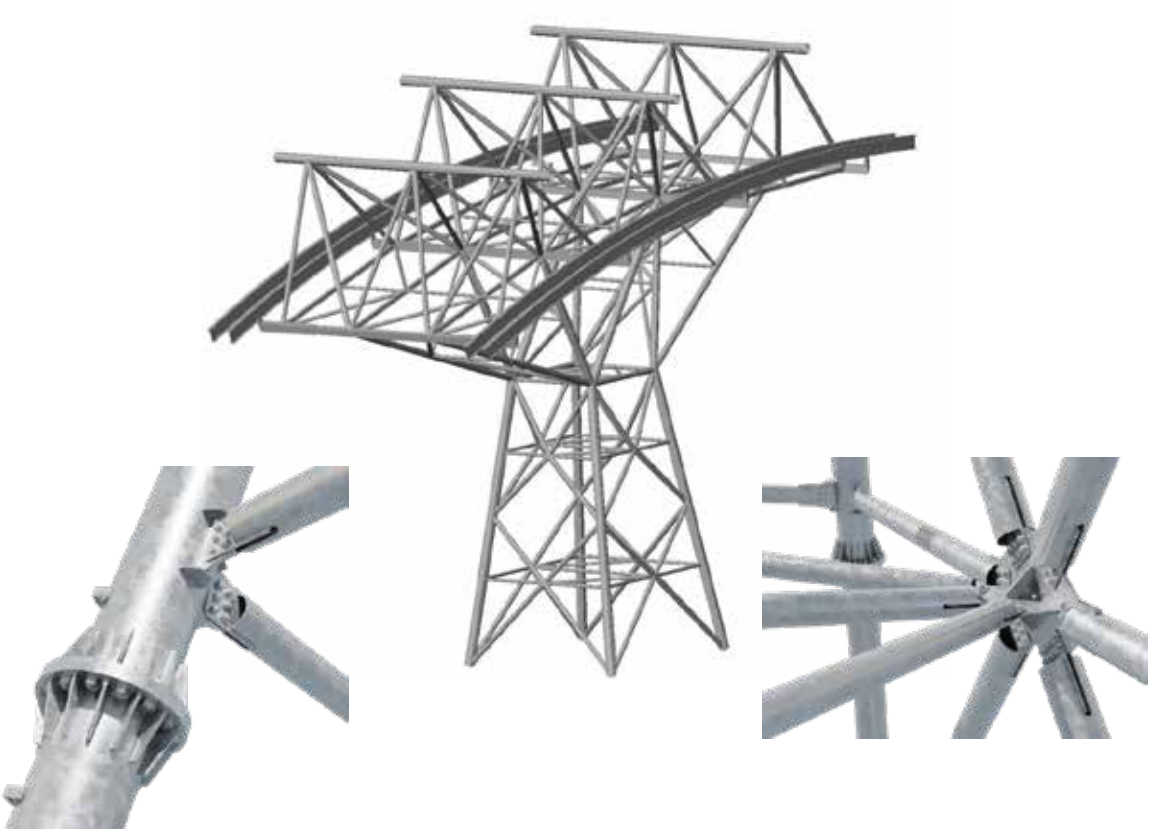
The **"slack carriers"** allow the support of the hauling rope approximately every 150m within the spans between two line towers. They are equipped with a roller identical to those present in station and line shoes.

The "slack carriers" are painted "traffic red" in order to ensure good visibility of the line for aircraft operating in the sector.

2.3.4 Line towers

The **line towers** are lattice structure (“trellis”) in galvanized steel, of which all the sections are in hollow cylindrical sections. This is because round tubing has the best strength to weight ratio for this type of construction. The elements are cut so as to be heliportable with a heavy helicopter if required. The main chords are assembled by cylindrical flanges.

In the upper part, brackets in a rectangular shape receive the shoes on each track. A superstructure makes it possible to have a lifting beam above the vehicle traffic lanes, in order to ensure the lifting of the shoes during the initial assembly, but also to allow the lifting of a track rope for operations of maintenance. Along the shoes, a continuous walkway allows the circulation of personnel and accessibility for maintenance operations.



Their dimensions comply with french regulation RM2 rules, in particular with regard to the safety distance in relation to the envelope space of the carriage circulating on the shoes. A transverse walkway accommodates the electrical equipment, and connects the two shoe walkways.

One of the legs of the trellis is equipped with an aluminum access ladder equipped with a lifeline and rest landings.

2.3.5 Vehicles

In aerial tramways the vehicles design's meets capacity requirement of the costumer, therefore there are the closest to a tailormade manufacturing to comply into a comfortable, safe and silent trip for the passengers.

The main components are:

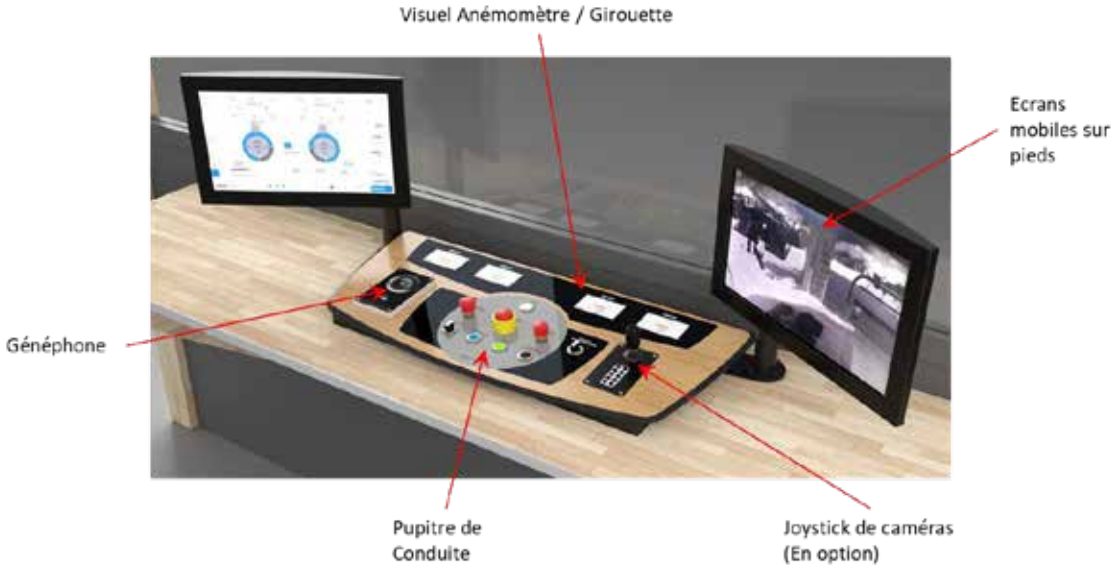
- The **Carriage** ensures the guidance of the vehicle through the track ropes and the connection with the hauling rope.

- The **Suspension** is the connection between the carriage and the cabin, based on a welded steel structure design as efficient as possible to support loads and equilibrate the cabin for a comfortable ride.

- The **Cabin** of passengers is designed with harmonized curves of the *Symphony* 3S technology line. It is equipped with 10 folding seats, thus the inner configuration can enhance the space distribution when its fully loaded. The final constructive details and configuration could be discussed with the custumer upon its needs.

2.3.6 Electrical equipment, automatism y safety

The **control system** is fully designed and manufactured by POMA. It works on SIEMENS brand safety PLC. The use of large series electrical components guarantees durability and ease of management and supply of spare parts.



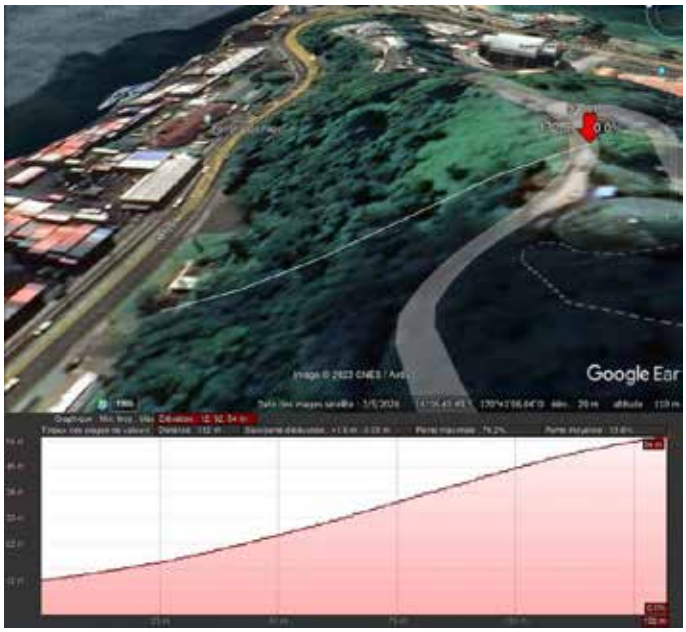
The automations of **L0 and L1 modes** are configured from SIMATIC S7-1500F industrial safety programmable logic controllers. These PLCs consist of a central unit and remote, safe and functional input/output modules. They allow dialogue and the transfer of all data between the different stations (driving and return) and the vehicles, using different media such as optical fiber and radio networks.

The automatism of the **L2 mode** is composed of relays, and totally independent of the other modes and based on a hardware architecture with relays.

2.4 Description of the **Inclined Elevator** POMA Solution

The project is consisting in an **outdoor inclined elevator** giving access to the bottom station of the MOUNT ALAVA SKY TRAM, starting from the road at sea level. The constant slope is 18°, 120m long to cross the 40m vertical rise.

The total capacity of the cabin shall be designed for **34 passengers** corresponding to 2,550kg (75 kg per people) to attempt the required capacity of 600 pphpd. At each station, the gondolas are stopped in order to allow the boarding / disembarkation of the passengers

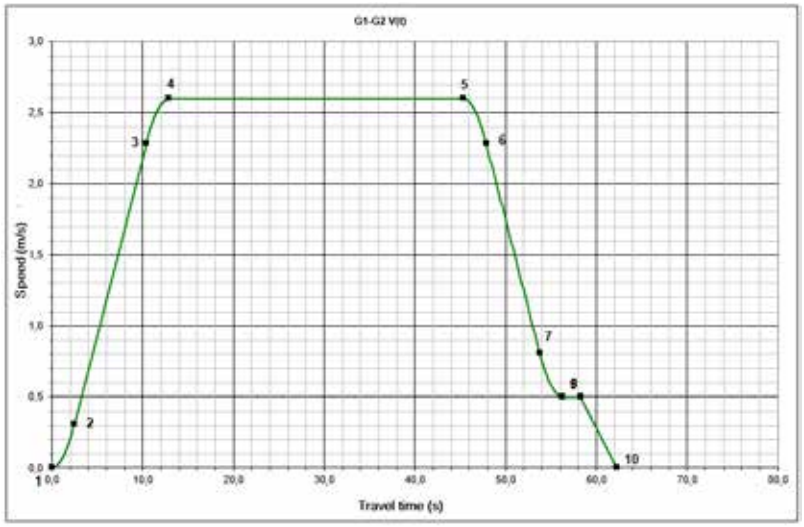


The design of this inclined lift is based on the use of regular lift components, reliable and experienced/proven equipment.

The maximum speed is 2,6 m/s, given by a layer of 4 tractor cables with a diameter of 13mm without compensation cables downstream. Cabin doors are located laterally.

The guiding track will consist in a steel structure supported by concrete pillars and slabs according to the code.

All detailed drawings or pictures here given in this document are illustrative and will be defined by POMA during the design stage of the project.



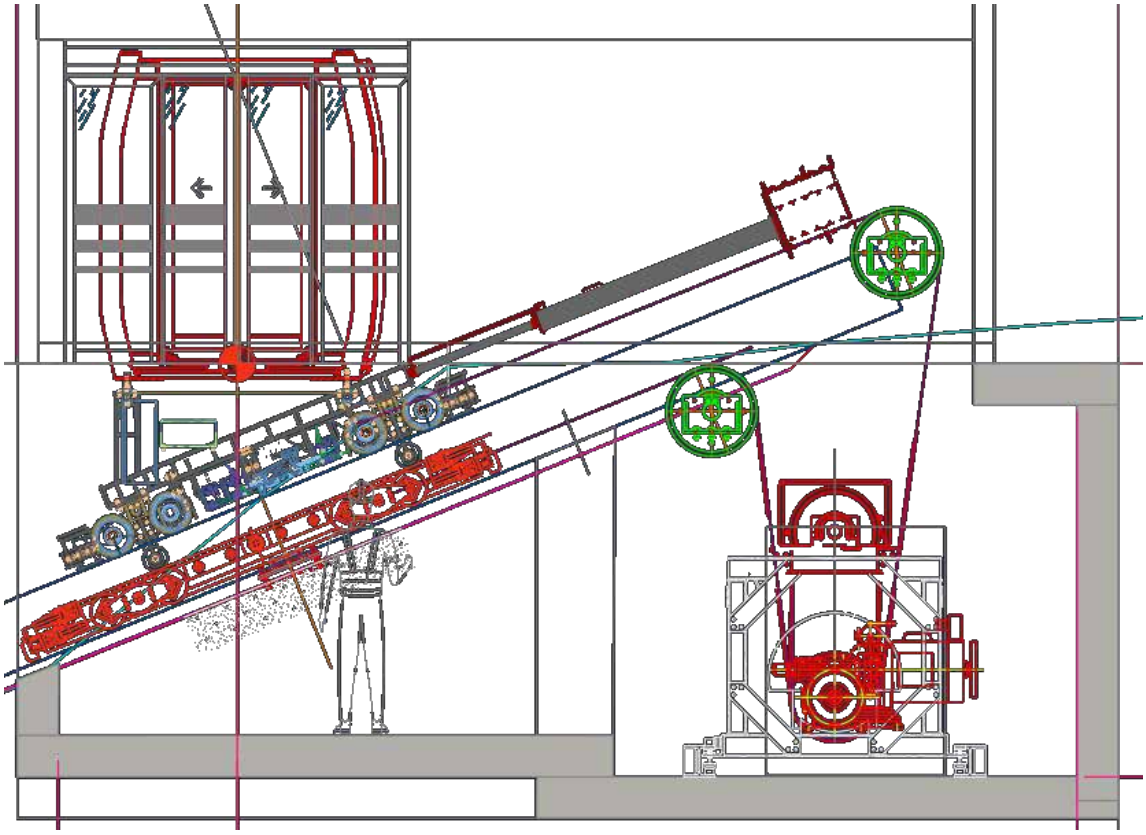
2.4.1 Drive Station (top)

The **top station** is developed on two levels:

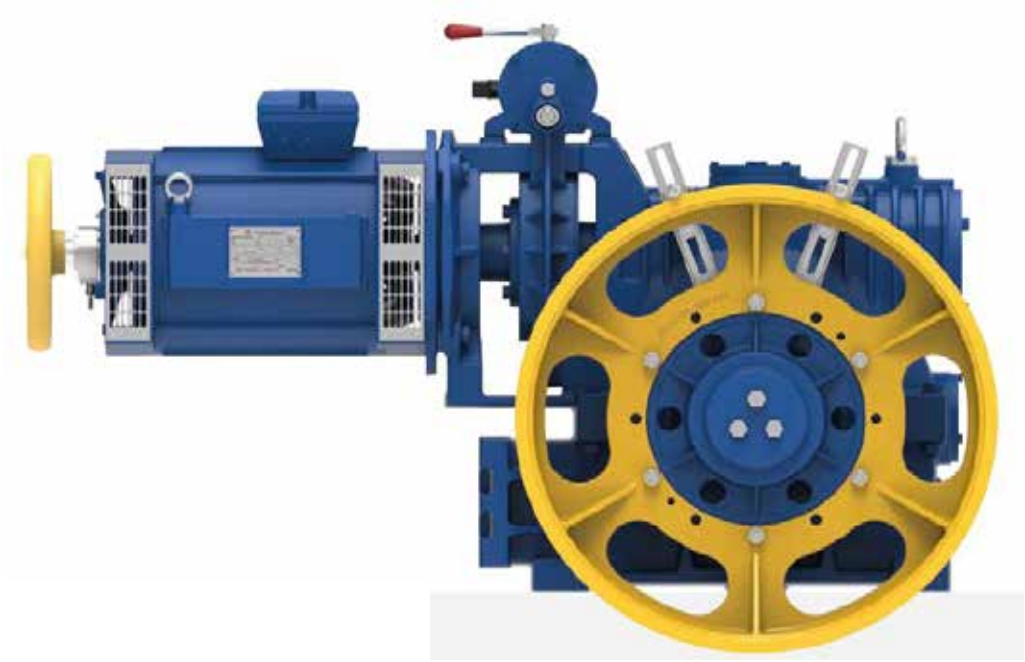
- the **upper floor** (ground level) consists of the boarding/disembarking platforms
- the **lower floor** (underground level) houses the mechanical and electrical technical devices.

This station is equipped with automatic electric doors, call button box and intercom. Power rails will give the electrical supply to the cabin in the station.

Here below the drive principle of the traction ropes as an illustration on another inclined elevator project.



The **drive unit**, its power/command system and the overspeed controller would be designed and supplied by POMA. Here below, you can find some views of those components used on other similar inclined lift projects.



Drive winch Montanari M105 type

The **electrical drive and monitoring system** of the elevator is designed to carry out safety functions like continuous speed control, as on advanced ropeways installations, and this is considered as a primary safety function of the lift automation.

This allows us to guarantee a fully controlled vehicle acceleration and deceleration from top speed to station stopping point, calling emergency braking whenever the instantaneous vehicle run is different from the requested one.

A **track counterweight** runs inside the track sections. The counterweight frame is made with galvanized or painted steel. The counterweight is equipped with load wheel bogies. The guide wheels are spring-loaded to limit noise emissions and vibrations. The cable ties of the traction ropes allow an adjustment of balancing. Anti-sags are attached to the counterweight frame.

2.4.2 Return tension Station (Bottom)

The **bottom station** is composed by the boarding and disembarking platforms and the vehicle pit. Also this station is equipped with automatic electric doors, call button box and intercom, as for the top station. Electric power is taken directly from the transformer room placed in the top station (out of POMA scope), brought to this station through cable ducts and supplied to the cabin thanks to power rails.

Here under a bottom station as an illustration of another inclined elevator project

2.4.3 Vehicle

Our proposal is the **SAPHIR cabin**, our best range in Inclined Elevator. The capacity of each cabin is 34 passengers. This is the one used for example on the Meribel inclined lift installed in 2018 in French Alps (see picture below).

This cabin is reliable and proven design, based on our standards for aerial cable car. It is functional and meets all the provisions resulting from lift regulations and standards.

The cabin is fully customizable, by choosing the exterior colors, or even the floor coverings.

The **cabin frame** is self-supporting. It consists of extruded aluminum profiles riveted together. It has no welding points transmitting operating forces. The floor is made of sandwich panels, covered with flexible plastic coating, to obtain a non-slip floor surface whatever the weather conditions.

The **ceiling** is divided into 6 parts:

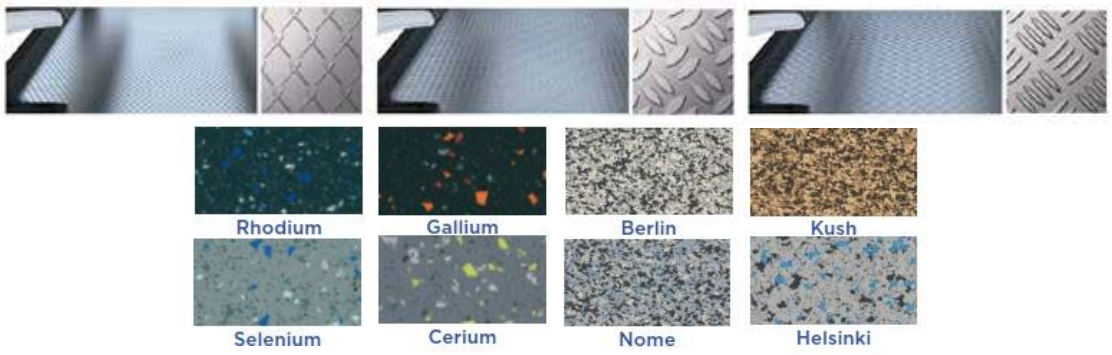
- Two removable parts on the door side, mounted on a hinge, held in place by 2 key locks, giving access to the door control mechanisms.
- An upstream part, on the emergency door side, locked by screws, giving access to the emergency door locking mechanism.
- Three parts locked by screws, finishing to dress the space between the ceiling and the roof

Sliding doors: The leaves are sliding outside the passenger compartment. In the upper part, the leaves are guided and carried by bearing rollers on rails. In the lower part, the leaves are guided by rollers circulating in a rail. The leaves are motorized and locked by the mechanism placed in the upper part. For doors, the mechanism performs the following functions: opening, closing and locking. The forces between the leaves are limited to 15 daN by the electric door motor system. In the event of an electrical failure, a manual release is located outside on the fixed upright of the boarding gate on the right, looking at the doors.

Glazing and ventilation: The glazed panels of the passenger compartment are made up of cold-bent polycarbonate panels, mounted from the inside of the cabin, resting positively on the aluminum frame. Pivoting windows are located downstream in the upper part of the glazing. They open from the inside. They perform a ventilation function. Shutters are located downstream in the lower part of the glazing. They complete the ventilation function.

Internal arrangement: The cabin is fitted with stainless steel handrails. Two vertical bars located in the cabin; two vertical handles located on either side of the doors and a horizontal handrail.

About the flooring, according to POMA experience of people transportation with high capacity, we propose different types of floor covering: aluminium covering (with different types of pattern) or elastomere covering (with different colors).



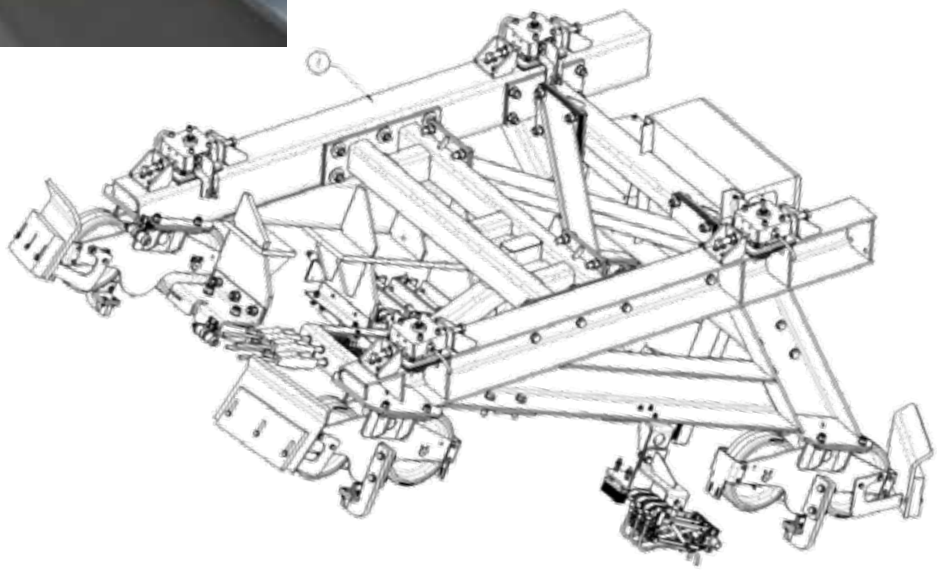
The **carriage** design consists in mechanically welded and galvanized structure. It supports all the mechanical elements of the vehicle.

Among other things, it is equipped with the following elements:

- Anti-uprisings ;
- Anti-sagging ;
- Wheels with polyurethane tires for rolling and steel for guiding ;
- ATWELL CE stainless steel parachute ;
- Waterproof electrical box ;
- Cabin weighing system provided with load cells arranged on the cable layer fixation.

Advantages of the POMA solution are :

- **Reliability**: construction of the mechanically welded and protected galvanized frame by welders approved by ski lifts;
- **Ease of upkeep and maintenance**: the chassis is wide open and all the equipment is easily accessible;
- **Esthetics**: painted skirts allow you to customize your device;
- **Availability**: the chassis is equipped with self-adjusting body guards;
- **Comfort**: the use of bogies equipped with wheels with polyurethane tires makes it possible to limit vibrations and the effects of track joints



2.4.4 Platform sliding doors

Automatic sliding doors protect the platforms.

These automatic door systems have been used since 1991 by POMA on all cable car and funicular / inclined lifts systems around the world.

The doors only open in the presence of a cabin, their movement is synchronized with that of the train doors and controlled by an automaton. As long as the cabin is not stopped in front of the doors, they are locked by a mechanical device. Maintenance and rescue teams can unlock and open them manually from the platform using a "fireman's triangle" key.

The opening width of the landing doors will be greater than the vehicle doors to compensate any positioning inaccuracy. POMA uses preferentially **PORTALP doors**, a French reference in the market, nevertheless WITTUR doors might be chosen.

2.4.5 Tracks

The **track main structure** is a metallic structure based on of galvanized steel H-sections HEA500 and (out of POMA scope). The upper part of the H-profile is the rolling surface of the carriage. Between the two H-profiles is guided the counterweight, inside both H-profiles.

A T-rail (POMA scope) is positioned inside the track on the upper part, to guide the carriage. The T-rail is also the profile on which the safety parachute is acting.

This track structure will be supported by concrete foundations (out of POMA scope).

The track is equipped with **roller guiding devices** to support the main traction ropes path. In addition the track is equipped with rolling devices dedicated to the speed limiter cable speed. This equipment is assembled by bolting on crosspieces perpendicular to the track structure. They are mainly made of a synthetic body (Nylatron or Ertalon) that ensures high noise reduction and high mechanical characteristics too (resistance to environmental agents, shock resistance, strength), and turns on roller bearings. All the system is supported by a tempered steel pin, bolted on a runway structure with the interposition of vibration-absorber materials

2.4.2 End track buffer

European standards allow the designers to use only reduced stroke **end track buffers** in case of continuous speed monitoring at station entrance.

Anyway, this kind of bumpers is used only on balancing weight while the vehicle runway, at the top and bottom station, will be equipped with energy dissipation buffers, 200 mm stroke, certified for inclined lifts operation.

Shock absorbers for elevators are closed hydraulic components which operate on the basis of oil displacement. When the piston rod is pushed into the cylinder, the piston displaces the oil through different sized holes which are progressively closed off. As a result the speed of the piston rod proportionally decreases to the stroke covered. The displaced oil from the volume of the piston rod is compensated by an accumulator of nitrogen, which is above the oil.

During the stroke the pressure in the nitrogen is increased. When the mass is released the piston rod is returned by the pressure of the nitrogen. A plastic stop cap reduces the impact noise. The shock absorbers are filled by a valve with nitrogen at 5 bar.

An oil sight glass allows easy visual check of the oil level. For monitoring of the extended piston rod a limit switch according DIN-EN 50047 is built in. The limit switch is pushed in by the contact pin.

Bergstation
Mountain station
Station supérieure
Stazione a monte
Estación superior

Talstation
Valley station
Station aval
Stazione a valle
Estación de valle

2.5 Work in **Quality** with the **Serenity and Sustainability** of a certified first-rate ropeway manufacturer

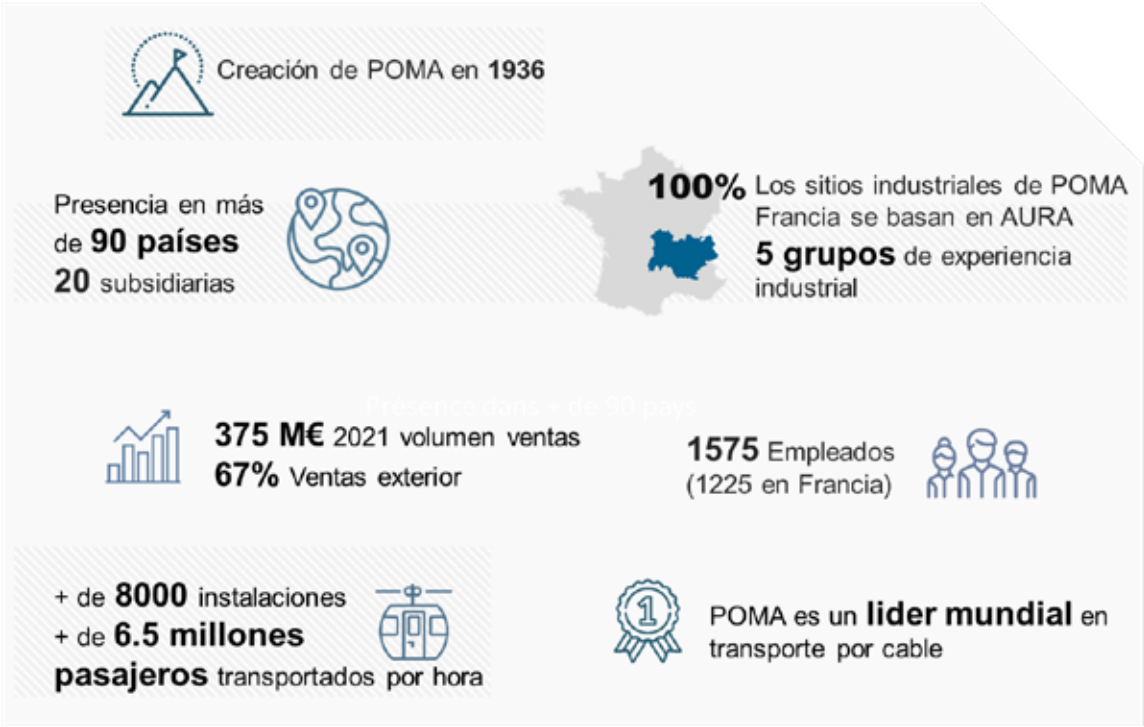
All the components and parts of the POMA group are studied, manufactured and controlled in accordance with the **quality standard** ISO 9001: 2015; ISO 14001: 2015; ISO 45001: 2018.

Which means that customer satisfaction is the first concern of our organization.

POMA has as a reference of some 8,000 cable car installations worldwide **since 1936**, the year it was created by the engineer Jean POMAGALSKI.

2.6 Trust in the **long term** with the **proximity** of the manufacturer

Since its creation in 1936, the POMA group has established its presence internationally and today constitutes a **worldwide network** in the form of subsidiaries and agents. POMA is today a unified team of more than 1,500 employees around the world.



Within the strategic objectives established by POMA, there is to provide an optimal technical and commercial service to all its clients during all the installation stages, as well as during the operation and maintenance of our equipment. POMA still supplies, and will continue to supply, its customers with **spare parts and maintenance** intervention when required.

3. Scope of Supply and Services POMA

3.1 Studies and Design POMA

The **studies and design** of the cable car include:

- Input of basic information and ropeway drawings for the planning permission / building permit to be done by the customer
- Line calculation notes and longitudinal line profile
- Structural calculations
- Line structure and Station base strengths notes for concrete foundation design
- Electrical diagram and specifications for electrical power requirement
- Drawings of mechanical assemblies of the POMA supply
- Start-up procedure
- Operation and maintenance manuals in English

Based on the following standards:

- For the **Aerial Tramway**: European CEN standards UE 2016/424 applicable to people transportation cable car
- For the **Inclined Elevator**: Safety Code for Elevators and Escalators ASME A17.1-2007/CSA B44-07

3.2 Supply of POMA Electromechanical Equipment – **Aerial Tramway**

The supply of **electromechanical components** includes:

- Foundation anchor bolts for the supplied equipment
- Electromechanical equipment of drive and return station
- Line equipment (slack carriers)
- Track ropes and hauling rope
- 2 x Vehicles
- Control electrical cabinets and power cabinets
- Safety line
- Basic spare parts and tools

3.3 Supply of POMA Electromec. Equipment – **Inclined Elevator**

The supply of **electromechanical components** includes:

- Drive unit (including anchor bolts) + Deviation pulleys + Traction ropes + Counterweight
- Moving parts protections for workers
- Control electrical cabinets and power cabinets
- Overspeed controller
- Power rails and current collector to feed the cabin
- Power and communication system to feed the cabin
- Vehicle: Cabin + Carriage
- Platform sliding doors
- Track: T rail + roller guiding devices
- End track buffer
- Basic spare parts and tools

3.4 Technical assistance POMA

POMA **Technical Assistance** on site includes:

- Technical assistance during the main erection activities of the equipment
- Adjustments and commissioning of the cable car
- Takeover (5 days) of the cable car (initial assistance)

3.5 Annexes

- Line profile for the Aerial Tramway **16941_PEL_01**

4. Scope of Supply and Services CUSTOMER

4.1 Customer Project management

The customer **project management** consists, among others, in:

- Obtaining the input data (land survey, wind study, etc ...)
- Bring the project to the local administrative authorities (building permit and exploitation authorization)
- Negotiation and obtain environmental licenses and other permits for the work,
- Approval of the definitive longitudinal line profile allowing the start of manufacturing
- Negotiation and obtaining of the necessary land for the project
- Insure the equipment, the civil responsibility and all the risks of the work
- Administrative management of interference (water, gas, electricity, telecom, etc ...)
- Monitoring and control of the work by an external audit company

4.2 Customer scope of supply and services

The **services and supply** provided by the customer consist, among others, of:

- Study and realization of civil works:
  - Construction of accesses to the work (stations, towers, etc ...)
  - Realization of the concrete foundations for the ropeway equipment together with the necessary landings
  - Deviation from eventual networks (interferences)
  - Construction of technical rooms (control, power, transformer, generator, etc ...)
  - Construction of eventual buildings (with lightning rods, detectors and fire protection)
- Storage, transfer and security of equipment on the construction site
- Control survey of the foundations before the start of the ropeway assembly
- Mechanical assembly, installation / tensioning of the ropes (with scaffolding / evtl road protection) and electrical connection of the electromechanical equipment
- Bring current at each station including supply and installation of transformers (incl. anti-harmonic filters) and electric wire cables to POMA electrical cabinets
- Supply and installation of barriers, equipment of accesses and passenger embarkation / disembarkation areas, auxiliary systems (CCTV, ticketing etc ...)
- *For the inclined elevator*: Main track metallic structure and Maintenance / evacuation stairs all along the tracks
- Presence of a team of workers from the future operator during start-up
- Supply and handling of loads for cable car load tests
- Power supply (electricity, water, etc…) during construction and start-up
- Magnetographic control of the ropes before public operation and hauling rope shortening after one year of operation around.

5. Budget and Payment Conditions

5.1 Budgetary estimation

This budget offer is based taking into account assumptions and approximations at this stage.

Description	Value (EUROS)
Cable car AT40 P16941 Sky Tram Mount Alava @600 pphpd Pago Pago (American Samoa) according to the description of this document: - Studies & design - Supply of Electromechanical Equipment (CIP Pago Pago) - Technical assistance on site	**12.100.000 €**
Inclined Elevator IE34 P30831 Sky Tram Access @600 pphpd Pago Pago (American Samoa) according to the description of this document: - Studies & design - Supply of Electromechanical Equipment (CIP Pago Pago) - Technical assistance on site	**2.285.000 €**

5.2 Conditions

5.2.1 Incoterm© ICC 2020

CIP Pago Pago harbour (Prices without VAT, importation & local taxes, unloading, inland transport to site, etc…)

5.2.2 Payment terms

The payment terms are as follows:

- 30% - via bank transfer as downpayment upon signing the contract. Payment of the advance, within 15 days after the signing of the contract, is a condition of entry into force of the contract.
- 70% - via bank transfer covered by an irrevocable L/C letter of credit (or SBLC guarantee) and confirmed by a first-class French bank, in favor of POMA SAS, payable at sight upon presentation of shipping documents, free of bank charges for the beneficiary. The opening of the L/C (or SBLC), within 30 days after the signing of the contract, is a condition of entry into force of the contract.

5.2.3 Planning

The proposal includes a CIP delivery of the equipment **12 to 18 months** from the entry into force of the contract and the validation by the customer of the longitudinal profile of the ropeway.

5.2.4 Validity

Due to the current world instability and inflation, this budget estimation is given for information and valid for a manufacturing of the equipment in 2023. A detailed offer will be done in a further step based on a defined line profile.


SE GROUP


LEITNER
POMA


RRC