Transit Consulting Network

December 16, 2013

THOMAS J. CAMACHO
Special Assistant for Public Transportation
Chairman, Commonwealth Public Transportation Advisory Board
Commonwealth Office of Transit Authority, Office of the Governor
Juan A. Sablan Memorial Bldg., Isa Drive, Capital Hill
Commonwealth of the Northern Mariana Islands
Caller Box 10007, Saipan, MP 96950

Dear Mr. Camacho:

Re: COTA / CNMI Fixed Flex-Route Paratransit Systems Feasibility Study – Final Report

On behalf of the Transit Consulting Network team, I would like take this opportunity to thank you, all COTA and CNMI staff involved with our project, political representatives, and the residents and businesses of the community for assisting us throughout the Fixed Flex-route Paratransit Feasibility Study. The very frank discussions during the community engagement process went a long way to assisting us in recommending, what we believe to be, a blueprint to successfully establishing public transit as an integral community service in the CNMI.

This project is one of the most engaging and fulfilling studies I have ever undertaken; our team very much appreciated the opportunity to learn from the community as I hope the community learned from our team. The end result, I trust you will agree with, is a 'made in the CNMI' solution to meeting the current and future public transportation needs of the communities you serve. We envision public transit becoming a reality and success story in Saipan, Tinian and Rota simply because you have the opportunity to do things right the first time. We look forward to the opportunity to work with your team again in the near future.

Best regards,

Transit Consulting Network

Wally Beck, C.E.T.
President

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EXECUTIVE SUMMARY

Introduction

The Commonwealth of the Northern Mariana Islands (CNMI), through the Commonwealth Office of Transit Authority (COTA), set in motion processes to develop a public transportation system in Saipan, and eventually in Rota and Tinian. A Transit Feasibility Study was awarded to Transit Consulting Network of Keswick, Ontario, Canada to work with the CNMI, COTA and the community. The study was launched on July 23, 2013 with a final draft report completed on November 21, 2013.

Answers to the following questions guided the project goals and objectives of the study:

- How many people will use transit?
- What is required to operate a mixed rural-urban public transit service in the short- and long-term?
- What public transit governance options and models are available?
- If Transit is not viable, why not?
- If Transit is considered viable, what are the nest steps?

The ultimate goal and challenge was to provide a feasible public transportation service that meets community needs, operates effectively within available resources, does not over-commit the CNMI government financially, and provides a blueprint for orderly development. Most important was putting in front of the decision-makers the term 'feasible', which remains to be a decision that can only be defined by elected officials.

Study Approach

It was very clear from the outset of the study that Saipan was unique compared to mainland systems in North America and many Western Pacific islands. What was not unique is the role that publicly funded transportation plays in the communities they serve.

To effect a successful conclusion, a logical study approach was undertaken using the following sequence of activities:

- **Step 1:** Review of the current environment using 2010 US Census to provide a snapshot of the socio demographic data and 'Journey to Work' tabulations, which provided the following insight that supports a latent demand for public transportation:
  - Almost one in four homes (23%) do not have a private automobile
  - 29.6% of households and 52% of the population are below the US poverty line

- **Step 2:** A public transportation peer review was undertaken to provide COTA and the CNMI with a better understanding of public transit elsewhere and establish reasonable expectations for a fixed flex-route and paratransit system in the Northern Mariana Islands relative to demand and costs.

- **Step 3:** An extensive public engagement process was undertaken that confirmed many of the issues anticipated from the interpretation of the census data, including the need for transit. In addition to undertaking 10 transit focus group meetings, there was a web-based survey undertaken, complemented by dozens of personal interviews with residents and businesses that confirmed the original focus group needs and priorities.

- **Step 4:** Based on the extensive community engagement process where over 200 residents provided input, a Transit Policy Framework was developed to guide the development of a transit service plan.

- **Step 5:** Using the peer review data and the policy framework supported by the study team, service concepts were developed along with the appropriate fleet mix to culminate with a 5-year service and financial plan. Inherent to the service plan were transit ridership growth strategies and transit asset management plan to support the service plan.

- **Step 6:** The preliminary service plan was presented to the community and finalized with COTA staff and the COTA Board of Directors before being finalized.

Key Findings and Conclusions

The Fixed Flex-route and Paratransit Systems Feasibility Study report delves into many aspects of public transportation and information that can go a long way to help the CNMI determine what is 'feasible' and what is 'sustainable'. The following key findings and conclusions have been provided to assist the reader in following the report to its conclusions and recommendations.

Past Attempts in Saipan to Operate Transit

Throughout the course of the study, particularly during the consultant on-site visits of August 20-30 and October 14-24 in 2013, Transit Consulting Network spoke to individuals that shed some light on fixed route bus service that was operated by the private sector in the past. Our anecdotal information was gleaned from a long-time 40-year resident that worked for a private operator in the 1990's while community elders shared information regarding a bus operation that was operated in the 1960's. This was helpful since there was no data available.

The information that was shared early in the study by the long-time residents helped the study team focus on key components of the study and helped confirm that urban and rural transit is not self-supporting given the demise of the previous attempts of the private sector. In fact, it was during the 1960's that transit systems transitioned in the United States and Canada from the private sector to public sector, requiring the financial support of governments at all levels.

Existence of the Colorum (Unregistered Taxis)

Given the non-existence of affordable public transportation, an 'illegal' taxi system has flourished. It has flourished because low income residents and those without a car cannot afford to use licensed (registered) taxis. In some cases, a licensed taxi rate could almost be equivalent to the wages earned by some employees (e.g. Kagman residents that work in the hotel industry in Garapan). The unregistered taxis charge as little as $3 or more to about $15- $20 for a shared door-to-door trip, depending on the distance travelled.

Of the 34 respondents that were asked if they used taxis, 15 or 44% reported that they use illegal taxis most of the time while 12 or 35% said they used both. The data is not statistically significant given the objectives of the survey (opinions), but it certainly supports what we heard from the community during our consultations. What is important to about the aforementioned statistics is that even if the numbers are 50% below what a more detailed study would reveal, the potential market is still very significant.

The study team concluded:

- The illegal taxi industry, although not desired, plays a significant role in the community;
- The illegal taxi market is one that publicly funded transit will attract provided it is more cost competitive; and
- Since public transit service hours are limited, there will always be demand for an illegal taxi industry.

To address the illegal nature of the unregistered taxis, we have suggested that a two-tier taxi system be considered to ensure all taxis meet minimum safety requirements and be properly insured.

Low Auto Ownership

Since one in four households do not own a vehicle and almost 30% of households are under the US poverty line, a very large market potential exists for the potential roll-out of a new publicly funded transit system. A larger than normal captive market when starting out could translate to higher than normal ridership growth.

Public Expectations

It has been made very clear is that residents, whether they would use transit or not, see a critical need for affordable public transit. What was interesting; however, is that residents want a service that is clean, reliable, and provides service hours that are sufficient to allow them to access jobs, schools, medical appointments, and goods and services. Many are aware of unreliable services elsewhere. It can, therefore, be concluded that if and when public transit is introduced, service quality must be inherent. This input pointed to a need to have a reliable service in place, which helped the study team recommend the appropriate business model, supported by low-cost monitoring technology.

It was also made clear and understood by residents that transit cannot be all things to all people and as such, service priorities were communicated to the study team. Getting people to work and school provides access to employment and rated highest on the requirements. Getting to medical appointments was critical. Being able to access recreational activities was reported by residents to be a health benefit and access to goods and services during the day and on weekends was desirable.

Route Network and Service Design Principles

From a service and route network design perspective, the island of Saipan is in an enviable position since there are approximately 1,600 residents for every one mile of a bus route. This exceeds the land use design requirement of 1,500 residents per one mile of service for normal urban areas in cities and communities in the mainland of US and Canada. The linear nature of the Saipan's dense mixed use development along a limited number of corridors provides COTA with the ability to operate an efficient and effective core service.

For the more remote areas of the island, low-cost feeder services can be introduced to bring residents to transfer points, which will be timed to connect to core transit services so customers can continue their travel almost seamlessly.

It was concluded by the study team that a key core route is needed along with feeder services, which can be expanded over time as demand increases. This 'walk before you run' principle will help ensure the success of transit through fiscal responsibility.

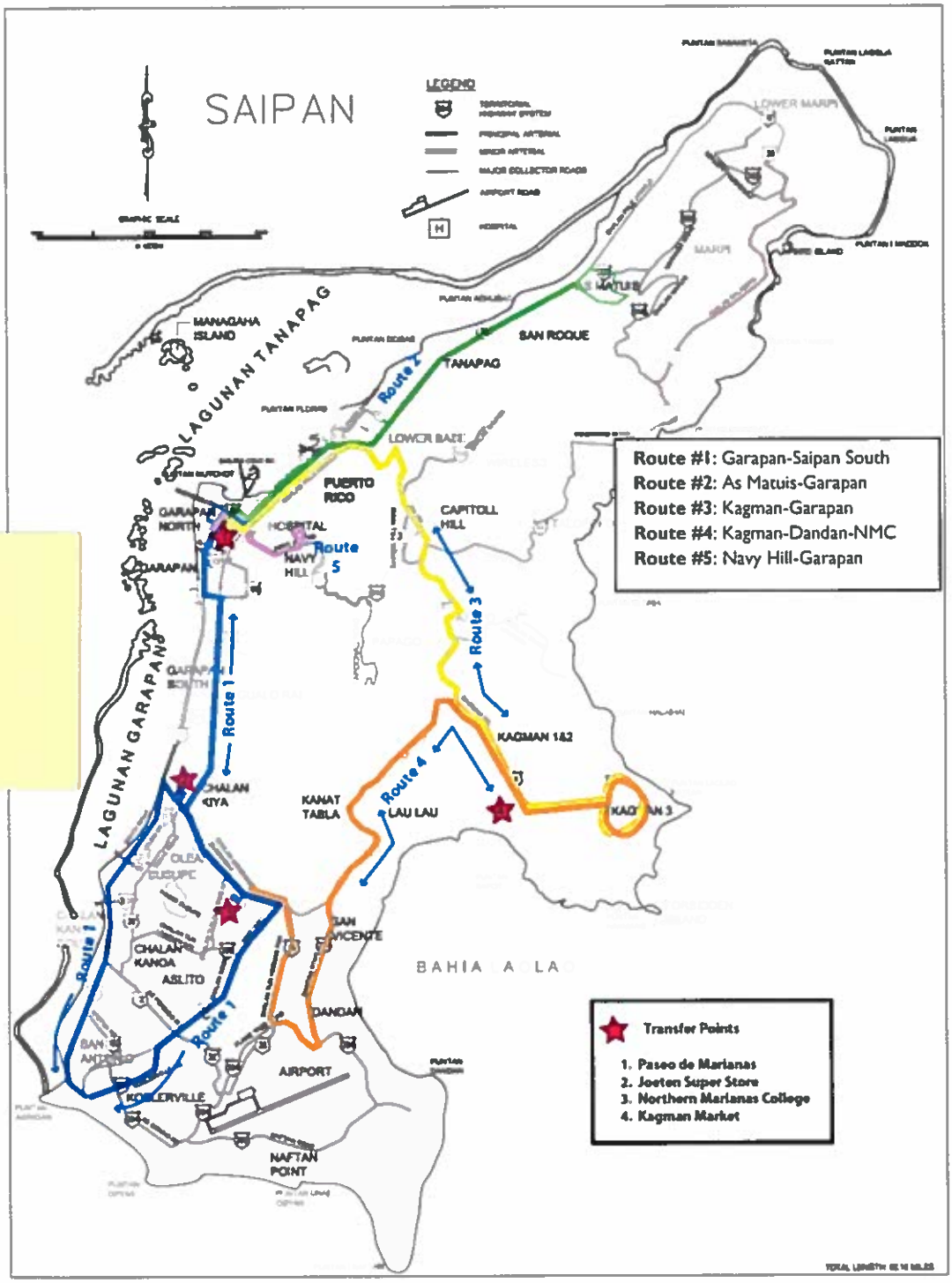
Travel Training

The vast majority of residents have not used public transit, which provides a challenge. This challenge; however, can be overcome by implementing an extensive travel training program. With the advent of easy to use smart card systems, the study team has recommended that residents receive a smart card for a low cost of about $10. The customers would then register their card, which would allow them to use transit at no cost for about a two- to three-month period. This accomplishes two key objectives.

- Firstly, having free transit will enable and encourage residents to become experienced transit customers and with reliable service in place, become choice transit customers – the largest market potential in any community.
- Secondly, the smart card and free initial service will wean customers off the illegal taxi. Although revenues will be lost during the free period, in the long run, residents will embrace transit quicker and help expedite the normal 3- to 5-year period it takes to establish transit as an integral component of the transportation system.

Proposed Route Network

The study team has developed a route network concept that is illustrated below. There are five routes with a core service between Garapan and the communities along the south and west coast of Saipan.



5-Year Service and Financial Plan

A transit service plan was developed that starts off with minimal service then is sufficiently flexible to expand as demand warrants. We have presented a five-year plan for budgeting purposes; however, if the number of passengers per hour is beyond our conservative estimates after Year 1, COTA has the option, for example, of by-passing Year 2 and go to Year 3 service levels in the second year.

In order to develop a service and financial plan, the study team developed a number of assumptions relative to costs and ridership that were approved by COTA. Given that transit does not support itself through ridership revenues, the Federal Transit Administration (FTA) provides 50% funding of the operating deficit with the CNMI responsible for the balance. Fortunately, the CNMI has the legislative authority to impose fees that can go towards reducing the deficit. A number of suggestions have been discussed and two of them have been identified for illustration purposes and to generate future debate and actions.

Annual Operating Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Facility maintenance	$50,000	$50,000	$50,000	$50,000	$50,000
Marketing	$75,000	$50,000	$50,000	$50,000	$50,000
Administration (10%)	$90,000	$95,000	$115,000	$125,000	$130,000
Total Fixed Operating	$215,000	$195,000	$215,000	$225,000	$230,000
Total Fixed Route Hours	12,450	15,820	20,160	24,210	26,070
Total Call-a-Ride Hours	6,240	6,240	6,240	6,240	6,240
Total Hours	18,690	22,060	26,400	30,450	32,310
Total Variable Operating Cost	$722,655	$855,770	$1,027,200	$1,187,175	$1,260,645
Total Operating Costs	**$937,655**	**$1,050,770**	**$1,242,200**	**$1,412,175**	**$1,490,645**
Ridership Estimates	68,650	117,440	188,540	249,600	320,840
Ridership Revenue	$137,300	$234,880	$377,080	$499,200	$641,680
Deficit: Total Cost Less Revenue	$800,355	$815,890	$865,120	$912,975	$848,965
FTA Operating Subsidy (50% Deficit)	$400,178	$407,945	$432,560	$456,488	$424,483
Net Cost to CNMI	$400,178	$407,945	$432,560	$456,488	$424,483
Other Potential Revenue Sources					
Licensing Fees ($10 surcharge)	$200,000	$200,000	$200,000	$200,000	$200,000
Parking Meters (net of expenses)	$50,000	$50,000	$50,000	$50,000	$50,000
Dedicated gas tax?					
Dedicated share of new sales tax?					
Other?					
Sub-total	$250,000	$250,000	$250,000	$250,000	$250,000
Net Cost to CNMI	**$150,178**	**$157,945**	**$182,560**	**$206,488**	**$174,483**

There was a principle behind the suggested revenue sources to offset transit costs such as licensing surcharge fees and parking meter revenues. There is significant investment in building and maintaining roadways that benefit auto users but are supported by both the higher income auto owners and the low income non-auto households. By imposing auto-related revenue tools for auto users, disparity decreases between the two and is considered to be fair.

At the very least, there must be recognition that the non-auto households and low income residents need to have their mode of travel supported financially at the local level. Within the report are a number of revenue and ridership growth strategies that can be considered in an effort to reduce the net cost to the CNMI even further.

Transit Asset Management Plan

In order to implement the Five Year service plan effectively, COTA will need to invest in the appropriate rolling stock on Day 1 and transit infrastructure over a period of time. Fortunately, the FTA provides 80% funding and, in some cases, 100% funding, which can be pursued.

Capital Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5
Fleet Expansion					
30' Transit buses (8) - Routes, 1, 2, 4	$1,800,000				
24' Transit buses (1)- Route 3 and 5	$145,000				
Sub-total	$1,945,000				
Fleet Replacement					
24' Call-a-Ride buses (2)	$290,000				
Call-a-Ride Van (1)			$75,000		
Sub-total	$290,000		$75,000		
Bus Stop Infrastructure					
Bus stop signs and posts (500)	$125,000				
Shelters (20 in Year2 then 10 per year)	$200,000	$200,000	$200,000	$200,000	$200,000
Bus stop pads/ retrofits (10 per year)		$20,000	$20,000	$20,000	$20,000
Beach Road Mobility Hub	$25,000	$50,000			
Other bus transfer stations	$100,000	$100,000	$100,000		
Sub-total	$450,000	$370,000	$320,000	$220,000	$220,000
Transit Technologies					
Smart Card/ Integarted GPS (11 vehicles)	$165,000				
Radio and PDA Communications	$50,000				
Sub-total	$215,000				
Total Capital Budget	$2,900,000	$370,000	$395,000	$220,000	$220,000
80% FTA Funding (100% funding to be sought)	$2,320,000	$296,000	$316,000	$176,000	$176,000
Net Cost to CNMI after FTA subsidy	$580,000	$74,000	$79,000	$44,000	$44,000

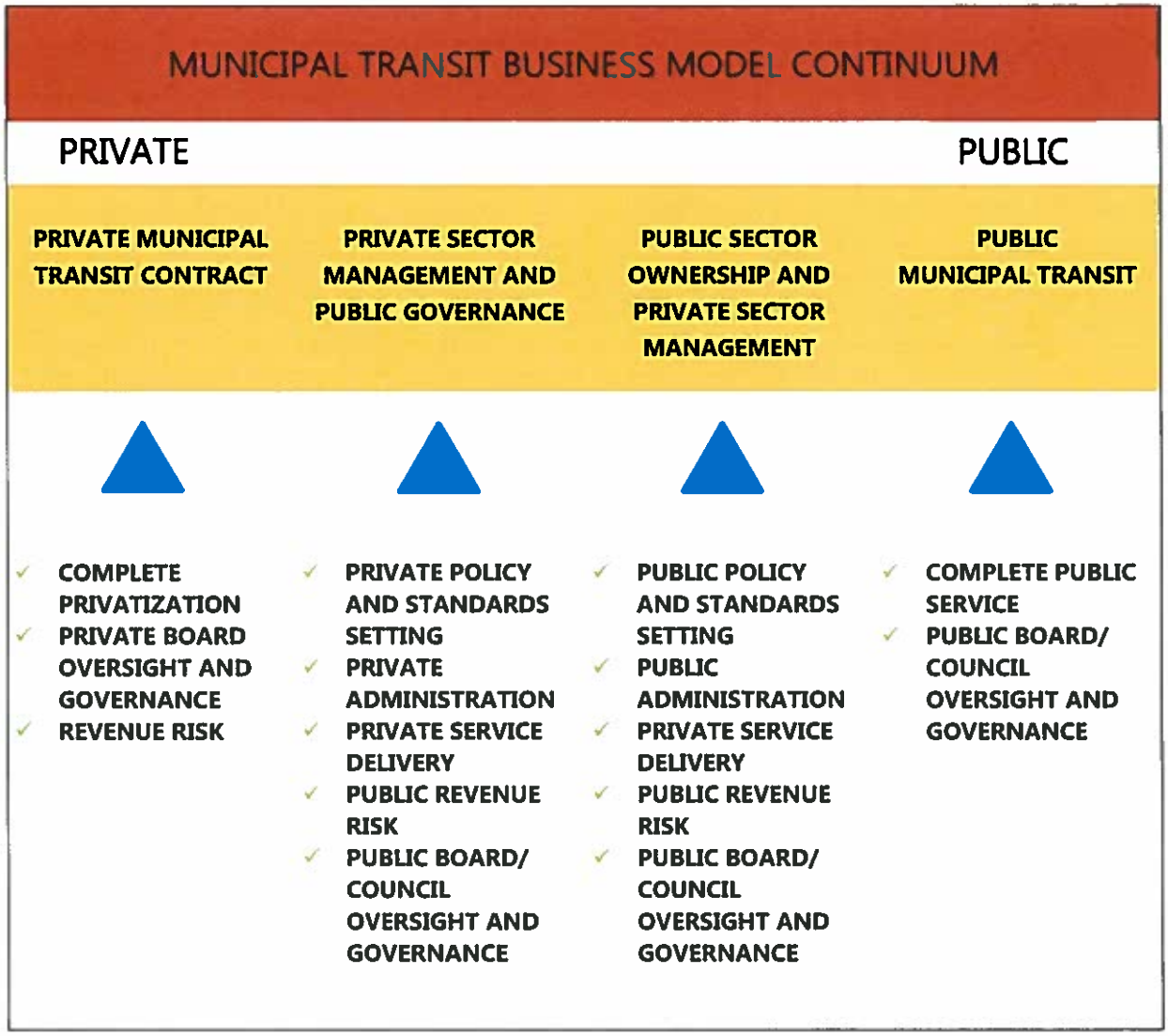
The fleet requirements are considered reasonable, along with a spare vehicle ratio that is very important to have in place given the time lines needed for delivery of additional vehicles or parts, and the time it will take to build local maintenance skills. Equally important is the ability to use Call-a-Ride buses for fixed flex-route service if and when required. More readily available large 15-passenger vans and agreements with taxi companies can be tapped as a resource, when required.

Consideration can also be given to expanding the fleet to enable COTA to provide student-oriented trips to and from high school and middle school where there is a business case to do so and in compliance to Title 49 CFR Part 605. A larger fleet will reduce the number of miles driven on a per vehicle basis to keep maintenance costs lower and extend the life cycle of each vehicle.

Business Model and Governance

Four business model options were assessed:

- Private Sector Municipal Transit Contract
- Private Sector Management and Public Governance
- Public Sector Ownership and Private Sector Management
- Public Municipal Transit



Preferred Business Model

The decision process for selecting the most appropriate business model was driven by the needs and priorities secured through the community engagement process – the transit focus groups, one-on–one interviews and through web-based surveys. In addition to securing community input to what the priorities should be were the informative meetings with long-term residents, most notably, the community elders who were able to convey what worked and what did not work since the 1960's.

In the long-term, it is recommended that the CNMI support the Public Sector Ownership and Private Sector Management option given the low-cost performance monitoring tools that are available today and can provide the accountability needed to ensure COTA and the community 'get what they paid for'; however, given the newness of public transit, an interim business model was recommended.

Interim Business Model

To mitigate the risk in awarding a contract to a new operator, it is suggested that the CNMI / COTA first have a 100% Public Municipal Transit business model to enable COTA management and staff to have more credible experience prior to contracting out the services to the private sector. Having control over the services provided during the start-up and subsequent growth period is important to the community and it is important to COTA. This is maximized through the direct accountability of COTA itself being the service operator during the early stages.

Over time, COTA would gain knowledge and have the ability and experience to become a more effective administrator of a contracted service when the time is right. Ultimately, the community will be served by a contractor that is responsible for providing the service with their staff and resources while the CNMI/ COTA organization is ultimately accountable to the public with minimum staff.

Transit Advisory Committee

To help guide staff and maximize community involvement, it is recommended that a Transit Advisory Committee (TAC) be formed that would consist of up to 10 members. Participants would represent each of the customer groups (adults, students, seniors, disabled), organizations (Administration on Aging, Public School System, hotels/ hotel associations, etc.), the medical field, caregivers, and the business community. This committee would deal with strategies to improve transit and help establish priorities. COTA staff would then report TAC input and consensus reached to the COTA Board. This is considered critical during the early stages with frequent meetings to start then lessening over time, perhaps bi-monthly or quarterly once service is fully established.

Conclusions

Transit Consulting Network and COTA set out to determine whether, under what conditions and at what cost, public transportation can be introduced, operated and sustained in Saipan, and eventually in Rota and Tinian. Our recommendations are considered to be reasonable and, given that COTA has an opportunity to incorporate best practices, fixed flex-route and Call-a-Ride is in a unique position to 'do things right' the first time.

It is clear that public transportation is not profitable. Before taking the next steps, the feasibility and sustainability of public transportation must be determined at the local level. In this regard, with available FTA funding, public transportation becomes more affordable; however, an injection of funds will be required to start out on the right foot so that measured improvements can be implemented affordably over time. As publicly funded transportation becomes a more integral component of the community and urban growth, one can expect investments exceeding that of the five-year service plan. This can best be addressed in the Sustainable Transportation Master Plan that looks at integrating transit with all modes of travel – auto, biking, walking, and future ferry services.

The first and last years of the service and capital plan are considered reasonable given the following comparisons with the peer group median values.

Peer Review Statistic	Median Value	Year 1 Service Plan	Year 5 Service Plan
Vehicles per 10,000 population	3.8	2.3	2.3
Service Hours per Capita	0.65	0.38	0.66
Passengers per Capita	7.3	1.4	6.6
Net Cost per Capita (operating)	$28.61	$16.50	$17.50

The amount of service can be assessed prior to the development of each annual budget. If passenger demand exceeds expectations, service levels can be increased. If demand does not grow as expected, service levels can remain. The main factor in COTA's favour is that the unregistered taxi industry provides COTA with a latent demand than can be realized sooner rather than later.

Next Steps

Once the Fixed Flex-route and Paratransit System Feasibility Study recommendations are approved in principle by COTA and CNMI, it is recommended that the next steps be undertaken prior to implementation:

- Finalize the operating and capital budget amounts to confirm the levels of service, rolling stock and infrastructure requirements and funding available
- Set up transit implementation team consisting of COTA, Public Works and Finance staff with the assistance of an experienced consultant to guide the process and assist with tasks, as required
- Establish a Transit Advisory Committee
- Develop a comprehensive strategic public marketing plan (first step is to develop transit website)

- Procure vehicles (rolling stock) and technology; knowing the date of vehicle delivery will enable COTA to better schedule an implementation date
- Enter in discussions with the Public School System to identify opportunities for COTA to supply students with transportation to and from school
- Enter into discussions with taxi industry and potential role they can play
- Develop Call-a-Ride eligibility criteria and application/ approval process
- Determine when the new COTA maintenance and administration facility will be available or whether an interim facility will be required
- Notify future private sector service providers of intent to contract out service and obtain their input to the potential contract requirements (e.g. performance agreement, accountability, etc.)
- Finalize the bus route design through public engagement process
- Locate on-street bus stops and bus stop designs (GIS data layer)
- Finalize COTA reporting requirements (performance monitoring and revenue management)
- Develop travel training programs for the various market segments
- Finalize fare structure and fare pricing policies
- Implement travel training program
- Build bus stop infrastructure
- Receive delivery of vehicles
- Distribution of smart cards
- Appoint transit and paratransit customers to working group (up to 6 members of the public + 2 bus operators)
- Implement two months of free service to maximize travel training needed and increase community dependence on transit (e.g. to shift over from illegal taxis)
- During free service period, solicit input from transit customers through surveys and customer working group meetings
- Make necessary route and service adjustments based on transit customer input
- Official launch of revenue service

There are numerous sub-tasks that will fall within each of the aforementioned steps. These sub-tasks should be developed and assigned as action items for individuals along with time lines and a critical path. This ensures there is ownership and accountability at the staff level. The most important elements of the next steps identified are to maintain regular updates, and inform the public of the implementation progress and any changes to the service launch date.

Recommendation

The Study Team recommends that the Fixed Flex-route and Paratransit Systems Feasibility report and recommendations be approved in principle and be used as a reference document going forward.

CONTENTS

1. INTRODUCTION

The Government of the Commonwealth of the Northern Mariana Islands (NMI), through the Commonwealth Office of Transit Authority, set in motion processes to develop a public transportation system in Saipan, and eventually in Rota and Tinian. A Transit Feasibility Study was launched on July 23, 2013. Transit Consulting Network and COTA set out to determine whether, under what conditions and at what cost, public transportation can be introduced, operated and sustained in Saipan, and eventually in Rota and Tinian.

1.1 Background

The Commonwealth of the Northern Mariana Islands (CNMI) consists of fourteen islands in the Western Pacific. The population of the Northern Mariana Islands is 48,220 (U.S. Census 2010), which is located on the three main islands of Saipan, Tinian, and Rota. Saipan is the capital of the CNMI and is the main island for commerce, commercial and agricultural products, healthcare facilities, and real estate development. Tinian leased most of its land to the military and the rest of it encompasses a mixture of socioeconomic activities. And Rota is active with ecotourism. Additionally, all three islands share the same issue: weak multimodal transportation system.

Signed into Public Law 17-43 on May, 27, 2011 by Governor Benigno Fitial, the Commonwealth of the Office of Transit Authority (COTA) was established. The Governor appointed Thomas J. Camacho to the position of Special Assistant for Public Transportation. Office and position was created on August 11, 2011.

COTA oversight and guidance is provided by the COTA Advisory Board, which is made up of representative CNMI stakeholders. The board has four primary roles, namely, Safety, Finance, Legal, and Advocacy. Specifically, the Board provides input to the governing body to maximize public transportation service quality, efficiency and effectiveness.

Currently, the Call-A-Ride, a para-transit service, is the only public transportation available on Saipan over the past 11 years. It provides curb-to-curb transportation service to individuals with disabilities and those 55 years of age or older. Eligibility is also extended to individuals with functional inability to use regular passenger vehicles. Passengers call in advance to request for the service.

On Saipan, the Call-A-Ride program has changed management several times over the years. The main factor attributed to the high turnover rate is the lack of or inconsistency of funding. As a result, the service depends on volunteers to keep it operational. On Rota, the demand for the program was too low to justify the expense. On Tinian, the program operated for approximately a year until funding from the Tinian Delegation could no longer afford to defray the personnel expense of one driver while other operating expenses such as fuel, maintenance and repair were also exhausted in 2005.

The COTA plan presents two initial types of transit services to be provided: para-transit and fixed-flex route. The para-transit service will offer an on-demand response system and will provide transportation within Saipan to allow residents to access education, health care, employment, shopping, and recreation. The fixed-flex route service supplements the para- transit service and is intended to provide a fixed stops and

scheduled transportation services for residents of Saipan to commute to and from work and other destinations.

1.2 Project Goals and Objectives

Answers to the following questions guided the project goals and objectives of the study.

- **What is required to operate a mixed rural-urban public transit service in the short- and long-term?**
  - What will ridership be like in the beginning and what factors are critical to developing it?
  - What is a reasonable amount of service, and how can we provide the widest coverage at key travel times?
  - What is the optimal vehicle mix?
  - What low-cost technologies are available to make the systems more efficient and cost-effective?
  - What capital and operating budget will be needed for the first five years?
  - What external funding is available to launch and support the service?
  - What should the fare structure be, and how should fares be sold and collected?
  - What technologies should be introduced?
- **What public transit governance options and models are available?**
  - What business models are most appropriate?
  - How would a service be structured?
  - What service types are appropriate?
  - Who should provide the service, and under what arrangements?
- **What tools and materials should be presented to communities in subsequent Public Consultations so that the options and trade-offs are well understood by political and community stakeholders?**
  - Presentation? Display Boards? Web site?
- **If Transit is not viable, why not?**
- **If Transit is considered viable:**
  - How should transit be introduced?
  - How and when should service be expanded?
  - What are the next steps?

The ultimate goal and challenge are to provide a public transportation service that meets community needs, operates effectively within available resources, does not over-commit the CNMI government financially, and provides a blueprint for orderly development.

1.3 Study Approach

The Transit Consulting Network study approach consisted of the incorporating a number of key elements:

- Transparent and inclusive community engagement process
- Confirming consensus throughout the study
- Due consideration to the needs of seniors and people with disabilities
- Higher level of senior consultant participation in all key tasks
- Newsletter and website releases at key milestones
- Ability to draw on our lessons learned in dozens of studies
- Recognizing that transit operating environments vary according to population size and density, cultural and environmental factors such as, income distribution, climate, facilities distribution, etc.
- Down-to earth plans that recognize public transportation cannot be all things to all people, that ridership can require years to develop, and that transit should be an integrative rather than a disruptive presence
- Leveraging community strengths and resources to make the service successful
- Informing members of the public who are unfamiliar with public transportation
- A logical work plan and task sequence
- Identifying external funding opportunities early in the study and ensuring they can be maximized
- Responding to all inquiries in a timely manner
- Having a steering committee review information and recommendations at critical decision-making points

The Study Work Plan followed a logical sequence of key project milestones:

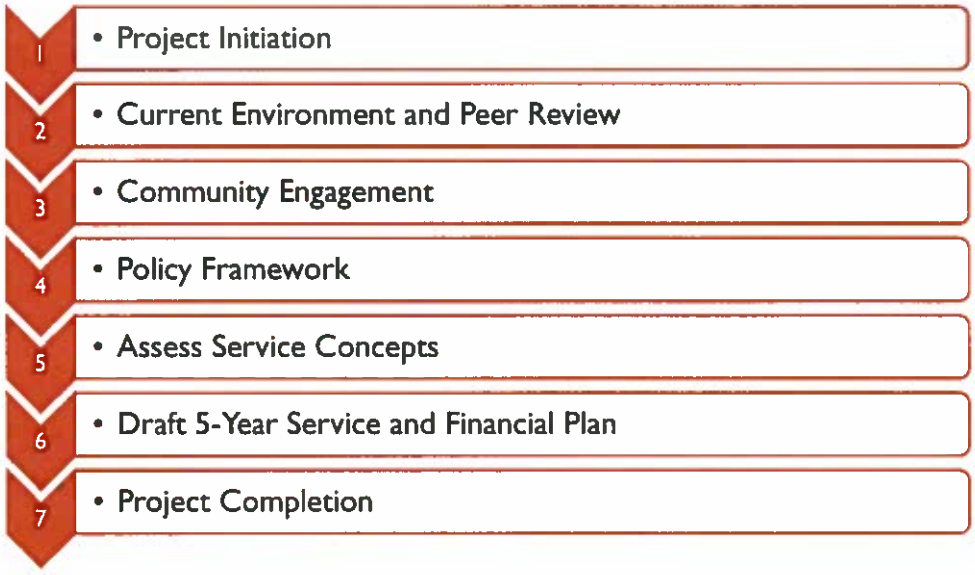


EXHIBIT 1-1 Study Work Plan

2. DEFINING THE TRANSIT MARKET

2.1 Introduction

This section describes the potential 'market' for public transit services on Saipan based upon available data. It also outlines complementary relationships between public transit, land use, the environment, and health. The two purposes are related:

- People travel in order to participate to access employment, goods and services, schools, government institutions, medical services, and simply to participate in recreational and social activities, all of which contribute to quality of life. Accessibility to transportation services, including public transit, helps determine where people live, work, study and shop.
- People also desire a place where they can live and work in a healthy, clean and pollution-free environment. As a result of this relationship, an understanding of the underlying demographic and socio-economic characteristics and trends is essential to help determine the 'market' for the proposed transit service.

2.2 Data Sources

Detailed data on Saipan's travel characteristics do not exist. However, the 2010 Census 'Journey to Work' tabulations provide a useful profile of how workers commute to work; and so they provide the basis for this analysis.

These tabulations, along with other Census demographic, household and vehicle ownership characteristics, help define the potential market for public transportation. The home-to-work (and return) commute typically comprises an important segment of public transportation ridership, so these data are useful; however, the lack of any other data on travel patterns means that other potential markets – such as the home-to-school trip, or trips for shopping or personal appointments – cannot be discerned.

Depending on how the Census information was tabulated, some data below are presented for Saipan alone, while other data cover the CNMI (of which Saipan dominates – hence the CNMI patterns largely reflect Saipan activities). Some comparisons can be made with the 2000 Census data, although the significant reduction in population in the interim allows only for selected comparisons. [1]

2.3 Basic Characteristics

Changes in US manufacturing and tariff regulations resulted in the closure of the CNMI's garment manufacturing industry between the 2000 and 2010 Censuses. As a result, the 2010 Census showed a reduction in the Commonwealth's population, from 69,221 in 2000 to 53,883 in 2010. Most of the reduction occurred in 'non-institutionalized group quarters,' reflecting the aforementioned changes: thus, the total

[1] Data sources: www.census.gov; *Northern Marianas Islands: 2010 Census Summary Report*, US Bureau of the Census and selected 2000 and 2010 Census spreadsheets downloaded from this site or provided by COTA.

population in *households* – which is the focus of this market analysis – dropped only slightly, from 52,312 households in 2000 to 51,430 households in 2010. In the meantime, the total number of households increased from 14,055 in 2000 to 16,035 in 2010.[2] Because many travel decisions are based on the activities of the entire household (e.g., the weekly trip for groceries is made for the household, not typically by each individual; and the household members typically share its vehicle[s] hence must allocate their travel behavior on this basis), **this stability is important**.

Other key points to note are:

- The median ages are 34 years for males and 33 years for females. ***Significance for public transit:*** This relatively young population group commonly translates into higher mobility rates compared with other age groups, reflecting their participation in the work force, young families, etc.
- Of the 16,035 households, 4,760 or 29.6% have incomes under the US poverty line. This proportion is significant, although the economic composition of this population is not clear. This number represents 27,921 individuals, or 52% of the population. ***Significance for public transit:*** Under the appropriate pricing and service policies, public transit could provide an attractive alternative to the costs of owning a personal vehicle.
- Of the 38,679 population 16+ years old, 27,968 (72%) are in the labor force, but only 24,541 actually recorded a place of work, and almost all of these (24,264) worked in the same municipality. ***Significance for public transit:*** In many urban areas throughout the United States, the regularity of the home-to-work commute makes workers a key market for public transit.

[2] Some caution is required in the comparability of the two Censuses, given the significant reduction in foreign labor. Nonetheless, the comparisons suggest some stability in the *traveling* population, which is the largest potential market for public transit.

2.4 Key Travel Journey to Work Travel Characteristics

Exhibit 2-1 presents the mode that Saipan's workers use to commute to work. It can be seen that private (personal) vehicles dominate. Two of every five commuters drive alone (41.1% of all commuters). Another one in three commuters carpools with someone else (33.0%). Three quarters (74.1%) of all commuters travel by private vehicle. Approximately one in seven commuters (14%) walks to work. Six percent of workers work at home. Public transportation (i.e., public transit) accounts for less than 1%. This indicates **that there is a significant opportunity for 'growing' the market for public transit.**

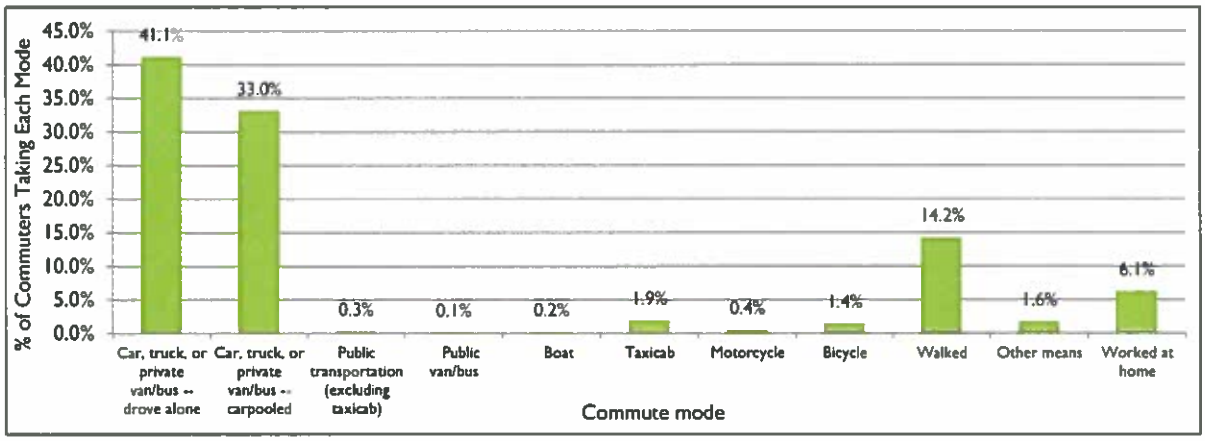


EXHIBIT 2-1 Commuting to Work Mode Share, Saipan – 2010 Census

Exhibit 2-2 below presents the distribution of travel times between home and work for all of the CNMI. Almost all commutes are made within 35 minutes, with the mean travel time to work across all modes being 12.7 minutes. Given the dominance of auto use on Saipan, this suggests that transit could offer a competitive alternative if it is able to provide similarly quick journey times. Other Census data indicate that almost half (48%) of all home-to-work commutes take place between 6:30 and 7:59 am, and 40% takes place between 7:00 and 7:59 am.

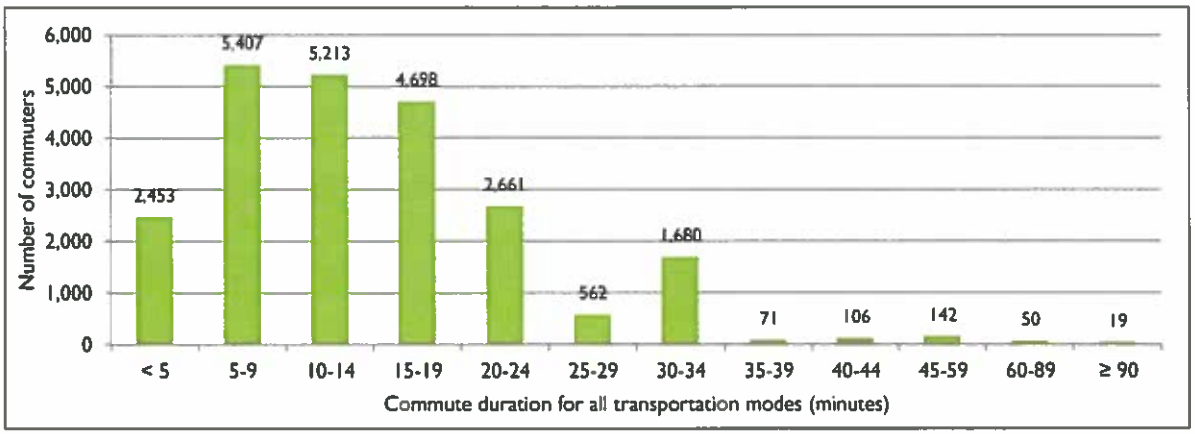


EXHIBIT 2-2 Travel Time to Work, CNMI – 2010 Census

Exhibit 2-3 below reflects the current disparity in travel times. The figure compares commute times by public transportation with those by other modes (personal vehicle, walking, etc.). It can be seen that the average public transportation commute trip takes longer than the average for other modes (although it is noted that boat trips are included in the public transportation data). At the same time, it can be seen that most public transport trips have durations of less than 30 minutes: This suggests that if public transit can offer short trips (competitive with the 12.7 minute mean), then it could increase its attractiveness to other commuters.

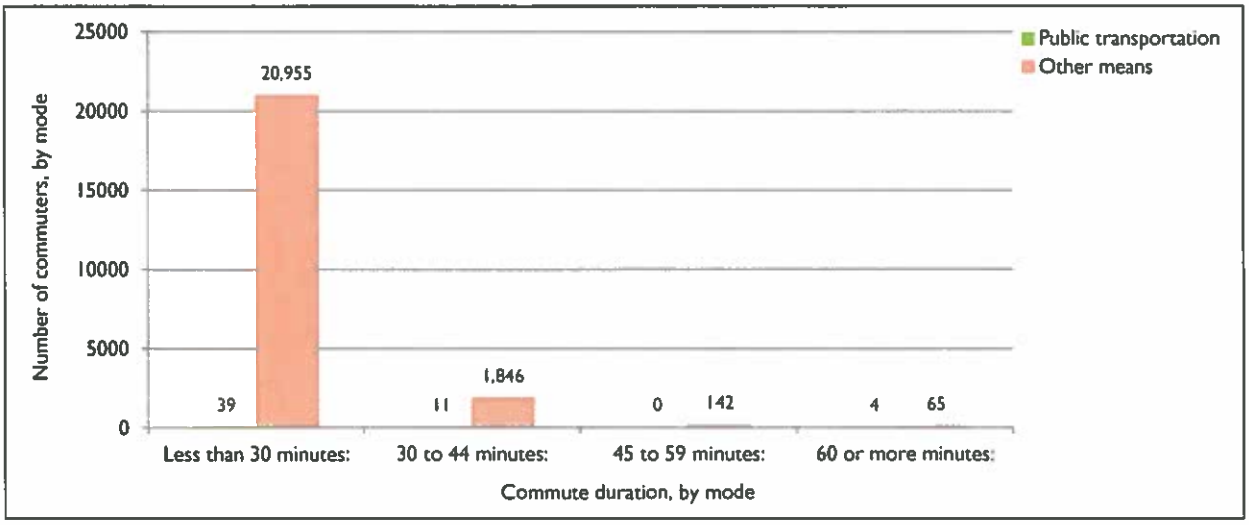


Exhibit 2-3 Commute Times by Mode, CNMI – 2010 Census

Vehicle availability is a key indicator of mode choice. Studies around the world have demonstrated that the greater the number of vehicles that are available to a household, the less likely other modes will be used; and auto-dependent households also tend to generate more trips generally. Exhibit 2-4 below shows that the distribution of vehicle availability by households varies among the five Saipan voting districts. Overall, there is an average of 1.1 vehicles per household or 1.5 vehicles for every 3 workers: the high auto use for commute trips described above is consistent with this high availability of vehicles. At the same time, fuel prices in the CNMI are considered to be high (of the order of $5 per gallon), and so a competitively priced, fast and frequent public transit service could provide an attractive alternative for auto commuters.

At the same time, almost one-quarter (23%) of households have no vehicles. These householders are thus conducive to the use of other alternatives; meaning that there is a potential public transportation market to serve zero-vehicle households. Zero-vehicle households are distributed among all five districts, but are especially apparent in Voting Districts 1, 2 and 3.

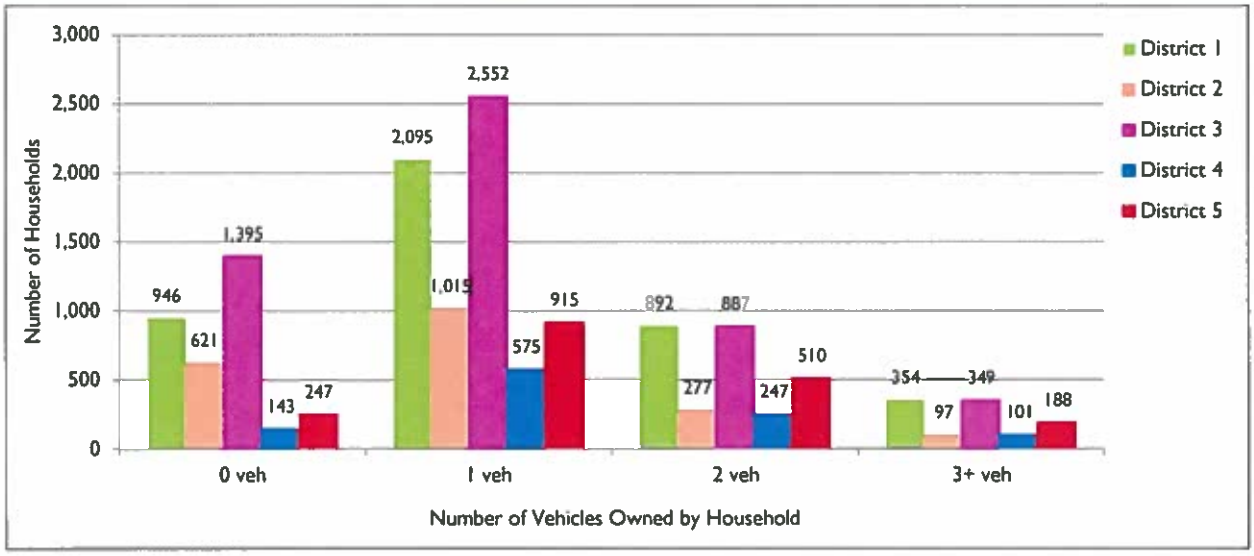


Exhibit 2-4 Automobile Ownership Rates per Household, Saipan by District – 2010 Census

Other important determinants of mode choice are income and age. Exhibit 2-5 and Exhibit 2-6 break down vehicle availability for the CNMI by household status (owned versus rented), which can be an indicator of income, and by age, which distinguishes between the working age population and those 65 years and older.

From Exhibit 2-4 above, it can be seen that the rate of zero-vehicle households for renters is 2+ times that for owners. This suggests that mode choice is also related to income and, accordingly, households in this category could be a potential market for public transportation. However, Exhibit 2-6 shows that owners comprise only 4% of the zero-vehicle households (0.9% of the 23% of households that have no vehicles).

Similarly, Exhibit 2-5 below shows that the same ratios apply for 65+ households. At the same time, however, Exhibit 2-6 shows that 65+ households comprise only 6% of the total, representing about the same proportion as in 2000 (although with slightly higher numbers: 983 households in 2010 versus 826 in 2000). Also, although 65+ owners have a slightly lower vehicle ownership rates than working-age owner households, the reverse is true for renters: At the same time, in the US and elsewhere it is well established that an aging population faces increased mobility challenges of its own; meaning that under some health circumstances, not everyone will be able to continue driving.

As a result, the 65+ population represents another potential market for public transportation. However, there are no data that describe the current travel patterns of non-working seniors, so more information would be needed to define their needs.

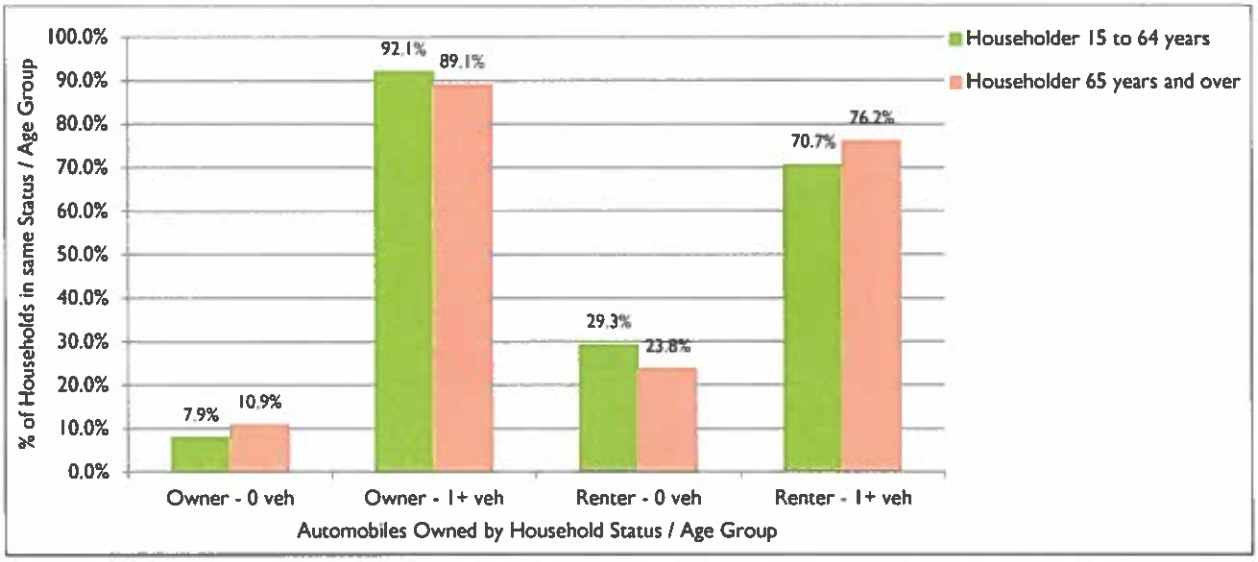


EXHIBIT 2-5 Automobile Ownership by Household Status and Age Group (%), CNMI – 2010 Census

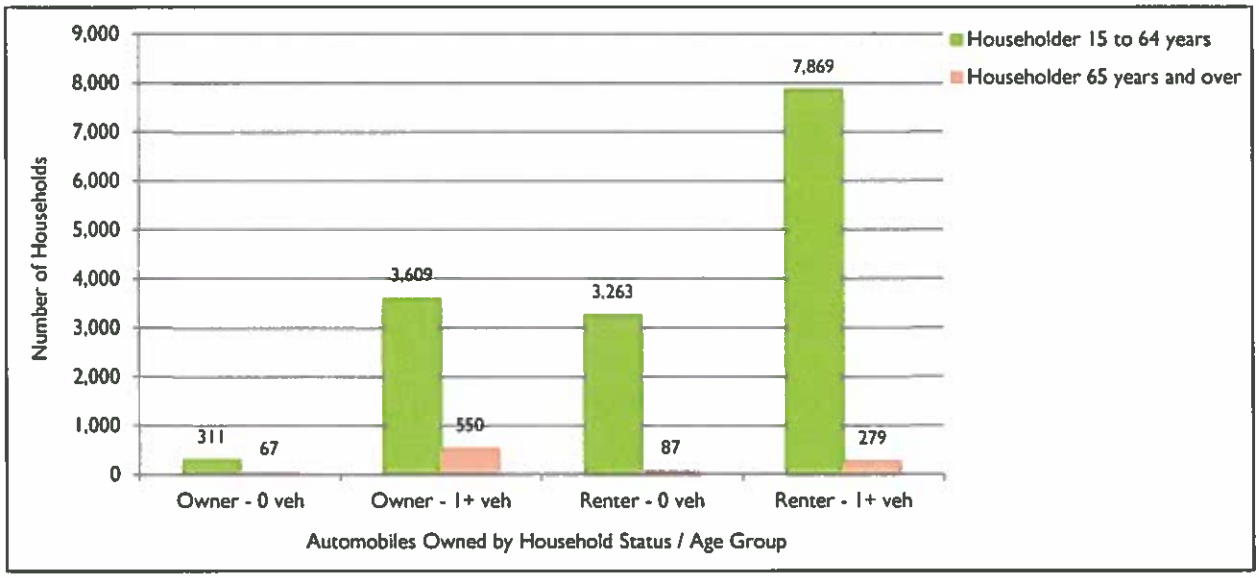


EXHIBIT 2-6 Automobile Ownership by Household Status and Age Group (Number), CNMI – 2010 Census

Exhibit 2-7 below summarizes recently released Census data that break down the commuting mode shares by occupation type.[3] Exhibit 2-8 expresses these data in terms of mode share, again by occupation type. It can be seen that higher-paid occupations (management et al., sales and office) generate higher auto use, while lower paid occupations (service, natural resources et al., production et al.) have lower though still significant share.

The public transit share is nominal, at 0.1% among all occupations. Walking varies from a low of 10% for management et al. occupations to 24% for service occupations, for an overall average of 15%. It is also noteworthy that 9% of service employees work from home, compared with 3% for management et al. and an overall average of 6%. The various occupation groups may represent potential markets, albeit in different ways: a fast, frequent and reliable transit service could capture some of the auto-oriented management et al. occupations, who represent 27% of all civilian workers; while transit could offer improved convenience and accessibility to service workers, who represent 30% of all civilian workers.

Characteristic	Total	Management, business, science, and arts occupations	Service occupation	Sales and office occupation	Natural resources, construction, and maintenance occupation	Production, transportation, and material moving occupation
MEANS OF TRANSPORTATION TO WORK AND CARPOOLING						
Civilian workers 16 years and over	24,522	6,672	7,328	4,958	3,536	2,028
Car, truck, or private van/bus	17,805	5,521	4,291	4,012	2,512	1,469
Drove alone	9,826	3,251	2,296	2,264	1,207	808
Carpooled	7,979	2,270	1,995	1,748	1,305	661
2-person carpool	5,045	1,448	1,378	1,188	628	403
3-or-more person carpool	2,934	822	617	560	677	258
Public van/bus	21	6	5	6	2	2
Walked	3,779	638	1,743	587	489	322
Boat, taxicab, motorcycle, bicycle, or other means	1,438	175	603	182	313	165
Worked at home	1,479	332	686	171	220	70

EXHIBIT 2-7 Commuting Characteristics by Occupation (Total Linkages), CNMI – 2010 Census

[3] Tabulations released 26 September 2013. See http://www.census.gov/newsroom/releases/archives/2010_census/cb13-tps91.html

Characteristic	Total	Management, business, science, and arts occupation	Service occupation	Sales and office occupation	Natural resources, construction, and maintenance occupation	Production, transportation, and material moving occupation
MEANS OF TRANSPORTATION TO WORK AND CARPOOLING						
Civilian workers 16 years and over	100%	100%	100%	100%	100%	100%
Car, truck, or private van/bus	73%	83%	59%	81%	71%	72%
Drove alone	40%	49%	31%	46%	34%	40%
Carpooled	33%	34%	27%	35%	37%	33%
2-person carpool	21%	22%	19%	24%	18%	20%
3-or-more person carpool	12%	12%	8%	11%	19%	13%
Public van/bus	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Walked	15%	10%	24%	12%	14%	16%
Boat, taxicab, motorcycle, bicycle, or other means	6%	3%	8%	4%	9%	8%
Worked at home	6%	5%	9%	3%	6%	3%

EXHIBIT 2-8 Commuting Characteristics by Occupation (% Mode Share), CNMI – 2010 Census

2.5 Summary of Potential Transit Market

A review of the available Census data describes several potential markets for public transit, as evidenced by the current mode choices of the various occupational groups in the CNMI. Moreover, the population resident in households is stable, with the number of households increasing (i.e., seemingly independent of the significant reductions in the manufacturing sector in recent years). However, current travel choices and potential needs are related to household vehicle availability and income, which vary by occupational category.

In sum, these findings demonstrate that a new transit service could be successful; however, the service must be designed to provide quick trip times and frequent and reliable service and its fares must be competitive compared with the costs of other modes.

While the demographic data point to a strong potential market for public transportation, the actual linkages (origins and destinations, or O-Ds) of commuters, and of other travelers, are not quantified. An understanding of these characteristics is a key to defining un-served or under-served markets, and to establishing routes, frequencies and times of day of service. Origin-destination surveys are generally undertaken to guide the transit service planning process.

Origin-destination surveys would normally be conducted among a sample of households across Saipan. These would be conducted by telephone, mail-back, web, or face-to-face surveys according to local methodological preferences. In addition, tourists represent an untapped market for public transit; for example, through the use of shuttles that link Saipan's hotels with island attractions (similar to the systems now used in many mainland National Parks).

Although a household survey was not within the scope of the study, this was not considered to be problematic for the following reasons:

- There was an extensive stakeholder engagement process throughout the study
- A community-wide web-based survey was conducted, which focused on respondent characteristics, their service priorities, and comments about a new public transport service
- The islands are small with communities well defined and minimum roadways due to the mountainous topography
- Key destinations of existing Call-a-Ride customers are a good indicator for transit demand
- Service would be new and as such, would be modest when starting out and expanded gradually
- If demand grew very quickly, partnerships with the private sector and other agencies could be established to meet that demand until transit vehicles were secured
- Relatively few roads are on the island that connects the vast majority of the population and businesses predominantly in low lying coastal communities.

2.6 Complementary Considerations

Several complementary aspects further support the potential for public transit.

A review of the American Public Transportation Association (APTA) website summarizes several key land use and societal benefits of a properly-designed transit service:[4]

- Reduced congestion, which allows for the smoother and more reliable flow of all traffic.
- Reduced fuel use and greenhouse gas emissions, thereby reducing climate change impacts and the use of limited natural resources that must be imported.
- Reduced air pollutants, with associated reductions in pollution-related health costs, included incidence of asthma.
- Positive impacts on land values, with residents and businesses often looking to locate near transit routes so as to maximize the accessibility for drivers and non-drivers alike.

Given the low auto ownership (e.g. 23% of households are without a car), the availability of an effective publicly funded transit system enables residents to travel without having to depend on family and friends, using unregulated taxis or simply not travelling.

A final note is important regarding the costs of vehicle ownership and operation: The relatively high cost of fuel has been the subject of recent discussion in the CNMI.[5] It is not the mandate of this paper to investigate this topic in detail; however, some general points are important to note, insofar as they relate to the importance of public transit:

[4] http://www.apta.com/resources/reportsandpublications/Pages/PolicyPlanning.aspx.
[5] See, for example, *Lower fuel prices in America Samoa raises questions*, PacNews / Saipan Tribune, 21 May 2013.

- Car ownership is the 2nd biggest household expense next to home ownership.
- A person earning $10 net per hour must work approximately 12 to 16 hours per week to carry the cost of owning and operating a modestly priced car.
- Less disposable income is left to purchase goods and services produced or sold within the community.
- Public transit, if properly designed and supported, can reduce the need for higher car ownership.

The cost of fuel approximates $5 per gallon. Mainland prices are a lot lower, this is comparable to more expensive areas in the United States, such as California; however, the high price of fuel impacts residents such as the working poor who may own a car but have to be selective in the number of trips they take. By eliminating the need for a car, transit now becomes a choice and, over time, the car can be eliminated as an expense. This, in turn, helps the local economy since more residents will have the financial ability to purchase more goods and services.

It is also reasonable to assume that multiple car households would be able to function more cost-effectively by eliminating the need for that 2nd or 3rd car. This will not happen overnight but as quality transit service expands and is frequent, it could become the secondary mode of choice. In this regard, it is important to recognize that when public funded transit is introduced, it must be sustained; it can take several years for residents to adapt. Once this happens, transit then becomes an integral component of urban growth, quality of life and economic stability.

3. PEER REVIEW

To help establish realistic expectations for the community, it is important to understand what is happening elsewhere, especially in the area of investments made locally to fund public transit. One excellent method was to undertake peer reviews of like communities.

3.1 Interpreting Peer Reviews

Transit Consulting Network identified a number of similar-sized jurisdictions with public transportation systems across the continental US, protectorates of the US and from Canada in a peer review to assist COTA in determining what the expectations can be for public transit today and in the future. This review uses data from the National Transit Database (NTD) administered by the FTA with statistics reported by small and rural transit systems in the US and 2011 Canadian Urban Transit Association statistics. A comparison was made of the various operating, financial, fleet, performance, and financial data.

Two peer review groups were analyzed:

- **Exhibit 3-1: Saipan Peer Review:** Consideration was given to similar population density and population size of up to about 100,000 residents with one notable exception, Guam, given its proximity to the CNMI.
- **Exhibit 3-7: Tinian and Rota Transit Peer Review**: Little data was available for small population jurisdictions; rather, population density of less than 500 residents per sq. mi. was used as a guide.

Caution should be used when assessing peer review statistics since operating environments can vary significantly from one jurisdiction to another. In addition and more importantly, is that statistics are reported for mature transit systems where many years and even decades of transit service have been in place. The more important aspect of peer review is to provide a high level understanding of the transit service levels in other jurisdictions, statistics reported for accountability, and the levels of local investment identified, which tend to the drive decision-making process.

As a guide only, median values were also calculated for each statistic with adjustments made where some transit systems statistics were not reported. For the purposes of the Fixed Flex-route and Paratransit Feasibility study, consideration was given to reporting the following performance indicators and financial data.

- Vehicles (buses) per 10,000 population (Saipan peer review only): to help determine ultimate fleet size
- Annual service hours of service per capita: guided by the level of bus service and population density
- Annual transit ridership per capita: to measure the effectiveness of the service provided
- Cost Recovery (% costs recovered from passenger revenues): to confirm that transit does not operate at a profit
- Net operating cost per capita (net of passenger revenues and federal funding); to identify the investments being made in other jurisdictions

The aforementioned indicators were selected to provide high-level guidance for this study as they helped frame the level of investment in similar-sized communities and, essentially, answers "What is everyone else doing?"

3.2 Saipan Peer Review

The population and population densities were the basis of selecting the following jurisdictions used in the peer review analysis:

Location	Population	Size (square miles)	Density (pop / square mile)
Saipan, MP	*48,220*	*45*	*1,082*
American Samoa, AS	54,719	77	712
Bangor, ME	55,500	29	1,914
Bismarck, ND	94,719	137	691
Brandon, MB, Canada	53,000	32	1,634
Cape Breton, NS, Canada	68,000	77	881
Casper, WY	57,561	93	619
Coralville, IA	19,219	12	1,602
Cornwall, ON, Canada	46,340	24	1,951
Fredericton, NB, Canada	56,000	51	1,099
Guam, GU	159,358	212	752
Jackson, MI	90,057	86	1,047
Jefferson City, MO	43,079	36	1,197
Lima, OH	87,324	52	1,679
Longview, WA	61,598	31	1,987
Loveland, CO	60,000	30	2,000
Monroe, LA	50,000	31	1,613
Moose Jaw, SK, Canada	33,274	20	1,699
Port Arthur, TX	57,755	39	1,481
Prince Rupert, BC, Canada	13,052	21	616
St George, UT	62,629	33	1,898
St Thomas, VI	106,405	132	806
Welland, ON, Canada	48,000	33	1,446
Williamsport, PA	69,764	89	784
Wilmington, NC	55,530	32	1,735
Yauco, PR	42,043	62	678
MEDIAN	56,000	36	1,446

EXHIBIT 3-1 Saipan Transit Peer Review

The foregoing analysis interprets the peer review data reported.

Exhibit 3-2 through Exhibit 3-6 illustrates a number of transit statistical indicators. These indicators provide high-level guidance for this study as they help frame the level of investment in similar-sized communities.

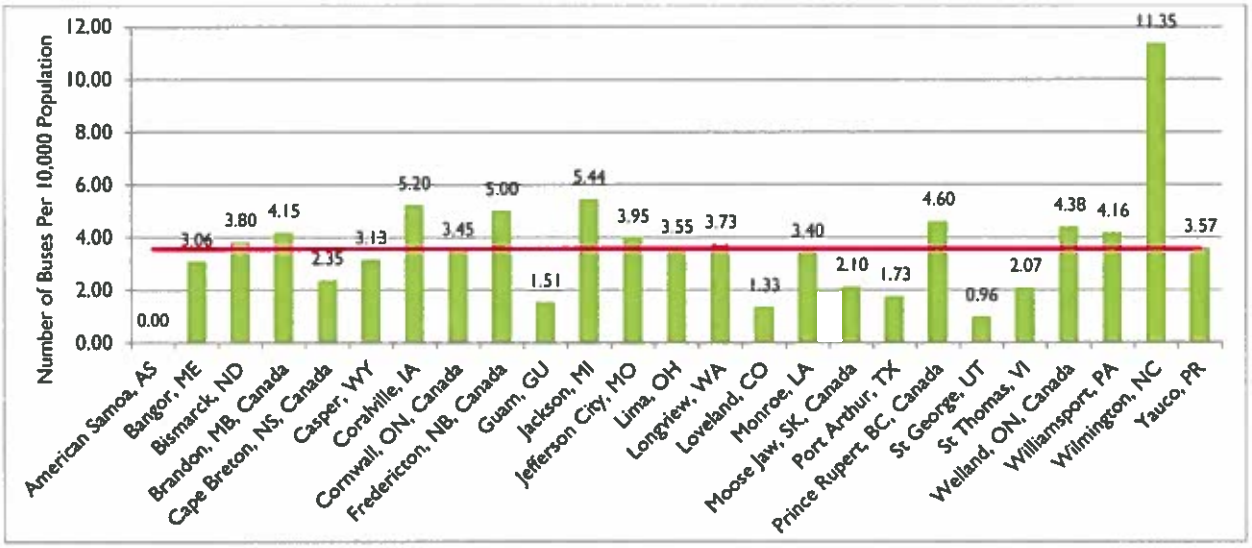


EXHIBIT 3-2 Number of Buses per 10,000 Population

Exhibit 3-2 shows the Number of Buses per 10,000 Population (within the Service Area) for both fixed flex route and door to door services. This indicator demonstrates the level of capital investment that will be required when the transit system matures. Among the peer groups, this indicator ranges from 1 to 5.8 buses (excluding Wilmington, NC), with a median value 3.8.

This value is dependent on the number of bus routes and the number of door-to-door vehicles (e.g. Call-a-Ride) supplied. It should be noted that spare vehicles are reported as well and are critical to the ability to have reliable service. If the median value was applied to Saipan, a fleet of about 18-20 buses and paratransit vehicles would ultimately be needed.

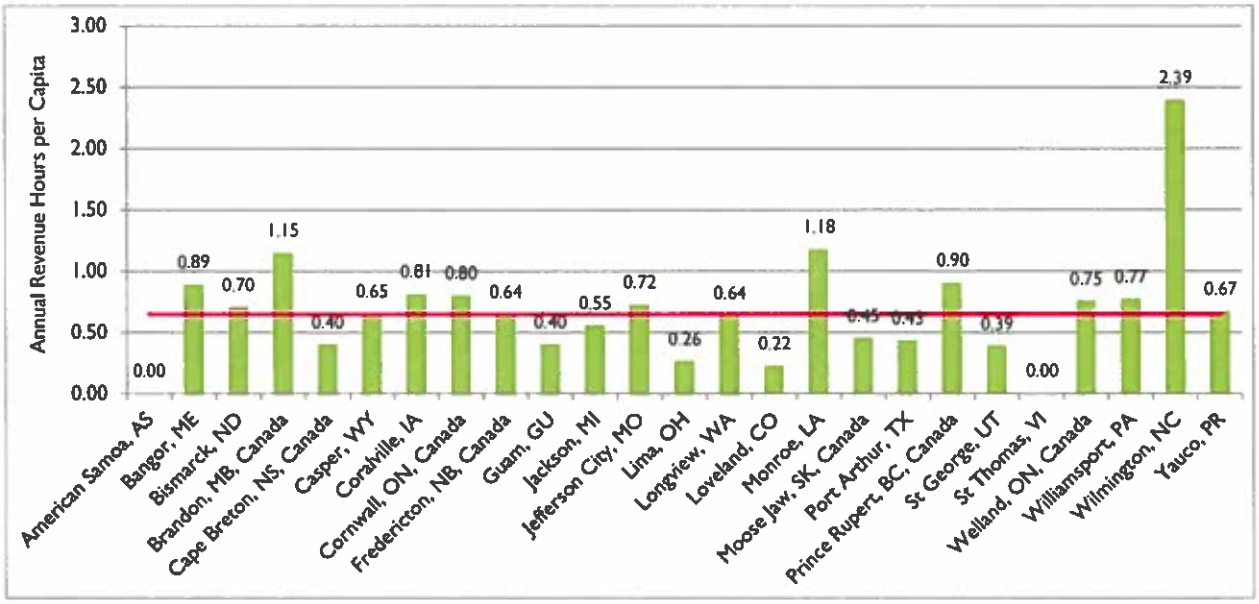


EXHIBIT 3-3 Annual Revenue Hours per Capita

Annual Revenue Hours are defined as the number of hours a vehicle is in service for the year reported. As seen in Exhibit 3-3, each system's Revenue Hours per Capita ranges from 0.2 hours to 1.18 hours (excluding Wilmington, NC), with a median value of about 0.65. If the median value was applied to Saipan, over 30,000 hours of revenue service would be required annually.

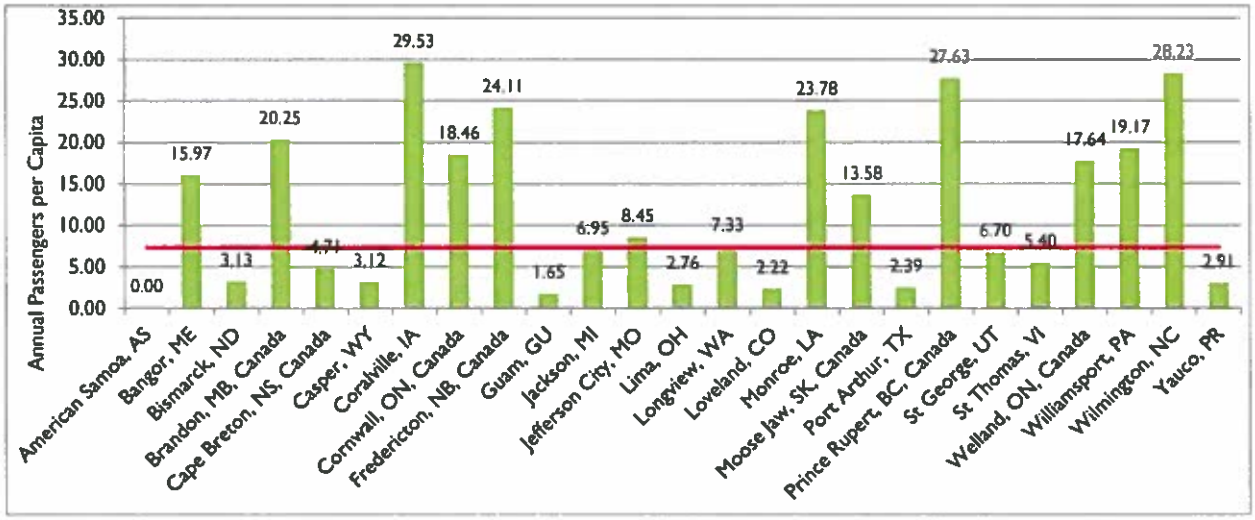


EXHIBIT 3-4 Annual Passengers per Capita

Revenue Passengers are defined as the number of fare paying passengers; it excludes passengers transferring from another bus. The peer systems' Passengers per Capita (Service Area) value ranges from 1.6 to 29.5, with a median value of 7.3 annual passengers per capita. The 7.3 passengers would translate to about 350,000 passengers per year in Saipan; however, the figures would reflect a high level of service with a mature system, which will not be the case when starting out.

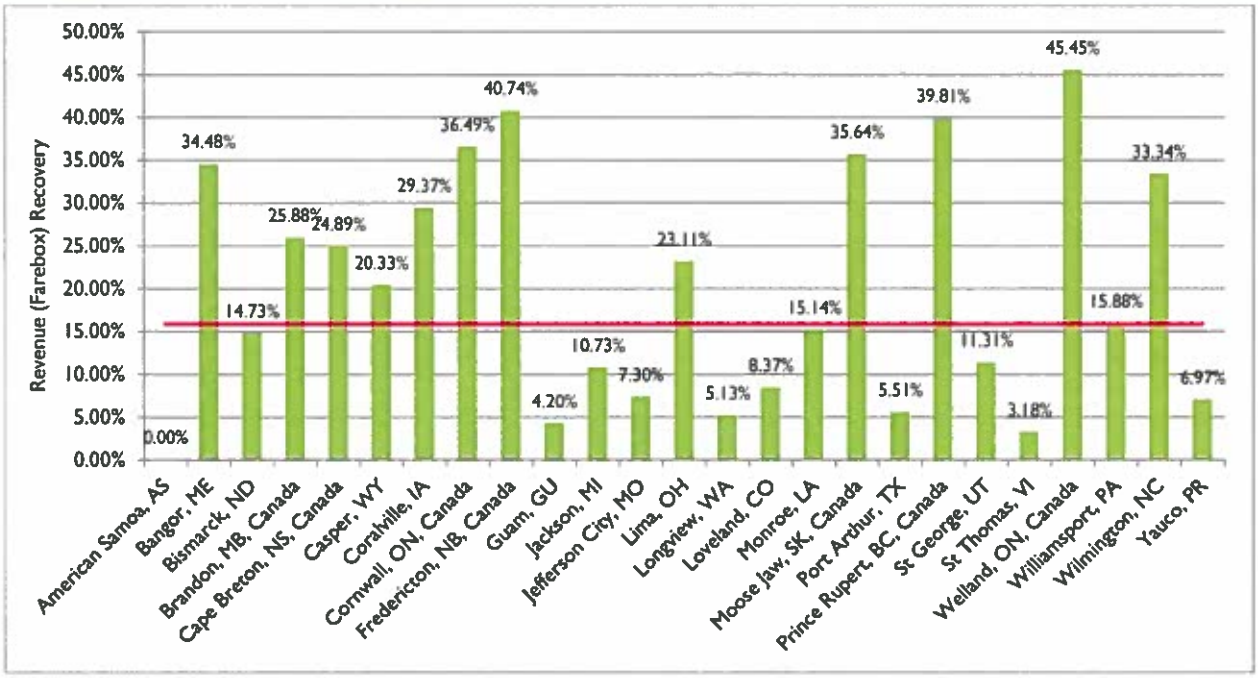


EXHIBIT 3-5 Revenue (Farebox) Recovery

The annual fare recovery, defined as the operating cost less fare revenues, is expressed as the percent (%) revenue to cost ratio or R/C ratio. As seen in Exhibit 3-5, the median revenue recovery is about 16%. The message this gives is that transit clearly does not operate at a profit. The key to fiscal responsibility is to maximize cost recovery and work within the financial constraints of the funding agencies while, at the same time, providing affordable public transportation to residents.

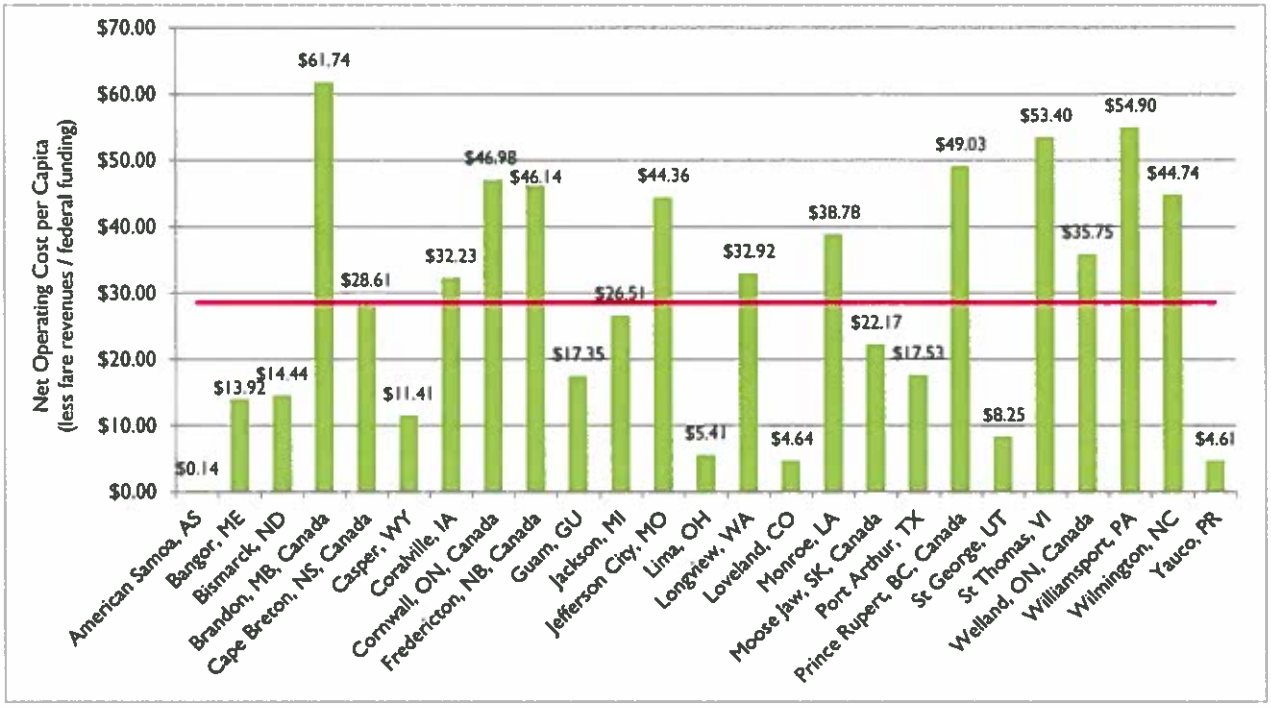


EXHIBIT 3-6 Annual Net Investment per Capita

As seen in Exhibit 3-6, the Annual Net Investment per Capita is explained as total cost less fare revenue received, divided by the number of residents within the geographic area. This varies significantly from $4.61 to $53.40, excluding American Samoa at $0.14 per capita. The variance can be explained by the fact that the net cost depends on a number of different factors such as the amount of service provided, the local cost per hour, passenger demand, the island's population, vehicle replacement cycle, and business model chosen.

If the median value of $28.61 per capita was applied to Saipan; the total subsidy would be about $1,400,000 per year. Realizing this investment would be unrealistic at the early stages of transit implementation and, perhaps even the long-term. The message the graph gives is that the level of investment in transit varies significantly from one jurisdiction to another but, similar to the variance in the R/C ratios, it does further emphasize that transit is not self-supportive and that the 'feasibility' of transit must be determined based on the level of investment that is considered affordable.

It is clear that transit is not a 'one size fits all' service nor can transit be all things to all people simply because funds are finite. Ultimately, the decision-making process must be driven by prioritizing service and working within the financial capability of each jurisdiction today and in the future.

3.3 Tinian and Rota Peer Review

The jurisdictions, populations and population densities used in the peer review analysis are provided in the following.

Location	Population	Size (square miles)	Density (pop / sq mi)
Tinian, MP	*3,136*	*39*	*80*
Rota, MP	*2,527*	*33*	*77*
Belleville, ON, Canada	37,000	95	388
Charlottetown, PE, Canada	45,000	97	466
Clatsop County, OR	37,301	829	45
Cowichan Valley, BC, Canada	66,000	1,341	49
Island County, WA	79,177	208	380
Kauai County, HI	68,434	620	110
Kentville, NS, Canada	42,505	139	306
Maui County, HI	158,226	1,162	136
North Bay, ON, Canada	49,000	122	403
MEDIAN	49,000	208	306

EXHIBIT 3-7 Tinian and Rota Transit Peer Review

Exhibit 3-8 through Exhibit 3-12 graphically illustrates a number of transit statistical indicators for areas where the population density is less than 400 per square mile. These indicators provide high-level guidance for this study as they can help frame the level of investment for Tinian and Rota.

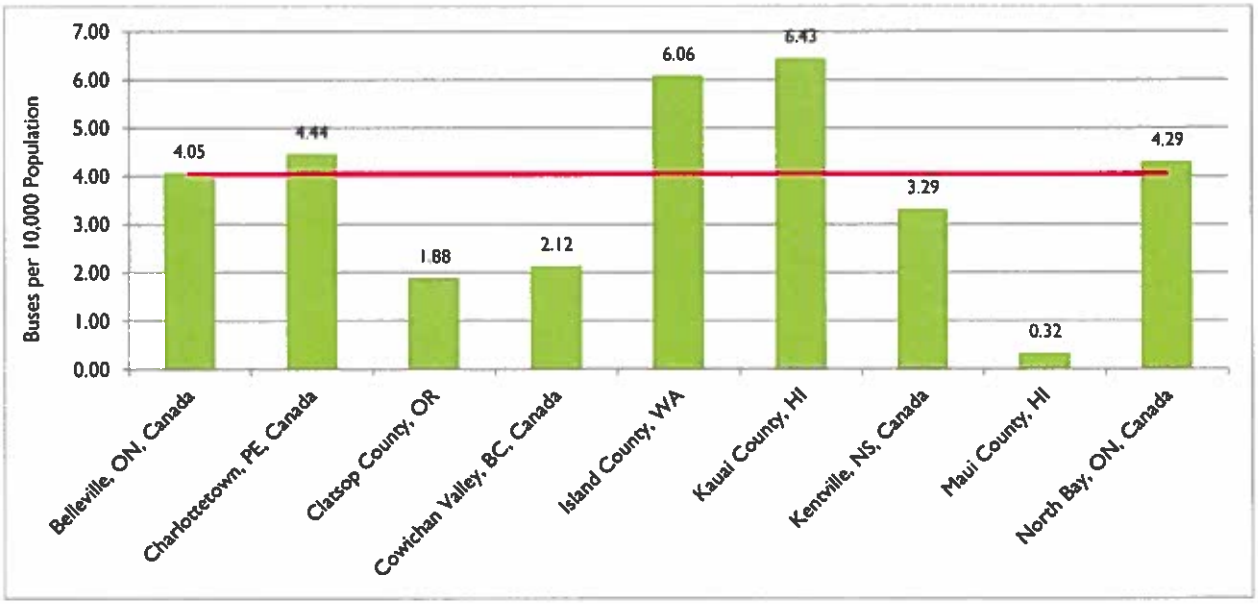


EXHIBIT 3-8 Number of Buses per 10,000 Population

In Exhibit 3-8, the indicator varies significantly from less than one vehicle to over 6 vehicles, with a median value of 4 vehicles. It can be surmised that for each of Rota and Tinian at least one vehicle and one spare will be required. It is also recognized that the business model and governance structure of the Saipan service will influence the fleet requirements for Tinian and Rota. As such, not conclusions can be drawn at this time than a minimum of 2 vehicles each will be required (one operating plus one spare).

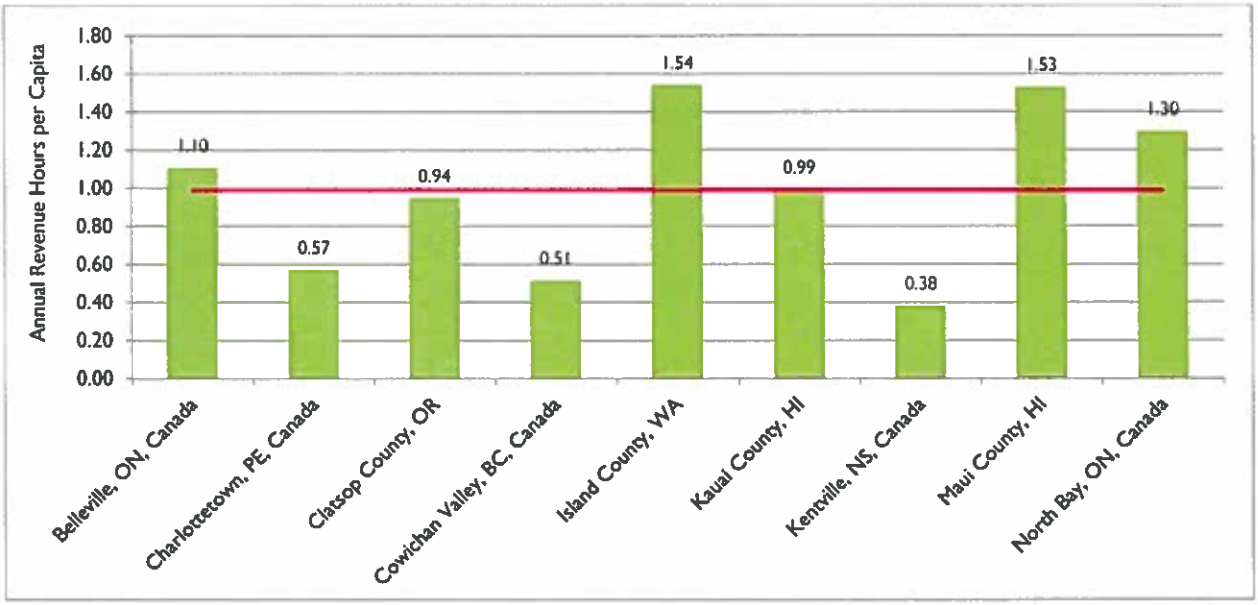


EXHIBIT 3-9 Annual Revenue Hours per Capita

Annual revenue hours in the peer group range from a low of 0.38 hours per capita to a high of 1.54 hours with a median of about 1 hour per capita of service each year. For Tinian and Rota, this would equate to about 2,800 hours of revenue service per year for each island. To put this in perspective, this would equate to about one bus operating 8 hours a day, Monday through Sunday.

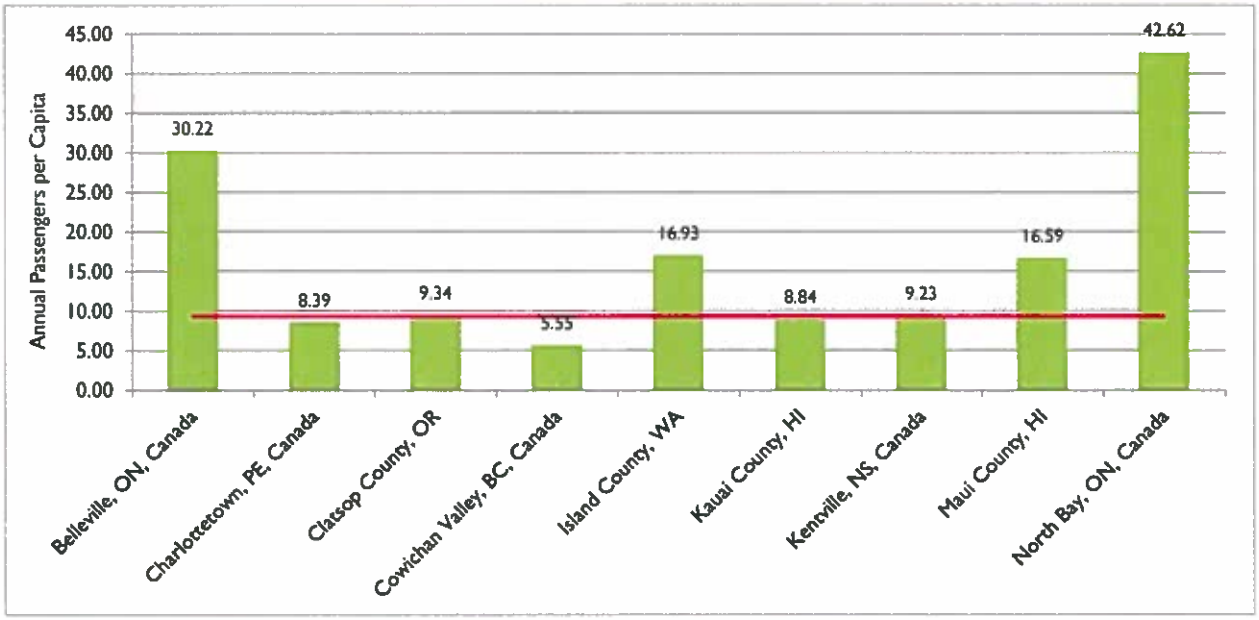


EXHIBIT 3-10 Annual Passengers per Capita

As seen in Exhibit 3-10, the peer systems' Passengers per Capita value ranges from 5.5 to 42.6 with a median value of 9.3 annual passengers per capita. The 9.3 passengers would translate to about 25,000 passengers per year in each island; however, these figures could take time to be realized.

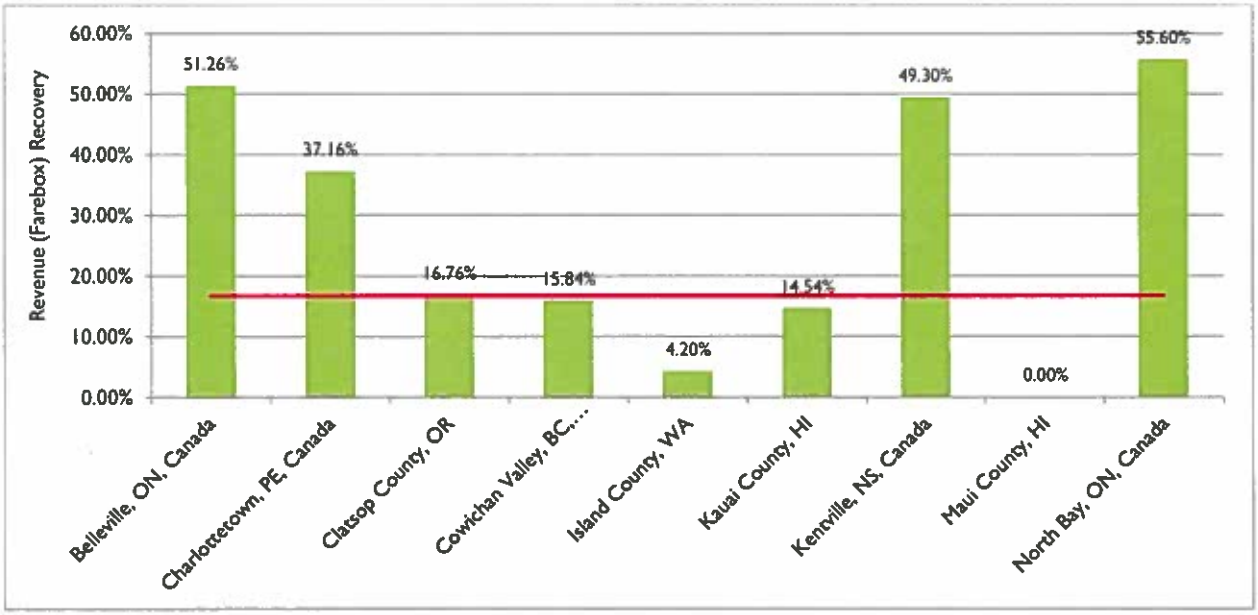


EXHIBIT 3-11 Revenue (Farebox) Recovery

As seen in Exhibit 3-11, the median revenue recovery is about 17%, which is similar to the Saipan Peer Review median of 15%. The R/C ratio of the peer group varies significantly from 4% and up to about 55%.

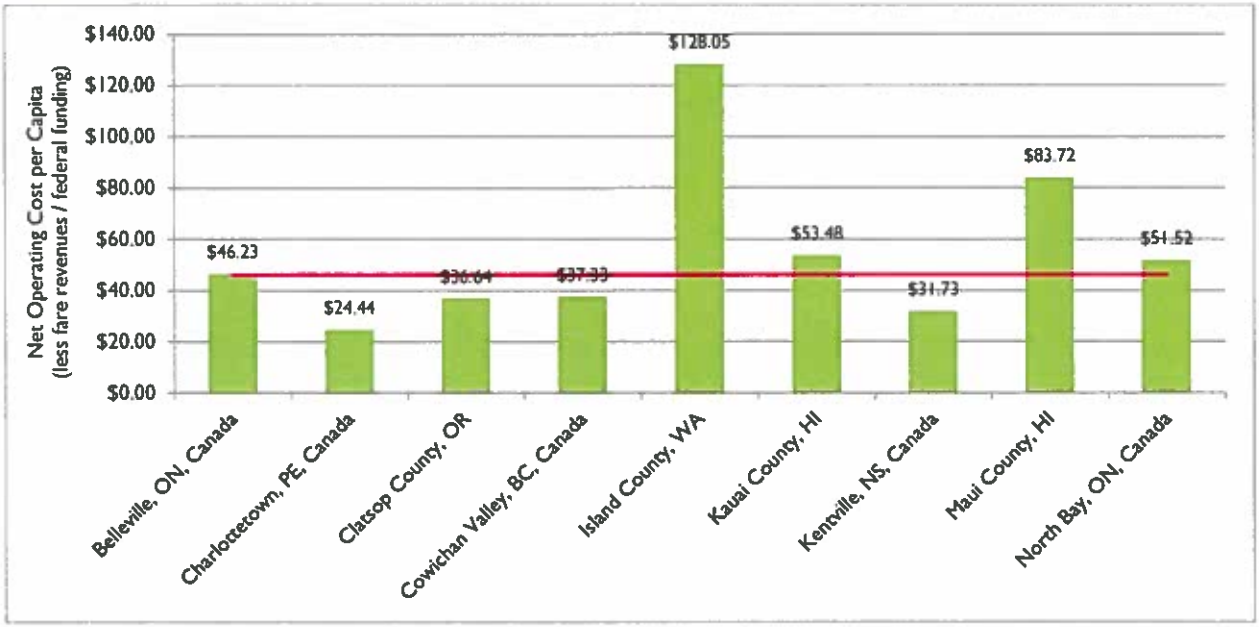


EXHIBIT 3-12 Annual Net Investment per Capita

As seen in Exhibit 3-12, the Annual Net Investment per Capita also varies significantly from about $24 to a high of $128 with a median value of $46.23. To put this into perspective, the total net cost of service for Tinian and Rota using the median value would be about $260,000 a year to run service for both islands. Given the need to have back-up vehicles for each island, the cost would likely be higher to maintain the same service hours or could be the same or less by reducing the hours of service.

3.4 Peer Review Conclusion

The peer review data and analysis of similar-sized communities provides a glimpse of what the cost and demand for transit service could be in Saipan and, eventually, in Tinian and Rota. There are a number of challenges to overcome to attain transit system performance similar to other mature transit systems which, as indicated, have been around for many generations.

The challenges to be faced are not insurmountable and as such, a phased-in approach is required whereby it is recognized that it can take a high school generation (e.g. 4 years) to entrench public transportation within the community through the implementation of transit ridership growth initiatives, including public education. This will be discussed further in the report.

The exact performance of service in each jurisdiction is difficult to predict; however, it can be surmised that service performance – service efficiency and effectiveness - will improve as residents embrace transit service over time. Given the success of the unregulated taxi industry, however, there is a latent demand that could emerge and grow more quickly than the norm. This will be discussed in more detail in this report.

4. PUBLIC ENGAGEMENT

The public engagement process was considered to be the most critical aspect of the study since it enabled the TCN team and the COTA Project Steering Committee members to more fully understand community priorities relative to the transit feasibility study. The initial community engagement was undertaken by TCN during the period August 20 through August 30, which consisted of the following:

- Ten (10) Transit Focus Groups
- Separate meetings with various agencies and departments within the CNMI
- Numerous interviews with local residents as the opportunities presented themselves
- Radio talk show at KKMP
- Web-based Community Survey

The Transit Focus Groups, agency meetings and local resident interviews involved participation by approximately 90 to 100 individuals, while the web-based survey was completed by 120 residents within the communities of Saipan, Tinian and Rota.

4.1 Transit Focus Groups

The Transit Focus Groups (TFG) held in Saipan consisted of informal meetings where TCN provided a PowerPoint presentation of the study outline and other information such as peer reviews and best practices. Since there has never been a publicly funded transport system in the NMI, every effort was made to educate the public and other stakeholders about transit and to instill a number of reasonable expectations about how transit service, if deemed feasible, could be introduced and expanded over time.

TCN facilitated the following Transit Focus Groups:

- TFG #1: Project Steering Committee
- TFG #2: Call-a-Ride
- TFG #3: Legislators
- TFG #4: General Public, GTC Elementary School
- TFG #5: Plenary Session with Elders, Man Amko Center
- TFG #6: Selected Elders, Man Amko Center
- TFG #7: Public Works Staff
- TFG #8: General Public, Dandan Elementary School
- TFG #9: General Public, Northern Marianas College
- TFG #10: COTA Planning and Operations Staff

The stakeholder consultations consisted of informal roundtable meetings presenting all participants with an opportunity to be involved in frank discussions. An overview of the study and the desired study outcomes were first presented to the participants so that they could provide meaningful input based on their own perspectives.

TCN staff were present on Saipan and benefitted from a very high level of personal involvement by COTA staff, and by many officials of the CNMI government. The importance of this consideration and effort cannot be overstated, as it not only enriched the formal program of planned discussions, but also led to many useful and productive informal meetings with knowledgeable and influential people in many walks of life. This included government officials, transportation providers, and interested private citizens. The discussions enabled TCN to more fully understand community needs from a wide cross-section of interest groups but also provided the community with information about transit and paratransit operations and the role that publicly funded transportation can play in the community.

Appendix A: Focus Group Meeting Notes outlines the input of each of the TFG meetings, which are summarized by subject manner, including consensus reached. It was found that the overwhelming consensus of focus group participants is that a public bus system is needed in Saipan. There was not one dissenting view on the subject.

The foregoing is a summary of the TFG discussion by topic.

4.1.1 Benefits of Transit

- Financial:
  - The availability of public transit will save thousands of dollars for those whom circumstances now require to own a personal vehicle
  - The high and rising cost of gasoline makes non-essential travel cost-prohibitive for some vehicle owners
- It would be a safer and more secure alternative to non-licensed licensed taxis
- It would increase the ability to travel autonomously, without depending on friends and family
- It would permit more flexibility about where to live
- Communities with public transit tend to be more economically vibrant than communities without
- It would make the island more attractive to people considering moving, retiring or studying in Saipan
- Transit protects the environment by reducing the number of cars on the road and economizing non-renewable fuel resources
- Perhaps most important of all, it would bring mobility and mobility choices to people who currently have few or no transportation options.
-

4.1.2 Priority Transit Markets

- Low income residents:
  - Provide an affordable alternative to non-licensed taxis
  - Many cannot afford to travel and are housebound
  - Many cannot access education or employment
- US Veterans, active service members, military families and others
  - Connect with work, education, and health care
  - Connect with vital services in their communities
  - Advocate for veterans and people with disabilities
  - Access local transportation options
- College Students:
  - Lack of affordable access to NMC causes some students to miss classes, while other potential students do not register due to the high cost and/or non-availability of affordable transportation
  - Many students cannot afford a car
  - Public transportation is an expectation by students arriving from off-island
  - Lack of affordable transportation limits where students can reside
  - Some students walk considerable distances to get to school
  - Students' access to part time jobs is dependent on having transportation
- Middle and High School Students:
  - Consensus reached that students are critical to the future of transit
  - Transit available for after after-school activities would be beneficial
  - Access to part time jobs after school and on weekends requires transportation
  - Use of public transit to travel to and from school, where there is a business case, can provide a sustainable revenue stream to support transit
- Seniors:
  - Access to transit is important to a high quality of life for seniors
  - Many seniors are unable or disinclined to drive, or cannot afford a vehicle
  - Being able to travel more is a health-related issue
  - Seniors want to rely less on family members for travel
  - Office on Aging provides adequate transportation for members to participate on arranged activities during normal weekday business hours (i.e. no evening or weekend service).
  - Seniors want to age-in-place and not be forced to move because of the lack of affordable transportation
  - There was agreement that at some point all people will be unable to drive and that as the population ages, this increased demand will need to be met
  - The cultural tradition of caring for seniors at home puts a strain on the caregiving children, which a public transit could alleviate in some cases

4.1.3 Trip Purpose and Service Hour Priorities

- Work trips: mainly at peak hours, but many hotel and hospitality staff work other shifts
- School: peak and after school hours
- Medical: off-peak, except for dialysis trips, which are often needed at peak hours
- Shopping and personal business: off-peak
- Recreational: off-peak

4.1.4 Span of Service Priorities

- Weekdays
  - Peak
  - Off-peak
  - Evening
- Saturdays
  - All day
  - Evenings
- Sundays
  - All day
  - Evenings

4.1.5 Route Coverage Priorities

- Route(s) that connect as many origins and destinations as possible
- Connect residential zones to places of employment, schools/ NMC, hospital, grocery stores, government offices, hotels
- One route from Garapan to south end of Saipan along Beach and Middle Road with connections to NMC and Costco was viewed as a good starting point
- Connect Kagman and Garapan to destinations on the west coast of Saipan
- Service from As Matuis to Garapan
- One short route from Garapan to Navy Hill that can be interlined with other service
- More remote tourist destinations were not considered a priority at this time
- There was consensus that transit should be provided to zones where there is development on both sides of the travel way, to the extent possible.

4.1.6 Route Network and Preliminary Service Design

- Consensus reached on focusing on service quality when starting out rather than servicing every identified market
- The concept of having key bus transfer points (i.e. mobility hubs) strategically located where feeder services can meet up with core transit services (timed transfers) was supported
- There was a strong emphasis to ensure that whatever transit options are considered for a 'core' service that the residents of Kagman and Dandan should be served also.

4.1.7 Vehicle Types and Design to Be Considered

- Low-floor wheelchair accessible buses with kneeling feature to:
  - Enable Call-a-Ride for passengers with a disability to use the Fixed Flex-route service for at least some of their trips
  - Enhance boarding for the elderly or those with packages or strollers
- Vans or mini-buses that can travel along steep gradient roadways or roads that are not considered 'bus-friendly' to serve more remote areas such as Kagman
- General consensus that residents simply want to get from A to B as long as service is reliable, safe and clean
- The idea of supplementing transit with lower cost shared-ride taxi vans was supported for areas and times of low demand
- Bike racks on buses to enable passengers to access their bus stop or continue their journey at both ends of their bus trip
- Air conditioning
- Fuel efficient
- Consensus was reached with respect to paying more for a more reliable bus with a longer life (e.g. 7 to 10 years), rather than a less expensive bus with a 5-year life
- Buses up to 33' foot in length considered reasonable for the core service

4.1.8 Transit Fare Strategies

- Fares should be affordable and low enough to:
  - Compete with the unlicensed taxis, which have been successful in addressing the market for inexpensive transportation ($3 minimum for single zone, $7 to Kagman)
  - Compete with the price of gas
- A $3 to $4 fare anywhere on the island suggested, with a $5-$8 day pass
- A period pass where one bus fare can provide for return trip or stop-over travel within 90 minutes was supported (this would enable passengers to pay once rather than twice on a short return trip
- All TFG groups reached consensus on the use of smart card technology whereby:
  - Exact cash fare is not required
  - Only discounts are offered on the smart card

- Value loading of the card can be done via the internet, at government offices or on the bus
- If a smart card is lost, it can be replaced for a nominal administration fee
- Registered users would provide information about themselves, which can be used for transit planning purposes

- Fare subsidies should be considered by agencies whose clients would benefit from transit
- NMC students could consider a semester universal pass (U-pass) whereby all students would contribute via regular activity fees and all students would be able to use transit free; this would provide COTA with a consistent and sustainable revenue source

4.1.9 Bus stops and Shelters

- Bus stops and shelters will need to meet American with Disabilities Act (ADA) requirements (i.e. accessibility)
- The sidewalk infrastructure should take into consideration the location of bus stops
- Given the lack of sidewalks in the more remote communities, consideration should be given to 'flag stop' where passengers would determine where it is safe to board a transit vehicle and flag the vehicle down to pick up

4.1.10 Call-a-Ride

- Need to focus Call-a-Ride service for those unable to use fixed-route transit service when available
- Demand is growing to a point where service must be provided by management staff; additional drivers are required
- Can be used in areas where regular bus service is not warranted and where capacity is available
- Dispatching capabilities need to be enhanced to improve productivity
- Current + and – 15 minute pick-up/ drop off windows work well
- Call-a-Ride drivers could be used for public transit service as well in the future

4.1.11 Other Transit Revenue Strategies

- It was recognized that although many residents do not own a vehicle (23% of households), their taxes go to supporting roadway infrastructure, which benefits those who own vehicles and are generally in the higher income bracket
- Parking meter revenues can be dedicated 100% to support transit
- Annual vehicle license fees can be increased with the increased portion dedicated 100% to support transit (e.g. $10 on private vehicles and a higher increase for larger vehicles; perhaps a special levy on private tour buses and hotel shuttles)
- Transit can operate charters to generate revenues where possible and does not contravene federal regulations.
- Buses, benches and shelters could be used as advertising media to generate revenues.

4.1.12 Other Consensus Reached

- Since publicly supported transit would be entirely new for most Saipan residents, it will be very important that 'travel training' be provided to teach people how to use the new service
- Marketing efforts should be targeted to each transit group (e.g. seniors, middle and high school students, NMC students, employees, employers)
- Fare revenues alone will not be sufficient to support a public transit service.

To complement the transit focus group meetings, it was important to provide an additional opportunity for all residents to participate by undertaking a comprehensive web-based community survey.

4.2 Community Web-based Survey

A web-based survey was undertaken during the month of September, which was filled out by 120 respondents. The purpose of the survey was to enable all residents to have input to the study underway and to complement the Transit Focus Group findings. The combined findings and conclusions were used to help determine service priorities, which are discussed in Section 5 Policy Framework.

The survey was hosted by COTA using Survey Monkey and managed by Transit Consulting Network. For residents that did not have access to internet, COTA staff received completed hard copy surveys and input the results on behalf of the participants. A full copy of the questionnaire and the raw analysis were provided to COTA staff in digital format for future reference and, if required, for further analysis.

4.2.1 Key Web-based Survey Results

There were 26 questions in the survey and an opportunity for respondents to provide comments at upon completion of the questionnaire. A total of 70 comments were received of the 118 respondents and listed in **Appendix B: Community Web-based Survey Comments**. 85% of the respondents were not or have never been a customer of the Call-a-Ride service, which was the primary reason for undertaking the survey to help assess the future potential of transit.

Questions ranged from providing standard demographic information such as income, household size, age, etc. complemented by existing trip-making characteristics and a number of 'what-if' questions about potential transit use. The questionnaire also provides COTA with a more in-depth look at the role that unregistered taxis now play in the community, given the lack of publicly funded transit service.

The following exhibits provide an illustration and interpretation of the survey results to offer the reader additional insight to the data, what it means to them and to the potential role publicly funded transit could play.

In which neighborhood do you live in Saipan?		
Answer Options	**Response Percent**	**Response Count**
Garapan	20.9%	23
Tanapag, San Roque	2.7%	3
Puerto Rico, Lower Base	3.6%	4
As Matuis	1.8%	2
Chalan Kanoa	11.8%	13
San Antonio, Asito	5.5%	6
Koblerville	6.4%	7
Kagman	21.8%	24
Dandan	25.5%	28
Other (please specify)		45
answered question		110
skipped question		10

EXHIBIT 4-1 Community Representation

Exhibit 4.1 breaks down the respondents' community of residence with Garapan, Kagman, Dandan, and the south-eastern communities representing three-quarters of the responses. This representation complements the Transit Focus Group input and together, they provided the Study Team with the guidance needed to design service.

What is your age?		
Answer Options	**Response Percent**	**Response Count**
Under 17	3.4%	4
18 to 25	17.8%	21
26 to 45	44.9%	53
46 to 54	16.9%	20
55 or older	16.9%	20
answered question		118
skipped question		2

EXHIBIT 4-2 Age of Respondent

Exhibit 4-2 shows that the vast majority of the population is in the working age group (79.6 %) while the 55 and older represent seniors that are retired or employed. A low representation of junior and high school students occurred, which can be explained by the use of yellow school bus transportation.

If public bus service is provided where and when you need it, would you consider using the bus service for some or all of your trips?		
Answer Options	**Response Percent**	**Response Count**
I will consider using bus service for some of my trips.	66.9%	79
I will consider using bus service for all of my trips.	25.4%	30
I am not considering to use bus service even if public	7.6%	9
answered question		118
skipped question		2

EXHIBIT 4-3 Implied Use of Public Transit

Exhibit 4-3 clearly indicates the potential support for public transit. About 67% of the respondents replied they would use transit for some of their trips while a significant 25% indicated they would use transit exclusively. Although the question is qualified by 'if public bus service is provided where and when you need it', it does provide one with the confidence that as service is enhanced over time, the latent demand will embrace the service.

If bus service is available, what would be your most important places to go? Select at most three from the following choices.		
Answer Options	Response Percent	Response Count
Work	30.5%	87
School	15.4%	44
Shopping	14.4%	41
Medical	18.6%	53
Recreational activities	12.6%	36
Visiting friends or family	8.4%	24
answered question		285
skipped question		2

EXHIBIT 4-4 Trip Purpose by Public Transit

Exhibit 4-4 indicates that the work has the highest selection at over 30.5%, probably for economic reasons. Combining work with school indicates that almost half the responses relate to predominantly peak travel (i.e. to and from work and school).The remaining 54% are related to quality of life travel purposes.

If you are currently employed full or part time, how do you usually get to and from work?		
Answer Options	Response Percent	Response Count
Walk	2.5%	2
Bicycle	0.0%	0
Scooter or motorcycle	2.5%	2
Car, as the driver	76.3%	61
Car, as a passenger	16.3%	13
Taxi - licensed	1.3%	1
Taxi - unlicensed	6.3%	5
Company vehicle	3.8%	3
Other (please specify)		2
answered question		80
skipped question		40

EXHIBIT 4-5 Work Trip Mode

Exhibit 4-5 confirms the car, as expected, is the predominant mode for work travel. This is a measure of modal split (% by mode). What is interesting is that unlicensed taxis reported 5 times more preference than the licensed taxis. Although the sample size is small, it nonetheless emphasizes the significant role unlicensed taxis play in transportation.

If you use a licensed or unlicensed taxi, which one do you use most of the time?		
Answer Options	Response Percent	Response Count
I use a licensed taxi most of the time.	5.9%	7
I use an unlicensed taxi most of the time.	12.7%	15
I use both licensed and unlicensed taxis about equal	10.2%	12
I don't use either taxis.	67.8%	80
Other (please specify)	3.4%	4
answered question		118
skipped question		2

EXHIBIT 4-6 Taxi vs. Unlicensed Taxi Preference

Exhibit 4-6 asks a taxi-related question relative to preference but for all trip purposes. Since the lower cost of unlicensed taxis is the driving force behind their relatively high demand, it is reasonable to assume that having a lower cost public transit service would attract an almost immediate demand.

4.2.2 Web-based Survey Comments

In addition to the analysis of the results, there were a total of 70 written comments received from the respondents. It was interesting to note that the respondents provided many comments that directly relate to either their needs whether or not they have a car (high price of gas issue in most cases) or to others less fortunate in the community. The comments received do mirror, for the most part, the comments Transit Consulting Network has received in other communities where no public transit is available.

4.2.3 Conclusions from Web-based Survey

The web survey results were considered to be extremely valuable to the study findings to date. Not only did the comments received reinforce what the Study Team heard during the Transit Focus Group meetings, some key statistics derived from the survey were very telling. For example, the web survey confirmed that unregulated taxis play a significant role in the community and, as such, contribute to the economy simply because it provides 'more' affordable transportation. Further, based on comments received, the unregulated taxis are not a mode of choice for many – they are captive because of the more affordable price compared to regulated taxis; they have no affordable alternative.

Since users of the unregulated taxis do share rides with others then it would make sense that a more affordable public transit service would be welcomed. This in itself reveals that there is a latent demand for publicly funded transportation service. Although public transportation can cut into the taxi market, it will not meet all community needs due to a shorter span of service, especially when starting out. This means that unregulated taxis will still have a role in the community after bus service is introduced; this will be discussed further in this report.

5. POLICY FRAMEWORK

To guide the decision-making process relative to service design and performance, it is of paramount importance that a number of route and service design principles are in place, which address, for example, where and how often service should first be provided. In terms of the span of service (service hours, days of the week) and frequency of service (how often buses run on a particular route), route performance guidelines should be established to guide COTA staff.

Given transit will be in its infancy, a number of policy guidelines have been established when starting out, recognizing that they are subject to change. The transit policy framework must be transparent, understandable to the public and sufficiently flexible to meet changes in the local environment and the level of investment that is available and sustainable.

5.1 Current COTA Policy Framework

To help development of the policy guidelines, COTA has, fortunately, developed a vision statement, a mission statement and a number of approved goals approved by the COTA Board of Directors, to provide the high-level direction needed, as follows:

Vision Statement: The preferred future of public transportation

"Transportation is always the link, and never the barrier, to accessing training, employment, child care, and related destinations".

Mission Statement: the purpose of COTA

"To provide a reliable, safe, and comfortable public transportation service for the people of the Commonwealth. COTA strives to ensure that the public transportation service is cost-effective, and energy efficient, and that it contributes to the cultural enrichment and economic advancement of the residents of the CNMI"

Goals

To support the vision and mission statement, a number of goals have also been approved by COTA:

- To enhance the access of people living in island villages to healthcare, shopping, education, employment, public services, and recreation;
- To assist in the maintenance, development, improvement, and use of public transportation systems in each island;
- To encourage and facilitate the most efficient use of all Federal funds used to provide passenger transportation in the CNMI though the coordination of programs and services;
- To assist in the development and support of surface transportation inclusive of marine/ blue highway;
- To improve mobility for elderly persons, persons with disabilities, and economically disadvantaged persons in villages and municipalities of the CNMI; and

- To ensure that all citizens and visitors of Saipan, including those that live in Rota, Tinian, and the Northern Islands have access to transit to meet basic mobility needs.

5.2 Enhanced COTA Policy Framework

As previously stated, COTA has been fortunate in providing the high-level direction to this study with the existing policy framework in place. With the undertaking of this study, which is one of the next steps to implementation, Transit Consulting Network proposes the following objectives:

5.2.1 Service Area Objectives:

- To provide fixed flex-route public transportation services that are accessible to a minimum of 90% of all residents and businesses within Saipan, Tinian and Rota

5.2.2 Service Objective:

- The minimum frequency of service and service hours to be provided shall be adequate to address the needs of the various target markets within the community

5.2.3 Performance Goals

Transit performance targets, which should be challenging enough to encourage continuous improvement, have been established for the next five years:

- **Effectiveness:** To raise transit use to 10 trips per capita within five years from the start-up of the fixed flex-route service.
- **Efficiency:** To attain a level of service utilization that is comparable to the median peer group value within five years.
- **Financial:** To maintain the net cost per capita of public transportation service at a level comparable to peer communities for the first five years from the start-up of the fixed flex-route service

The aforementioned performance goals will need to be updated as services are implemented and adjusted from time to time, especially during the initial stages. The reason for this is that there are a number of unknowns at this time, namely:

- Ability to compete with the unregulated taxi industry (i.e. Will the Colorum attempt to undercut transit fares?)
- The level of effort used for marketing public transportation to all residents
- The level of travel training to a population that is seeing a fixed route service for the first time
- The ability for public transportation to either reduce auto ownership or at least reduce auto travel required for some trips
- The cost of auto ownership
- The cost of parking

One of the most effective ways to compete with the auto is to limit the amount of (free) parking available for long-term parking and to introduce parking fees, particularly in the higher density downtown areas. Not unlike transit, parking infrastructure and maintenance costs are supported by the local tax base.

Introducing parking fees is one way to encourage people to transit for some or all of their trips. This is particularly true for the work trip where long-term all day parking is available at no cost. The more level the playing field in this regard, the more transit is likely to be used which, in turn, will reduce the need for parking investment. Furthermore, regulating and charging for parking in the downtown core will discourage car use, which will alleviate traffic congestion and the number of parked cars interfering with walking circulation in this heavily pedestrian area.

5.3 Transit Service Standards

Transit service standards are used to help achieve the general policy direction of COTA with respect to the provision of transit service.

Transit service standards are needed to guide COTA in determining when transit service will be provided, how often it will be provided and how it will be provided through:

- A framework for making rational decisions on the level and quality of service in the community.
- Increased public awareness of the philosophy of service and growth
- A strong commitment by island Councils to maintain service standards within the context of balancing social and environmental objectives with fiscal responsibility.
- A high degree of acceptance for transit expenditures since the decision-making process will be perceived as fair.

5.3.1 Transit Service Level Policies

Recognizing fiscal constraints and the need for an expanded and sustainable public transportation system, there must be a balance between providing a desirable high level of service and affordability. Service priorities and the service level policies have been designed to enable residents that are dependent on transit to expect a minimum level of service. Where and when demand justifies it, minimum service levels can be exceeded.

5.3.1.1 Span of Service Priorities

Each year on an ongoing basis, Transit staff should assess service requests and attempt to meet performance goals. In doing so, staff must establish service priorities based on the best return on investment, and fiscal responsibility. In this regard, routes that do not meet minimum performance criteria become candidates for reductions in service hours or restructuring.

Based on stakeholder input, assessment of existing transit services and best practices, new services should be considered based on the following priorities:

- Weekday peak: 6am-9am, 3pm-6pm
- Weekday off-peak 9am-3pm
- Saturday 7am-6pm
- Sunday 8am-6pm
- Weekday and Saturday evening 6pm-10pm
- Friday and Saturday evening 10pm-midnight
- All other evenings until midnight

Where ridership does not meet minimum requirements, services may be reduced in the reverse order. Alternative methods of service delivery can be assessed such as the use of fixed route shared ride taxis. Ultimately, staff must work within budgets. Another method to reduce deficits is to increase revenues through low cost ridership growth strategies and fare increases. However service reductions result in revenue reductions. It is therefore advisable to maintain total revenue hours of service but reallocate the service hours to serve areas where a better return on investment is likely.

Each year, the transit services offered should be evaluated against minimum performance requirements. Service to new neighborhoods or subdivisions identified by service requests from the public should be reviewed by identifying the bottom quartile of lowest performing routes and using those performance figures to estimate costs and projected ridership of new services. For example, existing routes that do not meet minimum ridership performance can be cut back by reducing service hours that have the least ridership impact (late evening) and those hours reallocated to providing peak service to the new areas.

5.3.1.2 Minimum Service Hours

The minimum hours of service to accommodate the various target market groups identified shall be:

- 6:30am–10:00pm weekdays
- 8:00am–7:00pm Saturdays and Sundays

5.3.1.3 Minimum Frequency of Service

Based on the current and future development of the island, the following service frequencies are recommended:

Fixed-Flex Route Service

- 30 minutes during weekday peak periods in the core service
- 60 minutes during weekday off-peak and evening periods
- 60 minutes during Saturdays and Sundays

Community Feeder Service:

- Hourly during peak
- Every two-hours during off-peak

5.4 Paratransit Service Standards

5.4.1 Existing Service Standards

The mission of Saipan Call-A-Ride paratransit service is to provide mobility to people with disabilities and the elderly who require an accessible vehicle. During the course of this study, Call-A-Ride operated as the only public transit service and covers the entire island with the service summarized as follows:

- **Service hours:** Monday through Friday: 6 am to 9pm; Saturdays 8am to 5 pm; closed Sundays and holidays
- **Fares:** $3 per trip/segment; companion $5; No-show: $5; personal attendant, children under 5 and service animal/pets are free
- **Booking hours:** 8am to 4pm Monday through Friday; closed on holidays
- **Service resources:** two vehicles (Ford high-top rear-door lift-equipped vans)
- **Drivers:** 3 drivers (Workforce Investment Agency program will be providing the transit driver trainees)
- **Applications:** Eligibility applications to use Call-a-Ride are received and processed by COTA. The Center for Independent Living processes applications only for their clients. Other organizations such as the Office for Vocational Rehabilitation and the hospital also prepare applications for their clients.

5.4.2 Recommended Service Standards

Call-A-Ride started up very recently, as a COTA-managed service in July 2013. As such there is no operating experience on which to base changes to its service standards.

5.5 Call-A-Ride Service Design Guidelines

Call-A-Ride is functioning as a general paratransit service. Core functions it is currently performing include:

- Accepting and processing applications for eligibility
- Accepting trip requests from eligible passengers
- Scheduling, dispatching and operating passenger trips
- Collecting fares
- Monitoring service events, customer complaints and operating statistics
- Hiring, training, scheduling and managing drivers
- Maintaining the vehicle fleet.

The Study Team recommends that the main goal for Call-A-Ride over the next five years should be to enhance its overall value to the community by improving its operating efficiency and effectiveness, and further building its administrative capacity. The following are intended as guidelines for this process.

5.5.1 Guidelines

That Call-A-Ride will strive to provide the CNMI Government with excellent value for money by adhering as closely as possible to the values of Efficiency, Effectiveness and Economy in its policies, operations and administration.

Efficiency in this context means 'doing things right' - performing necessary activities in an orderly and economical manner, at a reasonable level of quality within Call-A-Ride's mandate to the level required by law, regulation and Call-A-Ride service standards.

Specific:

- Develop and maintain a Policy Manual covering all areas of operational and administrative policy, procedures and accountabilities. The Policy Manual should incorporate Service Standards covering topics such as on-time performance, level of service (Curb to Curb vs. Door to Door), maximum on-board time, notification in case of major service delays, and customer satisfaction
- Have clear eligibility rules, an adequate application form, and a fair and equitable process for screening applicants for service, and for hearing appeals from applicants who are not satisfied with the eligibility determination.
- Operate the telephone line for bookings within the hours required by regulation or Call-A-Ride policy
- Negotiate with passengers where possible about their reservation times so that trips can be grouped together as much as possible.
- Once fixed-route transit is available, and Call-A-Ride then becomes subject to the rules covering ADA Complementary Paratransit, conduct an annual planning process for the coming fiscal year to ensure that the service will be able to meet anticipated demand for trips, and will have a process and resources in place to handle requests for transportation that exceed regular service capacity. For example, arrangements could be made with a transportation provider or taxi company to take passengers on an overflow basis when needed. Part of this planning is to estimate and request sufficient budget through COTA for the following year to be able to meet the expected level of demand for service.
- Schedule rides to vehicles in keeping with Call-A-Ride service standards for service level (Curb-to-Curb or Door-to-Door), on-time performance and maximum on-board travel time.
- Apply policies to discourage late cancellations and no-shows by passengers
- Monitor the performance of drivers to ensure they are complying with Call-A-Ride policies regarding circle checks of the vehicle, safe operating practices, and passenger assistance, obeying traffic regulations, and providing excellent customer service that reflects well on the CNMI government.
- Have staff resources, policies and procedures in place to receive, investigate and resolve customer complaints in accordance with Call-A-Ride policies and standards and within a reasonable time.

- Establish a staff complement requirement that will enable Call-A-Ride to perform all essential functions as required by its policies, and cover staff absences due to vacation, training, illness or special leave (maternity, etc.).
- Maintain vehicles, including at least one spare vehicle, so that the fleet can adequately support the mission and mandate of Call-A-Ride.
- Establish a Fleet Plan and secure the necessary funding to ensure that the fleet is renewed on a regular, predictable, adequate and economical basis.
- Provide COTA with performance reports that enable it to fulfill its accountability to the CNMI Government for Call-A-Ride service.

5.6 Fixed-Flex Route Design Guidelines

There are various ways of arranging transit routes to provide transit service within a reasonable walking distance of most residences and businesses of Saipan.

Some of the route design requirements are listed below:

- Round trip routes approximating 12-16 miles long are required. A bus round trip time on a route of this length approximates 1 hour. When routes of this length are required, it is essential that the route be provided both ways on the same street; otherwise most users will have very long trip times by bus.
- 'Through' streets on which transit service can be provided in both directions are required both radially from the downtown area and circumferentially through the outer areas of the island. These 'through' streets should be close enough together so that all residents can walk to them easily and provision must be made for pedestrian walkways and sidewalks, to and from these 'through' streets.
- Non-downtown service that may be required in the future can alleviate bus loads and reduce travel times on existing services by providing more direct origin-destination satisfaction by reducing or eliminating the need to transfer.

The guidelines which are set out in the following sections are intended to ensure that in the design of new residential and subdivisions, commercial development and infill development, that adequate provision is made for the three requirements to have efficient and effective transit listed above.

5.7 Land Use Development Design Guidelines

To ensure there is reasonable access to bus service by residents and that service is more effective and efficient, land use development design guidelines that reflect transit needs have become the norm. And they must be incorporated in municipal land use planning and development policies. By following municipally approved 'transit-friendly' guidelines, COTA would be in a position to better plan future transit services to help COTA sustain an efficient and effective public transportation system today and in the future.

A detailed document entitled The Need for Transit Friendly Land Use Development Guidelines has been provided in full to COTA and highlighted as follows:

Bus Stop Locations[6]:

- That the location of bus stops be co-coordinated with the design of walkways, intersections and development in order to minimize walk distances and provide for reasonable bus stop spacing.
- Central Business District bus stops should be spaced between 300 – 1,000 feet, with a typical standard of 600 feet.
- Urban Areas bus stops should be spaced between 500 – 1,200 feet, with a typical standard of 750 feet.
- Suburban Area bus stops should be spaced between 600 – 2,500 feet, with a typical standard of 750 feet.
- Rural Area bus stops should be spaced between 650 – 2,640 feet, with a typical standard of 1,250 feet or where warranted.

Bus Stop Area Design Guidelines:

- That bus stop areas and amenities be designed to meet the design guidelines to meet ADA Standards and Accessibility Guidelines (ADAAG).

Walk Distances:

- 90% of all dwelling units should be within a 1,500' walk distance of an existing or future bus stop with 70% of the dwelling units within a 1,000' walk distance of the bus stop.
- All multiple dwelling units should be within a 1,000' walk distance of an existing or future bus stop.

Walkway Locations:

- That walkways be provided such that walking distances from the residences of a subdivision to existing or future transit routes are minimized.

[6] Transportation Cooperative Research Program Report 19: Guidelines for the Location and Design of Bus Stops

Acceptable Transit Routes:

- Transit routes can be provided on arterial roads and major collectors which have reasonable through access: not on crescents or cul-de-sacs. A 30' pavement width is the minimum acceptable for transit routes.
- Arterial and major collector 'through' roads should be spaced no more than 3,000' apart to allow adequate transit route coverage of future residential developments.
- Provision should be made to minimize the length of one-way transit loops. One directional loops longer than 1.3 miles are unacceptable.
- Provision for temporary transit vehicle turning circles must be provided, where necessary, to allow transit route phasing to coincide with development phasing. A minimum 50' radius is required for the turning circle.

Transit Route Length:

- Road layouts in residential developments should be designed such that transit routes require a maximum of 1.0 mile of transit route per 1,500 residents served.

Trade-Offs:

- That land use/ transit co-ordination is a necessary and valuable goal recognizing that, in the implementation of the design objectives, trade-offs may exist in some instances with other planning, engineering and environmental considerations.

Comprehensive Plans, Transportation Master Plans and Draft Plans:

- That Comprehensive Plans, Transportation Master Plans and Draft Plans of subdivisions shall reflect efforts used in trying to achieve the transit guideline objectives.

The guidelines, when adopted, should be incorporated into new Comprehensive Plans, Transportation Master Plans new Draft Plans of Subdivision and when constructing new roadways or reconstructing roadways. Every attempt should be made to apply the adopted guidelines to draft plans of subdivision presently being considered within previously approved secondary plan areas wherever possible with minor amendments. The guidelines apply to bus stop and walkway locations, walk distances to bus stops, transit routing and transit route lengths serving residential developments.

It is recognized that the NMI topography and climate provides challenges when considering walk distance requirements. The following guidelines are simply that – guidelines; these cannot be applied where severe road grades are present. In these cases, transit route design will need to be addressed on a case by case basis.

6. SERVICE CONCEPTS AND VEHICLES

Based on the policy framework guided by stakeholder input, a number of route and service concepts were developed for short-listing purposes. Conceptual design consisted of preparing a preliminary route map and service plan and estimating the ridership. These preliminary concepts are prefaced by a brief description of the transit routes, service level, and the appropriate vehicles to deliver the service. The following section briefly describes alternative service concepts that address public transportation needs, and which can be implemented in integration with the Call-a-Ride paratransit service under a Family of Services concept, or in isolation from it.

6.1 Fixed Route Conventional Transit Service

Fixed Route Conventional Transit is the most common form of public transportation service operated in towns and cities. Buses operate along a fixed route following a published timetable. Service is generally provided along main roadways where key destinations are located. Routes tend to be as direct as possible to minimize travel time so as to be more competitive with the automobile for work and school trips. Buses are generally heavy-duty vehicles that range in size from 30' to 40', the most common being the 40' bus. These vehicles are typically the most expensive to purchase and operate. They are desirable in urban centers where transit demand is high.

Most new transit buses are of the low-floor design introduced in North America in 1992. By eliminating interior steps in the doorways, low floor buses make boarding and alighting easier and faster, reduce passenger tripping and falling accidents, and eliminate the need for a wheelchair lift for people using mobility devices. Under Title 49 CFR Part 37 Subpart F, ADA complementary paratransit service to accommodate persons with qualified disabilities is required to service up to 3/4 mile of a fixed route and have parallel hours of service.

In summary, Fixed Route Conventional Transit Service has the following characteristics:

- Wheelchair accessible heavy duty buses
- Fixed routes and reliable schedules
- Low cost per passenger due to high capacity
- Service tends to be more frequent during the peak periods
- Vehicles and frequency of service are designed to provide sufficient capacity to accommodate passenger loads at peak times, when demand for work, school and other regular trips is highest.
- Service frequency is reduced at off-peak times when demand is lower, and less capacity is needed. Typical off-peak trip purposes include shopping, recreation, medical, and personal business
- Two side doors permit passengers to board and exit the bus simultaneously.
- ADA complementary paratransit service (i.e. Call-a-Ride) must be provided within 3/4 miles of a fixed route travel way.

Action: Not to be considered at this time since Fixed Flex-route service is being recommended in lieu of conventional transit

6.2 Fixed Route Community Bus Service

Community Bus is a form of fixed route transit that addresses the needs of senior citizens, people with disabilities and others. Because of its indirect routing and low average schedule speed Community Bus is not well suited for commuters. Community bus typically uses small low-floor vehicles that are easy to board, can navigate small streets, and arrive close to locations that generate or attract a larger portion of seniors or stay at home parents and children, such as seniors' residences, shopping centers, and recreation, social and medical facilities.

Unlike Conventional Transit, community bus routes try to minimize walking distances rather than travel times, and its small vehicles can more easily use lower-tier roadways and neighborhood streets. In many cases, passengers are allowed to flag the bus down, and to request to get off between stops.

The driver is trained to provide boarding and alighting assistance to passengers. Interior seating is often configured in rows, rather than around the perimeter of the vehicle, which makes it easier for people to have conversations and to socialize. Having the seats close together also provides for more handholds when moving down the aisle.

Routes are generally indirect, with longer average travel times. Average scheduled speed and service frequencies are lower than conventional transit, since the service is designed to attract riders to whom short walking distances, passenger assistance and accessibility are more important than frequent buses and quick travel times. Service frequencies tend to be hourly or even every two hours. Community buses usually operate at off-peak periods. Sometimes a community bus service replaces a conventional route either completely, or during off-peak hours.

Community Bus operating costs per passenger are typically higher than conventional transit, but much lower than paratransit.

Action: To be considered in the future

6.3 Fixed/Flex-Route Service

Fixed-flex route service combines some of the advantages of fixed route (predictable service, low cost per passenger) with those of dial-a-ride (ability to cover a large, sparsely populated area, and to serve people who cannot or do not wish to walk to a bus stop). A fixed-flex route bus would follow a normal scheduled route but have the ability to deviate off the route and return to the route within 5 minutes to continue their trip.

Fixed-flex route service can provide curb-to-curb service to Call-a-Ride passengers at no additional or only marginal cost, in most cases. This reduces demand for paratransit and also helps establish the pattern of paratransit passengers to travel dynamically by using scheduled transit service. Furthermore, should the Fixed Flex-route may eliminate the requirement for ADA complementary paratransit services if the design

meets the requirements for accessible services under ADA regulations and route-deviation demand-responsive service under Appendix D to Title 49 CFR Part 37.3.

A fixed flex-route can be employed along both major and secondary roads similar to a conventional transit or community bus route. The vehicle can deviate from the established route to pick up and drop off Call-a-Ride registrants, seniors with limited mobility, and others. Route deviations for pick-ups must be requested in advance, either through Dispatch or by phoning the vehicle directly, if permitted. Deviations for drop-offs may be requested in advance, but can also be requested on-board and accommodated if the driver has sufficient time to accommodate it.

Given the need to have a reliable schedule at stops and route-end points, it is necessary to set limits to both the number and the distance of deviations. Typically this limit is equivalent to about 5 minutes.

Action: To be considered in lieu of conventional transit or community bus service

6.4 Transit Feeder Services

Feeder services work in conjunction with scheduled public transit to extend geographic coverage at relatively lower cost. They can be used to serve remote, sparsely populated areas, especially those where public transit is new. Small, low-cost vehicles shuttle passengers between neighborhood locations and scheduled stops on a transit route. There are two main variants: fixed-route feeder service, and dial-a-ride.

6.4.1 Fixed-Route Passenger Van Feeder Service

Fixed-route passenger van feeder service is a concept considered for places in the COTA service area where Fixed/Flex-Route vehicles would be difficult to manoeuvre due to excessive road grade or narrow roadways, and where population density is too low to produce sufficient ridership to merit the investment in a larger vehicle and higher-order service. It can, therefore, be useful in remote residential neighborhoods where demand may be minimal in the start-up phase.

The vehicles, typically 9 to12-passenger vans, minivans or even sedans, could be owned or leased either by COTA or by the service contractor, depending on which option is the more economical. Feeder service could be used as an interim measure in remote areas to accustom people to transit and build transit ridership, with the understanding a bus route may eventually be established when demand warrants it.

The feeder van would pick up passengers in a given area on a fixed route and transfer them to regular bus service at designated stops or mobility hubs so that they can either walk to their destination or continue their trip on another transit vehicle. The passenger vans may not be wheelchair accessible; however, customers with disabilities can be accommodated by Call-a-Ride complementary ADA Paratransit service.

The significant benefits are lower cost, extended reach for transit, and the ability to establish the pattern of catching a transit vehicle at a designated stop at a scheduled time – a skill that is necessary in order for people to use public transit.

Contracted taxi service providers would be compensated based on a negotiated hourly rate. COTA might undertake to offer a minimum revenue guarantee in the contract tender, if that is deemed necessary to secure good quality bids.

Shared-ride taxis are used in conjunction with bus service as an interim solution until bus service is warranted. No dedicated dispatch service is required for this option. Since taxis would not offer a door-to-door service, a shared-ride taxi is not viewed as competing with regular taxis.

Given that service would be in its infancy, it may be possible to implement a scheduled service then custom design routes and schedules during the start-up phase of the service. Further, given the close knit communities, it may be possible to pre-book passengers who will be using the services regularly such as travel to from Kagman or Dandan to NMC as one example.

Action: To be considered further and discussed with the local transportation industry

6.4.2 Demand-Response Dial-a-Ride Service

Dial-a-Ride Service is a demand-response door-to-door service whereby residents call into a dispatch center or driver cell phone to request service. A van or small bus is then sent to pick them up. For regular trips (i.e. daily, weekly, etc.), service can be arranged on a reservation basis so that the customer is not required to continuously call. Service can be completely in response to requests, or can be structured to operate on a frequency basis (e.g. every hour). In that case, the requester is given the next available time the vehicle can arrive to pick him or her up, and an approximate arrival time at destination. Similar to a fixed route shared-ride taxi, a Dial-A-Ride customer would be able to transfer to another transit route, if necessary, to complete a trip. On the return trip, the process is the same where the customer is also required to call and request the trip.

Dial-a-Ride Service is generally used in place of bus service in areas where population is sparse and demand for service is low. The need to request each trip and wait for the next available time can make it less convenient for the customer; however, this is offset by the convenience of door-to-door service, especially during inclement weather. Dial-a-Ride may either compete directly with the taxi industry or be offered using taxi vehicles. Costs per passenger may be significantly higher than other low-cost services since the vehicle costs are incurred, regardless of whether pick-ups are made.

Action: To be considered further as a market for Call-a-Ride, where capacity is available.

6.4.3 Colorum Dial-a-Ride Taxis

In the absence of public transit, a low-cost dial-a-ride sector has evolved in Saipan in the form of Colorum (unlicensed) taxis. These provide door-to-door service, are summoned by a telephone call, typically arrive within a few minutes and are shared with other passengers. The proliferation of low cost cell phones has

played a role in the development of this service mode. Per-trip fares reported by focus group participants ranged from $3 to $7, depending on the length of the trip. The Colorum taxis are not in direct competition with the non-shared licensed taxis, since the licensed taxi accost per user can be triple the cost of a Colorum taxi.

Colorum taxis are unlicensed and, therefore, unregulated with regard to ride-sharing practices, mechanical fitness, insurance, and driver training and performance standards. This enables them to charge lower individual fares. During informal discussions with members of the public and government officials, questions arose about insurance coverage for passengers in the event of a traffic accident, and also concerns that they compete unfairly with taxis licensed by the Commonwealth, which must meet minimum standards, charge approved rates and pay an annual license fee.

In other jurisdictions, such as Israel, the French Antilles, and several African countries, a two-tier taxi system has evolved whereby regular, non-shared-ride taxis and shared-ride, collective taxis (similar to Saipan Colorum taxis, but licensed and regulated by the government) co-exist. Regular taxis charge higher rates, address the high end of the market, including the tourist market, and have certain privileges, such as the right to sit at taxi ranks at hotels and major locations, the right to advertise and publish their business address and telephone numbers, etc. The collective taxis, sometimes organized through independent associations of taxi operators, use collective taxi terminals, adopt a more or less fixed itinerary, and pick passengers up along the roadways. They must pay their annual license fee, and abide by a regulated code of conduct with regard to vehicle fitness, insurance coverage, and driver licensing and performance.

Given the current key role of Colorum taxis in the mobility of people in Saipan, this form of travel cannot be ignored. It is presumed the Colorum has very low operating costs and as such, it is prudent that the Feasibility study explores if and how the taxi sector – currently licensed single-ride taxis, or newly-licensed shared-ride taxis - might play a complementary role in the Saipan Transportation System. By levelling the playing field, there may be an opportunity to enable licensed taxis to better compete with Colorum taxis. This makes sense since licensed taxis must meet minimum standards and priority should be given to that sector from a safety and liability perspective. Also, licensing and enforcing standards for shared-ride taxis will raise their operating costs (insurance, vehicle inspections, license fees, etc.), which will probably cause their prices to rise. The license fees could be used by the CNMI government to subsidize transit.

Licensed shared-ride taxis could increase their revenues through agreements with COTA to operate as a complementary service to transit in Saipan by providing:

- Passenger van feeder service as per 6.4.1
- Demand Response Dial/ Call-a-Ride 6.4.2

Consideration can be given to shared-ride reservation-based door to door service where taxis are guaranteed an hourly rate over a specified period such as feeder service during the peak. For example, if a taxi (van) charges COTA $45 per hour and can carry 10 passengers during a 40-minute run, the charge

could be negotiated at $30 while fares collected could be $25 (assuming $2.50 each); the net cost to COTA would only be $5. The benefit to the resident is that they would be using a licensed vehicle that meets minimum safety, insurance and code of conduct standards.

There are other ways to encourage residents to use COTA services. Transit fare collection through the use of smart card technology or transit passes is one such example. By equipping all contracted taxis and transit vehicles with smart card readers and providing residents with discount fare incentives, the regulated taxis can be a mode of choice in some cases during specified transit service hours.

The shared-ride taxis (currently unregulated) will still continue to play an important role in providing mobility, especially outside transit service hours. Better, therefore, to provide them with an avenue to become legally operated vehicles, by amending the CNMI licensing regulations to create a 'shared-ride taxi' category. An outreach campaign (newspaper and radio) could be initiated to encourage them to come forward and sign up.

This step by COTA would considerably increase the size of the regulated taxi fleet, and the two categories: single-ride and shared-ride would cover the entire market. This would ensure transit passengers and the general public have access to safe and affordable transportation.

Action: Identify opportunities to expand the role of regulated taxis in the public transportation family of services and establish restrictions on non-regulated taxis.

6.5 Car- and Van-pool Options

Car- and Van-pool services are effective where a significant number of people in one area need transportation to another area at about the same time, such as a college, commercial, business or industrial areas. Pooling requires matching people with similar start and end work times in close proximity to each other. The rural nature of some remote communities in the NMI lends itself to car- and van-pools that can be organized informally. There are established services available at a nominal start-up fee and ongoing web-hosting fee.

Action: To be encouraged where COTA service is not warranted or available

A summary of the aforementioned service concepts including advantages and disadvantages is provided in Exhibit 6-1: Summary of Service Concepts.

6.6 Summary – Family of Services

The modern understanding of public transportation is to see it as a Family of Complementary Services, rather than being limited to the usual fixed route bus service and ADA complementary paratransit. Each member of the Family of Services has different strengths and cost levels. Taken together, they support each other to provide, overall, an excellent range of mobility choices as an alternative to the private car. Elsewhere in the study we have brought forward specific recommendations in this regard.

Concepts	Vehicle (approx. size)	Relative Operating Cost	Advantages	Disadvantages
Fixed Route Conventional Transit	30'- 40' Conventional Transit Bus	High	• Highest capacity • Services all markets • Mobility aid accessible	• Most expensive to purchase and operate • If provided in off-peak, buses would be under-utilized
Fixed Route Community Bus Service	Up to 35' Community Bus	Medium-High	• Serves more origins and destinations • Mobility aid accessible • Service can be infrequent (60 to 120 min. frequency)	• Not designed to accommodate peak hours work/ school trip travel • Not direct • Infrequent service
Fixed Flex-Route	Up to 35' (conventional or community bus)	Medium	• Generally direct route that only deviates upon request for those eligible	• Likely to be less direct • Limited to one or two requests per trip
Fixed Route Passenger Van Feeder Service	Large Van or Mini Bus	Low	• Ideal feeder services for remote areas • Low cost for periods of low demand • Overloads can be accommodated by taxi industry quickly, if taxis used	• Generally limited to low demand areas
Demand Responsive Dial-a-Ride	Large Van or Mini Bus	Low-Medium	• Applicable to more remote areas • Flexible hours of operation	• Customer must call in and schedule • Requires dispatcher or driver with cell-phone • Customer at mercy of availability • Highest cost per passenger
Car- and Van-Pool	Sedan up to a Large Van	Lowest	• Low-cost feeder services for remote areas • In the realm of the private and volunteer sector	• Depends on coordination by the public; ride matching services required

EXHIBIT 6-1 Summary of Service Concepts

The preceding service concepts refer to varying vehicles to provide the service. A description of these vehicles, their capital costs and relative operating costs are provided in **Exhibit 6-2: Vehicle Descriptions**.

Vehicle Type	Vehicle Photo	Seats	Capital and Operating Cost	Advantages	Disadvantages
Conventional Transit Vehicle (30'-40')		Up to 42 seats + standees	**Capital:** • New: $400-500K • *Rebuilt: $150,000+* • Used: $65,000 ('01) **Operating**: High	• Can accommodate large loads • 12+ year life cycle • Low-floor • Wheelchair Accessible • Heavy Duty • Diesel is efficient during idling	• Higher initial capital cost • Higher operating cost • For larger urban centers • New maintenance infrastructure may be needed (e.g. hoists, storage, etc.)
Community Bus (approx. 22' – 30')		*16-26* seats + standees	**Capital:** • New: $120-$220K • Used: $20,000-$40,000 **Operating**: Medium	• Good capacity • Low demand routes • Low-floor / wheelchair accessible • Some are Medium Duty • 7+ year life cycle • Can be maintained by existing service centers	• Can accommodate only a modest number of passengers • 7+ year life cycle • Fuel used during idling more expensive than diesel
Mini Bus/ Cut-away		14-20 seats	**Capital:** • New: $90,000+ • Used: $15,000-$30,000 **Operating**: Low	• Ideal for low demand areas • Can be maintained by existing service centers	• 5-7 year life cycle • High floor / not wheelchair accessible
Large Van		Up to 15 seats	**Capital:** • New: $60,000+ • Used: $20,000-$25,000 **Operating**: Lowest	• Ideal for low demand areas and demand response services • Can be wheelchair accessible • Can be maintained locally	• Only 5 year life cycle • High floor • Minimum capacity

EXHIBIT 6-2 Vehicle Descriptions

7. RIDERSHIP GROWTH AND REVENUE STRATEGIES

7.1 Introduction

The Fixed Flex-route Paratransit Systems Feasibility Study request for proposal (RFP) does not define what the term 'feasibility' means. As a practical matter, public transit in the Northern Mariana Islands could be considered feasible if, when provided, it meets community needs in a fiscally responsible manner. To do so, it must be affordable to 1) the customer that boards the bus, 2) the Federal Transit Administration that provides off-island external funding and 3) the local taxpayers through the CNMI Government. This study must assist COTA in demonstrating due diligence in providing quality public transportation service at the lowest cost per passenger.

From data in the peer review section, it is very clear that public transit in nearly all communities cannot be self-sustaining since only about 10% to 40% of costs are recovered through passenger revenues. The balance is supported by external funding and the local tax base. Transit service in the CNMI will also need significantly more local financial support than paratransit alone has received in the past if the needs of residents are to be more fully addressed. Recognizing this, the study team proposes a gradual strategy to mitigate financial risk today and in the future.

Since publicly funded transit is a relatively new concept in the CNMI, it will be important to ensure that improvements to transit service levels occur only when demand increases and local funding sources are, and will continue to be, available. And when this happens, public transportation can be considered a 'sustainable' public service investment.

The key findings of this report regarding feasibility are:

- That the public needs and desires a public bus system, and that the population in Saipan, at least, is capable of supporting it.
- That quality of the existing road network in Saipan is adequate for transit operation and will not impose costs due to excessive wear and tear on the vehicles. Ambitious road upgrading projects are now underway.
- That estimated operating and capital costs for transit are well within the range considered acceptable in other communities of similar size that have public transit.
- That Federal funding, subject to confirmation, appears to be available to cover at least 50% of the operating deficit of a transit system, and as much as 100% of the capital costs for vehicles, technology and infrastructure. The operating deficit is the total operating cost of the service minus revenues from passenger fares.

This section of the report addresses a number of strategies which have either worked elsewhere and can be adapted to create a 'Made in Saipan' solution, some of which can be emulated on the islands of Tinian and

Rota. The objective is to ensure transit is sustainable by proceeding cautiously with the introduction and expansion of transit service.

Federal funding, passenger fares, other revenue sources and local funding will all be required in order to make transit 'feasible and sustainable' in the CNMI. COTA must be able to provide a high-quality, adequate, reliable service, and with acceptable bus stop and shelter infrastructure that will be a credit to the CNMI Government. Recognizing the need for local funding support and fiscal responsibility, a number of strategies have been reviewed and are articulated in this section.

Three areas that can reduce the net cost of public transportation:

- Build ridership revenues through effective and proven, low-cost ridership growth strategies
- Dedicated local non-transit revenue tools to support transit, such as a vehicle license surcharge
- Cost containment by partnering with other government agencies and the private sector to ensure that input costs to produce transit are kept as low as possible.

As with any new service, there is an element of risk involved in starting public transit in the CNMI. COTA and the CNMI Government are to be congratulated for their willingness to take this community-building initiative. Once in place and fine-tuned, transit will be an integral component of the islands' infrastructure and will be of benefit to everyone.

7.2 Ridership Growth Strategies

A number of low cost transit ridership growth strategies can be implemented prior to the launch of service. Thereafter, the growth strategies must be complemented by excellent service reliability and quality.

7.2.1 Affordable and Competitive Bus Fares

Bus fares must be competitive with the fares charged by illegal taxis, which range from $3 within one zone (e.g. Garapan) to $7 between more than one zone (e.g. Kagman and Garapan). Setting transit fares too high will result in fewer passengers. Setting fares too low will impact local financial support. A fare structure that balances affordability with fiscal responsibility needs to be in place. COTA has considered offering transit for free on an introductory basis so that the public can try it, and this idea has merit provided that it is executed in such a way that no public expectation for free transit in the long term is created.

7.2.1.1 Smart Card Technology

During the consultation process, strong consensus was reached in support of the use of smart card technology. COTA has a unique opportunity to take advantage of the evolution and low-cost of smart card systems on Day 1 of the service launch. The opportunity is unique since there are no fare media to convert from such as tickets, monthly passes, weekly passes, etc. that are the norm with transit agencies of all sizes.

There are numerous inherent advantages to embracing the use of smart cards. Total revenue management system (RMS) costs would be reduced when compared to industry use of other fare media, saving about 2% to 4% of the total Transit budget.

An overview of the benefits is presented as follows:

- Eliminates the need to print and distribute tickets, transfers and paper passes (transfers would be printed for cash fare paying customers only)
- Reduces theft and eliminates fare fraud
- Eliminates fare evasion (i.e. lost revenue)
- Eliminates fare disputes
- Quicker boarding times
- Passengers do not need to carry exact cash for the fare
- Transit has the flexibility to change fares quickly (i.e. overnight)Lost smart cards can be replaced with the remaining value on the lost card restored for the user
- Detailed card user information can be used for planning purposes
- Can be used by Call-a-Ride and Transit to track where people get on and off, and at what times of day these events occur. This is a great assistance to service planning.
- It has been found in other jurisdictions that smart cards provide an incentive to ride transit more frequently
- Can be tied to other transit technologies
- Provides accurate ridership data for NTD, FTA-mandated and other useful reports).

Recommendations:

- **That smart card technology combined with mechanical fare boxes be installed on all transit vehicles**
- **That cash fares and smart cards be the only form of fare payment**
- **That Wi-Fi be considered to accommodate fare payment by smart phones**

7.2.1.2 Proposed Fare Pricing Strategy

Fares should be established using the following criteria:

- Cash fares should be the highest form of fare payment
- Fares should be set the same, regardless of the age of the customer
- Smart card is mandatory for those qualified for specialized discounted fares (medical subsidized trips, low income trips, and concessionary fares).
- The more a smart card is used, the deeper the discount should be
- Smart cards should be transferable between passengers
- The fare must be competitive with the unregistered taxis and whatever other competitor for ridership is out there

Recommendations:

- **That cash fare payment be the highest fare paid**
- **That discounted fares only be offered when payment is made via smart card.**
- **That COTA work with the community to finalize fare pricing policies**

7.2.1.3 Proposed Fixed Flex-route Fares

It is important that transit fares, whether for fixed flex-route customers are affordable to their respective markets, encourage ridership growth and are balanced with the need to recover costs to supply the services used.

With the proper fare technology in place, and considering the need to compete with unregistered taxis, the following fare strategy is suggested for the Fixed Flex-route service:

Fares - General

- There would be only one fare zone for each island

Cash Fare

- The cash fare be set at $3.00 (equivalent to unregulated taxis cost for a single zone)

Smart Card Fare

- 25% discount of the cash fare ($2.25)

Recommendation: That COTA set the pricing of fares based on the implementation of a smart card system as follows:

- Base cash fare of $3.00 (Note: Base cash fares to be competitive with unregistered taxis)
- Discounted smart card fares:
  - Regular adult fare: 25% discount of the cash fare ($2.25)
  - Student, seniors, low income groups: 10% discount of the regular fare ($2.00)
- Pre-school children: free fare accompanied by an adult
- Stop-overs, transfers and return trips made within 90 minutes of the initial boarding with smart cards be provided at no additional fare
- That fare pricing keeps pace with the cost of inflation
- Smart Card Rollout and Administration:
  - Smart cards can be made available to customers for a registration fee of $10.00
  - During the first three months of fixed flex-route operation, customers that have purchased a smart card will be able to use the service at no cost.
  - Lost smart cards will be replaced at an administration fee of $5.00 and the remaining value on their lost smart card will be loaded onto the replacement card

7.2.1.4 Proposed Call-a-Ride Fares

The ADA permits paratransit fares to be as much as twice the regular transit fare. In the past, Call-A-Ride fares were $6 per trip. By encouraging Call-a-Ride registrants to use fixed flex-route service, without deviating (i.e. without flexing), the normal bus fare can apply. The customer benefits from a lower cost to travel while COTA benefits from the lower cost to transport compared to the cost of a Call-a-Ride trip.

Due to the very high cost of the Call-a-Ride door-to-door service compared to regular fixed route services, Call-a-Ride fares should be more affordable but higher than fixed flex-route service, proposed as follows.

- Call-a-Ride service fare shall be set at $6.00 per one-way trip using cash and $5 using smart card.
- Eligible Call-a-Ride customers may use fixed flex-route service by boarding at ADA-compliant bus stops and pay the normal fixed flex-route fare

Recommendation: Revisit the Call-a-Ride fare pricing structure after 12 months of operating the fixed flex-route service.

7.2.1.5 Northern Mariana College Universal Pass

Many transit agencies in North America have concluded an agreement with colleges and student unions in their service area to issue a pass for every student in return for a set fee being added to student activity fees at the college. The NMC focus group participants found this concept interesting, and supported it. It was stated at the meeting that some potential students did not register this year, while others were attending irregularly, due to transportation problems of the type that a universal student pass would resolve simply and completely. Even if a student drives, or walks to school, the cost of the pass could more than pay for itself if the student used transit for only one return trip per week.

The U-pass program could provide the following benefits:

- It brings a guaranteed and sustainable revenue source to COTA
- It would provide revenues to enable COTA to offer transit service to students that would otherwise not be available

It is also important to understand that public transit will help attract international students who, in their home country, are used to the availability of transit to get to and from school or to and from part time work or other activities. As an example, if one assumes 500 students are enrolled and a surcharge of $50 per semester was levied on the student activity fee, $25,000 raised. This translates to an extra 2 hours of service during weekday evenings.

Recommendation: That COTA work with Northern Mariana College to investigate the opportunity to implement a U-Pass program.

7.2.1.6 Junior and High School Student after School Activity Pass

Many junior and high school students that use yellow school buses either walk or often depend on family and friends to get home following after-school activities or when going to part time jobs. By introducing a very affordable (smart card) pass, students could have access to transit services. A nominal fee of, say, $15 per month can provide the student with unlimited transit use outside of school hours.

Recommendation: That after school activity fare incentives be considered.

7.2.2 Marketing

There are several low-cost marketing tools available that need to be in place, particularly since fixed route services are being introduced for the first time:

- COTA should develop a Transit and Paratransit website linked to the COTA and CNMI home web pages (note: Transit Consulting Network will provide the website domain nmitransit.com to COTA)
- Travel instructions on how to use fixed route and paratransit services should be made available on the nmitransit.com site
- The COTA transit website should have the following information in multiple languages:
  - Vision and Mission Statements as well as proposed 5-year plan
  - Title VI statement
  - Individual and system-wide route maps and schedules
  - Travel or trip planner
  - Bus stop locations and designated flag-stop areas
  - Travel training programs that can vary by user group (e.g. seniors, persons with disabilities)
  - Fares and fare payment information
  - Individual and system-wide route map and schedules
  - Lost and found inquiries
  - Customer responsibilities
  - Complaints and other inquiries that are directed to the transit operator
- Printed schedule maps and schedules with street names (can be sold for $1.00)
- Printed schedules handed out upon request
- Open houses conducted prior to launch of service (at least 2 weeks before launch)
- Information mail outs to all households
- Information posters at all institutions, hotel employee rooms, medical centers, public facilities, etc...
- Information package for NMC - existing and prospective students

Other marketing media, depending on available budget can be:

- Newspaper
- Radio, TV
- Social Media (e.g. Facebook, Twitter, YouTube)

To minimize costs, it will be important that the nmitransit.com website is fully developed.

7.2.3 Charters

Once COTA has a full fleet, including spare vehicles, COTA should provide charters to the private sector at market prices and in compliance to Title 49 CFR Part 604. The advantage of COTA buses is that they would be wheelchair accessible. Some known clients are large grocery stores or shopping centers where they charter buses to bring people directly to their stores. COTA could also offer service tourist groups where the private sector is either too expensive or do not meet accessibility requirements. It should be pointed out that large coaches will offer a higher level of comfort and seating capacity not available on transit vehicles.

Recommendation: That COTA explores charter regulations and the opportunity to generate charter revenues.

7.2.4 Tourist Market

Given the extensive island coverage, the availability of fast reliable public transit service will be an attractive and affordable alternative for some tourists. For example, buses travelling from Garapan offer a $3.00 cash fare to many destinations along the south end of the island such as the PIC. Fare incentives such as day passes or tourist family passes could be made available through hotels. Since buses are less full during the off-peak, tourists can help fill the seats at no additional cost to COTA.

Recommendation: That COTA work with the Hotel Association to help market transit services to their hotel guests.

7.2.5 Transit Technology

There has been extensive progress in the development and implementation of transit technologies that have resulted in growing ridership and reducing transit operating costs. Transit systems throughout the world have invested millions of dollars in procuring and implementing computer aided dispatching and automated vehicle location (CAD/AVL) as well as other intelligent transportation systems (ITS). For Saipan, Tinian and Rota there are alternative low cost solutions that are just as effective.

In this regard, COTA should consider the following:

- Purchasing and installing Wi-Fi and GPS-equipped smart card readers for all transit vehicles to provide for:
  - Real time monitoring of buses
  - Real time passenger information systems for the public
  - Reduced operating, planning and administration costs
  - Detailed operating and passenger statistics needed for planning and budgeting purposes
  - Origin-destination data to better customize transit in the future to grow ridership even more

- Vehicle dispatching software for Call-a-Ride to increase service efficiency by at least 10% per year
- Transit signal priority at key intersection to reduce transit travel times and the cost of transit
- Maintenance monitoring tools to ensure that all transit vehicles undergo preventative maintenance in a timely manner to reduce high maintenance and fuel consumption costs in the future

The transit technologies recommended do not require IT staff to support them, they can be relatively low cost and, over time, can provide a return on investment. For example, real time schedule information will increase transit ridership as will the use of smart cards. The technologies will also provide COTA with the tools needed to ensure that, regardless who operates the service, there is full transparency and accountability through real time monitoring of the service.

Recommendation: That COTA purchase the necessary technology to enable ease of monitoring of its services, to provide secure revenue management system processes, and to maximize passenger information systems.

7.3 Non-Passenger Revenue Tools

Investments made in transit by jurisdictions worldwide are evidence that transit is recognized as playing a significant role in supporting a community that is healthy economically, environmentally and socially. It is well documented that taxes are made available to support roadway infrastructure; however, roadway infrastructure budgets do not report on the full cost in relation to the roadway users – the public travelling to and from work, goods movement and so on. There are revenue tools; however, that are accessed to help pay for the infrastructure. With the exception of some toll roads, the real cost is not passed onto the users directly. This means that all taxpayers subsidize roadway infrastructure indirectly, including CNMI taxpayers.

There are no roadway deficits reported in Saipan – only costs - and as such, it can be surmised that all taxpayers, whether or not they benefit directly from roads, do contribute to roadway construction and maintenance. As reported earlier, those that do not own an automobile, which is 23% of the households in Saipan, have no access to affordable transportation; public transit can help fill this gap. One strategy to even the playing field slightly is to take the approach that auto owners contribute to those who are in the lower income group (i.e. non-auto owners) that are currently supporting those in the higher income groups.

It is clear from comments received during the stakeholder engagement process, and from comparative data from similar sized communities with transit service, that latent (unexpressed) demand exists for the transit service. For the purpose of this study, we have identified revenue opportunities that, coupled with transit cost containment measures, could be considered by COTA and the CNMI since they seek to address the current inequality that exists.

There are many revenue tools that can be considered that were investigated at a high level during the study consultations with senior government officials. The measures discussed are described in the foregoing.

7.3.1 Vehicle License Renewal Surcharge

Many jurisdictions in North America tap into license renewal fees to generate revenues to be used for transit. In the case of the NMI and using the 2010 census data, there are approximately 16,000 households with an average car ownership 1.1 autos per household, there are about 16,000 household vehicles. This excludes other licensed/commercial vehicles that use the roadways such as construction equipment, taxis, tour buses, and recreational vehicles.

Simply putting an annual license renewal surcharge can go a long way to supporting transit. For example, by dedicating a $10 per vehicle license surcharge to transit, the revenues received would approximate $176,000 per year, excluding commercial vehicles. Assuming a net cost of $50 per hour for transit (total cost less fare revenues received), this would equate to about 3,200 hours of service per year. The estimated 3,200 hours of service that would be realized from license fee renewals would allow COTA to operate a bus 12 hours per day, Monday through Friday every year.

Recommendation: COTA to work with the appropriate authorities to investigate the potential of a license renewal surcharge to be dedicated to transit.

7.3.2 Parking Meter Revenues

Many jurisdictions in North America dedicate all or part of parking meter revenues to transit. Since parking meters discourage long-term parking, they are also supportive of transit. Likewise, in zones, such as central Garapan tourist zone, where large numbers of pedestrians circulate, on-street metered parking can be set at a dissuasively high rate to keep the streets clear and safer for foot traffic.

Many parking studies have shown that in high-profile commercial areas such as central Garapan, free or very low-cost parking leads to store staff taking up most of the best spaces all day, leaving none for customers. This of course, harms the commercial interests of their employers and should be discouraged by effective meter pricing and enforcement.

Recommendation: COTA to implement a metered parking program in the central business districts of Saipan and, eventually, Tinian and Rota, and dedicate the net revenues (revenues less cost) of existing and future parking meters exclusively to transit.

7.3.3 Dedicated Local Transit Gas Tax

During the community engagement process, residents that owned cars reported that they make fewer trips due to the high cost of fuel. This will not go away. For the same reason as the license fee surcharge recommendation, the CNMI could add a 'nominal' 2 to 3% cost dedicated gas tax, which represents 10 to 15 cents per gallon based on current prices. The significant revenues could be used to support a much higher level of service than would normally be provided and, more importantly, provide a steady and sustainable revenue stream that has proven to help transit in many other jurisdictions around the world.

A dedicated gas tax in the NMI would go a long way to providing a higher quality bus service that will attract more industry and residents, and help reverse the population decline. Higher fuel costs also has the potential to reduce car ownership and resultant greenhouse gases and emissions, while increasing the disposable incomes of island residents.

If one assumes that each of the 17,600 private automobiles identified earlier consumes $100 of fuel each month, a 3% tax would provide $528,000 of revenue per year to COTA. Fuel consumed by other vehicles would result in even higher revenues.

Recommendation: That the CNMI explore the implementation of a dedicated local transit gas tax.

7.3.4 Transit Advertising

Transit buses, shelters and benches can be considered as advertising revenue sources through the selling of advertising spaces to businesses in the community. For example, in high traffic areas, benches could attract approximately $100 per month. Twenty benches could generate a gross of up to $24,000 per year. This would equate to the provision of 10 hours a day of Sunday service. Advertising could also be made available on large cards on the rear and side(s) of vehicles, which is common in North America. It would be advisable to contract this advertising out to a 3rd party and solicit proposals from the private sector. Care should be taken to ensure that the COTA transit bus advertising does not detract from the branding of the service.

Recommendation: That COTA investigate the selling of advertising on transit benches and shelters initially then consider advertising on the transit vehicles.

7.3.5 Dedicated Sales Tax

A local sales tax in support of public transit has the merit of being very broadly-based, since almost everyone pays it, including tourists, and has the potential to raise large sums. This is an avenue that should be considered by COTA, and proposed to the CNMI Government within the general context of revenue reform for the Commonwealth.

Recommendation: That COTA work with CNMI to investigate the potential of a sales tax with a dedicated portion given to support public transportation services in the community provided by COTA.

7.4 Cost Containment Partnerships

The objective of cost containment is to provide the lowest cost per ride that meets community needs and expectations, which will require partnerships to be explored with other government transportation service providers and the public sector such as:

- Call-a-Ride
- Public School System
- Other Government Agencies
- Taxi Industry

7.4.1 Call-a-Ride for Non Call-a-Ride Registrants

During the early stages of implementing fixed flex-route services, it may be plausible to utilize Call-A-Ride vans to transport non-eligible customers where capacity is available. For example, if Call-a-Ride is making regular trips from Kagman to the hospital every day, the seating available can be used to transport able bodied individuals who can be transported to the Garapan transfer point (mobility hub) to transfer to the Route 1 bus while the Call-a-Ride passenger is transported door to door to the hospital.

As demand increases, a separate transit service vehicle (dedicated 12-passenger van) can be provided. This is an example of a 'walk before you run' approach to growing service. Alternatively, the service could be provided by the taxi industry based on a negotiated price that would be the lowest cost per passenger; this is being fiscally responsible.

Recommendation: That COTA consider the use of Call-a-Ride vans as a complementary feeder service to transit and, failing that, utilize the taxi industry until there is a business case to operate vans or small buses operated by COTA or the COTA contractor.

7.4.2 Integrate COTA and Public School System Bus Transportation

In numerous jurisdictions worldwide, students in Grade 7 and up are transported by public transit to and from school. There is overwhelming support for this given the fact that students are, first and foremost, the future of transit. By establishing transit as a primary means of getting to and from school, students will be far more inclined to use transit when they attend post-secondary education or enter the workforce as young adults. Further, if students from the NMI attend education off-island, they will be more fully prepared to use local transit services, thereby reducing their total cost of education.

One major consideration for the NMI is that student transportation is supported by the CNMI government; so would COTA's public transportation system. Given that there is only 'one taxpayer', it makes financial sense to enable students to travel on public transit to get to and from school when capacity of transit is available. Rather than pay for the cost of yellow school buses, the PSS could purchase student passes. This reduces their cost and it provides a sustainable revenue stream to COTA.

Given the fixed flex-route service of COTA would be minimal when starting out due to the limited bus size and too few buses when starting out, COTA would not be able to accommodate the demand. It appears, however; to make sense to have COTA and the PSS work together to integrate their respective services where there is a business case to do so. This eliminates overlap and puts money back into the community.

The responsibility of the PSS would remain unchanged relative to getting students to and from school. Rather than provide the services internally, the PSS would simply 'contract' the service to COTA. Elementary students would still require yellow school bus transportation. There would be fewer delays on the roadways since public transit does not require traffic stoppage. More important, the costs saved by the PSS could provide more funds for other school needs (e.g. books, recreational equipment, etc.).

Recommendation: Given best practices internationally and the limited funds available, the following strategy is recommended provided there is compliance with Title 49 CFR 605:

- **That COTA and the PSS work together prior to service launch to identify a number of students that can use transit to get to and from school.**
- **That as the COTA bus service evolves and grows, the COTA fleet be expanded to meet the junior and high school student transportation needs where there is a financial benefit to do so.**

7.4.3 Other Government Agencies

There are other government agencies on the islands that provide transportation. For example, the Office on Aging (OOA), which can be contracted by COTA to provide transportation services to the general public where they are able to. For example, if the OOA has transportation resources on Tinian and Rota, their vehicles and drivers could be considered for use by the general public. Until demand warrants, COTA may be able to purchase the vehicles for their own use with the service managed by OOA. Both sides would benefit financially.

The Office of Military Liaison & Veteran's Affairs could be approached to charter bus services from COTA or purchase transit passes (smart card) for its clients.

Recommendation: That COTA pursue partnerships with other government agencies to reduce overall publicly funded transportation costs within the CNMI

7.5 Summary of Transit Strategies

During the course of the study, the Study Team members have gained an unprecedented understanding of the resident and business community needs relative to implementing a much needed public transportation service. It is also clear that unless there is local funding support, public transportation, whether Call-a-Ride or Fixed Flex-route service, cannot be self-sustaining. Recognizing that the provision of public transportation at an approximate COTA hourly cost that will range from an estimated $50 - $65 per hour, depending on the service delivery method, will only be able to recover a portion of its costs.

The Transit Ridership Growth Strategies identified in this report are designed to maximize transit ridership revenues based on best practices combined with service innovation to minimize the hourly cost. These cost savings will be reflected in the subsequent service and financial plan.

While the Federal Transit Administration provides capital and operating funds to support public transportation, the funds will clearly be inadequate to cover the cost of service after passenger revenues are collected. The Revenue Strategies of this report provide an indication of the revenue tools at the disposal of the CNMI to reduce the net cost of the service. Further, the revenue tools identified recognizes that while auto owners are subsidized through CNMI roadway infrastructure budgets, non-auto owners, which represent the lower income groups, do not enjoy similar financial support. In fact, non-auto owners subsidize auto owners.

By tapping into the revenue tools identified, a more fair distribution of revenues could make quality public transportation feasible and, in the long term, sustainable.

8. SERVICE PLAN DESIGN PRINCIPLES

Based on the extensive public engagement process and best practices, a public transportation service was developed based on the implementation of a core Fixed Flex-route system, complemented by feeder services and a Paratransit strategy summarized in the foregoing.

8.1 Service Design Principle

8.1.1 Fixed Flex-route

The fixed flex-route provides for a transit route design with the ability to deviate off-route (i.e. 'flex') on a request basis without compromising the bus schedule by more than 5 minutes per direction. It is of paramount importance to develop a primary for core route that will have the highest ridership potential during the early development of the public transit system.

The fixed flex-route design principles are summarized as follows:

- Core service that can be covered with two-way half-hour service with a minimum number low-floor wheelchair accessible community buses
- Focusing the initial core service on the highest density mixed land use development areas
- Serving the highest population and key destinations of the existing COTA service and the destination priorities obtained from the public engagement process
- Service and schedule reliability
- Key time point locations to accommodate lower-cost feeder services
- Ability to increase service or extend fixed flex-route coverage as demand grows

Exhibit 8-1: Proposed Route Concepts were developed to reflect the system design principles based on input received during the community engagement process and industry best practices. The result is a `made in Saipan `solution, which can, ultimately, be applied to Tinian and Rota.

It is interesting to note that the desirable population density guideline relative to road layouts identifies the need to have 1,500 residents within a 5-minute walk (1,500') of bus service for each 1.0 mile of transit route. The island of Saipan exceeds this with approximately 1,600 residents within 1.0 miles of bus route.

8.1.2 Paratransit Service Design Principles

The paratransit services of Call-a-Ride provide an extremely valuable service for those that require the assistance of mobility and seniors. With the introduction of a fixed flex-route service, there is an opportunity to focus the service on those that need it the most while seniors, unless they are unable to access fixed route transit, would be obliged to take the fixed transit service.

The paratransit service design principles are summarized as follows:

- The lowest cost per passenger trip, without compromising one's ability to travel should be inherent in the service.
- Customers of the Call-a-Ride service should be required to undertake a needs test, whereby eligibility is determined.
- All Call-a-Ride customers who have the ability to access and board fixed flex-route service should be trained and encouraged to do so.
- Call-a-Ride should work closely with the Administration on Aging to determine how their respective services could be coordinated to attain efficiencies, regardless of jurisdiction.
- The use of scheduling and dispatching software will result in more efficient service by better enabling more passengers carried on each trip.
- Call-a-Ride can be considered as one option for scheduled van feeder services to those that are not eligible and can complete their trip on the core transit service, provided capacity is available.

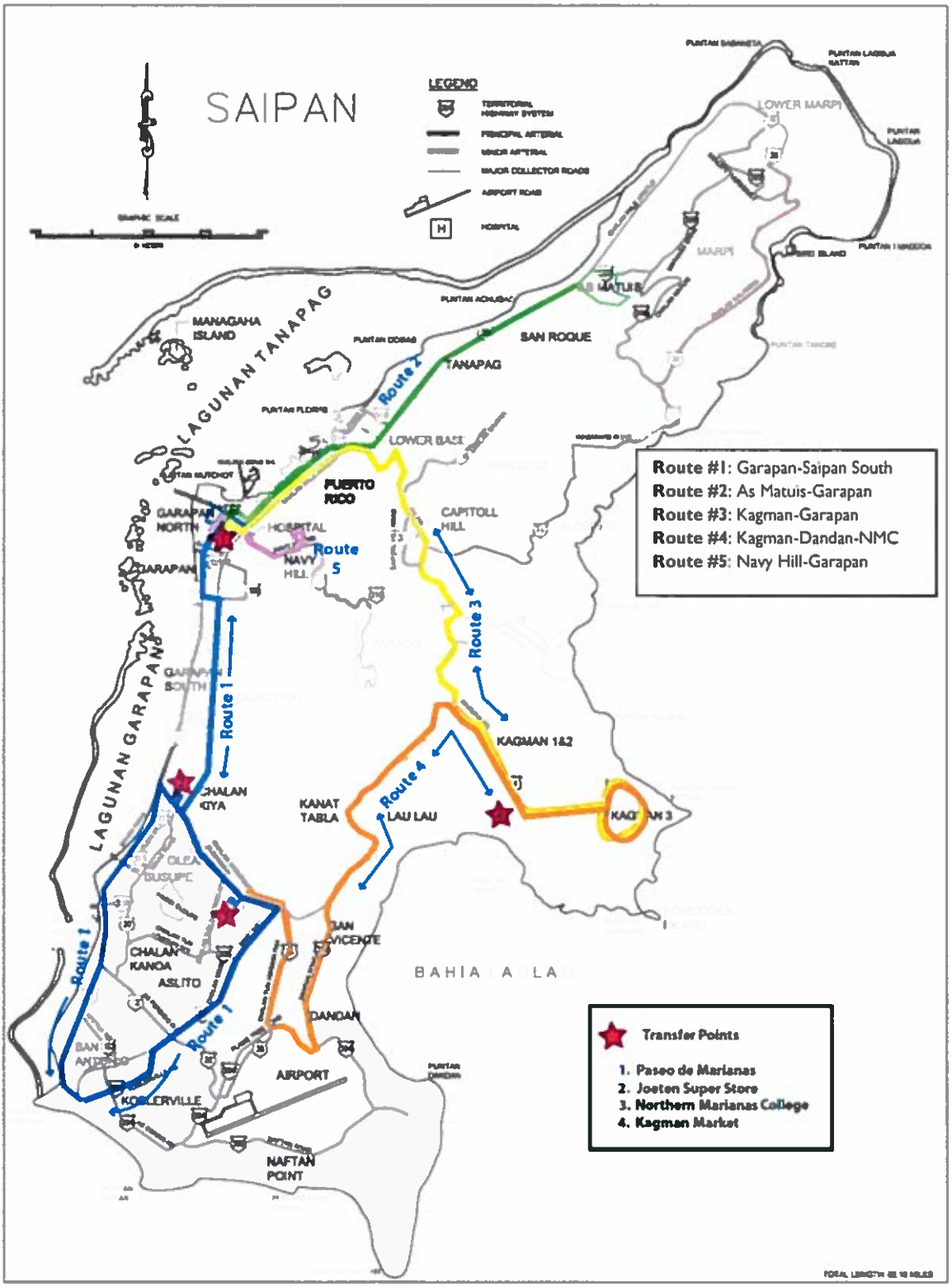


EXHIBIT 8-1 Proposed Route Concepts

9. 5-YEAR SERVICE PLAN

9.1 Introduction

The Study Team has followed a logical sequence of tasks that have culminated with a sound approach to developing a quality public transportation service at a reasonable cost and in a fiscally responsible manner, including the identification of a number of revenue generating tools for the CNMI to consider. More important, we have developed a plan that is a 'made in Saipan' solution guided first and foremost by what we heard during the extensive community engagement process.

The development of the Service Plan is based on the following principles:

- Proper rolling stock and technologies are in place
- A core service (Route 1) between Garapan and the south end of Saipan would be in place, which all other routes and services would be timed to meet.
    - Bus service would be provided from 6:30am through 7:00pm and extended into evening as demand meets targets
    - Two Mobility Hubs would be located: in Garapan on Beach Road and a second location in proximity to Highway 30 and Highway 31 to accommodate timed transfers
    - Vans would be used to feed passengers from Kagman to Garapan and deviate to Navy Hill - on a reservation basis to start - then evolve into fixed regular schedules as demand increases
    - Service would be provided Monday through Saturday with Sunday service added as demand meets targets
- Service growth will only occur when ridership demand meets the targets of the Policy Framework
- Call-a-Ride hours of service will mirror that of the fixed flex-route service as a minimum
- Seven community buses (approximately 30') will be needed (two buses would be allocated as a spare)
- Two low floor Call-a-Ride 24' community buses will be needed, while current aging vans can be used as spare. Call-a-Ride buses may service as back-up to the fixed flex-route service, if required
- Once service has been established, COTA would be in a better position to contract out the operations

A sustainable, predictable public transportation plan and growth strategy is needed in Saipan and eventually on Tinian and Rota. COTA is in a unique position to ensure the CNMI has a service that will be here for years to come by avoiding the mistakes of other communities and by introducing best practices to better ensure a quality public transportation system is in place today that can adapt to the future.

9.2 Core Fixed Flex-route Service

Since service reliability is the key to customer satisfaction and ridership growth, Route #1 Garapan-Saipan South would be the core service that all other routes must be built upon through timed transfers. Given the 18.1 mile roundtrip distance of Route 1, an average travel time in regular fixed route service would be 60 minutes at an average design speed of 18.1 miles per hour, including layover. Layover time of 10 to 12% must be built in to allow for unforeseen delays and to accommodate transfers.

A 60-minute roundtrip is reasonable for regular fixed route service on Route 1; however, fixed flex-route service will require additional travel time. When starting out, it is recommended that an 80-minute roundtrip time be allocated then improved to 60 minutes should actual travel times allow this.

9.3 Fixed Flex-route Service Plan Assumptions

To assist in the decision-making, a number of conservative assumptions were made with respect to estimating transit ridership and revenues, transit costs by mode and service delivery type, FTA funding, and access to available CNMI revenue tools.

9.3.1 Ridership Forecasting

For transit ridership estimates, research (Transit Price Elasticities and Cross Elasticities 25 May 2012, Todd Litman, Victoria Transport Policy Institute) indicates that new bus service in a community with no previous transit service, typically achieves 3 to 5 annual rides per capita. The Saipan peer group which represent mature systems, quantifies the median value at 7.3 trips per capita. Guam reported about 2 passengers per capita; however, it was considered that the service offered in Saipan could prove to be more reliable, effective and less costly on a per capita basis based on implementation of the transit ridership growth strategies.

Since the amount of service provided should be directly related to the anticipated ridership that will be carried, it makes sense at this early stage to estimate ridership based on the number of revenue service hours. In this regard, the peer group in Chapter 3 reported a median value of 7.3 trips per capita has a corresponding value of approximately 12.5 passengers per hour. This will be projected as the ridership level to be achieved by Year 5 of the service plan. It should be borne in mind that if ridership values are not attained, anticipated service increases could be delayed; or if demand exceeds estimates, service can be increased sooner. This is a decision that would ultimately be based on available financial resources.

Given the project team member experience, research undertaken, the peer review findings, and the need to be conservative for budgeting purposes, the Study Team has made the following assumptions:

- That the route network as illustrated in Exhibit 8-1 is launched as follows:
  - Route 1: Garapan - Saipan South (fixed flex-route bus)
  - Route 2: As Matuis – Garapan (fixed flex-route bus)
  - Route 3: Kagman/ Garapan (small bus)

  - Route 4: Kagman – Dandan – Northern Marianas College (bus)
  - Route 5: Navy Hill – Garapan (small bus interlined with Route 3)
- That Core service will be provided 13 hours a day from Monday through Saturday from approximately 6am to 7pm.
- That feeder services from As Matuis, Navy Hill, Kagman, and Dandan will be provided initially at least during the peak periods and for 2 hours during the mid-day off-peak period Monday through Saturday
- That fixed flex-route and Van feeder service will be conservatively estimated to carry an average of:
  - 5 passengers per hour in Year 1
  - 7 passengers per hour in Year 2
  - 9 passengers per hour in Year 3
  - 10 passengers per hour in Year 4
  - 12 passengers per hour in Year 5

It is important to ensure that there is a core service in place (Route 1) that serves the largest and most dense mixed-use corridors on Saipan. This service must be the most frequent service, reliable, and comfortable Service, and one that is clearly marketed as the backbone of the system, to which all other routes and services on the island connect for quick transfers. Route 1 is designed to be the most productive – the most effective and efficient - route in the network.

9.4 Summary of 5-year Fixed Flex-route Service Plan

The study team developed a start-up service plan and an expansion plan based on the estimated ridership growth, building towards a progressively higher level of service. Given the unknowns, the plan is designed to be minimalist (a minimum start-up level of service); conservative (on the costs and ridership estimates) and sufficiently flexible to adapt to change as experience operating the service is acquired.

9.4.1 Summary of Service by Route

For budgeting purposes, the following is an annual breakdown by day of week:

- Weekdays: 250
- Saturdays: 52
- Sundays: 52 (no service)
- Statutory Holidays: 11 (no service)

Each year of the 5-year service plan is summarized by route as follows:

Route 1: Garapan – Saipan South

Year 1 and 2 Base Service

- Monday – Friday
  - 40-minute - 6:30am - 7:30pm - 2 buses @ 13 hours = 26 hours
  - 6,500 hours
- Saturday
  - 40 minute all day - 7:00am-6:30pm – 2 buses @11.5 hours = 23 hours
  - 1,196 hours
- Annual service hours: 6,500 +1,196 hours = 7,696 hours

Year 3 (added service)

- Sunday
  - Add 40-minute Sunday service 8:00am-6:30pm – 2 buses @ 10.5 hours = 21 hours
  - 1,092hours
- Annual service hours: 7,696 + 1,092 = 8,788 hours

Year 4 and 5 (added service)

- Monday – Friday
  - Add 40 minute evening service from 6:30pm – 9:30pm - 2 buses @ 3 hours = 6 hours
  - 1,500 hours
- Annual service hours: 8,788 + 1,500 = 10,288 hours

Route 2: As Matuis – Garapan

Year 1

- Monday – Friday
  - 60 minute peak (6:00am-8:30am + 4:30pm – 7:00pm) – 1 bus @ 5 hours
- Annual service hours: 1,250 hours

Year 2 (added service)

- Monday – Friday
  - Weekday hourly service 6:00am – 7:00pm (8 hours added/ day)
  - 2,000 hours
- Annual service hours: 1,250+ 2,000 = 3,250 hours

Year 3 (added service)

- Saturday
  - Hourly service 7:00am – 7:00pm – 1 bus @ 12 hours
  - 620 hours
- Annual service hours: 3,250+ 620 = 3,870 hours

Year 4 (added service)

- Sunday
  - Add 60 minute Sunday service 8:00am-6:30pm – 1 bus @ 10.5 hours
  - 546 hours
- Annual service hours: 3,870 + 546 = 4,416 hours

Year 5 (added service)

- Monday – Friday
  - Add 60 minute evening service (7pm-10:00pm) – 1 bus @ 3 hours
  - 750 hours
- Annual service hours: 4,416 + 750 = 5,166 hours

Route 3: Kagman - Garapan + Route 5 Navy Hill - Garapan

Years 1 and 2

- Monday – Friday
  - Peak 6:30am – 8:00am, 4pm-6pm – 1 small bus @ 3.5 hours = 7 hours
- Annual service hours: 1,750 hours

Year 3 (added service)

- Monday – Friday
  - Add off-peak 8:00am – 4:00pm with 1 small bus @ 8 hours
  - 2,000 hours
- Saturday
  - 7:00am–7:00pm hourly service with small bus – 12 hours
  - 624 hours
- Annual service hours: 1,750 + 2,000 + 624 = 4,374 hours

Year 4 (added service)

- Monday – Friday
  - Add evening service 6:00pm-10:00pm - 4 hours
  - 1,000 hours
- Annual Service Hours: 4,374 + 1,000 hours = 5,374 hours

Year 5 (added service)

- Sunday
  - 8:00am–7:00pm – 11 hours
  - 572 hours
- Annual service hours: 5,374+ 572 = 5,946 hours

Route 4: Kagman – Dandan – Northern Marianas College

Years 1

- Monday – Friday
  - Peak hourly 6:00am – 8:00am, 4pm-6pm – 2 buses @ 4 hours = 8 hours

- Off-peak service every 2 hours 10:00am – 2:00pm– 1 bus @ 4 hours
- 1,750 +1,000= 2,750 hours

- Annual Service Hours: 3,750 hours

Year 2 and 3 (added service)

- Weekday
  - Add Full off-peak every 2 hours 8:00am – 4:00pm – 1 bus @ 4 hours = 4 hours
  - 1, 000 hours
- Saturday
  - 7:00am–7:00pm every 2 hours = 12 hours
  - 624 hours
- Annual service hours: 1,750 + 624 = 3,124 hours

Year 4 (added service)

- Monday – Friday
  - Add evening service 6:00pm-10:00pm 1 bus @ 4 hours – 4 hours
  - 1,000 hours
- Annual Service Hours: 3,124 + 1,000 = 4,124 hours

Year 5 (added service)

- Sunday
  - Service every 2 hours 8:00am–7:00pm 1 bus @11 hours
  - 572 hours
- Annual service hours: 4,124 + 572 = 4,696 hours

9.4.2 Summary of Transit Service Hours

Exhibit 9-1: Summary of Fixed Service Hours provides the total annual fixed-flex route and feeder service hours recommended each year for budgeting purposes, which is used to estimate costs in Section 9 Five Year Financial Plan.

Fixed Routes	Year 1	Year 2	Year 3	Year 4	Year 5
Route 1	7,700	7,700	8,800	10,300	10,300
Route 2	1,250	3,250	3,870	4,420	5,170
Route 3 + 5	1,750	1,750	4,370	5,370	5,900
Route 4	1,750	3,120	3,120	4,120	4,700
Total Fixed Route	12,450	15,820	20,160	24,210	26,070

Exhibit 9-1 Summary of Transit Fixed Service Hours

9.5 Call-A-Ride 5-year Service Plan

This section describes the existing Call-a-Ride service, the opportunities for change and a service plan to adapt to the change.

9.5.1 Existing Call-a-Ride Service

Call-A-Ride currently operates Monday through Friday from 6am to 9pm, Saturdays from 8am to 5pm. Service is closed on Sundays and holidays. Up to seven days advanced service reservation is permitted. Service is provided from curb to curb. The passenger is expected to get to the vehicle independently.

Call-A-Ride provides a span of service of 74 hours of per week using two vehicles, for a total of 120 van hours per week. In August 2013 trip volumes were attaining about 20 passenger trips or more, or about 120 passenger trips per week. Productivity per vehicle hour is therefore about 1 passenger trip per hour.

The study team recommends that the span of service and total van hours remain at the current levels for the present time, and that COTA review these service levels during the second year of Fixed-Flex Route operation (mid-way through FY 2014-2015) to determine if change is warranted.

9.5.2 Projected Demand for Call-A-Ride service

Based on the very limited data available since service resumed in July 2013, we estimate that current Call-A-Ride demand is about 6,000 passenger trips per year. Experience in other jurisdictions suggests that demand for paratransit service tends to escalate, in the absence of demand management strategies at about 13% per year.

Exhibit 9-2 below illustrates Call-Ride demand through FY 2017-2018 showing the potential impact of implementing varying degrees of demand management scenarios. At the current productivity of 1 passenger trip per hour, Call-A-Ride would have to nearly double its hours of service by FY 2017-2018 in order to meet the expected level of demand.

Year	Estimated Call-a-Ride Ridership		
	Without Demand Management (13%/yr)	Moderate Demand Management (6%/yr)	Aggressive Demand Management (2%)
2012-2013 (incomplete, but projected to full year)	6,000		
Year 1	6,780	6,360	6,120
Year 2	7,661	6,742	6,242
Year 3	8,657	7,146	6,367
Year 4	9,783	7,575	6,495
Year 5	11,055	8,029	6,624

Exhibit 9-2 Estimated Call-a-Ride Ridership

It becomes clear from the table above that COTA, to reduce the number of Call-A-Ride service hours that will be needed in the future, has an interest in containing the demand for Call-A-Ride through demand management strategies, and improving its productivity through productivity improvement strategies. These strategies are presented in the following paragraphs.

9.5.3 Strategies to Improve Paratransit Productivity

Several demand and productivity management strategies exist to improve paratransit efficiency:

Demand Management

- Re-direct Passengers to the Fixed Flex-route service by offering training and incentives
- Make it more costly by increasing fares
- Tighten eligibility requirements to 'unable to use transit due to a disability', so that fewer people will qualify for the Call-A-Ride, and some requests for trips that could be taken on transit can legitimately be denied
- Introduce a subsidized taxi program for Call-A-Ride registrants (taxi scrip), whereby COTA would pay for about half the cost of taxis trips by selling taxi vouchers for half their face value

Productivity Management

- Procure low-cost scheduling software
- Widen the scheduling on-time window
- Upgrade training for call-takers, schedulers and dispatchers to increase ride-sharing
- Use of contracted vans or taxis for overflow, evening and long trips
- Use low-floor buses to:
  - Reduce boarding/ drop-off times by about 8 minutes per wheelchair/ scooter passenger
  - Open the Call-a-Ride service to accommodate non-eligible registrants where and when capacity is available

A detailed discussion on the strategies is described in the foregoing.

9.5.3.1 Re-directing Passengers to the Fixed Flex-route Service

The Call-A-Ride paratransit service, which resumed direct operation under COTA in July 2013, is presently the island's only public transit service, and will continue to be so until the fixed-flex route transit begins. After that time, Call-A-Ride will continue as the mobility option for people who are unable to use the fixed-flex route service due to a disability. However, we expect that some existing Call-A-Ride passengers and new applicants for Call-A-Ride will be able to use the fixed-flex route at least some of the time once it is established.

The fixed-flex route service will be able to serve some Call-A-Ride passengers who meet the following conditions:

- People who are able to get to and from transit stops at their starting point and destination, are able to wait at the stop for the next bus, and able to use fixed-flex route service. And they understand the route, identify and get off at the right stop, and proceed independently to their destination. The number of people in this category can be increased by COTA providing of travel training to Call-A-Ride passengers.
- The number of people in this category will depend on many factors: the number and location of transit stops, accessibility of the stops (concrete landing pad, maneuvering area, stop location, traffic conditions, ambient lighting, the availability of bus shelters), and the likelihood for someone who uses a wheelchair, of a vacant wheelchair position being available on the fixed-flex route vehicle.
- People, who can use the feeder service to connect with the fixed-flex route bus, provided they have a reasonable expectation of being able to board the fixed-flex route. This includes people who are ambulatory.
- People who can use Call-A-Ride to get to and/or from the fixed-flex route and who are encouraged by Call-A-Ride to make a long trip partly on the fixed-flex route service. For this encouragement to be effective, Call-A-Ride passengers should be able to travel on the fixed-flex route without paying an additional fare.
- People who request and receive a route deviation by the fixed-flex route bus to pick them up and/or drop them off. As mentioned elsewhere in the service plan, the fixed-flex route schedule will provide enough slack for only a limited number of fairly short deviations –a maximum of one per trip. Consequently, the number of Call-A-Ride passengers who can be provided a route deviation will be limited.

Bearing the above factors in mind, the study team considers that the fixed-flex route service will cause only a limited reduction in Call-A-Ride trip volumes through route deviations.

9.5.3.2 Re-direct Passengers to the Fixed Flex-route Service

COTA could provide training to Call-A-Ride registrants, and to non-registrants who are elders or who have a disability, on how to use the fixed-flex route transit service to encourage them to use transit for at least some of their travel, and reduce the number of requests for Call-A-Ride service.

In some cities, such as Los Angeles, the paratransit service pays the fare for any trip taken on transit by its eligible clients, as an incentive. In 2011, LA Access provided 2.5 million paratransit trips and an additional 1.5 million trips on transit for its registrants.

Recommendation: Enable eligible Call-a-Ride registrants to use fixed-flex-route service at the fixed-flex route rate.

9.5.3.3 Tightening Eligibility Criteria

Tighten eligibility requirements to 'unable to use transit due to a disability', so that fewer people will qualify for the Call-A-Ride, and some requests for trips that could be taken on transit can legitimately be denied. The introduction of fixed-flex route transit could reduce Call-A-Ride trip volumes not only by carrying some trips by Call-A-Ride users, but by enabling Call-A-Ride eligibility to be revised along the lines that most US communities with both transit and paratransit have done – that a person is eligible for paratransit if they are unable to use transit for the trip they want to make. Once this is done, paratransit clients who can make their trip on transit can be required to do so. This will reduce the growth in demand for Call-A-Ride, and reserve Call-A-Ride for people who have no other mobility option.

Overhauling Call-A-Ride eligibility is a task that should be undertaken as soon as possible, and the new eligibility policy put into effect as soon as the fixed-flex route service is reasonably well established – such as during the second half of the first year of operation.

Recommendation: Develop Call-a-Ride eligibility criteria in line with the latest ADA best practices

9.5.3.4 Introducing a Subsidized Taxi Program

COTA could introduce a subsidized taxi program for Call-A-Ride registrants. Sometimes referred to as taxi scrip, with this type of program COTA would pay for about half the cost of taxis trips by selling taxi vouchers for half their face value to registered paratransit clients. Experience with this type of program has been that it is by far the least expensive way to provide mobility for people with disabilities, since the transit authority pays only a voucher cost of about $7 or $8 per trip, replacing a paratransit trip that may cost much more. Unlike paratransit, taxi scrip trips provide spontaneous travel for the user.

Recommendation: Introduce a subsidized taxi program for Call-A-Ride registrants (taxi scrip), whereby COTA would pay for about half the cost of taxis trips by selling taxi vouchers for half their face value.

9.5.3.5 Scheduling Software

Experience has shown scheduling software is a powerful tool for raising service productivity. Even a relatively simple scheduling program that enables call-takers and schedulers to see available service resources and match those with requests for service can increase ride-sharing and help negotiate trip times with clients that fit well with other trips, and which enable optimization of confirmed trips and adjustment for trip cancellations.

We recommend that COTA obtain a web-based software-as-a-service package such a Simpli Transport, that can be rented for a reasonable price ($400 - $500 per month), requires no up-front investment in software licenses, computer networks and IT staff, and which has high-performance features such as computer-aided scheduling that can be unlocked when COTA feels it is warranted.

9.5.3.6 Widen the Scheduling On-Time Window

Schedulers have to have some scope for adjusting times so that rides can be shared. For this purpose many paratransit services adopt the policy that passengers must be ready 15 minutes before their negotiated pick up time, and up to 15 minutes after. The vehicle is considered on time if it arrives anywhere within this half-hour window. This is known as the 15 early/15 late on-time window.

As a shared-ride public transit service, Call-A-Ride should adopt such a policy, which has been shown to increase productivity as much as 15% compared to a very tight window such as 5-early 5-late.

9.5.3.7 Upgrade Training for Call-takers, Schedulers and Dispatchers

Paratransit is difficult to schedule and manage. Skills upgrading for Call-A-Ride call taking, scheduling and dispatch staff would assist them to get the most out of service resources. Excellent on-line courses are available, sponsored by various agencies, often at little or no cost. Better quality software providers also commonly offer this type of training, which is usually free for clients on a maintenance and support contract.

9.5.3.8 Use of Contracted Vans or Taxis for Overflow and Evening Trips

Paratransit vehicles can improve their productivity when auxiliary service is available to cover hours when demand is too low for a high-capacity vehicle to be used to its full productivity potential. Also, longer trips that harm van productivity can also be sent out as less cost to taxis or contracted vans, leaving the high-capacity Call-A-Ride vehicles to concentrate on shorter trips where ride-sharing is easier to achieve.

Having contract vans or taxis available at peak hours to take overflow trips is also an effective strategy for avoiding having to place additional Call-A-Ride vans in service.

9.5.3.9 Use Low Floor Wheelchair Accessible Vehicles

The wheelchair accessible vans in service, today, require approximately 8 to 10 minutes per passenger to board, secure, then unsecure and de-board each passenger using a mobility aid. The advent of low floor buses with ramps enables passengers to board and alight within 1 to 2 minutes. The time saved results in an increase in the number passengers carried each hour the bus is in service (i.e. improved efficiency).

9.5.4 Summary of Call-a-Ride Service Hours

Call-a-Ride hours of service must, as a minimum, mirror that of fixed flex-route service. The study team recommends that the span of service and total van hours remain at the current levels for the present time, and that COTA review these service levels during the second year of fixed flex-route operation (mid-way through FY 2014-2015) to determine if change is warranted.

Recommendations:

- **Maintain existing Call-A-Ride Service levels for the first two years then decrease when lower-cost alternatives materialize.**
- **Maintain the van hours at the current level through Year 1 and 2.**
- **120 van hours per week * 52 = 6,240 hours**
- **Phase in contracted service from Years 3 to 5, using taxis for ambulatory trips, and accessible taxis or accessible vans for wheelchair trips, with the objective of reducing Call-A-Ride van hours to about 4,000 from October 2015 through September 2018**

For budgeting purposes, it is assumed that total service hours would remain constant over the five-year period.

10. TRANSIT ASSET MANAGEMENT PLAN

To effect implementation of the public transportation service plan, the proper infrastructure, rolling stock (fleet plan) and technology needs to be in place to ensure:

- There are a reliable and accessible buses;
- The appropriate fleet spare ratio (minimum 20%) will need to ensure service continues in the case of:
  - major repairs or breakdowns
  - passenger demand can be met during the peak hour (e.g. use spare vehicle for 'trippers')
- The fleet size allows for unexpected rise in demand
- There is a safe and comfortable passenger environment – ADA-compliant bus stops, bus shelters, transfer facilities/ mobility hubs; and
- COTA can monitor and manage service performance effectively without needing to add staff regardless of fleet size

10.1 Fleet Requirements

Based on peer review results relating to the number of vehicles required on a population basis, COTA would need approximately 18 to 20 vehicles – a mixture of buses and Call-a-Ride vehicles - once the public transportation has reached maturity; this can take many years. Recognizing that a publicly funded fixed transit service would be introduced for the first time, the Study Team decided to take a conservative fiscally responsible approach by starting small then grow based on the relatively unknown uptake in the service.

The fleet requirements were broken down into 3 categories:

- Fixed flex-route medium-duty low-floor buses (30')
- Light-duty Call-a-Ride buses (24'-26')
- Accessible Call-a-Ride van

The fixed route service buses would be the largest vehicles in the fleet and, if larger vehicles or more service is required, the spare vehicles could be used until larger vehicles are made available. Alternatively, buses could be rented or leased locally on a short-term basis.

10.1.1 Accessible Buses

At some point, it could make financial sense to purchase heavy duty 40' diesel buses; however, they are costly, ranging from $450,000 to $550,000 per bus in North America. The high cost; however, is offset by bus capacity (if needed) and long life (12+ years). For example, if a 30-minute service is in place and people are left stranded at bus stops, there are three courses of action:

- Increase the frequency of service (requires additional vehicles) during peak periods,
- Add 'overload specials' (requires additional vehicles) as double headers/ trippers, or
- Use a higher capacity bus

It was determined that wheelchair accessible medium-duty buses that are a minimum 30' in length and tested for a 7-year life would be needed when starting out. Seating capacity would range from about 24 to 30 seats plus a limited number of standees.

Buses would first be placed on the core route (Route 1) between Garapan and NMC that travels via the south end of Saipan. A 40-minute service during the peak will require two buses plus one spare. Having the spare is critical to ensure service is maintained when a bus is unavailable for maintenance reasons or in the case of an accident. If required to be in service due to unexpected demand, the spare vehicle could be put in service to accommodate the overloads, as required. A 15-passenger van or mini-bus could be added or rented in emergency situations.

Route 2 As Matuis would require one bus to link up with Route 1 in Garapan then as demand builds, a second bus could be purchased. Route 2 can be fully interlined with Route 1 to eliminate the need for passenger transfers.

Route 3 Kagman to Garapan via Capitol Hill and Route 5 Navy Hill to Garapan would be more ideally served with a small bus (e.g. 24-26') given the very steep topography.

Route 4 between Kagman and NMC via Dandan would be the 3rd route with two buses needed during the peak periods, providing 40-minute service.

Recommendation: For its first order, COTA should purchase seven medium-duty 30' to 35' buses plus one small bus to start then build in a capital reserve for fleet expansion and fleet replacement. Six of the buses would be allocated to the fixed-flex route system, one bus will be needed as an operating spare, and one bus will be needed as maintenance spare.

10.1.2 Call-a-Ride Vehicles

Call-a-Ride operates two vans with the ability to carry three wheelchairs with limited seating capacity. The vans have wheelchair lifts, which require about 10 minutes to load and unload each passenger with a mobility device (e.g. wheelchair). Given the desire to increase efficiency and to accommodate non eligible Call-a-Ride registrants, it is proposed that two low-floor wheelchair accessible buses, approximately 24' in length, be purchased to replace the two vans. The 2011 van could remain as a spare while the 2005 van would be retired. The 2011 van should be replaced in 2016 unless it remains in good working order.

For the financial plan, the Study Team determined that two vehicles should be available for service with a spare vehicle. Alternatively, COTA may consider contracting another service provider such as the Office on Aging (OOA) or a taxi operator with a wheelchair accessible van. The taxi operator would need to have a minimum quantity of business to cover the additional cost of their vehicle. An accessible taxi would also serve the needs of the airport for passengers requiring the vehicle for regular taxi door to door service outside of COTA/ Call-a-Ride service hours.

Recommendations:

- **COTA should purchase two 24' low floor wheelchair accessible community buses, maintain the 2011 van as a spare and retire the 2005 van.**
- **The taxi industry should be encouraged to provide wheelchair accessible vans to mitigate the need for COTA to purchase additional vans for the Call-a-Ride service.**

10.2 Bus Stop Infrastructure

10.2.1 Bus Stop Locations

A bus stop zone – or simply a "bus stop" – is the area designated exclusively for the boarding and alighting of Transit customers. The definition of "bus stop zone" refers not only to the actual point at which people board and alight, but also to the space required for a bus to approach the zone, align parallel to the curb and leave from a stopped position. When buses are absent, other vehicles may treat this area as part of a travel lane, but not as a parking, stopping or loading zone. Bus stop guidelines will enable Transit to serve and function in the overall transportation system better. Bus stop zones that are poorly integrated in the street network reduce levels of service for all road users.

ADA accessibility design will attract new riders, provide universal accessibility to transit, and reduce dependency on the automobile. Full-accessibility improvements include hard-surfaced (preferably concrete) pedestrian links to sidewalks (bus stop pads), benches, shelters and, possibly, unique and highly visible bus stop identification markers. When it comes to determining where bus stops should be placed, there are several factors to consider as illustrated in Exhibit 10-1: Bus Stop Location Guidelines.

Factor	Guideline	Checked
Adjacent Land Use	Preference is to place adjacent to major trip generators	
Sidewalks	Preference is where sidewalks exist	
Walkways	Improves service coverage	
Pedestrian Crossings	Controlled, supervised or assisted	
Driveways	Bus should not block driveways	
Streetlights	Should be adequate illumination at the stop	
Transfers between routes	Minimize road crossings for transferring passengers	
Route Configuration	Consider bus turning movements	
Suitability for a shelter	Room available; minimize sightline impacts	
Traffic Control & Utility poles	Should not block bus doors or visibility	
Traffic Controls	Signalized intersection	
	Stop Signs	
Landscaping/ street furniture	Planters & street trees should not block bus doors	

Roadway alignment/geometry	Maximize sightlines for operators, motorists and pedestrians	
Intersections	Minimize impact on sightlines; impact of slip off lanes	
Gradients	Avoid locating stops on upgrades or downgrades when possible due to noise of acceleration & slipping in winter	
Street Parking	All stops are No Parking zones (30 metres)	
Traffic Volumes	Which locations can minimize impact from or on motorists	

EXHIBIT 10-1 Bus Stop Location Guidelines

With respect to the spacing of bus stops, a general rule of thumb can be made for budgeting purposes, namely, bus stops should be spaced generally no less than 1,000' in suburban and rural areas and 500'-750' in downtown areas. Proper bus stop spacing balances the needs of transit accessibility with transit operations and traffic management. The location of a bus stop can also be adjusted to minimize the impact on an adjacent residence or business; however, safety, operation standards and pedestrian access must take priority.

Given that there is an estimated 30 miles of roadways with bus service, the number of stops would approximate 6 to 8 per mile, per direction. This translates to about 400 to 500 stops in total; however, it is suggested that passengers boarding a bus in rural and sub-urban roadways (e.g. Kagman, Dandan) be based on a 'flag stop'; this will reduce the number of bus stops required, reduce the costs and enable the transit customer to board at a convenient and safe location as determined by them.

10.2.2 Bus Stop Infrastructure

Bus stops can simply consist of a bus stop sign on an existing or new post or possess a full range of ADA-compliant accessories commonly found in bus terminals such as enclosed shelters, bench seating, schedule monitors, lighting, security cameras, garbage and recycling receptacles, and bike storage. A quality bus shelter could range significantly in price and as such, an average price of $8,000 has been established for shelter purchase and installation.

Given both the rainy season and hot sun in the NMI, it will be important to provide shelters wherever possible to protect transit customers from the elements (i.e. wind and rain). And in the more rural communities where the flag stop program is in place, shelters could be installed to designate as a scheduled time point, which also offers some protection from stray dogs, if required.

There is a wide range of bus stop shelter designs available that is 'off the shelf' in the marketplace. Given the cost to ship pre-fabricated shelters and replacement components, consideration could be given to constructing shelters in Saipan, similar to the approach taken for the construction of some school bus shelters. Bus stop areas should be well marked, well-lit for the evening, have security cameras in some locations, and have room to post route and schedule information.

Given the cost of building and maintaining bus shelters, it is clear that every bus stop cannot accommodate a shelter due to physical constraints nor is it affordable at this point. It is, therefore, suggested that shelter location priorities focus on the following:

- Bus transfer areas / mobility hubs
- Retrofitting existing school bus shelters for accessibility
- Medical facilities
- Academic institutions
- High traffic government facilities
- Retail centers
- Remainder based on demand

Affordability and consistency in design of the shelters is also encouraged. In this regard, a standard shelter should have the following features:

- Meets ADA requirements
- Protects from the wind, sun and rain
- Bench seating
- Easy to maintain
- Well-lit for evening use
- Security cameras, where required
- Affordable to build and maintain and relocate, if required

The simplest bus stop requirement is a post with a bus stop sign that would have schedule and route information. Costs will likely range from $50 to $1,000 depending whether or not a simple sign is affixed to an existing post or a separate post and hard surface bus stop pad is required. An average price of $250 per bus stop without a bus pad and $1,000 with a bus stop pad was estimated for budgeting purposes. Caution should be taken with respect to a bus stop infrastructure program. While some shelter location priorities are a given (e.g. at institutions), others may change after service has been introduced, requiring a change in the route travel way or a bus stop is relocated for other reasons.

The Study Team supported the following bus stop infrastructure program:

- Identify flag stop zones in the rural areas and communities
- Identify bus stop locations
- Install bus stop signs on existing posts
- Install posts and signs, where required
- Retrofit existing school bus shelters, where appropriate
- Install 20 shelters at key locations after the CNMI has determined transit is sustainable
- Install additional shelters at a rate of 10 per year for the next 3 years then reassess
- Install new and permanent bus stops in the flag stop zones, where demand is sufficient

10.2.3 Mobility Hubs

Mobility hubs are strategically located transportation centers that can serve multiple modes with a focus on public transportation. Given the higher density mixed use and its central location on the east coast of Saipan, the central business district (CBD) of Garapan is considered to be a choice location for a mobility hub. It is a destination of choice that is within walk distance of residences and businesses alike, including hotels that depend on hundreds low income employees, a target market for transit.

EXHIBIT 10-2 Proposed Downtown Terminal Location

In the downtown area, the CNMI will be reconstructing Beach Road in Garapan where the core service of Route 1 will be travelling and connecting with other routes to accommodate passenger transfers between routes. Along Beach Road, enhanced passenger amenities could be incorporated into the planned reconstruction to encourage walking, cycling and transit, which are the modes associated with active transportation strategies and complementary to transit.

The area of Beach Road at the east end of the Promenade could serve as a mobility hub in the CBD. Up to three transit vehicles would need to be parallel parked at any one time (2 initially) to accommodate transfers. The area is well-lit, central to the tourist area, able to accommodate a bike storage facility (note: buses will be equipped with bike racks), spacious, and contains sidewalk links to numerous destinations. The boulevard separating the travel on Beach Road also enhances pedestrian safety.

Given the inherent amenities in place, today, costs would be limited to adding bus stop amenities, enhanced passenger information, and security cameras.

Once transit ridership growth strategies have a positive impact on the communities they serve, additional mobility hubs, albeit modest in size, could be identified once transit routes have matured and infrastructure needs better defined.

10.3 Transit Technology

Transit technologies that are common can range from the development of a proper web presence to obtain transit information through complex computer aided dispatch, automated vehicle location and control systems (CAD/ AVLC). These technologies lend themselves to incorporating real time passenger information systems and trip planning, transit signal priority (TS), and automated vehicle and manpower scheduling systems. Given a modest start-up of the transit service, a modest technology plan can be in place that is relatively low-cost yet very effective.

The Study Team addressed a modest technology plan that, first and foremost, requires little technical support and has a positive impact on the transit customer experience. One other equally important application is that of performance monitoring to maximize accountability to the funding agencies and to ensure transit services are effective and efficiently operated. There are many lessons learned internationally about transit technologies, which have become far more affordable for small transit systems in recent years.

During the study, COTA secured the services of Route Match for passenger information systems, vehicle dispatching and scheduling services. It will be important to ensure whatever technologies are selected that they can operate effectively independently or be integrated, if there is a business case to do so.

10.3.1 Smart Card System Integrated with GPS

To start out, the Study Team recommends that a GPS-based technology integrated with a contactless smart card system be integrated rather than purchased separately and integrated afterwards. Costs (excluding distance-related delivery and training costs) can be as little as $10,000 to $12,000 per vehicle with marginal support costs to maintain. More important, very little expertise is required locally.

The benefits are summarized as follows:

- Maximizes bus schedule adherence
- Measures route efficiency and effectiveness
- Reduce revenue management system (RMS) costs
- Provides unprecedented ridership data to:
    - Support short- and long-term planning
    - Meets FTA / NTD ridership information requirements
- Enables COTA to be proactive
- Provides a technology that can be integrated with future TSP and CAD/ AVLC systems
- Enables COTA to track contractor performance in real time

COTA would be in the enviable position of installing proven technologies on Day 1 by capitalizing on lessons learned elsewhere, while maximizing transit ridership growth. More important, the residents of Saipan and, eventually, Tinian and Rota will have access to reliable transit service and information.

10.3.2 Communications Systems

Bus radios will be required for both Fixed Flex-route service and Call-a-Ride on the same radio frequency since both services are to be complementary. This would replace the current cell phones used today. It is also important to note that the vehicle drivers/ operators will operate both services, further supporting the shared radio frequency. In the longer-term, as real time dispatching becomes digital, Call-a-Ride drivers could be equipped with personal device assistants (PDA) to receive pick-up requests, changes to pick-up times or service cancellations from time to time during the service day.

10.3.3 Intelligent Transportation Systems

CAD/ AVLC and Transit Signal Priority (TSP) Systems provide a next step to advanced communications technology where coordination takes place at a central dispatch and control center. During the consultation process, the Study Team learned that a state-of-the-art traffic control and central dispatch system may be procured at some point to replace the current out-date equipment.

During the rollout and growth of the transit service, there may be a requirement to optimize transit signals or give transit priority at signalized intersections to improve travel speeds similar to emergency vehicle priority. This has proven effective in many jurisdictions, large and small, and could be integrated with the public transit system in the future.

Since COTA will constructing its new administrative building and renovating an existing facility to house its offices and transit operations and maintenance, the CNMI Department of Public Works may consider utilizing available office space to house a central dispatch and control center, which can also take on the dispatching and radio communications systems of the fixed flex-route transit and Call-a-Ride services.

Recommendations:

- **That COTA purchase a radio communications system for all its public transportation services**
- **That COTA's transit technologies are integrated with future traffic signal and control technology.**
- **That the Department of Public Works review the feasibility of housing a traffic control center at the planned COTA Transit and Administration Facility.**

11. FIVE YEAR FINANCIAL PLAN

The Study Team has developed a service plan as input to the financial plan, with a number of cost and revenue assumptions based on available data.

Key to the development of the financial plan is the assumptions used in determining the operating and net costs of the service. In this regard, COTA staff indicated that the Federal Transit Administration provides 50% of the net operating cost (total operating cost less passenger revenues) and, since the NMI is considered to be in an insular area, it would enjoy 100% capital funding under the New Starts grant program. Local funding tools under the jurisdiction of the CNMI were then identified as means of reducing or even eliminating the CNMI share of the 50% deficit.

11.1 Transit Operating Cost Assumptions

COTA currently provides the administration and staffing to operate the Call-a-Ride service. Staff and other administrative costs are now within the COTA organization. In addition, a maintenance and administration facility is scheduled to open in 2015. In this regard, it can be assumed that the Transit and Call-a-Ride fleet will be housed at this facility.

Given the lack of available costing data, a conservative approach was taken to estimate transit costs by mode type, which were discussed and agreed to by the COTA study team, including finance staff. The estimates are described in the foregoing.

11.1.1 Annual Fixed Operating Costs

- Facility capital costs: Not applicable
- Facility maintenance (air conditioning, property and building maintenance): $50,000
- Marketing: $50,000 per year ($75,000 in first year)
- Administration: Approximates 10% of fixed and variable operating costs
- **Total fixed costs: $90,000 in Year 1, increasing to $130,000 by Year 5**

11.1.2 Hourly Variable Operating Costs

11.1.2.1 30' Low-floor Medium-duty Bus (Diesel):

- $12.50 hourly pay
- $1.50 hourly cost for benefits, uniforms
- $12.50 per bus hour in maintenance
- $13.00 per bus hour in fuel
- **$39.50 per hour total variable cost**

11.1.2.2 Call-a-Ride 24' Light-duty Accessible Buses:

- $12.50 hourly pay
- $1.50 hourly cost for benefits, uniforms
- $11.50 per bus hour in maintenance
- $11.50 per bus hour in fuel
- **$37.00 per hour total variable cost**

11.1.2.3 Taxi (future consideration)

Taxi contract cost: $45 per hour; hours of service would vary

11.2 Transit Capital Costs Assumptions

This section to address: vehicle purchase, replacement and expansion (capital reserve), bus stop infrastructure, shelters, technology, mobility hubs.

11.2.1 Transit Vehicles

With respect to the fixed flex-route medium duty buses that are low floor design, they could be equipped with a kneeling feature due to the lack sidewalks throughout most of the NMI. This adds about $20,000 to $25,000 to the price of the vehicle; however, given the higher maintenance requirements and cost, this feature was not considered at this time. A minimum gross vehicle weight restriction of 23,300 pounds has been used to ensure larger passenger loads and rear-facing wheelchair positions can be accommodated on the fixed flex-route service. A minimum 14,400 pounds is a specification to be used for the smaller Call-a-Ride light-duty buses, which will also be low-floor in design to reduce boarding and alighting times.

The following are vehicle purchase prices used for budgeting purposes, which reflects a higher than mainland cost of about $15,000 to $20,000 per vehicle as suggested by COTA staff, excluding shipping and delivery:

11.2.1.1 Fixed Route Buses

- $145,000 Light duty 7-year life 22'-24' bus ($20,700 per year)[7]
- $180,000 Medium-duty 7-year life 30' bus ($25,700 per year)
- $240,000 Medium-duty 10-year life 30' bus ($24,000 per year)
- $220,000 Average price per vehicle

[7] Light duty vehicle for Route 3 Kagman-Garapan interlined with Route 5 Navy Hill-Garapan

11.2.1.2 Call-a-Ride Vehicles

- $145,000 24' 7-year life bus ($20,700 per year)

Note: The fleet size will be determined by the peak one minute of the day in terms of accommodating passenger demand. Given that the transit service would be in its infancy, ridership estimates could be conservative, although they are in line with demand of other jurisdictions within the 5-year period. The fleet plan should then be reviewed within the first three years of service to assess the fleet requirements and capital and or capital reserve that will be required going forward.

11.2.2 Bus Stop Infrastructure

- $250 Average bus stop sign and post (from sign only to sign + post)
- $10,000 Average shelter price
- $2,000 Average price to retrofit existing school bus stops and adding bus pads to stops
- $75,000 Garapan Mobility Hub budget
- $100,000 Other mobility hubs/ transfer stations (Costco site, NMC site, Kagman, As Matuis)
- TBD Build up sidewalk infrastructure for bus stop accessibility (allocate to Public Works)

11.2.3 Transit Technology

- $15,000 Vehicle integrated revenue management system and GPS
- $50,000 Lump sum radio communications and personal device assistant (PDA)
- TBD Transit signal priority, dispatch and communications center (allocate to Public Works)

11.3 Federal Funding for Transit Systems

11.3.1 Introduction

The majority of Federal transit funding comes from the Federal Transit Administration (FTA) through a combination of population based formula grants and competitive discretionary grants. Some provisions such as transportation planning, Transportation Infrastructure Finance and Innovation Act, Surface Transportation Program, Congestion Management and Air Quality program may reside under the Federal Highway Administration (FHWA). Additional grant opportunities may come from the Departments of Health and Human Services (DHSS), Veterans Affairs (VA), Housing and Urban Development (HUD), Homeland Security (DHS) and the Environmental Protection Agency (EPA).

Different funding programs have varying levels of eligibility, application procedures and deadlines, spending stipulations and performance management reporting requirements. Therefore, it is highly recommended that COTA maintain contact with FTA Region 9 advisors, in addition to keeping a lookout for opportunities through the Federal Register when FTA releases a 'Notice of Funding Availability', grants.gov,

abovementioned Federal department, Community Transportation Association of America (CTAA), Rural Transit Assistance Program (RTAP), Regional University Transportation Centers and American Public Transit Association (APTA).

Recipients should review Title 49 CFR, in particular Chapter 6 and familiarize FTA Circulars to ensure compliance with the general terms of FTA funded procurement, purchases, operations and reporting. Proactive communication with FTA Region 9 advisors, peer transit systems, CTAA, RTAP, University Transportation Centers and training through the National Transit Institute (NTI) will provide such necessary guidance.

A summary of the funding programs are listed below and a synopsis of each is provided in **Appendix C: Summary of Transit Funding Programs**, which addresses:

- MAP-21 Funding Grants
- Discretionary FTA Funding
- 5310 – Enhanced Mobility of Seniors and Individuals with Disabilities
- 5311 – Formula Grants for Rural Areas
- 5339 – Bus and Bus Facilities
- 5305 - Regional / Statewide Planning

11.3.2 FTA Operating and Capital Funding Assumptions

The various funding programs described provide an overview of what can be considered by the CNMI and COTA. Normal FTA funding for the Fixed Flex-route and Paratransit service as follows:

- 50% of the transit operating deficit
- 80% of capital/ 100% capital[8]

Recommendation: That CNMI-COTA continues to maximize the amount of external Federal funding available for transit investment to reduce the cost of transit fares and to minimize the financial support needed locally.

11.4 Five-year Operating and Capital Budget

The Study Team developed a five-year operating budget to reflect the service plan and a five-year capital budget needed to support the service plan. The challenge is to determine what is considered 'feasible and sustainable'. The service hours and fleet requirements are considered reasonable in relation to the peer group and the local operating environment.

[8] COTA staff indicated the CNMI is considered to be an 'insular area' and as such, would qualify to compete for 100% capital funding under the New Starts grant program. For budgeting purposes, it is assumed that only 80% funding would be secured.

11.4.1 Operating Budget

Exhibit 11-1: Five-year Transit Financial Plan summarizes the estimated cost to operate both the Fixed Flex-route and Call-a-Ride service.

Annual Operating Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Facility maintenance	$50,000	$50,000	$50,000	$50,000	$50,000
Marketing	$75,000	$50,000	$50,000	$50,000	$50,000
Administration (10%)	$90,000	$95,000	$115,000	$125,000	$130,000
Total Fixed Operating	$215,000	$195,000	$215,000	$225,000	$230,000
Total Fixed Route Hours	12,450	15,820	20,160	24,210	26,070
Total Call-a-Ride Hours	6,240	6,240	6,240	6,240	6,240
Total Hours	18,690	22,060	26,400	30,450	32,310
Total Variable Operating Cost	$722,655	$855,770	$1,027,200	$1,187,175	$1,260,645
Total Operating Costs	$937,655	$1,050,770	$1,242,200	$1,412,175	$1,490,645
Ridership Estimates	68,650	117,440	188,540	249,600	320,840
Ridership Revenue	$137,300	$234,880	$377,080	$499,200	$641,680
Deficit: Total Cost Less Revenue	$800,355	$815,890	$865,120	$912,975	$848,965
FTA Operating Subsidy (50% Deficit)	$400,178	$407,945	$432,560	$456,488	$424,483
Net Cost to CNMI	$400,178	$407,945	$432,560	$456,488	$424,483
Other Potential Revenue Sources					
Licensing Fees ($10 surcharge)	$200,000	$200,000	$200,000	$200,000	$200,000
Parking Meters (net of expenses)	$50,000	$50,000	$50,000	$50,000	$50,000
Dedicated gas tax?					
Dedicated share of new sales tax?					
Other?					
Sub-total	$250,000	$250,000	$250,000	$250,000	$250,000
Net Cost to CNMI	$150,178	$157,945	$182,560	$206,488	$174,483

EXHIBIT 11-1 Five-year Operating Budget

It is interesting to note that the Net Cost to the CNMI will decrease as ridership picks up; however, much will depend on the fleet make-up and bus capacities. For example, if demand exceeds vehicle capacity during the peak period, either additional buses will need to be purchased to increase the frequency of service or larger vehicles such as 40 conventional transit buses may have to form part of the fleet so that current hours of service remain consistent. It should be pointed out; however, that the more frequent the service, the higher the ridership growth. Alternatively, 15-passenger vans may be adequate to use for the short-term. Time will tell.

11.4.2 Capital Budget

The capital budget as presented in Exhibit 11-2 reflects 80% capital funding provided by the FTA. There is an opportunity to seek 100% funding under the New Starts grant program and as such, the cost could be lowered significantly.

Capital Budget Description	Year 1	Year 2	Year 3	Year 4	Year 5
Fleet Expansion					
30' Transit buses (8) - Routes, 1, 2, 4	$1,800,000				
24' Transit buses (1)- Route 3 and 5	$145,000				
Sub-total	$1,945,000				
Fleet Replacement					
24' Call-a-Ride buses (2)	$290,000				
Call-a-Ride Van (1)			$75,000		
Sub-total	$290,000		$75,000		
Bus Stop Infrastructure					
Bus stop signs and posts (500)	$125,000				
Shelters (20 in Year2 then 10 per year)	$200,000	$200,000	$200,000	$200,000	$200,000
Bus stop pads/ retrofits (10 per year)		$20,000	$20,000	$20,000	$20,000
Beach Road Mobility Hub	$25,000	$50,000			
Other bus transfer stations	$100,000	$100,000	$100,000		
Sub-total	$450,000	$370,000	$320,000	$220,000	$220,000
Transit Technologies					
Smart Card/ Integarted GPS (11 vehicles)	$165,000				
Radio and PDA Communications	$50,000				
Sub-total	$215,000				
Total Capital Budget	$2,900,000	$370,000	$395,000	$220,000	$220,000
80% FTA Funding (100% funding to be sought)	$2,320,000	$296,000	$316,000	$176,000	$176,000
Net Cost to CNMI after FTA subsidy	$580,000	$74,000	$79,000	$44,000	$44,000

EXHIBIT 11-2 Five-year Capital Budget

11.4.3 Operating and Capital Budget Summary

The first and last years of the service and capital plan are considered reasonable given the following comparisons with the peer group median values.

Peer Review Statistic	Median Value	Year 1 Service Plan	Year 5 Service Plan
Vehicles per 10,000 population	3.8	2.3	2.3
Service Hours per Capita	0.65	0.38	0.66
Passengers per Capita	7.3	1.4	6.6
Net Cost per Capita (operating)	$28.61	$16.50	$17.50

The amount of service can be assessed prior to the development of each annual budget. If passenger demand exceeds expectations, service levels can be increased. If demand does not grow as expected, service levels can remain. The main factor in COTA's favor is that the unregistered taxi industry provides COTA with a latent demand than can be realized sooner rather than later.

12. TRANSIT BUSINESS MODEL AND GOVERNANCE

This section provides information to support the main finding of the Study, which is that the key to transit feasibility in the CNMI is for COTA to design a transportation system that combines the complementary strengths of the public and private sectors, and avoids duplication of effort and competition with private sector for services that best left in the private sector.

Federal funding can enable COTA to deliver, at reduced cost, core fixed-route transit and paratransit services, which the private sector has not been successful at providing or sustaining. The private sector can, however, can play a role both inside and outside the transit structure, provided that they are properly regulated.

The sub-sections below review the range of business models of how the service could be delivered, and describes options for governance structure and explains how each one blends accountability and economy in different proportions. Public transit and paratransit services throughout the world use a wide variety of business models, from completely private-sector delivery to completely public-sector.

Between these two extremes are several models that combine varying degrees of private and public sector participation. Almost invariably, government assumes the exclusive right, through legislation, to provide public transit within its territory. This right is sometimes delegated in varying degrees to private or voluntary sector organizations operating under contract. The overall goal is to ensure that collective transportation is provided in a manner that is consistent with the public interest, local needs and local resources, and is affordable, economical, effective, and efficient.

12.1 Business Model Options

The four business model options are discussed below.

Private Sector Municipal Transit

Under this model, all capital assets, overall management of the service, as well as operation and maintenance of the vehicles, belong to the private sector, as governed by a contract with the public authority which is vested with the exclusive right to operate transit, and which delegates this right to the contract holder. Oversight and governance of the service is performed by a private sector Board. The private sector also assumes all revenue risk, meaning there are no public sector operating subsidies provided to the service.

Private Sector Management and Operations / Maintenance

Under this model, the local authority delegates all functions, including policy and planning, management, operations and maintenance to a contractual service provider. The local authority is responsible for subsidizing operating deficits. Capital investments are made by the contractor, and recovered through the contract. High-level oversight and governance are most often the responsibility of the municipal Council, or a publicly appointed Board or Commission, through a contract administrator.

Public Sector Management / Private Sector Operations

Under this model, the local authority owns the assets and the responsibility to provide transit service. The model ensures transit management and planning functions are retained but delegates actual operations and maintenance to a contractual service provider. The local authority is responsible for subsidizing all operating deficits. Oversight and governance are exercised by the regional or municipal Council, or by a publicly appointed Board or Commission. Either the transit authority or the contractor may own some or all of the assets. This is usually determined by the rules governing capital grants for transit.

Public Municipal Transit

This is probably the most common municipal transit business model in North America. All aspects of the transit service are directly operated by the regional or municipal Council. In some cases, an autonomous transit commission or authority is created. All assets are publicly owned; all planning, and most if not all operations and maintenance functions are performed by public sector employees.

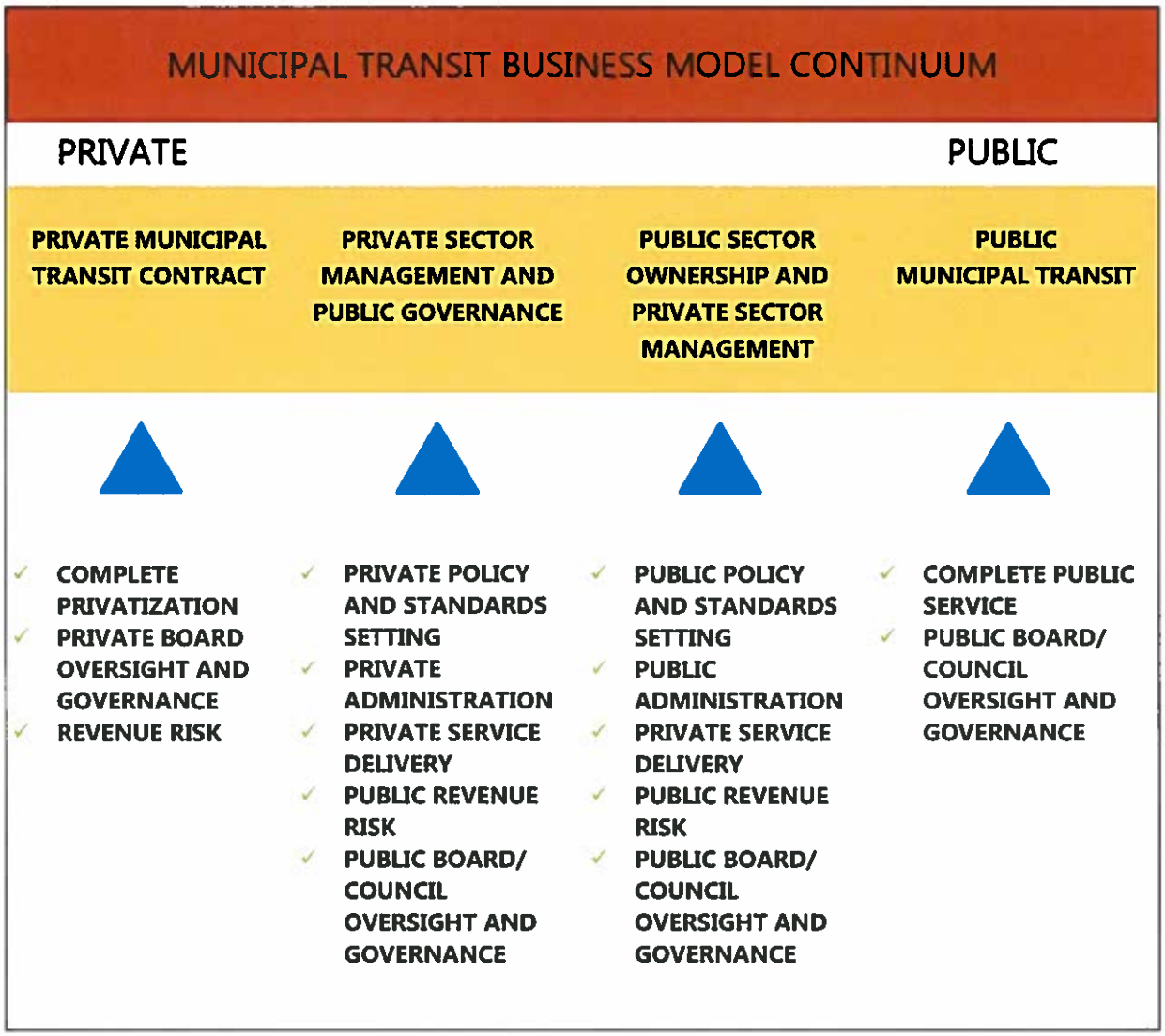


EXHIBIT 12-1 Business Model Continuum (provides a synopsis of the abovementioned business models

12.2 Industry Experience with the Private Sector

Private sector participation in the delivery of municipal services is most often promoted as a means to:

- Harness the energies of the business community to provide a necessary public service
- Provide the best value for money
- Reduce government deficits and involvement in direct delivery of services
- Increase efficiency and innovation
- Improve service quality
- Transfer appropriate risks.

There is much to recommend in a model that blends the strengths of the public and private sectors while minimizing their weaknesses. The public sector typically excels at service quality and stability, while the private sector offers economy and responsiveness to new business opportunities.

Private municipal transit was operated in the past in Saipan during the 1960's and 1990's but failed due to the inability to operate at a profit. The reasons for this are similar to the challenges of public transit in North America and many other places in the world where population densities are low and car ownership has risen dramatically since the Second World War. This phenomenon made transit systems dependent on government funding in order to survive.

In the 1990's, an entrepreneur attempted to operate a bus service at the height of the garment industry boom in Saipan. However, competition from company shuttles and lack of financial resources led to the demise of the service.

Transit systems are comprised of a network of routes that generate different ridership levels, fare box revenues and associated cost recoveries. When Britain privatized public transit in the 1980's, private operators immediately competed fiercely for the densely populated areas where transit could make money, and reduced or truncated bus services in areas that were less profitable. Without the prospect of generating a profit, a completely private model is not feasible.

The other public-private partnership options outlined in the business model continuum are feasible and capable of delivering municipal transit services that are both efficient and of a high quality provided that the proper elements are in place. The procurement process used to retain a private sector partner, the contract document used to implement the service, and the monitoring of service to ensure that 'one gets what one pays for' each has a role to play in ensuring that public-private partnerships are successful, economical and productive.

The advent of lower cost monitoring technology and reporting software makes service regulation and control more affordable.

12.3 Preferred Business Model

The consulting team has carefully reviewed the existing situation in Saipan with regard to gaps and unmet needs for transportation, and has proposed a 'Made in Saipan' model that takes advantage of both the infrastructure that presently exists (good roads, plentiful shared-ride taxis, effective Call-a-Ride service, and the opportunity for federal transit funding to help support a sustainable and affordable public bus service.

The decision process for selecting the most appropriate business model was driven by the needs and priorities secured through the community engagement process – the transit focus groups, one-on–one interviews and through web-based surveys. In addition to securing community input to what the priorities should be were the informative meetings with long-term residents, most notably, the community elders who were able to convey what worked and what did not work since the 1960's.

Going forward, a fixed flex-route service should form the core of the public transit system. This would be complemented by either fixed-route shared-ride vans or accessible small buses or vans operating on a pre-arranged schedule, which would feed into the core service at timed transfer points. The demand responsive Call-a-Ride service would continue its door to door service; however, the Call-a-Ride market should focus on those unable to access or use the fixed flex-route service.

A review of the services to be provided has been summarized and a long-term business model was developed. However, since a publicly funded Family of Transit services in Saipan and the CNMI is unique, an interim business model was considered as a 'walk before you run' strategy to mitigate the financial risk and enable COTA to be flexible based on experience developed during the start-up stages of the service.

12.3.1 Public Transportation Services Provided

The recommended service concepts and technology to be considered in a subsequent implementation plan are summarized as follows:

- Fixed Flex-route Service:
  - Low-floor wheelchair accessible buses operating on a fixed route and schedule
  - Deviation allowed upon request to accommodate accessibility for qualified customers
  - One minor deviation would be accommodated per direction with the slack time built into the schedule (e.g. 5 minutes)
  - Diesel engines
  - Bus length would be 26' to 33'
  - Potential to evolve into 30' to 40' heavy duty conventional transit buses in the future
- Feeder services:
  - Call-A-Ride feeder service, where warranted
  - Fixed route shared-ride taxis (sedans or vans) contracted to feed into the cores service; alternatively, taxis could have pre-arranged feeder trips to start
- Call-a-Ride:
  - Wheelchair accessible and demand responsive door-to-door vans currently in place
  - Provides service to only those that cannot access or are unable to use other transit services
- Technology capabilities:
  - Central dispatch operations and Personal Device Assistants (PDA) to schedule Call-a-Ride requests and requested flex-route requests more efficiently
  - GPS to provide real time monitoring of all COTA services
  - Smart card technology to provide:
    - Revenue management and security
    - Ridership reports
    - Tracking of route and passenger utilization reports
    - Route statistics and performance reports by period specified (hourly, day of week, monthly, annual)

Although business models in North America often provide for two separate driver pools – one for transit and another for paratransit – this does not need to be the case today. With the advent of low floor wheelchair accessible buses, transit and paratransit operations can cater to the same client base. The door-to-door Call-a-Ride operation, which is funded by the CNMI and currently operated by COTA, has a steadily increasing passenger demand, which currently requires one additional driver; additional drivers will be needed if COTA continues without introducing additional services such as fixed flex-route.

With the introduction of a fixed flex-route service and low-floor buses used by Call-a-Ride, there is good reason for Call-a-Ride drivers to be cross-trained to operate fixed flex-route service. This would provide for a more reliable and flexible employee pool that can better accommodate employee vacations, short- and long-term sick leave, and other personnel needs such as training. By being under one organization, efficiencies can also be realized by encouraging Call-a-Ride customers to use fixed flex-route services, which are a lower cost option.

Based on the aforementioned, it is recommended that operating personnel of the fixed flex-route service and Call-a-Ride service fall under a single operating organization in the selected business model. It is easier and more coherent to encourage the migration of paratransit customers to accessible transit when a separate organization is not operating the paratransit service. A separate paratransit organization may be more concerned with not losing its customers than it is with having people gravitate to the lowest cost service that is capable of meeting their mobility needs.

The service concepts recommended may require the participation of the taxi industry, a proven low-cost alternative to transit that established transit systems would like to embrace but may not be able to due to potential union issues. Although taxis are not cost-effective for large passenger loads, they can be used on an interim basis when starting out and a long-term basis for low demand markets.

12.3.2 Recommended Long-term Business Model

Assuming the service concepts and technologies recommended are in place, COTA has the option of employing a 100% government owned and operated public transportation system or a fully contracted out public transportation system. Since COTA has secured a maintenance facility with offices and outside storage, and will own the fixed flex-route and Call-a-Ride vehicles, it is in the enviable position of being able to fully contract out the services. The fact that COTA would own the vehicles removes the risk factor for a potential private sector operator.

Given that COTA does not have full time staff resources to operate a transit system, the business model for CNMI / COTA would ensure an operating partner is in place that has:

- Experience in providing public transportation
- A dedicated and accountable staff complement
- Maintenance capabilities
- Availability of spare vehicles, if required
- Dispatch service in place
- Has a vested interest in the success of the service

Based on the aforementioned, the Public Management and Private Operations / Maintenance option is recommended in the long-term. Through a contract with a single agency, maintenance facilities, fare collection and reporting, administration, customer service, and other common operating costs are minimized through economies of scale. Further, the agency could be responsible for coordination with the taxi industry on behalf of COTA, depending on the negotiated operating agreement.

12.3.3 Interim Business Model

To mitigate the risk in awarding a contract to a new operator, it is suggested that the CNMI / COTA first have a 100% Public Municipal Transit business model for the following reasons:

- To enable COTA management and staff to have more credible experience prior to contracting out the services relative to:
  - Understanding the operating environments and how the fixed route and paratransit services can be fully integrated to operate as efficiently and effectively as possible
  - Establishing credibility with future service providers when a performance-based transit operating agreement is developed (this also mitigates the financial risk for both COTA and a future contractor)
  - Ensuring the technology is fully implemented and effective before it is handed over
  - Being pro-active in the marketing of transit
  - Educating the public on the services provided
  - Establishing reasonable expectations
  - Maximizing service quality through extensive public engagement during service start-up
- Fine-tuning the schedules during the start-up phase
- Implementing transit ridership growth strategies over time and maximize community engagement
- Time to enable the COTA Administration building and Maintenance, Repair & Storage Facility to be constructed and gain facility experience
- Meeting with potential private sector operators to:
  - Educate them about the service
  - Understanding what they want to see in an agreement and vice versa
  - To help ensure the operating contract will attract more than one proposal

One exception would be in the area of maintenance. Instead of hiring mechanics and other staff, the COTA-owned vehicles would be serviced by the private sector onsite.

Having control over the services provided during the start-up and subsequent growth period is important to the community and it is important to COTA. This is maximized through the direct accountability of COTA itself being the service operator during the early stages. Over time, COTA would gain knowledge and have the ability and experience to become a more effective administrator of a contracted-out service when the time is right. Ultimately, the community will be served by a contractor that is responsible for providing the service with their staff and resources while the CNMI/ COTA organization is ultimately accountable to the public with minimum staff.

12.4 Recommended Governance Structure

Given that the funding of transit service is the responsibility of CNMI through COTA, COTA should have the following responsibilities:

- Ownership of rolling stock
- Ownership of infrastructure such as facilities, bus stops and shelters
- Setting policies
- Determining bus routes and bus stops in consultation with the service provider
- Determining fares
- Revenue risk
- Public accountability
- Service planning
- Meeting requirements of the Federal Transit Administration
- Meeting Americans with Disabilities Act regulations relative to transit services
- Liaison with all levels of government

To ensure the investment in transit is protected, COTA will require a 'champion' from within the existing staff organization. The staff member would liaise with the future service provider/contractor and be the point of contact for politicians, the public, other CNMI departments, and the Federal Transit Administration. In terms of governance, Council is ultimately responsible and as such, it is suggested that COTA maintain the current Board of Directors.

To help guide staff and maximize community involvement, it is recommended that a Transit Advisory Committee (TAC) be formed that would consist of up to 10 members. Participants would represent each of the passenger groups (adults, high school and NMC students, seniors, disabled), organizations (Office on Aging, Public School System, hotels/ hotel associations, etc.), medical field, caregivers, and the business community. This committee would deal with strategies to improve transit and help establish priorities. COTA staff would then report TAC input and consensus reached to the COTA Board. This is considered critical during the early stages with frequent meetings to start then lessening over time, perhaps bi-monthly or quarterly once service is fully established.

13. CONCLUSIONS AND NEXT STEPS

The 5-Year Service Plan (Chapter 9) and Transit Asset Management Plan (Chapter 10) were developed by the Study Team consisting of Transit Consulting Network, CNMI and COTA staff. Driving the recommendations of the plan was the feedback received during the transit stakeholder engagement process with a wide representation of the general public, CNMI / COTA and other organization staff, the business community, and numerous one-on-one meetings. This was the complemented by a web-based survey that supported the priorities of previous community input.

The stakeholder engagement process enabled the Study Team to update the Policy Framework, which addresses COTA's mission and vision statements supported by goals and objectives required to fill the COTA mandate. As transit evolves over time, the policy framework is sufficiently flexible to meet resident and business needs in the future. The technology in place provides COTA with the ability to measure and in meeting these needs in a proactive manner.

13.1 Conclusions

Transit Consulting Network and COTA had set out to determine whether, under what conditions and at what cost, public transportation can be introduced, operated and sustained in Saipan, and eventually in Rota and Tinian. Our recommendations are considered to be reasonable and, given that COTA has an opportunity to incorporate best practices, fixed flex-route and Call-a-Ride is in a unique position to 'do things right' the first time.

Mitigating the financial risk is the current and strong role that illegal taxis play in the lives of many residents and in the positive impact they have on the local economy. Although illegal taxis are not a mode of choice for many, they do represent an opportunity for the CNMI to wean many residents off the service by providing a reliable and more affordable alternative. By doing so, some residents may eventually give up their car while others will refrain from replacing that 2nd or 3rd car. This, in turn, provides more disposable income into the community which, in turn, will be spent locally. In addition to all this, the carbon footprint in the NMI will be reduced.

It is clear that public transportation is not profitable. Before taking the next steps, the feasibility and sustainability of public transportation must be determined at the local level. In this regard, with available FTA funding, public transportation becomes more affordable; however, an injection of funds will be required to start out on the right foot so that measured improvements can be implemented affordably over time. As publicly funded transportation becomes a more integral component of the community and urban growth, one can expect investments exceeding that of the five-year service plan. This can best be addressed in a longer-term transit strategy that looks at integrating transit with all modes of travel – auto, biking, walking, and future ferry services.

13.2 Next Steps

Once the Fixed-Flex route and Paratransit System Feasibility Study recommendations are approved in principle by COTA and CNMI, it is recommended that the next steps be undertaken prior to implementation:

- Finalize the operating and capital budget amounts to confirm the levels of service, rolling stock and infrastructure requirements and funding available
- Set up transit implementation team consisting of COTA, Public Works and Finance staff with the assistance of an experienced consultant to guide the process and assist with tasks, as required
- Establish a Transit Advisory Committee
- Develop a comprehensive strategic public marketing plan (first step is to develop transit website)
- Procure vehicles (rolling stock) and technology; knowing the date of vehicle delivery will enable COTA to better schedule an implementation date
- Enter in discussions with the Public School System to identify opportunities for COTA to supply students with transportation to and from school
- Enter into discussions with taxi industry and potential role they can play
- Develop Call-a-Ride eligibility criteria and application/ approval process
- Determine when the new COTA maintenance and administration facility will be available or whether an interim facility will be required
- Notify future private sector service providers of intent to contract out service and obtain their input to the potential contract requirements (e.g. performance agreement, accountability, etc.)
- Finalize the bus route design through public engagement process
- Locate on-street bus stops and bus stop designs (GIS data layer)
- Finalize COTA reporting requirements (performance monitoring and revenue management)
- Develop travel training programs for the various market segments
- Finalize fare structure and fare pricing policies
- Implement travel training program
- Build bus stop infrastructure
- Receive delivery of vehicles
- Distribution of smart cards
- Appoint transit and paratransit customers to working group (up to 6 members of the public + 2 bus operators)
- Implement two months of free service to maximize travel training needed and increase community dependence on transit (e.g. to shift over from illegal taxis)
- During free service period, solicit input from transit customers through surveys and customer working group meetings
- Make necessary route and service adjustments based on transit customer input
- Official launch of revenue service

There are numerous sub-tasks that will fall within each of the aforementioned steps. These sub-tasks should be developed and assigned as action items for individuals along with time lines and a critical path. This ensures there is ownership and accountability at the staff level. The most important elements of the next steps identified are to maintain regular updates, and inform the public of the implementation progress and any changes to the service launch date.

GLOSSARY

The terminologies used throughout this report are hereby defined using the Transportation Cooperative Research Program Report 165 – Transit Capacity and Quality of Service Manual. Adopting a reputable source for terminology and definition ensures consistency when communicating with internal / external stakeholders, members of the public, peer transit systems and with Federal funding / regulatory agencies.

A

Accessibility, transit – 1. A measure of the availability of all people to travel to and from various origins and destinations by transit. **2.** A measure of the ability of all people to get to and from the nearest transit stop or station and their actual origin or destination. **3.** In common usage, often used to mean the ability of persons with disabilities to use transit.

Accessible transportation facilities – transportation facilities that are barrier-free, allowing their use by all travelers, including elderly, transportation disadvantaged, and persons with disabilities.

ADA paratransit eligible individual – individuals whose disabilities, permanent or temporary, prevent their independent use of fixed-route transit service. Transit agencies must establish an eligibility process to determine which individuals qualify for ADA complementary paratransit services.

American with Disabilities Act of 1990 (ADA) – federal civil rights law which ensures people with disabilities equal opportunity to fully participate in society, the ability to live independently, and the ability to be economically sufficient.

American Public Transportation Association – a non-profit international industry association made up of transit systems and other organizations and institutions connected to or concerned with the transit industry. It performs a variety of services for the industry, and its objectives include promotion of transit interests, information exchange, research, and policy development. Known as the American Public Transit Association prior to 2000.

Area, coverage – in transit operations, the geographical area that a transit system is considered to serve, normally based on acceptable walking distances (e.g. 1/4 mile, 0.4 km) from loading points. For suburban rail transit that depends on automobile access (park-and-ride or kiss-and-ride), coverage may extend several miles (kilometers). Coverage is usually computed for transit-supportive areas.

Area, service – 1. The jurisdiction in which the transit property operates. **2.** The geographic region in which a transit system provides service or that a transit system is required to serve.

Area, transit-supportive – an area with sufficient population and / or employment density to warrant at least hourly fixed-route transit service.

Arterial roadway – a signalized street that primarily serves through traffic and secondarily provides access to abutting properties; signal spacing is typically 2 miles (3 km) or less.

Automatic Vehicle Location System (AVL) – a system that determines the location of vehicles carrying special electronic equipment that communicates a signal back to a central control facility. AVLs are used for detecting irregularity in service and are often combined with a computer-aided dispatch system.

B

Barrier-free – containing no obstacles that would prevent use by persons with disabilities or any other persons.

Base period (off-peak period) – in transit, the time of day during which vehicle requirements and schedules are not influenced by peak-period passenger volume demands (e.g. between morning and afternoon peak periods). At this time, transit riding is fairly constant and usually moderate in volume when compared with peak-period travel.

Base-period fleet – in transit, the number of transit units (vehicles or trains) required to maintain base-period schedules.

Bicycle-friendly – characterized by features and elements that make bicycling safe and convenient. A bicycle-friendly environment at a transit stop might include bicycle parking that is well lit, sheltered, secure, and easily accessed.

Bicycle locker – a lockable, enclosed container used for storing bicycle. Typically provided at major transit stops and stations and rented on a monthly basis.

Bicycle rack – 1. A fixed post or framework to which bicycles may be secured and locked, typically provided on a first-come, first-served basis. **2.** A device mounted to a transit vehicle that allows bicycles to be transported outside the passenger compartment. Typically provided on a first-come, first-served basis; many transit operators require that passengers obtain a permit to use them.

Bus – A self-propelled, rubber-tired road vehicle designed to carry a substantial number of passengers (at least 16, various legal definitions may differ slightly as to minimum capacity), commonly operated on streets and highways. A bus has enough headroom to allow passengers to stand upright after entering. Propulsion may be by internal combustion engine, electric motors or hybrid. Smaller capacity road transit vehicles, often without full headroom, are termed vans.

Bus, low floor – A bus without steps at entrances and exit. The low floor may extend throughout the bus or may use a ramp or steps to access the raised rear portion over a conventional axle and drive train. Wheelchair access is provided by a retracting ramp.

Bus, school – 1. A vehicle operated by a public or private school or by a private contractor for the purpose of transporting children (through grade 12) to and from school or to and from other school-sponsored activities. The vehicle is externally identifiable as a school bus, typically by color (yellow) and lettering that identifies the school or school district served by the vehicle. This definition includes vehicles designed and built as school buses as well as other vehicles, such as vans and station wagons. **2.** A vehicle designed and built as a school bus, typically with body-on chassis construction. Such a vehicle may be used for other purposes than school bus service (e.g. military or church service).

Bus, small – Bus that is less than 20 ft. (6 m) long.

Bus, standard urban – A bus for use in frequent-stop service with front and (usually) center doors, normally with a rear-mounted engine and low-back seating. Typically 35-40 ft. (10-12 m) long.

C

Canadian Urban Transit Association (CUTA) – An industry association made up of individual transit operators and suppliers in Canada.

Capacity, constraints – In demand-responsive transit, the service characteristics that may limit the ability to meet passenger demand especially during specific times of the day. ADA regulations prohibit capacity constraints for ADA complementary paratransit. A transit agency cannot deny requests for trips by ADA eligible riders, as long as the trip requests are within the prescribed service area and services hours of fixed-route service.

Capacity, design – **1.** The maximum number of transit vehicles that can reliably pass a given point in a given period of time (typically 1 hour). **2.** The maximum number of persons that can reliably be transported past a given point in a given period of time, at a design passenger loading level.

Capacity, fleet – **1.** The total number of passenger spaces in all vehicles of a transit fleet. **2.** Maximum system or line capacity when the entire fleet, less maintenance spares, are deployed, not in common use.

Capacity, maximum – The maximum number of persons or transit vehicles that can pass a given point in a given period of time, without regard to reliability or passenger comfort. This is a theoretical value that should not be used for planning in most cases.

Capacity, passenger – The number of persons that can be carried in a given transit vehicle at a given passenger loading level, expressed in persons per vehicle.

Capacity, seating – The number of passenger seats in a vehicle.

Capacity, standing – The number of standing passengers that can be accommodated in a vehicle under specified comfort standards, expressed in area per standee.

Capacity, vehicle – The maximum number of transit vehicles (buses, trains, vessels, etc.) that can pass a given location during a given time period at a specified level of reliability.

Capital cost – Nonrecurring or infrequently recurring costs of long-term assets, such as land, guideways, stations, buildings, and vehicles. These costs often include related expenses: for example, depreciation and property taxes.

Carpool – An arrangement in which two or more people share the use, cost, or both of traveling in privately-owned automobiles between fixed points on a regular basis.

Central Business District (CBD) – Defined by the Bureau of the Census, an area of high land valuation characterized by a high concentration of retail businesses, service businesses, offices, hotels, and theaters, as well as by a high traffic flow.

Commute – Regular travel between home and a fixed location (e.g. work, school). The term is often applied only to travel in the direction of the main flow of traffic, to distinguish from reverse commute.

Commute, reverse – A commute in the direction opposite to the main flow of traffic, for example, from the central city to a suburb during the morning peak. Increasingly common with growth in suburban employment. Valuable to operator as it provides additional passengers and revenue at little or no marginal cost.

Connectivity – The ability of a public transportation network to provide service to the maximum number of origin-and-destination trip pairs through the optimal integration of routes, schedules, fare structures, information systems, and modal transfer facilities.

Cost Recovery Ratio – The ratio of total revenues to total costs; the inverse of operating ratio. It is often used for evaluation of alternative plans. Usually total direct operating and maintenance costs are used although outside the United States; many agencies include annualized capital costs and / or depreciation in the calculation.

Count – 1. In transportation, a process that tallies a particular movement of people or vehicles past a given point during a stated time period. It may be a directional or two-way value and is also known as a traffic count. **2.** In transportation, a volume of people or vehicles.

D

Demand-responsive – A form of public transportation characterized by flexible routing and scheduling of small- to medium-size vehicles (passenger cars, vans or small buses typically less than 25 seats) operating in shared-ride mode between pick-up and drop-off locations according to passengers' requests. A demand-responsive operation is characterized by the following: (a) the vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a limited basis to serve specific origins or destinations; (b) passengers make a personal request for a reservation or service consideration (the reservation may be required several days in advance of the requested trip or on board the vehicle depending on the type of demand-responsive operation), and (c) typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may stop en route to these destinations to pick up other passengers. The following types of operations fall under the above definitions provided they are not on a scheduled fixed-route basis: many origins-many destinations, few origins-few destinations, many origins-one destination, one origin-many destinations, and one origin-one destination.

Demand-response connector – Provides demand responsive service within a defined zone that has one or more scheduled transfer points to fixed-route transit. The transfer points may be bus stop for peak-period express or other bus service, or a rail service.

Density, population – Average number of people per unit area; typically expressed as persons per square mile or square kilometer.

Department of Transportation (DOT) – A municipal, county, state, or federal agency responsible for transportation.

Dial-A-Ride – A demand-responsive system in which passengers call the transportation operator, who then dispatches a vehicle to pick up the passengers and take them to their destinations. It is also known as dial-a-bus when buses are the vehicles used.

Disincentive – Something that discourages people from acting in a certain way. For example, high parking fees or tolls are disincentives to automobile use.

Dispatcher – 1. In bus operations, the individual who assigns buses to runs, makes up work assignments to fill runs, directs the operators at the start of their assignments, and in some cases, maintains a constant awareness of status of the operation, via radio, telephone, or other means. **2.** In rail operations, an operating person whose function it is to dispatch train units (cars or trains), monitor their operation, and intervene in the event of disruption of schedule or when any change in service or routing is required. **3.** In demand-responsive transportation, the person who assigns the vehicles to customers and notifies the appropriate drivers and who may schedule and route vehicles and monitor their operation.

Dispatching – 1. In rail operations, the process of starting a transit unit (car or train) into service from a terminal, yard, or transfer track. **2.** In demand-responsive transportation systems, the process of relaying service instructions to drivers. The procedure may include vehicle scheduling, routing, and monitoring, and it can be manual or partly or fully automated. **3.** The relaying of service instructions to vehicle drivers or operators.

Distance, maximum walking – The maximum distance that people will walk to transit; affected by grade, pedestrian environment, and pedestrian characteristics.

Distance, walk – Measure of walking distance between two points following continuous pathways or sidewalks.

Dynamic routing – In demand-responsive transportation systems, the process of constantly modifying vehicle routes to accommodate service requests received after the vehicle began operations, as distinguished from predetermined routes assigned to vehicle.

E

Effectiveness – 1. In transportation, the correspondence of provided service to intended output or objectives, particularly the character and location of service; in other words, producing the intended result (doing the right things). **2.** In transit, the degree to which the desired level of service is being provided to meet stated goals and objectives; for example, the percentage of a given service area population that is within the desired 1/4 mile (400 m) of a transit stop.

Elasticity – The percentage change in demand for service for each 1% change in the price or amount of that service.

Eligibility, limited – Refers to limited eligibility demand-responsive transportation that operates similarly to general public demand-responsive transportation except that only defined rider groups are served, often older adults and people with disabilities. May be referred to as specialized transportation.

Equity – In transportation, a normative measure of fairness among transportation users.

F

Fare – 1. The required payment for a ride on a public transportation vehicle. It may be paid by any acceptable means, for example, cash, token, ticket, transfer, farecard, voucher, or pass or user fee. **2.** A passenger who pays a fare.

Fare, average – The arithmetic average of all fares paid by all revenue passengers, including those who received special or reduced fares. It is usually derived by or generally equivalent to dividing total fare revenue by total origin-to-destination trips, although it may be based on unlinked trips.

Fare, pre-paid – Any fare not paid onboard a transit vehicle (e.g., a transit pass, a ticket purchased at a machine prior to boarding a vehicle, or a fare paid prior to entering a fare-paid area).

Fare, reduced – A special fare for children, students, senior citizens, or others that is less than the regular fare.

Farebox – A device that accepts coins, bills, tickets, tokens, or other fare media given by passengers as payment for rides.

Farebox, registering – A farebox that counts the money and fare media processed and records fare information.

Farebox (Revenue) recovery ratio – The ratio of fare revenue to direct operating expenses.

Fare collection system – The procedures and devices used to collect fares and to accumulate and account for fares paid.

Fare collection system, automatic (AFC) – The controls and equipment that automatically admit passengers on insertion of the correct fare in an acceptable form, which may be coins, tokens, tickets, or farecards (magnetically encoded or smart card). On systems with distance based fares stored value farecards must be inserted again on exit, at which point an additional fare may be subtracted. The system may include special equipment for transporting and counting revenues.

Fare structure – The system set up to determine how much is to be paid by various categories of passengers using the system in any given circumstance.

Federal Highway Administration (FHWA) – A component of the US Department of Transportation, established to ensure development of an effective national road and highway transportation system. It assists states in constructing highways and roads and provides financial aid at the local level, including joint administration with the Federal Transit Administration of the 49 USC Section 5311 (formerly Section 18 of the Federal Transit Act) program.

Federal Transit Act of 1964 – Federal legislation enacted in 1964 that established the federal mass transportation program. Formerly known as the Urban Mass Transportation Act of 1964. Repealed in 1994 and re-enacted as Chapter 53 of Title 49, United States Code.

Federal Transit Administration (FTA) – A component of the US Department of Transportation, delegated by the Secretary of Transportation to administer the federal transit program under Chapter 53 of Title 49,

United States Code and various other statutes. Formerly known as the Urban Mass Transportation Administration.

Fixed Route – Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response. Includes route deviation service, where revenue vehicles deviate from fixed routes on a discretionary basis.

Flag stop – 1. In paratransit, fixed or flex route operations, a service accessed by hail. **2.** In rail operations, a non-scheduled stop may be served if proper notice is given by a passenger or prospective passenger.

Fleet – The vehicles in a transit system.

Flexible transit services – A range of user-oriented forms of public transportation that share attributes of demand-responsive transit and fixed-route transit.

Flex (route deviation) route – A variant of demand-responsive transportation service, sharing aspects of fixed-route service. Flexible-route vehicles operated along a regular route, with or without marked bus stops, and flex off that route to serve demand-response trips within a zone around the route.

Forecasting – In planning, the process of determining the future conditions, magnitudes, and patterns within the urban area, such as future population, demographic characteristics, travel demand.

G

Garage – In bus systems, the location in which buses are stored and serviced and where operators report for work and receive supplies and assignments. Also sometimes known as a depot or barn.

Global Positioning System (GPS) – A system that determines the real-time position of vehicles using communications with a satellite. Also, refers more specifically to a government-owned system of 24 Earth-orbiting satellites that transmit data to ground-based receivers and provides extremely accurate latitude / longitude ground positions.

Grade – Or gradient, rise in elevation within a specified distance. As an example, a 1% grade is a 1 ft (m) rise in elevation in 100 ft (m) of horizontal distance.

H

Headway – The time interval between the passing of the front ends of successive transit units (vehicles or trains) moving along the same lane or track (or other guideway) in the same direction, usually expressed in minutes.

Headway, clock – The scheduled headway between transit unit (vehicle or train) trips based on even times, i.e., 60, 30, 20, 15, 10 and 7.5 minutes

Highway, street or road – 1. General terms denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way. The recommended usages are as follows: in urban areas, highway or street; in rural areas, street or road. **2.** Street, in common general usage, refers to the vehicular travel way, as distinguished from the sidewalk (the pedestrian travel way).

Hub (timed transfer focal point) – Transit center or interchange for connections or transfers between modes and / or routes. Connections are usually timed in clock-headway pulses and allow convenient transfer between local routes and to express routes. The express routes can connect to the city center and to other hubs, thus offering better suburb-to-suburb trips than possible with a radial route system. Hubs are best located at activity centers such as shopping malls, suburban town centers, and campuses.

Hub-and-spoke – Type of route structure based on timed connections that increases connectivity and productivity.

Human service transportation – Shared-ride, advance-scheduled transportation for users and clients of human service programs; human service transportation is an ancillary service provided by many human service agencies so that their clients can access the agency's primary mission.

I

Infrastructure – 1. In transit systems, all the fixed components of the transit system, such as rights-of-way, tracks, signal equipment, stations, park-and-ride lots, bus stops, maintenance facilities. **2.** In transportation planning, all the relevant elements of the environment in which a transportation system operates.

Intelligent Transportation Systems (ITS) – Electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

Interchange – 1. Facility for passenger transfers or connection between routes or modes. **2.** The system of interconnecting ramps between two or more intersecting travel ways (highways, transit guideways, etc.) that are grade separated.

Interline – 1. Interchange of passengers between one or more bus lines, rail transit lines, or railroads. **2.** Transfer of transit vehicles or trains between routes during a day to improve staff or vehicle assignment efficiency.

Intermodal – 1. The ability to connect, and make connections between, modes of transportation. **2.** Those issues or activities that involve or affect more than one mode of transportation, including transportation connections, choices, cooperation, and coordination of various modes.

Intermodal Integration – Service coordination between two or more different transportation modes. This arrangement may include joint (transfer) stations, coordinated scheduling, joint fares, and combined public information activities.

Intersection – The point at which two or more roadway meet or cross.

J

Jitney – A transit mode composed of passenger cars or vans operating on fixed routes (sometimes with minor deviations) as demand warrants without fixed schedules or fixed stops.

K

Kiss-and-Ride – An access mode to transit whereby passengers (usually commuters) are driven to a transit stop and left to board a transit unit and then met after their return trip. Transit stations, usually rail, often provide a designated area for dropping off and picking up such passengers.

L

Line – 1. A transportation company (e.g., a bus line). **2.** A transit service operated over a specified route or combination of routes. **3.** An active (in-use) railroad track or AGT guideway. **4.** In network coding, a route and its service level, including mode designation (type of service), line number, headway, and sequence of transfer points (nodes). These factors describe the line's route as an ordered set.

Loop – 1. A transit route or guideway layout that is of a closed continuous form, such as a circle. **2.** A terminal track layout or bus driveway that reverses the direction of a vehicle without the vehicle itself reversing.

M

Moving Ahead for Progress in the 21st Century Act (MAP-21) – Signed into federal law on July 6, 2012, this act provided authorizations for highways, highway safety, and public transportation for 2 years. A significant aspect of the act is an emphasis on performance and outcome-based management of the transportation system.

Maintenance – The upkeep of vehicles, plant, machinery, and equipment. It may be scheduled, planned, progressive, or periodic on the basis of pre-established intervals of time, hours, or mileage, and employ preprinted checklists (preventative maintenance), or it may be unscheduled or corrective, in which case it is generally not interval based.

Market – 1. The potential or actual consumers (or both) of a (transportation) product or service. A general market denotes the entire population of a designated geographic area, whereas a specialized market denotes particular groups, such as the elderly, persons with disabilities, or students. **2.** The extent of demand for a transportation commodity or service.

Market share – The percentage of a (transportation) market realized by or available to a particular (transportation) provider.

Mobility – The ability to satisfy the demand to move a person or good.

Modal split – 1. The proportion of total person trips that uses each of various specified modes of transportation. **2.** The process of separate total person trips into the modes of travel used.

Mode – 1. A transport category characterized by specific right-of-way, technological and operational features. **2.** A particular form of travel, for example, walking, traveling by automobile, traveling by bus, traveling by train.

N

National Transit Database (NTD) – A database compiled by the Federal Transit Administration of operating and financial statistics for over 600 transit agencies in the United States (those systems eligible

for grants under Title 49 United States Code, Chapter 53 – Mass Transportation, Section 5307). Formerly known as Section 15 of the Federal Transit Act.

Network – 1. In planning, a system of links and nodes that describes a transportation system. **2.** In highway engineering, the configuration of highways that constitutes the total system. **3.** In transit operations, a system of transit lines or routes, usually designed for coordinated operation.

Network, radial – In transit operations, a service pattern in which most routes converge into and diverge from a central hub or activity center (e.g., central business district), like the spokes of a wheel. The hub may serve as a major transfer point.

O

Off-peak period – The periods of time outside the peak periods (also known as base period).

Operating costs – The sum of all recurring costs (e.g., labor, fuel) that can be associated with the operation and maintenance of the system during the period under consideration. Operating costs usually exclude such fixed costs as depreciation on plant and equipment, interest paid for loans on capital equipment, and property taxes of capital items.

Origin-Destination Study – A study of the origins and destinations of the trips of vehicles or travelers. It may also include trip purposes and frequencies.

P

Paratransit – Forms of transportation services that are more flexible and personalized than conventional fixed-route, fixed-schedule service but not including such exclusory services as charter bus trips. The vehicles for paratransit service are usually low- or medium-capacity highway vehicles, and the service offered is adjustable in various degrees to individual users' needs. The term paratransit originally referred broadly to categories of service that are public, which is available to any user who pays a pre-determined fare (e.g., taxi, jitney, dial-a-ride), and semi-public, which is available only to people of a certain group, such as older adults, employees of a company, or residents of a neighborhood (e.g., vanpools, subscription buses). However, more recently, paratransit is often used to refer more specifically to ADA complementary paratransit.

Paratransit, complementary – Paratransit service required within a distance of any local fixed-route transit service to accommodate passengers whose disabilities prevent their independent use of the fixed-route service. Required by the Americans with Disabilities Act.

Park-and-Ride – An access mode to transit in which patrons drive private automobiles or ride bicycles to a transit state, stop, or carpool / vanpool waiting area and park the vehicle in the area provided for that purpose (park-and ride lot, park-and-pool lot, commuter parking lot, bicycle rack or locker). They then ride the transit system or take a car or vanpool to their destinations.

Parking facility – An area, which may be enclosed or open, attended or unattended, in which automobiles may be left, with or without payment of a fee, while the occupants of the automobiles are using other facilities or services.

Pass – 1. A means of transit prepayment, usually a card that a transit passenger displays to the operator, conductor, or fare inspector, or processes through automatic fare collection equipment instead of paying a cash fare. Passes are usually sold by the week or month. In some area, to encourage tourism, they are also sold for shorter periods, sometimes with restricted hours for their use. **2.** A means, usually a card, of granting free access to a transit system. This type of pass is issued to employees, visiting dignitaries, police, and so on. Employee passes usually carry some form of identification.

Passenger – A person who rides a transportation vehicle, excluding the operator or other crew members of that transportation vehicle.

Passenger, revenue – A passenger who pays (or has prepaid) a fare.

Passenger, transfer – A passenger who changes from one route or line to another route or line.

Peak period – 1. The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak. **2.** The period when demand for transportation service is heaviest.

Persons with disabilities – People who have physical or mental impairments that substantially limit one or more major life activities. In the context of transportation, the term usually refers to people for whom the use of conventional transit facilities would be impossible or would create a hardship.

Point deviation – A transit routing pattern in which the vehicle passes through pre-specified points in accordance with a prearranged schedule but is not given a specific route to follow between these points. It may provide door-to-door or curb-to-curb service. May be called checkpoint dial-a-ride.

Productivity – The ratio of units of transportation output to units of input (consumed resource); for example, vehicle miles (vehicle kilometers) per operator hour, or passenger miles (passenger kilometers) per unit cost of operation.

Public transit – Passenger transportation service, usually local in scope that is available to any person who pays a prescribed fare. It operates on established schedules along designated routes or line with specific stops and is designed to move relatively large number of people at one time. Examples include bus, light rail, rapid transit.

Public transportation – Transportation service to the public on a regular basis using vehicles that transport more than one person for compensation, usually but not exclusively over a set route or routes from one fixed point to another. Routes and schedules of this service may be predetermined by the operator or may be determined through a cooperative arrangement. Subcategories include public transit service and paratransit service that are available to the general public.

R

Revenue passenger trips – The number of fare-paying transit passengers with each person counted once per trip; excludes transfer and non-revenue trips.

Ridership – The number of people making one way trips on a public transportation system in a given time period.

Ridesharing – A form of transportation, other than public transit, in which more than one person shares in the use of the vehicle, such as a bus, van, or automobile, to make a trip.

Right-of-way (ROW) – 1. A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes. For transit, rights-of-way may be categorized by degree of their separation: fully controlled without grade crossings, also known as grade-separated, exclusive, or private ROW; longitudinally physically separated from other traffic (by curbs, barriers, grade separation, etc.) but with grade crossings; or surface streets with mixed traffic, although transit may have preferential treatment. **2.** The precedence accorded to one vehicle or person over another.

Roadway – That portion of a highway built, designed, or ordinarily used for vehicular travel, except the berm or shoulder. If a highway includes two or more separate roadways, the term means any roadway separately but not all such roadways collectively.

Route – 1. The geographical path followed by a vehicle or traveler from start to finish of a given trip. **2.** A designated, specified path to which a transit unit (vehicle or train) is assigned. Several routes may traverse a single portion of road or line. **3.** In traffic assignments, a continuous group of links that connects two centroids, normally the path that requires the minimum time to traverse. **4.** In rail operations, a determined succession of contiguous blocks between two controlled interlocked signals.

Route deviation – Public transportation service on an exclusive basis that operates along a public way on a fixed route (but not a fixed schedule). The vehicle may deviate from the route occasionally in response to demand for service or to take a passenger to a destination, after which it returns to its route. It is a form of demand-responsive transit.

S

Service span – 1. The number of hours during the day between the start and end of service on a transit route. **2.** For calculating transit level of service, the number of hours during a day when service is provided at least hourly on a transit route.

Smart card – Stored-value ticket with built-in semiconductor chip. The chip is loaded with monetary value which is decremented for each ride, in flat amounts or, with exit checks, for distance-based fares. Most versions in transit are proximity cards and require only to be held close to the farebox or fare gate inductive detector plate.

T

Terminal – 1. The end station or stop on a transit line or route, regardless of whether special facilities exist for reversing the vehicle or handling passengers; also known as a terminus. **2.** An assemblage of facilities provided by a railroad or intercity bus service at a terminus or at an intermediate location for the handling of passengers and the receiving, classifying, assembling , and dispatching of trains or dispatching of buses.

Transit Cooperative Research Program – A major transit research program provided for in the Intermodal Surface Transportation Efficiency Act of 1991 and established by the Federal Transit Administration in 1992. The program is administered by the Transportation Research Board on behalf of the Federal Transit Administration and the American Public Transportation Association. The program emphasizes the distribution of research information for practical use.

Transit dependent – Having to rely on transit services instead of the private automobile to meet one's travel needs.

Transit shelter – A building or other structure constructed at a transit stop. It may be designated by the mode offering service, for example, bus shelter. A transit shelter provides protection from the weather and may provide seating or schedule information or both for the convenience of waiting passengers.

Transit stop – An area where passengers wait for, board, alight, and transfer between transit units (vehicles or trains). It is usually indicated by distinctive signs and by curb or pavement markings and may provide service information, shelter, seating, or any combination of these. Stops are often designated by the mode offering service, for example, bus stop, car stop.

Transportation Demand Management (TDM) – The concept of managing or reducing travel demand rather than increasing the supply of transportation facilities. It may include programs to shift demand from single-occupant vehicles to other modes such as transit and ridesharing, to shift demand to off-peak periods, or to eliminate demand for some trips.

V

Van – Vehicles having a typical seating capacity of 5 to 15 passengers and classified as a van by vehicle manufacturers. A modified van is a standard van that has undergone some structural changes, usually made to increase its size and particularly its height. The seating capacity of modified vans is approximately 9 to 18 passengers.

Vanpool – Vans and / or buses seating less than 25 persons operating as a voluntary commuter ridesharing arrangement, which provides transportation to a group of individuals traveling directly between their homes and their regular places of work within the same geographical area. The vans should have a seating capacity greater than seven persons, including the driver. It is a mass transit service operated by a public entity, or in which a public entity owns, purchases, or leases the vehicles. Other forms of public participation to encourage ridesharing arrangements such as the provision of parking spaces, utilization of high-occupancy vehicles (HOV) lanes, and coordination or clearing house service, do not necessarily qualify as public vanpools.

Appendix A
Transit Focus Group Meeting Notes

Appendix A: Transit Focus Group Meeting Notes August 22 – August 28, 2013

August 20-21

- Interviewed members of the public informally, such as hotel workers, Pau Pau charter operator employee (maintenance) of 32 years
- Observed taxi operators (licensed and non-licensed), charter buses, etc.
- Drove the main roads, and explored neighbourhoods including Dandan, Kagman, San Roque
- First formal meeting with Thomas Camacho
- Met briefly with Governor Eloy S. Inos, who welcomed us to Saipan; Later on August 22, met the Lt. Gov. Jude U. Hofschneider, the Attorney General, the Director of Public Lands, and the Highway Administrator.

Focus Group # 1: Project Steering Committee - August 22, 2013

COTA statute

- There are some problems with the statute that created COTA, such as that COTA does not have the authority to set its own fares.

Coordination on transit issues

- **Coordination**: Sonya Dancoe expressed the general need for more effective coordination between government departments, and said this was particularly true of transit issues, which involve Public Works, Public Lands, Public Safety (police), etc. which at present have only informal contacts
- **Policies**: The body of CNMI government policy is just in a formative stage, and this may pose problems for transit, as it can be difficult to resolve complex issues
- **Stakeholder input**: An ongoing forum to receive input from the business community, health care agencies, etc. would also be useful

Early attempts by private sector to start a transit service:

- 1970's – a local bus service was started that charged 25 cents for a trip
- 1990's – A Korean entrepreneur started a 6-bus system with good coverage of the island, which failed due to insufficient ridership and revenues. Once garment factories started providing transportation for their workers, the service folded
- The Chicken Bus – one vehicle, has run for about 15 years, and is still running as a shuttle between hotels; also does charters. Fare not known.

Colorum (unlicensed) taxis

- Shared ride, dial-a-ride service; usually responds to call within 5 minutes
- Costs $3 per passenger; drops off and picks up passengers along the way.
- Appear to be very successful at addressing the market for inexpensive transportation.
- There are reportedly about 50 such vehicles, some of them said to be owned by licensed taxi owners, who want to cover this market as well as the much higher priced licensed, non-shared taxi market ($25 to $30 per trip).
- Potential service issues include delays in responding at peak travel times, and occasional incidents on board such as assaults

Transit Route design:

- Met with Sonya Dancoe, Highway Administrator, who suggested that the most promising start-up route for transit/flex route would be a Garapan Loop running on the Beach Road (33), and 31.

- About 15-20-minute straight driving time –- needs to be checked. Would link a large number of attractors and generators, including the hotels, the commercial district, downtown residences, and the hospital.
- Allowing for stops and very limited deviation, should be able to achieve about a half-hour running time
- Vehicles would run in each direction
- Potential for clock-face headways posted on bus stop signs which would make the service very easy to understand and use

Transit equipment:

- Low-floor vehicle would be necessary for quick on-off of both regular passengers and wheelchairs, and to eliminate steps and tripping; also long lift cycle times for high-floor lift-equipped vehicle would keep the lift door open too long and challenge the air conditioning, leading to steamed windows, passenger discomfort, etc.
- Low-floor deemed not to be an issue by COTA staff during road flooding incidents
- Buses not recommended for some residential streets that are not in good repair; streets in bad condition are likely candidates for door to door service such as dial-a-ride and shuttles

Transit stops and shelters:

- Stop and shelter placement will be challenging to figure out – maybe stops should be temporary at first, to allow for adjustment.
- Beach Road reconstruction will allow for 2 travel lanes per direction and have one shelter per 1,000'. Bus stop distances may be closer to 600' to 800' but not all stops need to have shelters

Potential Transit Operators:

- Public School District uses government employees to operate buses; therefore, unlikely candidate as an operator due to higher wages and benefits, and presently distant relationship with COTA due to misunderstandings about federal vehicle subsidies re-directed to COTA
- Minimum wage of about $5 per hour will be increased to $10.50 within a 5-year period so costs should reflect this; some justification for COTA paying better than rock-bottom wage rates to set a good example as a government-run service, and to attract and retain high-quality staff with good people skills
- Two non-emergency transit services exist today:
- August Health Care – previous Call-A-Ride operator
- Priority Care who are also equipped for stretcher patient transport
- Limousine service in town
- Fixed-route shared-ride taxi or dial-a-ride taxi can be a low-cost option to act as a feeder service to community bus route(s); would depend on getting buy-in from the industry, and willingness to bid on COTA RFP for feeder service.
- Chicken Bus shuttles between hotels
- Charter Bus Operators; they have all the requirements and serve a different market
- Technology will be needed to monitor service and maintenance performance
- On-road inspector will be necessary to keep tabs on driver and route performance

Bus Operations:

- Vince Merfalen is a certified bus operator and trainer
- Bus operator rules and regulations in place

Transit Policy Framework

- Vision, mission and goals are in place
- COTA objectives to be developed that support the vision/ mission statements and goals
- The word 'guidelines' shall be used to the extent possible; allows for flexibility
- Transit-supportive land use design guidelines to be developed based on best practices developed by W. Beck and sent to COTA

Focus Group #2: Call-A-Ride Staff - August 28

Participants:

Will, Kelvin (drivers), Mary (Kit) Dickinson and other COTA staff

General Comments

- The drivers reported that the service is generally going well.
- The number of rides is growing, and they are quite busy.

Vehicles

- Problems on logged with the vehicle to request maintenance
- The consultant observed that one van appears to need new tires. Will said this had already been noted. They are on order from Guam
- The gasoline-engine vehicles are quite satisfactory. The older one is 10 years old and is still capable of providing reliable service.
- Presently there is not a policy that establishes vehicle service life and schedules replacements at a regular interval.

Trip booking and scheduling

- Dialysis return trips are always will-call, since the time the patient will finish is quite variable. Patients accept that the vehicle may be busy when they call for a return ride.
- The current on-time pickup window is 15 early, 15 late. This seems to work well.
- Currently work and school trips are guaranteed regular trips, which are not displaced for other trip types, such as medical trips.
- When the transit service starts, it would be good to have all drivers trained to provide both transit and Call-A-Ride service, as this would provide flexibility in assigning drivers and covering absences, and would ensure that transit drivers know how to accommodate passengers with disabilities.
- For large facilities, such as the hospital, reservationists must be careful to note at which door the pickup is to take place
- A Call-A-Ride pickup point sign might be useful at the most frequently used entrance of the hospital

What is needed to improve Call-A-Ride?

- More drivers are needed. Presently 2 drivers are covering mornings, afternoons and Saturdays. It is impossible to schedule regular rest days for drivers. Drivers would at least like to have every second weekend off. Two more drivers are needed, plus ideally an additional spare driver who can also double on Dispatch.
- WIA funding should be sought for additional drivers
- The existing radiophones do not allow passengers to call the vehicle after office hours. This capability would be useful in case of a time change, cancellation, or a will-call request that comes after the office is closed.

Other Comments

- St. Michaels did a good job with the service, but was unable to continue to operate because of inadequate funding. It tried to keep the service going despite the funding shortfall by raising fares, but in the end could not continue.

Focus Group # 3: Legislators - August 23, 2013

Participants:

19 Senators and House Members, including the President of the Senate and Speaker of the House; COTA Director and staff. The Speaker opened the special session at 10:15 am, and brought it to a close at 12:15 pm. The legislators included members of both the House and the Senate. They accorded us nearly two hours of their time. Following the presentation, nearly every member asked a question or provided guidance for the project.

Service Priorities

- Consider the possibility of hybrid vehicles for fuel efficiency.

Fares

- Consider how, for the transportation of students at the two high schools and Northern Marianas College, grant money for student transportation might be leveraged to support the transit system
- Consider how much the Government will have to pay to sustain the transit system.

Other Comments

- How do you see the challenge of the high cost of fuel in setting up a transit system? We responded that the high cost of fuel is actually an opportunity to attract riders, since each car owner must bear the increase alone, whereas 100 passengers or more every day would share the increased cost of fuel for the transit system.
- Configure the new transit system in such a way that it is fuel efficient, which will minimize the effects of increases in fuel costs.
- Consider the impacts of transit on the existing taxi system.
- Consider ways to maximize convenience for those who use transit.
- Consider the tendency of people in Saipan to abandon an initiative that they consider to be unsuccessful.
- Consider the possible impact on ridership of the departure of foreign workers in 2014.
- Consider the impacts of mainstreaming on transit service people with disabilities who are used to travelling in the protected environment of the Call--A-Ride paratransit service.
- Consider the need for shelters in case of inclement weather.
- Look at Guam and note what Guam has achieved, and also what are its challenges and problems.
- Although the title of the study is impressive, consider that Saipan is different from the mainland USA.
- Consider that a trunk route system, with feeder service into neighbourhoods, would extend the reach of the transit service economically, while avoiding the need to run bigger vehicles into neighbourhoods.
- Consider that the beneficiaries of the NMI Retirement Fund, who are faced with a significant cut in benefits, may increase the market for public transportation.
- Consider that the public is used to spontaneous travel, either by private car, or by the unlicensed taxis that respond quickly to a request for transportation, and are inexpensive. As a result, many people are not accustomed to the planning required to use transit - understanding the bus schedule, being at the stop in time, allowing sufficient time to arrive where they want to go when they need to be there.
- Consider that relieving members of the public of the need to spend $300 per month or so to run a car will have impacts on other sectors of the economy - positive in the case of college students and the college itself, but challenging for car dealers, repair shops, taxis, etc.
- Consider the limited accessibility of some secondary roads when planning routes.
- Consider the need to carefully place pick-up point
- It was made clear that the fare revenues and FTA funding alone will not be sufficient to financially support the transit system

Focus Group # 4: General Public, GTC Elementary School - August 23, 2013

Participants:

Director, Centre for Independent Living, private citizens (3)

Service Priorities

- Priority destinations: Hospitals, grocery stores, university, schools, beaches, hotel to hotel service, theater
- Priority trip purposes: work trip, school, medical, shopping, recreational, then other
- Days of service: Monday through Saturday, then Sunday
- Hours of service: peak service then off-peak then evening; evening till 9pm
- Transit market: low income workers and students (peak), then remaining population
- Service coverage: agreement reached on giving priority on serving urbanized communities that are contiguous first then expanding to other areas, as required and when affordable
- The concept of dial-a-ride or fixed-route shared-ride taxis serving more remote areas such as Dandan, Kagman and Navy Hill/ Capitol Hill was supported
- A bus route that eventually traverses the entire island would be a 'nice to have'; however, it was considered a long-term goal
- It is important to provide a service that is of high quality regarding frequency and reliability, even at the cost of sacrificing greater coverage. Whatever is provided must have frequent and direct service in preference to accepting a low level of bus service in order to expand route(s) to other areas
- It was recognized that transit cannot be all things to all people
- DFS shuttle???

Fares

- Monthly pass cost should be less than the cost of buying gas (example given: $140 spent monthly on gas alone; could consider $60 monthly pass)
- $3.00 fare
- $4.00 anywhere on island
- $7-$8 for day pass
- The fares discussed were considered by some to be too high for many persons transit is designed to serve, and because the main competition for ridership is the well established system of dial-a-ride non-licensed taxis. A new transit service, that is not door to door, as the non-licensed taxis are, and may impose longer travel times than they do, will have an uphill struggle to gain riders if it does not at least compete on lower cost
- Consideration given to a low fare to help those looking for work; perhaps other government agencies can help subsidize the bus fare for their clients
- Smart card concept supported
- Period fares supported enthusiastically (i.e. 90-minute free transfer on any route and in any direction)
- Have tourists pay more for transit while locals pay a discount (unworkable?)

Other Comments

- The wording 'fixed flex-route and paratransit' should be replaced with 'public transit and paratransit' since it will remove the implication we are dealing with paratransit only. In fact avoiding the word transit altogether in the service name, and using something like 'Public Bus', which has a clear historic meaning to the average person in Saipan and no connotation of transit for the disabled, might be best
- Transit provides a freedom by not having to rely on others for transportation
- Transit will relieve some of the pressure on people who are caring for elders and children, and who also work and are not available for driving duties during the day
- Bike racks on buses could help with the completion of trips at both ends of a route
- Transit would provide an option to low income residents that are biking unsafely

- Transit would provide a much safer option than the widespread practice of carrying passengers – frequently children - in the bed of pickup trucks, where they are bound to be ejected and injured or killed in a collision
- Bus seats should be water-resistant
- Air conditioning is a must
- Bus stops need to be accessible (i.e. ADA)
- A short video on instructing residents on how to use transit would be an asset (travel training) since most nationals have never taken public transport
- Concern that bus shelters should eventually be provided at all stops due to rainy season

August 26: Man Amko Center

- Travelled to Man Amko Center, accompanied by Roy and Vince, to meet with elders attending day programs, and staff
- Interviewed Director, Mr. Walter Manglona
- Gave a brief presentation to about 60 elders, and asked for their recollections of previous public bus services, and for their ideas on what a future public bus system should look like
- Interviewed four elders from this group who showed a high level of interest and expressed good ideas on a range of subjects. These included the Chair and Vice-Chair of the Seniors Association
- Reviewed proposed Route structure with Roy and Vince
- Travelled to COTA offices to continue the staff review of route layout, travel times, and key attractors and generators of transit trips

Interview with Mr. Walter Manglona, Director of Office on Aging

- The Man Amko Center provides Program 1 services to elders. These are delivered on-site, and include health and wellness and socialization services, and transportation to and from the Center.
- The programming and the transportation are delivered free of charge to registrants. The program runs from 8 am to 2 pm, weekdays only.
- When a participant in the program shows signs of dementia, or requires intensive personal care beyond what the staff can provide, the person is asked to bring an attendant to care for him/her, or, if that is not possible, to withdraw from Program 1, whereupon the person becomes eligible for Program 2 services which are delivered at home.
- The Office on Aging also provides limited Program 2 services, delivered at home to elders who are unable to attend Program 1 due to their mental or physical condition.
- Transportation to and from the Man Amko Center is provided to Program 1 registrants using 3 GMC Savannah 14-passenger vans, several sedans or SUVs, and a wheelchair-accessible vehicle, which is currently off the road.
- These vehicles are also used to take Program 1 registrants to and from the hospital, medical appointments, the bank, shopping, etc., also free of charge.
- Current enrolment in Program 1 is 71 people, of whom 2 use a wheelchair but travel using their own vehicle
- In prior times, the enrolment was about 130; however problems with the program under a previous Director discouraged many people from attending. Numbers are now recovering.
- Passenger vans may be idle between 10 am and 1 pm, but under the agency funding agreement, the Director doubts that they could be used for other purposes, such as chartering to COTA as auxiliary vehicles.
- Consultant comment: however, these skilled drivers might be available after program hours to drive for COTA or its contractor.

Plenary Session with Elders, Man Amko Center - August 26/ 13

Participants:

45 residents + 5 staff attended meeting and presentation; 5 key residents from previous meeting attended a special meeting with TCN

Service Priorities

- A level of service that allows for independence and not having to rely on family or friends
- Ability to access all trip purposes that are non-work related
- Access to hospital and other medical trip purposes
- Service to Marianas Business Center
- A limited demand-responsive (Dial-a-Ride) service in remote areas that feeds into regular bus service was supported

Fares

- Would like to see affordability for seniors
- A cash fare less than the illegal taxis would be supported (e.g. $2.50)
- $5 day pass supported; could be higher
- Monthly passes for seniors and students desired ($40 suggested based on prices quoted in US a few years ago)
- Liked the idea of a free transfer period for 90 minutes
- Wide support for a smart card application (lost cards can be replaced, no exact cash fare required, etc.); liked the idea of a $5 smart card registration fee for one month of free bus service during project launch

Other Comments

- Mandatory to have air conditioned buses
- Very much liked the low floor buses with kneeling capability
- Recognized that regular buses (community buses) would have challenges on roads such as Navy Hill and Isa would be difficult to serve
- Saw the need for a travel training program to familiarize all residents and have tied into 1st month of free transit
- Requested we review San Mateo Rapid Transit
- Rota and Tinian have vans in Saipan that perhaps COTA could operate

Recollections about earlier public bus services:

- Joeten Enterprises started the Saipan Bus Company.
- For reasons of political rivalry, the party in power at the time then started a government bus service. The two services polarized the population. People aligned with Joeten's party would take the SBC bus, and those aligned with the party in power would take the government bus. By splitting the ridership in half, the two services effectively killed each other. Both discontinued service after a time. At one point, Joeten sued the government for infringing on his business, and won. The government was ordered to shut down its bus service. But the damage had been done, and Joeten eventually shut down, too.
- One elder pointed out that at that time Saipan had a very small population – about 6,000 people, mainly Chamorros and Carolinians, so the population base to sustain even one, let alone two bus services, was too weak
- Six people out of the 50 or so who were present reported that they have a car.
- The Public Bus should offer a day pass for about $5
- When asked for a show of hands of people who were in favor of a public bus system, everyone raised their hand
- One participant said he welcomed a public bus system because it would take away business from the non-licensed taxis that 'don't pay taxes or contribute to the government'.

Focus Group # 5 Small Group of Elders at Man Amko Center - August 26

Participants:
Four elders who volunteered for the separate focus group; See sign-up sheet

Service priorities
- We need a bus that kneels because many places have no curb, and the first step onto the bus would be lower that way.
- Don't forget to serve the hospital. Every time I go there in my car someone asks me for a ride home.

Fares
- A monthly pass at $40 for seniors and students should be offered.
- Non-licensed taxis charge $2, $3, $5, or $10 depending on the length of the trip, so go lower than that to attract riders.
- Have a $5 day pass.

Other Comments
- Guam uses feeder service to go into neighbourhoods and bring people to the transit routes.
- Have a good hub like the Marianas Business Center
- Ask Legislators to think about where they have seen transit on their visits to the States, and consider the transit system they saw there.
- Many of us do not go often to Garapan, but we would if there was a bus.
- We need to use shopping carts when we go out. Make sure the bus has a place to put them.

Focus Group # 6: General Public, Dandan Elementary School - August 26

Participants:
School Principal, Ms. Martha Zeto, Director of Veterans Affairs Office; staff of Dandan Elementary; private citizens

Service Priorities
- Saipan needs to attract more people to retire here. For this, it needs transit, as people do not want to lose their mobility once they are older and can no longer drive a car

Fares
- Transit should be priced less than the non-licensed taxis

Other Comments
- A process is needed to teach people how to use the bus – develop the various skills required
- One participant said he had put 199 thousand miles on his car in 16 years, but some people reported taking fewer trips by car because of the rising cost of fuel
- The vehicles should carry umbrellas
- Families in Dandan need to travel to register for Medicaid, food stamps, pre-registration for school, etc.
- It's a great idea to convince people to save money by taking transit instead of their car, but the numbers used need to be calculated using local data
- The marketing of transit needs to be effective. It should focus on convenience and economy

Focus Group #7: Multipurpose Center, Public Works Director and Staff - August 27, 2013

Bus Shelters

- COTA will propose the design and locations of shelters it needs. ADA design criteria must be followed and sidewalks will need to be built in some cases. PW will secure the approval of the Federal Highway Administration, and will be responsible for contracting the construction of shelters.
- Once built the shelters would belong to PW, but a memorandum of understanding with COTA would govern who is responsible for shelter maintenance, who benefits from advertising revenues, etc.
- The shelters would be built on the PW right of way, which is typically 100 feet in width from the road center line on major roads, 80 feet on beach roads
- Shelters would require lighting if they are to be used after dark.
- Depending on the design, shelters would cost between $6,000 and $9,000 for wooden construction; more for concrete; possibly less for metal and glass modular shelters, which seem to be the preferred approach
- Public School Board (PSB) might agree to COTA using school bus shelters, where appropriate. These shelters are numerous, and some come in and out of use by school buses as routes change on a yearly basis.

Fares

- COTA should price bus fares so that they are competitive with unlicensed taxis

Other Comments

- The Public School Board is an autonomous body. Its bus stops might be made available for use by public transit. This would require coordination between PSB and COTA, which up to now has been difficult. However, the Governor would be able to say to both agencies that it is imperative that they sit down together and iron out a good working relationship, and collaborate fully in areas where they could be of assistance to each other, for the good of the Commonwealth.
- The private schools are independent of the PSB, yet there could be some interest on their part in supporting a public transit system. This should be investigated by direct contacts with them.
- Transit could assist the schools by enabling students to take the bus home after attending after-school activities. Presently there is no late bus, so parents must pick up their children.

Other Sources of Revenue

- It was agreed that while there is inherent local funding support for autos (i.e. road construction and maintenance), there is none in place to support non-auto owners
- It is recognized that bus fares will not be sufficient to cover transit costs and as such, innovative funding mechanisms within the control of the NMI government can be considered such as:
    - Starting up the metered parking and sharing the revenues 50/50 with COTA
    - Adding $5 to $10 annual car license registration fees, of which 100% of the 'surcharge' can be dedicated to CTA Transit costs. Would include about 5,000 private vehicles
    - Taxis, tour buses, and any licensed equipment such as construction vehicles may have a larger surcharge dedicated to transit
    - A minimum of $50,000 could be realized on private auto licensing fees alone
- A sustainable non-transit revenue source can go a long way to being able to expand transit and project longer-term budget planning

Focus Group # 8: Northern Marianas College, General Public - August 27, 2013

Participants:

Staff and students of Northern Marianas College (about 20); staff and clients of the Centre for Independent Living (Call-A-Ride clients)

Service Priorities

- Service to and from Kagman was strongly supported by some participants
- Suggested hours of operation:
- A bus at 3 and at 4 pm for day students
- A bus at 8 or 8:30 pm for evening students. Evening classes run from 5:30 to 8:00 pm

Fares

- A student discount should be offered.
- Participants seemed receptive to the idea of a student pass, to be paid for by an additional amount per semester added to student fees (currently $300 per semester).

Other Comments

- The college currently has 1,171 full-time students enrolled. The Center has a minivan, which was donated but is expensive to keep in good repair. There are no funds available to operate the vehicle. It may be possible for COTA to share the NMC vehicle at certain times in return for some consideration, such as a contribution to the costs of maintaining the van.
- Rota and Tinian students live in apartments near the College
- Foreign students are often used to having transit in their own country, and expect to find it in Saipan
- Hawaii is an example of a place where transit is very accessible to people with disabilities
- Some participants said they had friends who would be attending NMC if they had a reliable, inexpensive way to get there.
- Students in Kagman have difficulty getting to the College. A non-licensed taxi costs $7.00 from Garapan
- Students said they often have to rely on friends to get a ride to the college
- Some students said they use non-licensed taxis to get to the college from Garapan. The cost, one-way is $3.00 to $3.50
- People would like to have transportation on Sundays
- Call-A-Ride passengers would like to have service in the evenings and on weekends. The consultants pointed out that the ADA will require equal service hours for ADA complementary paratransit once transit service begins, therefore Call-A-Ride will be available for the same hours as transit.
- Some social agencies (such as the Centre for Independent Living) contribute to the Call-A-Ride tickets for students at the college who have disabilities.
- Call-A-Ride is experiencing more demand for service. One participant said that the previous day, her pickup was a half-hour late

Lunch Meeting with Public School Board Commissioner and Staff - August 28, 2013

Present:

Dr. Rita Sablan: Commissioner of Public School Board + 6 staff members, 2 COTA staff (Vince Merfalen and Roy Rios)

Service Priorities

- 4,245 total students in Saipan, Rota and Tinian: 1,356 elementary, 2,889
- Approximately 3,000 students in Saipan
- There are 3 high schools and 2 middle schools

- Students within a 1 mile walk distance to school do not qualify for school board transportation
- Cross enrolment exists whereby students will travel between schools for certain classes and they will also travel to NMC for courses
- Dr. Sablan agreed in principle on the following points:
    - Elementary school students will continue to take yellow school buses; however middle and high school students would be a potential untapped market for public transit
    - Students were considered to be the future of Transit in Saipan since they are at the age where early introduction of transit will have a greater impact on them being adult users in the future
    - Would consider Saipan Transit providing students transportation to and from school where it makes financial sense to do so
    - Students are dependent upon the family car
    - Unlicensed taxis are a concern if used by students when travelling outside of school
    - Bus stops can be shared with school board and would consider sharing in maintenance costs if stops can be used by yellow school bus
- After school 9-passenger vans are available to students
- Agreement was reached relative to a philosophy that the Public School Board and COTA should work together to 1) identify opportunities to reduce costs to the taxpayer, regardless of jurisdiction, and 2) to establish public transit as an environmentally friendly alternative to middle and high school students

Fares

- The idea of a low cost student 'activity' pass for about $10 or so a month would be welcomed since there is not always after school yellow school bus service to meet student needs
- Students with part time jobs or other out of school activities would benefit
- Consideration should be given to pricing a student pass that is comparable or lower than what it cost the school board to provide transportation. Another consideration is that a monthly pass would provide free transportation outside of normal school hours, improving the mobility of students. This was considered a ridership growth activity
- The College has a minivan, which was donated. However is expensive to keep in good repair.
- This vehicle might be available to COTA at certain times in exchange for maintenance services.

Focus Group # 9: Multipurpose Center: COTA planning and operations staff - August 27, 2013

- This session, in the absence of general public participants, was an informal but productive discussion with COTA staff re options for transit routing – service to more remote neighbourhoods; route running time; coverage versus route efficiency; use of feeder service.

Interview on KKMP Radio - August 28

The consultants, accompanied by COTA staff, had the opportunity to describe the Feasibility Study on a popular radio show. Gary, the radio host, showed a lively interest in the project, and helped listeners fit it into the context of building the communities of Saipan, Rota and Tinian.
Following our 15-minute discussion, the co-host summarized the main points in the Chamorro and Carolinian languages, using informal notes prepared by the consultants.

Ride-Along on Call-A-Ride Van - August 28

The ride-along was for passenger trips from the Capitol Hill area to the Centre for Independent Living in Capitol Hill, and to the commercial centre in Dandan.

Observations:

The vehicle

- The vehicle is a 2009 high-top lift-equipped Ford van in apparently excellent condition.

- The vehicle was in excellent repair, operated smoothly, and was cool and comfortable, and very clean.
- Steve reported that this van, the newer of the two vehicles, travelled 4,000 miles in July, and consumed $3,000 in fuel (about 606 gallons of gasoline.) Fuel economy was about 6.6 miles per gallon.
- The vehicle can carry 7 ambulatory passengers or 3 ambulatory and 2 wheelchair passengers.
- The passengers were in good spirits, and very appreciative of the service.
- The de-boarding of the wheelchair passenger went very smoothly.

Lift Platform Width

- It was observed that the wheels of the passenger's wheelchair were right at the edges of the lift platform when leaving the vehicle, due to the width of the wheelchair. The vehicle has a standard width ADA lift platform. While there was no difficulty accommodating this passenger's wheelchair, there may be other, heavy passengers whose wheelchair has an even wider distance between the wheels.
- Extra-wide (40-inch) lift platforms are now becoming available for paratransit vehicles.
- COTA should investigate these wider lift platforms for future vehicles, and determine whether the additional cost would be justified by the number of oversize wheelchairs that Call-A-Ride customers have.
- COTA Operations
- Steve remarked that Call-A-Ride was out back in operation, in July, under COTA, earlier than anticipated, at the request of the Governor. At this early date, formal budgets and other things are being developed as operations go forward.
- The process of developing policies, budgets, maintenance facilities, scheduling software, more advanced communications, vehicle monitoring etc. can be expected to take some time and are much easier to do when COTA has complete responsibility for the operations and driver training.
- Therefore COTA may want to consider keeping Call-A-Ride as a directly-operated COTA service for the fiscal 2014 beginning October 1, then developing an RFP for service the following year, 2015, and transitioning Call-A-Ride to a contracted operation the third year, Fiscal 2016.
- If this is done, the service will be stable, and policies and procedures will be fully documented as service standards that can be part of the service contract, for the contractor to adhere to. This would make it easier for COTA to manage Call-A-Ride as a contracted operation.

Call-A-Ride Issues Identified for Final Report

- Eligibility
- Certification process
- Demand estimation
    - Factors affecting demand (see Appendix)
    - Analysis
    - Conclusions
    - Recommendations
- Booking and scheduling procedures
- Reporting
- Scheduling software
- Improving efficiency of will-calls
- Equipment – capital plan
- Diesel versus gasoline
- Procurement of tires and maintenance parts
- Proportion of passengers with wider wheelchairs

Appendix B
Community Web-based Survey Comments

Appendix B: Community Survey Comments

1. Help those who do not have means for transportation
2. Certain areas are very isolated and far from everything. This don't allow come the opportunity to work due to sheer distance and expense of taxi when one doesn't have access to a car.
3. With the right cost of living in the islands, a bus service would be very helpful
4. it would be great for saving gas
5. Secure enough buses to do multiple areas: one for southern part of the island, one for northern part, middle part and so forth.
6. a lot of people don't have transportation
7. If there is a bus running on middle road that should be ok.
8. we need public vehicle
9. Bus service is needed usually for those students whose parents don't have a car. In our area, bus service is really important.
10. Regular schedule if possible
11. It will rid of illegal transportation that's plagued our island (Saipan)
12. CNMI is in dire need for public transportation to eliminate illegal taxi and enable people to show up for doctors' appointments, go to college, and not burden family members.
13. Gas or fuel is expensive
14. We need public bus at As Lito area
15. We really need bus service only because people here on island don't have transportation to do important stuff plus some of us have problem affording gas because thing on island get more expensive.
16. So we can go to pasando
17. It would be very helpful for disadvantage individuals or families that do not have transportation
18. none
19. With the gas price, public transportation is a "MUST"
20. So we can go pashando
21. Stop at the grocery/market and church
22. We really don't prioritize buying a car because we know we will not work / stay here long time. We need transportation to go to the laundry, grocery and work.
23. Hope they are available at Saipan
24. Very far from everything.
25. We really need public bus service because it would really help me get to work easier and help my family get around easily.
26. For purpose of getting from point A to point B without having to use my car to cause pollution.
27. Bus shelters would be nice as well
28. That would be nice
29. It would be more convenient for the community to get to where they need to go.
30. A consistent stop on a certain time of the day through every village
31. I see a need, I see neighbors walking about 3-5 minutes to the main road with dogs around. To get to the main road if there is a bus would still be a challenge.
32. It is necessary for the need for bus service in our area, because a lot of people do not own an automobile
33. we need one for Tinian
34. I need service when I go for my appointment and shopping and visit.
35. effective public bus service
36. I feel that there is a need for the gas prices today is just crazy!!!
37. Having service will eliminate carpooling for most residents. This will provide a true budget management for families.
38. Not sure about the need for bus service, but I do see people walking on the side of the road everywhere on Saipan
39. Please model after Hawaii Transit!
40. Seeing a lot of people walking during the rainy season is very bad. If there's bus service it will help.
41. Just to be organized, prompt with time and clean. I hope is successful!
42. I want to go to school for the blind. I like going to the CLI center to learn braille. I would like to go with my mom to the library.

43. Kagman is a big village. Locals ride bikes or walk to the stores, laundry mat or want to go to the movies. Friends tell me they don't have a car but want to go somewhere but Call-a-Ride is only for people with disabilities.
44. For more rides riding and to buy coupons so I can continue services plus to go to the store and laundry and also to the college with my son.
45. Not everyone can afford a car; it would really help if we have a bus program. I went from a new car to a 2nd-hand car to a clunker. Used cars can set u back financially; they r a time bomb ready to explode. Public bus would be a relief. Even a carpool would help on Saipan.
46. for us not to walk far
47. We really need bus service. We are disabled and live very far from everything.
48. It will be a pleasure for us that only have 1 car and also our kids can go to school and their activities
49. we really need bus service due to we stay very far and disabled
50. I need bus service because I stay in Kagman
51. I need this service because I am disabled and can't drive and I go to dialysis every week 3 times
52. Here in Kagman I really don't know if we need bus rides, but downtown if for and people struggle for gas. So I think bus is good for Kagman
53. Affordable and dependable public transportation is a community necessity for residents and non-residents alike
54. Gas is very expensive in the cnmi. we need some alternative, reliable transportation locally
55. Desperately needed
56. Karidat is assisting many clients who are qualified for various social services we offer. Some lives far from our office that walking is not an option. By having bus services, these poor people will be able to avail different services offered which they qualify without missing the opportunity due to no transportation or high cost of taxi.
57. I think a mass transportation system for the islands is necessary and important.
58. I hope that COTA considers having bike racks on the front of buses like they do in Hawaii. People can us the bus service and get some exercise too.
59. I just want to recommend that you consider the Judicial Complex as a drop/pick up point. Many times court clients cite their lack of transportation as basis for not appearing and or could not serve on a jury.
60. I believe that bus service is needed not just in my area but at other villages on Saipan. There are students and employees that do not have means of transportation. Public Transportation is definitely the answer for those that need to get to school and work.
61. We need accessible, covered shelters with seating, (solar-powered) lights during evening, safe and clean bus stops located closest to most frequented public and private services (i.e. hospital, schools, stores, etc.)
62. Public Transportation System is greatly needed in the CNMI, because of the gas and CUC expenses. When and if the public transportation systems will start running, I am sure that many people will be elated. However, we NEED a system that would run seven days a week. Thank you.
63. Rota is a small community but with the high price in fuel, people with disabilities that don't have transportation limits them to make it to their medical appointments and also to go to the store. Yes they have families but like I said due to high gas prices, they are unable to accommodate them.
64. Public Transportation is cheaper, no maintenance cost and very affordable, I hope.
65. It's an idea that is long overdue it will benefit all it is now more than ever that we need this, especially in this economy.
66. It will help people have access to social services programs. It will help people make it to work. It will better CNMI
67. ensure that bus stops are accessible for individuals with disabilities
68. the bus area must be well lit, have spacious space to sit/wait for bus, schedule of transit should be every hour, and clean of bushy area
69. Some people do not have their own private transportation. If they did, more would be participating in vocational training programs or going to college or seeking employment. I believe public transit will help to improve lives and revitalize the economy. There is definitely a tremendous need for public transportation in the CNMI. Kudos to the COTA for continuing this effort and most especially to the CLI and CDD for the vision. Great collaboration on the part of all stakeholders!
70. Other residents may have the need for transportation that are less fortunate and I would use the service if and when it is in place.

Appendix C
Summary of Transit Funding Programs

Appendix C: Summary of Transit Finding Programs

Introduction

Majority of Federal transit funding comes from the Federal Transit Administration (FTA) through a combination of population based formula grants and competitive discretionary grants. Some provisions such as transportation planning, Transportation Infrastructure Finance and Innovation Act, Surface Transportation Program, Congestion Management and Air Quality program may reside under the Federal Highway Administration (FHWA). Additional grant opportunities may come from the Departments of Health and Human Services (DHSS), Veterans Affairs (VA), Housing and Urban Development (HUD), Homeland Security (DHS) and the Environmental Protection Agency (EPA).

Different funding programs have varying levels of eligibility, application procedures and deadlines, spending stipulations and performance management reporting requirements. Therefore, it is highly recommended that COTA maintain contact with FTA Region 9 advisors, in addition to keeping a lookout for opportunities through the Federal Register when FTA releases a 'Notice of Funding Availability', grants.gov, abovementioned Federal department, Community Transportation Association of America (CTAA), Rural Transit Assistance Program (RTAP), Regional University Transportation Centers and American Public Transit Association.

Recipients should review Title 49 CFR, in particular Chapter 6 and familiarize FTA Circulars to ensure compliance with the general terms of FTA funded procurement, purchases, operations and reporting. Proactive communication with FTA Region 9 advisors, peer transit systems, CTAA, RTAP, University Transportation Centers and training through the National Transit Institute (NTI) will provide such necessary guidance.

A summary of the funding programs are listed below and a synopsis of each is provided as follows:

MAP-21 Funding Grants

Under the Moving Ahead for Progress in the 21st Century (MAP-21) program, several grants from the previous Safe Accountable Flexible Efficient Transportation Equity Act (SAFETEA-LU) funding program have been repealed, modified or consolidated into new and existing grant framework within the Department of Transportation, which oversees FTA, FHWA. The current MAP-21 program is effective from October 1, 2012 and authorized until September 30, 2014, for a period of 2 years.

Under MAP-21 funding, it is possible for COTA to provide student transportation service as long as other members of the public are not excluded from the service.

5305 - Regional / Statewide Planning

As a precursor, CNMI may need a Regional or Statewide Transportation Planning program and representation as per Title 49 USC 5304 in order to qualify for Federal funding. The FTA and FHWA jointly appropriates funding under formula grant 5305 for planning programs and detailed guidance is provided under *FTA Circular 8100.1*. The Regional or Statewide Transportation Planning for rural areas is typically a separate specialized planning organization (i.e. Rural Planning Organization / Commission) or absorbed into an existing government department. (i.e. in Guam, this is absorbed into the Department of Public Works and the team is comprised of consulting / government specialists).

Examples of some of the planning duties include:

- Long Range Statewide Transportation Plan
- Statewide Transportation Improvement Program
- Performance Based Planning
- Unified Planning Work Program
- State Management Plan
- Air Quality and Congestion Management

5310 – Enhanced Mobility of Seniors and Individuals with Disabilities

To enhance the mobility for seniors and individuals with disabilities beyond regular fixed, flex route and ADA complementary paratransit services, FTA's 5310 formula based grant provides recipients the funding to:

- Make capital purchases,
- Undertake public transportation projects to improve access to transit or exceed ADA accessibility requirements, and
- Provide alternative transportation to seniors and individuals with disabilities.

Funding is apportioned based on the number of seniors and individuals with disabilities, with 60% designated to recipients in urbanized areas with a population over 200,000, 20% to states for small urbanized areas and 20% to states for rural areas. 5310 has a condition that a minimum of 55% of the funds be used on capital projects, with the Federal share being 80%. For operating assistance, the Federal share would be 50% and its use cannot exceed 45% of the funds apportioned to CNMI. Additionally, 10% of the funds can be used to administer the program, plan or provide technical assistance.

To be eligible, recipients must have a locally developed, coordinated public transit-human services transportation plan with the proposed projects included and certified. For areas with population under 200,000, the State is typically considered the recipient, while sub recipients can either be non-profit organizations or government agencies when non-profits are unavailable. Detailed guidance is found in *FTA Circular 9070.1.*

5311 – Formula Grants for Rural Areas

The 5311 program is in place to support public transportation in rural areas, primarily in areas with population less than 50,000, by providing assistance in capital, planning and operating costs. Funding is apportioned through a weighted multivariate formula, in which 83.15% is determined by land area and population in the rural area, and 16.85% is determined by the land area, revenue vehicle miles and low-income individuals in the rural area.

Similar to 5310 funding, the Federal share for capital projects is 80% and operating assistance is 50%. This grant expands further by permitting 10% of the amount apportioned to CNMI be used for administration, planning and technical assistance, and up to 10% be used for ADA non-fixed route paratransit service with the Federal share capped at 80%. Details guidance is found in *FTA Circular 9040.1.*

Furthermore, 5311(b)(3), commonly referred to as the Rural Transit Assistance Program (RTAP), provides funding to assist in the design and implementation of rural transit projects, including training, technical assistance, participation, research and support services. In the past SAFETEA-LU program, CNMI can receive a minimum of $10,000, with the remainder of the program balance distributed according to the non-urbanized population of the recipient States.

5339 – Bus and Bus Facilities

FTA assists transit agencies with the capital purchase, rehabilitation, replacement and construction of buses and bus facilities respectively through the 5339 program. CNMI can expect to receive a minimum of $500,000, with the remainder of the program balance distributed through a formula based on population,

vehicle revenue miles and passenger miles. CNMI can relocate 5339 funds to supplement their 5311 program. As with the previous programs, the Federal share is 80% and requires a 20% local match.

Discretionary FTA Funding

The following FTA funding are provided on a competitive or as-needed basis through justification. Some of these grants are destined for college / university research facilities, National Transit Institute and the Transportation Research Board, producing informative literature and training materials for the transit industry. Nonetheless, there are elements of interest to CNMI such as workforce development, demonstration projects and in the unlikely evenly event of an emergency, a relief program.

- 5312 – Research, Development, Demonstration, and Deployment Projects
- 5314 – Technical Assistance and Standards Development
- 5322 – Human Resources and Training
- 5324 – Public Transportation Emergency Relief Program

Joint / Flexible Funding Programs

In conjunction with FHWA, the following grant programs can be used on a multimodal basis, including highway, transit, bicycle and pedestrian infrastructure:

- National Highway Performance Program
- Surface Transportation Program
- Transportation Alternatives Program

These programs are highly beneficial to CNMI in achieving its goals of having a sustainable transit and transportation system. Specifically, the programs will partially fund complementary infrastructure to facilitate transit usage, reduce traffic congestion, which in turn will improve transit service quality and efficiency.

Previously under SAFETEA-LU program, FTA had a Transit in Parks Program that addressed vehicle congestion, by providing transportation alternatives in and around National Parks and Federal Lands in working with Federal Land Management Agencies including the Bureau of Land Management (BLM), Bureau of Reclamation (BR), National Park Service (NPS), US Fish and Wildlife Service (FWS) and US Forest Service (USFS). Due to the interdisciplinary nature of addressing vehicle congestion and providing transportation alternatives, this program has been reassigned to FHWA's Federal Lands Transportation Program and Federal Lands Access Program.