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REDACTED – FOR PUBLIC INSPECTION

October 28, 2013

VIA HAND DELIVERY AND ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *WC Docket No. 10-90*
PTI Pacifica Inc. dba IT&E Form 481 Submission, SAC 659002
Request for Confidential Treatment

Dear Ms. Dortch:

On behalf of PTI Pacifica Inc. dba IT&E ("IT&E"), please find (1) IT&E's Form 481 submission for SAC 659002 (Commonwealth of the Northern Mariana Islands or "CNMI"), which was timely filed with USAC on October 15, 2013 and (2) a request that this material be withheld from public inspection pursuant to sections 0.457 and 0.459 of the Commission's rules. 47 C.F.R. §§ 0.457, 0.459. IT&E is filing concurrently a version of this submission redacted for public inspection through the Commission's Electronic Comment Filing System. Per FCC Public Notice DA 13-2025, this filing is timely.

The submission contains commercial and technical data that IT&E does not in the normal course of its business reveal to the public or its competitors. IT&E thus requests that the submission be withheld from public inspection under Freedom of Information Act ("FOIA") Exemption 4, 5 U.S.C. §552(b)(4), and Section 0.457(d)(2) of the Commission's Rules.

In support of this request, IT&E provides the following information, as required by Sections 0.457(d)(2) and 0.459(b) of the Commission's Rules.

1. Information for Which Confidentiality is Requested. IT&E is requesting confidential treatment for the non-redacted portions of the Form 481 submission, which contain commercially-sensitive, proprietary, and confidential operational, cost and technical information about IT&E's past and anticipated investments in the very competitive wireless market in CNMI.

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2. Circumstances Giving Rise to Submission of Materials. IT&E is submitting Form 481 and attachments to comply with newly adopted FCC rules.

3. Degree to Which Information is Commercial or Financial, or Contains a Trade Secret or is Privileged. The attached document contains commercially-sensitive, proprietary, and confidential operational, financial and technical information about IT&E's wireless infrastructure and plans in CNMI. IT&E closely guards this information against disclosure to competitors and the public. The information for which confidential treatment is sought concerns IT&E's private business and operations and "would customarily be guarded from competitors." *See* 47 C.F.R. §§ 0.459(a)(4), 0.457(d)(2). Such proprietary and confidential information may be withheld from public disclosure under FOIA Exemption 4.

4. Degree to Which Information Concerns a Service That is Subject to Competition. The submission contains commercially-sensitive, proprietary, and confidential operational and financial information about IT&E's past investments and future infrastructure plans in the CNMI CMRS market, which is highly competitive.

5. Substantial Competitive Harm That Would Result from Disclosure of Information. Public disclosure of the commercially-sensitive, proprietary, and confidential operational and financial information set forth in the Plan would cause competitive harm to IT&E. The wireless industry in CNMI is highly competitive, and thus others always are interested in gaining a competitive advantage by learning information about IT&E's infrastructure plans and construction schedules. The D.C. Circuit has found that parties do not have to "show actual competitive harm" to justify confidential treatment. Rather, "'[a]ctual competition and the likelihood of substantial competitive injury' is sufficient to bring commercial information within the realm of confidentiality." *Public Citizen Health Research Group*, 704 F.2d at 1291, *quoting Gulf & Western Industries v. U.S.*, 615 F.2d 527, 530 (D.C. Cir. 1979).

6. Measures Taken to Prevent Unauthorized Disclosure. IT&E treats the operational and financial information set forth in the submission as confidential and proprietary and does not publicly disclose this information.

7. Previous Disclosure. There has been no public disclosure of the information that IT&E has redacted in its public filing.

8. Requested Duration of Nondisclosure. The attached Request should not be released for public inspection until such information no longer is deemed confidential and proprietary by IT&E and no longer subject to IT&E's internal procedures for maintaining its confidentiality. The attached Request contains commercially-sensitive, proprietary and confidential operational and technical information, the release of which would adversely affect IT&E's competitive position.

For the foregoing reasons, IT&E respectfully requests that the Commission withhold from public inspection the attached document. Consistent with 47 C.F.R. § 0.459(d)(1), IT&E requests notification if access to the attachment is requested pursuant to the FOIA or otherwise,

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so that IT&E may have an opportunity to oppose the grant of any such request. As noted previously, a redacted version of the document is being filed with ECFS.

If you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ *Timothy J. Cooney*
Timothy J. Cooney

FCC Form 481 - Carrier Annual Reporting Data Collection Form

FCC Form 481
OMB 3060-0986
OMB 3060-0819
Avg. Burden Estimate per Respondent: 20 Hours

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name: Person USAC should contact with questions about this data	Leriza S. Debrum
<035>	Contact Telephone Number: Number of the person identified in data line <030>	(670) 682-2612
<039>	Contact Email: Email of the person identified in data line <030>	leriza.debrum@itehq.net

ANNUAL REPORTING FOR ALL CARRIERS

			54.313 Completion Required	54.422 Completion Required
			(check box when complete)	
<100>	Service Quality Improvement Reporting	(complete attached worksheet)	X	
<200>	Outage Reporting (voice)	(complete attached worksheet)	X	X
<210>	X <-- check box if no outages to report			
<300>	Unfulfilled Service Requests (voice)	$0	X	
<310>	Detail on Attempts (voice)	(attach descriptive document)		
<320>	Unfulfilled Service Requests (broadband)		X	
<330>	Detail on Attempts (broadband)	(attach descriptive document)		
<400>	Number of Complaints per 1,000 customers (voice)		X	X
<410>	Fixed			
<420>	Mobile	0		
	Number of Complaints per 1,000 customers (broadband)			
<440>	Fixed			
<450>	Mobile			
<500>	Service Quality Standards & Consumer Protection Rules Compliance	(check to indicate certification)	X	X
<510>		(attached descriptive document)		
<600>	Functionality in Emergency Situations	(check to indicate certification)	X	X
<610>		(attached descriptive document)	X	X
<700>	Company Price Offerings (voice)	(complete attached worksheet)		
<710>	Company Price Offerings (broadband)	(complete attached worksheet)		
<800>	Operating Companies and Affiliates	(complete attached worksheet)	X	X
<900>	Tribal Land Offerings (Y/N)?	(if yes, complete attached worksheet)		
<1000>	Voice Services Rate Comparability	(check to indicate certification)		
<1010>		(attach descriptive document)		
<1100>	Terrestrial Backhaul (Y/N)?	(if not, check to indicate certification)		
<1110>		(complete attached worksheet)		
<1200>	Terms and Condition for Lifeline Customers	(complete attached worksheet)		X

Price Cap Carriers, Proceed to Price Cap Additional Documentation Worksheet

Including Rate-of-Return Carriers affiliated with Price Cap Local Exchange Carriers

<2000>	(check to indicate certification)	
<2005>	(complete attached worksheet)	

Rate of Return Carriers, Proceed to ROR Additional Documentation Worksheet

<3000>	(check to indicate certification)	
<3005>	(complete attached worksheet)	

(100) Service Quality Improvement Reporting Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

<110>	Has your company received its ETC certification from the FCC?	(yes / no)	No
<111>	If your answer to Line <110> is yes, do you have an existing §54.202(a) "5 year plan" filed with the FCC?	(yes / no)	

If your answer to Line <111> is yes, then you are required to file a progress report, on line <112> delineating the status of your company's existing § 54.202(a) "5 year plan" on file with the FCC, as it relates to your provision of voice telephony service.

<112> Attach Five-Year Service Quality Improvement Plan or, in subsequent years, your annual progress report filed pursuant to 47 C.F.R. § 54.313(a)(1). If your company is a CETC which receives only frozen support, your progress report is only required to address voice telephony service

659002MP112
Name of Attached Document (.pdf)

Please check these boxes below to confirm that the attached PDF, on line 112, contains a progress report on its five-year service quality improvement plan pursuant to § 54.202(a). The information shall be submitted at the wire center level or census block as appropriate.

<113>	Maps detailing progress towards meeting plan targets	
<114>	Report how much universal service (USF) support was received	x
<115>	How (USF) was used to improve service quality	x
<116>	How (USF)was used to improve service coverage	x
<117>	How (USF) was used to improve service capacity	x
<118>	Provide an explanation of network improvement targets not met in the prior calendar year.	x

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(200) Service Outage Reporting (Voice)
Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

<220>

<a> NORS Reference Number	<b1> Outage Start Date	<b2> Outage Start Time	<b3> Outage End Date	<b4> Outage End Time	<c1> Number of Customers Affected	<c2> Total Number of Customers	<d> 911 Facilities Affected (Yes / No)	<e> Service Outage Description (Check all that apply)	<f> Did This Outage Affect Multiple Study Areas (Yes / No)	<g> Service Outage Resolution	<h> Preventative Procedures

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(800) Operating Companies and Affiliates
Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

<810>	Reporting Carrier	PTI Pacifica Inc.
<811>	Holding Company	Micronesian Telecommunications Corp.
<812>	Operating Company	PTI Pacifica Inc.

<813>

<a1> Affiliates	<a2> SAC	<a3> Doing Business As Company or Brand Designation
Micronesian Telecommunications	653700	IT&E
PTI Pacifica Inc.	669004	IT&E

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(1110) No Terrestrial Backhaul Reporting Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

<1120>	Please check this box to confirm no terrestrial backhaul options exist within the supported area pursuant to § 54.313(G)	[ ]
<1130>	Please check this box to confirm the reporting carrier offers broadband service of at least 1 Mbps downstream and 256 kbps upstream within the supported area pursuant to § 54.313(G)	[X]

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(1200) Terms and Condition for Lifeline Customers
Lifeline
Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@jtehg.net

<1210> Terms & Conditions of Voice Telephony Lifeline Plans — 659002MP1210
Name of attached document (.pdf)

<1220> Link to Public Website — HTTP _____

Please check these boxes below to confirm that the attached PDF, on line 1210, or the website listed, on line 1220, contains the required information pursuant to § 54.422(a)(2) annual reporting for ETCs receiving low-income support, carriers must annually report:

<1221> Information describing the terms and conditions of any voice telephony service plans offered to Lifeline subscribers, [x]

<1222> Details on the number of minutes provided as part of the plan, [x]

<1223> Additional charges for toll calls, and rates for each such plan. [x]

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(2005) Price Cap Carrier Additional Documentation
Data Collection Form
Including Rate-of-Return Carriers affiliated with Price Cap Local Exchange Carriers

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

CHECK the boxes below to note compliance as a recipient of Incremental Connect America Phase I support, frozen High Cost support, High Cost support to offset access charge reductions, and Connect America Phase II support as set forth in 47 CFR § 54.313(b),(c),(d),(e) the information reported on this form and in the documents attached below is accurate.

Incremental Connect America Phase I reporting

<2010>	2nd Year Certification {47 CFR § 54.313(b)(1)}	
<2011>	3rd Year Certification {47 CFR § 54.313(b)(2)}	

Price Cap Carrier Receiving Frozen Support Certification {47 CFR § 54.312(a)}

<2012>	2013 Frozen Support Certification	X
<2013>	2014 Frozen Support Certification	
<2014>	2015 Frozen Support Certification	
<2015>	2016 and future Frozen Support Certification	

Price Cap Carrier Connect America ICC Support {47 CFR § 54.313(d)}

<2016>	Certification Support Used to Build Broadband	

Connect America Phase II Reporting {47 CFR § 54.313(e)}

<2017>	3rd year Broadband Service Certification	
<2018>	5th year Broadband Service Certification	
<2019>	Interim Progress Certification	
<2020>	Please check the box to confirm that the attached PDF , on line 2021, contains the required information pursuant to § 54.313 (e)(3)(ii), as a recipient of CAF Phase II support shall provide the number, names, and addresses of community anchor institutions to which began providing access to broadband service in the preceding calendar year.	
<2021>	Interim Progress Community Anchor Institutions — Name of Attached Document Listing Required Information	

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Certification - Reporting Carrier Data Collection Form

FCC Form 481
OMB Control No. 3060-0986
OMB Control No. 3060-0819
July 2013

<010>	Study Area Code	659002
<015>	Study Area Name	PTI Pacifica Inc.
<020>	Program Year	2014
<030>	Contact Name - Person USAC should contact regarding this data	Leriza Debrum
<035>	Contact Telephone Number - Number of person identified in data line <030>	(670)682-2612
<039>	Contact Email Address - Email Address of person identified in data line <030>	leriza.debrum@itehq.net

TO BE COMPLETED BY THE REPORTING CARRIER, IF THE REPORTING CARRIER IS FILING ANNUAL REPORTING ON ITS OWN BEHALF:

I certify that I am an officer of the reporting carrier; my responsibilities include ensuring the accuracy of the annual reporting requirements for universal service support recipients; and, to the best of my knowledge, the information reported on this form and in any attachments is accurate.

Name of Reporting Carrier: PTI Pacifica Inc.

Signature of Authorized Officer: Steven Carrara Date October 14, 2013

Printed name of Authorized Officer: Steven Carrara

Title or position of Authorized Officer: Legal Counsel

Telephone number of Authorized Officer: 671-777-7252

Study Area Code of Reporting Carrier: 659002 Filing Due Date for this form: 10/15/2013

Persons willfully making false statements on this form can be punished by fine or forfeiture under the Communications Act of 1934, 47 U.S.C. §§ 502, 503(b), or fine or imprisonment under Title 18 of the United States Code, 18 U.S.C. § 1001.

IT&E's Lifeline Assistance Program:

The Lifeline Assistance Program gives qualified low-income subscribers a discount on their phone service from the Universal Service Fund. Residential subscribers receiving the following assistance may qualify.

Federal Public Housing Assistance or Section 8
Food Stamps
Medicaid
Low Income Home Energy Assistance Program (LIHEAP)
National School Lunch (NSL) FREE Program
Temporary Assistance to Needy Families (TANF)
Total household income at or below 135% of the Federal Poverty Guidelines(FPG)

The program allows eligible participant to sign-up for:

Basic Lifeline Plan for $ 16.75 per month
Plan Includes:
300 Free minutes (.20/per additional minute)
Unlimited Local SMS
Free Custom Calling Features
Free LD tolls to the US and selected foreign countries

The standard $50 deposit is waived if the customer agrees to block long-distance. Toll blocking is free of charge.

Limitations: If a participant wishes to have long-distance, then the $50 deposit charge is applicable and due upon sign-up. Annual Certification is required to continue eligibility of the Lifeline Assistance Program. Only one Lifeline discount per household.

Call 234-7143 for more details or drop by IT&E's Customer Service Center at Chalan Lau-lau during regular business hours.

Life in Motion

October 15, 2013

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

USAC
Vice President, High Cost and Low Income Division
2000 L Street NW, Suite 200
Washington, DC 20036

Re: PTI Pacifica Inc., d/b/a IT&E Certification Pursuant to 47 C.F.R. § 54.313(a) (5).

Pursuant to the requirements of 47 C.F.R. § 54.313(a)(5) *PTI Pacifica Inc., d/b/a IT&E* hereby certifies to the Federal Communications Commission and the Universal Service Administrative Company that PTI Pacifica Inc. has complied with CTIA's Consumer Code during the reporting period.

I, Steven Carrara, attest for the Study Area Code 659002.

Steven Carrara
General Counsel
Contact No. (671-777-7252)
Steven.Carrara@itehq.net

cc: CNMI PUC

Life in Motion

October 15, 2013

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

USAC
Vice President, High Cost and Low Income Division
2000 L Street NW, Suite 200
Washington, DC 20036

Re: PTI Pacifica Inc., d/b/a IT&E Certification Pursuant to 47 C.F.R. § 54.313(a) (6) and set forth in 47 C.F.R. § 54.202(a)(2).

Pursuant to the requirements of 47 C.F.R. § 54.313(a)(6) and set forth in 47 C.F.R. § 54.202(a)(2) *PTI Pacifica Inc., d/b/a IT&E* hereby certifies to the Federal Communications Commission and the Universal Service Administrative Company that it is able to function in emergency situations as described in the attached Business Continuity Plan.

I, Steven Carrara, attest for the Study Area Code 659002.

Steven Carrara
General Counsel
Contact No. (671-777-7252)
Steven.Carrara@itehq.net

cc: CNMI PUC

NETWORK RESTORATION CONTINGENCY PLAN

FOR

IT&E GUAM & CNMI WIRELESS NETWORKS

CONFIDENTIAL

CONFIDENTIAL

EXECUTIVE SUMMARY

This document describes IT&E's wireless networks with concentration on the prioritization of restoration of failed or damaged sites due to: (1) natural disasters such as typhoons or tsunamis; (2) cases where by coincidence, multiple sites fail at the same time and crews are not available to go to all failed sites simultaneously; and (3) failures of the microwave back haul network. Both the Guam and CNMI networks are considered, both GSM and CDMA, separately by type and then combined by site. Estimated revenue loss for failures are estimated down to the sector level and then rolled up to the BTS, site, and back haul link levels. This level of detail allows judicious decisions to be made to minimize revenue loss, especially in the case where multiple sites fail, insufficient spares are on hand, and lesser used sites must be temporarily cannibalized to restore heavier used sites to service until off-island spare can be obtained.

Also included are the current policy on typhoon preparations for both the Guam and CNMI operations, and an assessment of the risk of damage to IT&E's networks from tsunamis based on recent studies performed by the Pacific Marine Environmental Laboratories following the Sumatran (Indean Ocean) tsunami in 2004 and including information gathered from the Sendai (Pacific Ocean) tsunami of 2011.

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I INTRODUCTION

The document begins with a description of the various elements in the network and the services they provide. It then describes the current configuration, including where known, short and long terms plans for changes to the network configuration to accommodate new services and shifts in populations densities. It then describes the current geographic distribution of subscribers based on tables and maps generated by the US Census Bureau, matching them to the network elements that serve these populations densities.

Next, a site-by-site assessment of the vulnerabilities of the network elements to typhoon winds presented. This is followed by a site-by-site, service-by-service identification of mitigation techniques that can be applied to reduce the vulnerabilities of the network elements and to speed, where possible, restoration of service in case of loss of service due to damage by high winds and other factors.

The final four sections of this document delineates service-by-service, the priorities that should be assigned to restoration efforts in case of widespread failure or damage to the network by typhoon winds on a site-by-site basis to maximize the number of subscribers to which service is restored while minimizing the time service is down according to

weighted metrics determined by factors such as equipment availability, manpower required, loss of revenue, restoration costs, and other business and humanitarian considerations, etc.

The document can also be used for other purposes, for example, providing guidance in determining what networks elements IT&E should consider for insuring against typhoon damage and determining how to structure loss-of-revenue insurance.

II. NETWORK ELEMENTS

III. NETWORK CONFIGURATION

SUBSCRIBER POPULATION DENSITIES

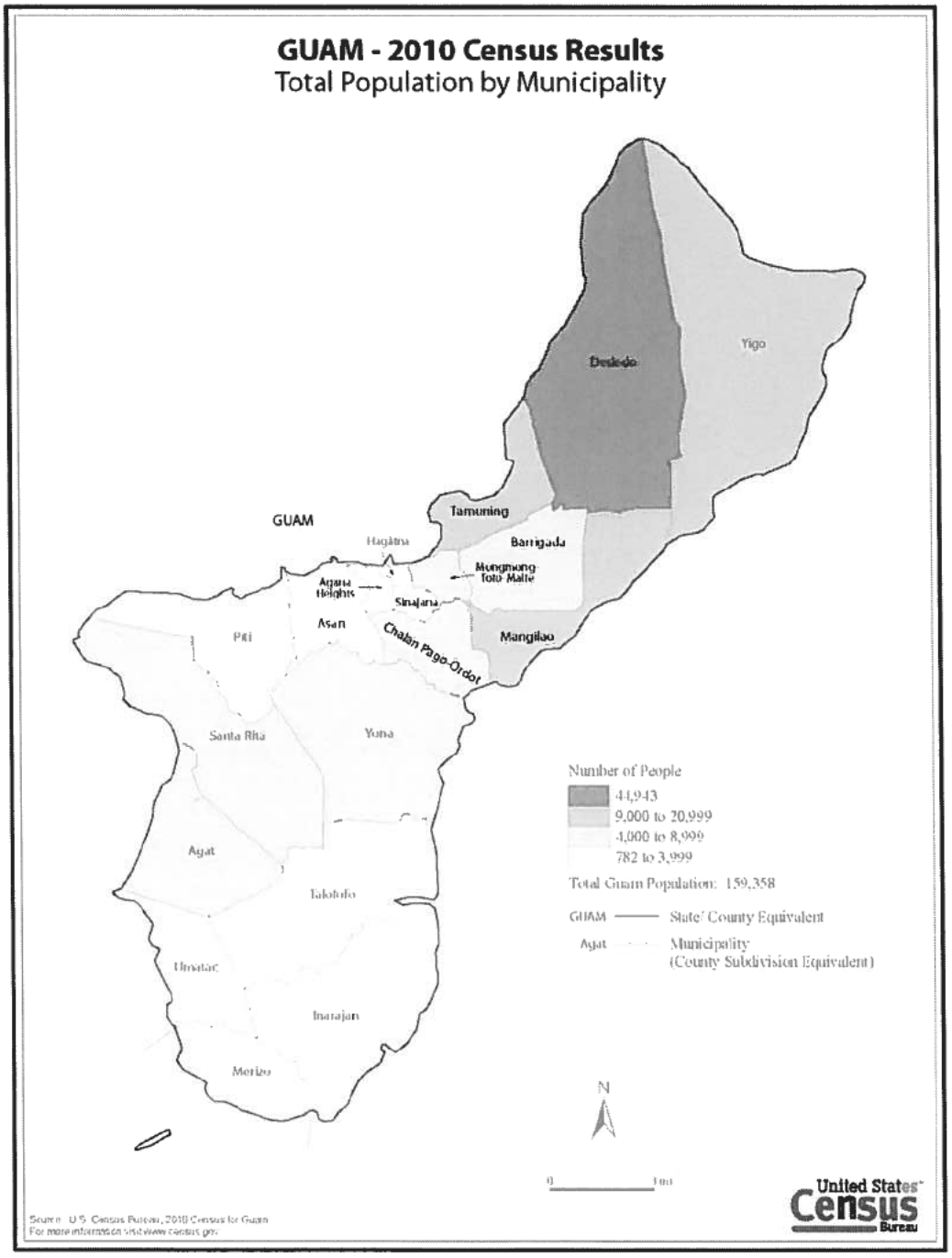

Figure 7 – Guam Population Density

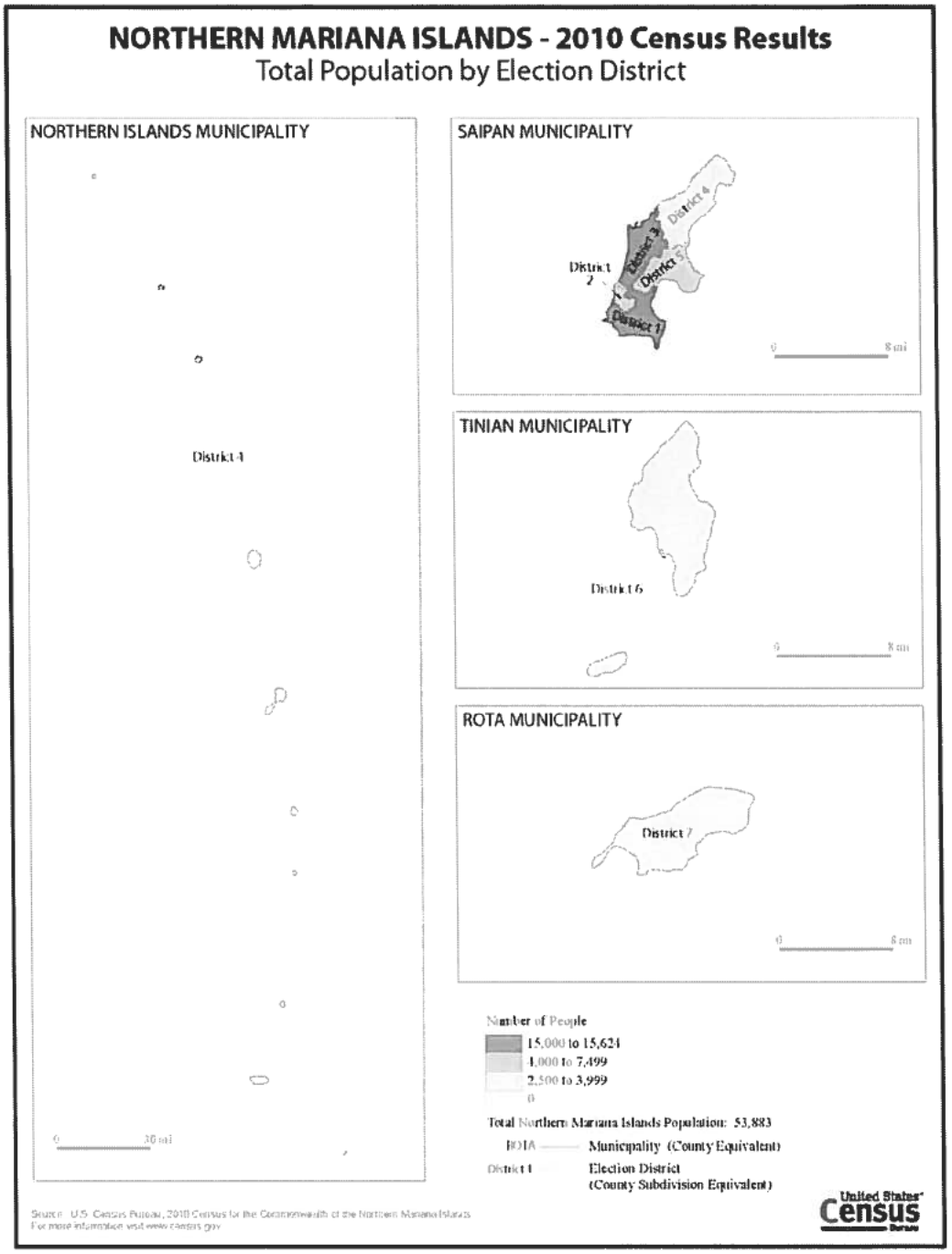

Figure 8. CNMI Population Densities

Population of the Commonwealth of the Northern Mariana Islands: 2010	
Geographic area	**Population**
Commonwealth of the Northern Mariana Islands	**53 883**
Northern Islands Municipality	0
District 4	0
Rota Municipality	2 527
District 7	2 527
Saipan Municipality	48 220
District 1	15 160
District 2	6 382
District 3	15 624
District 4	3 847
District 5	7 207
Tinian Municipality	3 136
District 6	3 136

Table 1. Populations by District in the CNMI (2010)

Population of Guam: 2010	
Geographic area	**Population**
Guam	**159 358**
Agana Heights municipality	3 808
Agat municipality	4 917
Asan municipality	2 137
Barrigada municipality	8 875
Chalan Pago-Ordot municipality	6 822
Dededo municipality	44 943
Hagåtña municipality	1 051
Inarajan municipality	2 273
Mangilao municipality	15 191
Merizo municipality	1 850
Mongmong-Toto-Maite municipality	6 825
Piti municipality	1 454
Santa Rita municipality	6 084
Sinajana municipality	2 592
Talofofo municipality	3 050
Tamuning municipality	19 685
Umatac municipality	782
Yigo municipality	20 539
Yona municipality	6 480

Table 2. Populations by Municipality in Guam (2010)

V. VULNERABILITIES

VI. MITIGATION OF VULNERABILITIES

VII. RESTORATION CRITERIA

VIII. RESTORATION PRIORITIES FOR BACK HAUL LINKS

IX RESTORATION PRIORITIES FOR BTS SITES

X. RESTORATION PRIORITIES FOR Wi-Max SITES

XI. RESTORATION PRIORITIES FOR LTE SITES

APPENDIX A: SITE INSPECTION REPORT

APPENDIX B

TYPHOON EMERGENCY PREPAREDNESS PLAN

Life in Motion

EMERGENCY PREPAREDNESS

APPENDIX C

RESTORATION PRIORITIES FOR GUAM 3G BACK HAUL NETWORK

APPENDIX D

RESTORATION PRIORITIES FOR GUAM CELLULAR SITES

APPENDIX E

RESTORATION PRIORITIES FOR GUAM CDMA SITES

APPENDIX F

RESTORATION PRIORITIES FOR GUAM GSM SITES

APPENDIX G

RESTORATION PRIORITIES FOR CNMI CELLULAR SITES

APPENDIX H

RESTORATION PRIORITIES FOR CNMI CDMA SITES

APPENDIX I

RESTORATION PRIORITIES FOR CNMI GSM SITES

APPENDIX J

AN ASSESSMENT OF THE RISK OF DAMAGE TO THE IT&E SWITCHES LOCATED IN SUSUPE, SAIPAN FROM A TSUNAMI

APPENDIX K

TSUNAMIS

INTRODUCTION

Located as they are in the Western Pacific Ocean, Guam and the Commonwealth of the Northern Mariana Islands (CNMI) are in the direct path of tsunamis generated by earthquakes along the Pacific Rim. This includes the West Coast of South America, most notably Chile, the Cascadian, Aleutian, and Kuril Island subduction zones, and offshore the East Coast of Japan. In addition, mid-ocean tsunami-generating earthquakes occurring in the Eastern Philippines, Manus, Mariana, and Ryukyu-Nankai trenches can also affect Guam and the CNMI.

The December, 2004 Sumatra tsunami focused the attention of the U.S. Congress on reducing the tsunami vulnerability of U.S. coastal communities. On December 20, 2006, the U.S. Congress passed the "Tsunami Warning and Education Act." The Act mandated development of a tsunami forecasting capability based on models and measurements, including tsunami inundation models and maps. This work was undertaken by the Pacific Marine Environment Laboratory (PMEL), which undertook the task of extending a numerical simulation model named the Method of Splitting Tsunami (MOST) Model originally developed in 1997 to predict the effects of tsunamis generated by Aleutian Island earthquakes on Hawaii to other areas of tsunami generation and impact.[3] One result of this effort is a study published in December 2010 describing simulation results for tsunami impact from large-scale tsunamis on Apra Harbor.[2] A second result of this effort resulted in a study of the vulnerability of five of Guam's coastal communities: Tumon Bay, Apra Harbor; Pago Bay; Agana Bay; and Inarajan Bay under 725 different earthquake scenarios.[4] Comparison of simulated tsunamis generated by the MOST model with three actual mega-earthquake tsunami events, Kamchatka 1952 (9.0 M_w), Chile, 1960 (9.2 M_w), and Alaska 1964 (9.2 M_w) recorded at the five locations show good agreement between the simulation model and actual readings, yielding a high degree of confidence in the simulation results.

The MOST model accurately simulates all three stages of a tsunami, generation of the tsunami; the earthquake that generates the tsunami, propagation of the tsunami across the ocean, and runup at the point of impact. A description of how it accomplishes this is given in general terms in Titov and Gonzalez[1] and specifically for the scenarios considered for the Apra Harbor simulations in Uslu, et al.[2,3]

The impact of large magnitude historical tsunamis to Guam is inherently different from impacts along coastlines of Japan, Hawaii, Alaska, and the U.S. West Coast due to

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[3] V.V. Titov and F. I. Gonzalez, *Implementation and Testing of the Method of Splitting Tsunami (MOST) Model*, NOAA Technical Memorandum ERL PMEL-112, November, 1997.

[2] Uslu, Burak; Marie Eble; and Vasily Titov, *A Tsunami Forecast Model for Apra Harbor, Guam*, PMEL Forecast Series: Vol. 9, December 2010.

directivity of wave propagation and local conditions.[2] This is due to the presence of fringing reefs and rapid drop off to deep water surrounding the island. Thus, simply looking at the effects of tsunamis elsewhere and extending the observations to making predictions about effects on Guam is likely to either overestimate or underestimate the effects. Thus, the studies referenced should be used to make predictions of the effects of tsunamis generated by these earthquake based on the factors such as location of the earthquake and its magnitude rather than near-field effects of tsunamis in areas close to the epicenter of the earthquake.

PMEL is currently preparing a tsunami hazard assessment for the CNMI, but it has not yet been published.

EFFECTS

Guam:

Four tsunamis since 1849 have caused damage on Guam. These tsunamis occurred in 1849, 1892, 1990, and 1993. Based on historical data, Pacific Rim earthquakes below 8.0 on the Moment Magnitude Scale (M_w) have not generated tsunamis that noticeably affected Guam. The maximum wave amplitude observed along the south and east coasts of Guam as a result of the 1993 Marianas Trench earthquake (magnitude ?) tsunami was 2 meters, but the extent of inundation is unknown because the earthquake and tsunami were followed almost immediately by Typhoon Steve before an assessment of the damage due to the earthquake and tsunami could be undertaken.[5] The 1849 tsunami was reported to have caused a 6.9 meter wave in Agat and a runup inland of 1,321 feet in Umatac Bay.[6]

The worst-case for locations for earthquakes generating tsunamis for Guam are the Eastern Philippines, the Kuril Islands/Japan, and the Marianas subduction zones. A magnitude 8.5 M_w earthquake in the Kuril Islands/Japan or Mariana subduction zones could generate a wave height in Pago Bay of up to 4.42 meters. A magnitude 9.0 M_w earthquake in the same locations could generate a wave height in the same location of up to 14.5 meters.

Estimated wave heights for different earthquake scenarios extracted from Uslu, et al[3], are shown in tables 1 and 2 for earthquake magnitudes 8.5 M_w and 9.0 M_w, respectively. These figures are used for the maximum wave heights to be expected in the vulnerability assessments that follow below:

Table 1 – Maximum Predicted Wave Heights on Guam for Tsunamis Generated by Magnitude 8.5 M_w Earthquakes

	Maximum Wave Height

[5] Uslu, Burak, Vasily Tivov, Marie Eble & Christopher Chamberlin, *Tsunami Hazard Assessment for Guam*, NOAA OAR Special Report, Tsunami Hazard Assessment Special Series, Vol. 1, May 2010.
[6] *Pacific Daily News*, Vol 43, No. 48, March 21, 2011.

	(m)				
Earthquake Location	**Tumon Bay**	**Apra Harbor**	**Pago Bay**	**Agana Bay**	**Inarajan Bay**
Alaska/Aleutians-Cascadia	0.3	0.31	0.59	0.26	0.41
Eastern Philippines	1.4	**0.87**	1.24	**0.91**	1.14
Kuril Islands/Japan and Mariana	0.27	0.77	**4.42**	0.66	**2.8**
Manus	**1.49**	0.25	0.84	0.25	0.47
New Guinea	1.02	0.24	0.33	0.25	0.32
Ryukyu-Nankai	0.78	0.65	0.5	0.54	0.36

Table 2 – Maximum Predicted Wave Heights on Guam for Tsunamis Generated by Magnitude 9.0 M_w Earthquakes

	Maximum Wave Height (m)				
Earthquake Location	**Tumon Bay**	**Apra Harbor**	**Pago Bay**	**Agana Bay**	**Inarajan Bay**
Alaska/Aleutians-Cascadia	1.6	1.4	2.7	1.1	1.9
Eastern Philippines	**7.0**	**3.7**	5.4	**5.6**	3.8
Kuril Islands/Japan and Mariana	4.6	2.2	**14.5**	2.9	**9.4**
Manus	1.1	0.9	2.6	0.8	1.6
New Guinea	1.3	1.0	1.4	0.9	1.1
Ryukyu-Nankai	3.4	2.2	2.6	2.7	1.4

Table 3 – Maximum Predicted Wave Heights on Guam from Tsunamis

	Magnitude	
	8.5 Mw	9.0 Mw
Location	**Wave Height (m)**	
Tumon Bay	1.49	7
Apra Harbor	0.87	3.7
Pago Bay	4.42	14.5
Agana Bay	0.91	5.6
Inarajan Bay	2.8	9.4

Table 5 – Major Pacific Ocean Earthquakes since 1868

Year	Location	Magnitude
1868	Arica, Chile	9.0
1877	Tarapaca, Chile	8.3
1902	Agana Guam	8.1
1906	Honshu	8.4
1909	Honshu	8.3
1909	Guam	8.0
1910	Taiwan	8.3
1911	Ryukyu Islands	8.7
1916	Duda, Japan	8.0
1918	Mindinao Islands	8.3
1920	Taiwan	8.3
1923	Kamchatka	8.3
1924	Mindinao Islands	8.3
1944	Kii, Japan	8.1
1946	Honshu	8.1
1946	Unimak Island	7.3
1948	Panay, PI	8.3
1952	Kamchatka	9.0
1952	Hokkaido	8.1
1957	Aleutian Islands	9.1
1960	Temuca, Chile	9.5
1964	Prince William Sound	9.2
1968	Honshu	8.2
1975	Hawaii	7.2
1976	Mindinao Islands	8.1
1985	Valparaiso, Chile	7.8
1996	Andreanov, AK	7.9
1998	Papua New Guinea	7.0
2003	Hokkaido	8.3
2003	Offshore Central Chile	6.8
2006	Kuril Islands	8.1
2007	Kuril Islands	8.2
2007	Antofagasta, Chile	7.7
2007	Antofagasta, Chile	6.7
2009	Vanuatu	7.6
2009	Samoa	8.0
2009	Tarapaca, Chile	6.5
2010	Bonin Islands	7.4
2010	Solomon Islands	7.2
2010	Bio-Bio, Chile	8.8
2011	Honshu	9.0

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(TBD)

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IT&E CNMI WIRELESS
FIVE YEAR SERVICE QUALITY IMPROVEMENT PLAN

OVERVIEW

PTI Pacifica, Inc. dba IT&E ("IT&E"), as a wireless Eligible Telecommunications Carrier (ETC) currently provides Universal Service supported services to 4 exchanges, for which there is 1 wire center.

Consistent with Commission requirements, this Service Quality Improvement Plan addresses only IT&E's non-regulated eligible telecommunications carrier operations.[1] A detailed description of IT&E's plans for the provision of the supported services in the five-year period starting with January 2013 is provided herein. IT&E will re-evaluate this plan on an annual basis. The environment in which IT&E operates remains dynamic. As a result, IT&E reserves the opportunity to modify its plan in response to further regulatory decisions as they are adopted, and as IT&E's financial viability in providing the required services and service level quality becomes known.

Per USAC, during the calendar year 2012, IT&E has received a total of $683,229 (as of 1/31/2013) in USF support funds for wireless service in CNMI. The breakdown of the funding for the year was:

- $0 High Cost Loop Support,
- ($2,529) Local Switching Support
- $0 Connect America Fund-Intercarrier Compensation Support
- $0 Interstate Common Line Support
- $2,610 Interstate Access Support
- $683,148 Fixed High Cost Support

All funds were used in 2012 to maintain, upgrade and improve the Company's network and to cover its operating expenses and debt commitments as necessary to permit it to offer a high level of service for both voice and broadband throughout its service area. IT&E spent a total of to maintain and improve the quality of wireless voice and data service in calendar year 2012.

IMPROVEMENT PLANS BY YEAR (2013-2017 inclusive)

Summary descriptions in accordance Part 54.202(a)(1)(ii) and Part 54.313(a)(1) by year and by wire center are presented in the paragraphs below and present network improvements planned for the next five years. Detailed expenditures on a wire center

[1] Per 47 C.F.R. § 54.314, federal USF support, "will be used only for the provision, maintenance, and upgrading of facilities and services for which the support is intended." If investments or expenses are for service areas larger than the supported service areas, then allocations of the expenditures are required.

basis are contained in the attached Excel worksheets. Area and population estimates impacted by the improvements are identified in the worksheets as well as on the wire center maps. Costs are broken out by site and service.

- Network improvement expenditures identify the cost to provide those services supported by the universal service funding mechanisms. When a project involves expenditures for both regulated and non-regulated services, the non-regulated investment costs have been removed. The Company estimates non-regulated costs using the appropriate allocation rules. Details of those costs are retained by the Company and available for inspection.
- Costs for individual projects involving multiple wire centers are broken out by wire center on a ratio of "population served" basis if a specific dollar amount is unavailable.
- Costs are reported only for those service areas in which the Company is authorized to receive USF funding. Costs incurred outside the authorized area, if any, are excluded.

BASELINE MAPS

IT&E presents the attached Baseline Maps (GIS or similar) highlighting current availability of broadband service, by wire center, which delivers at least 4Mbs actual downstream and 1Mbps actual upstream within its territory which is sufficient to provide VoIP. This is the baseline territory for which network performance testing will be conducted when the rules and format for the testing have been released by the FCC.

IT&E provides telecommunications to the islands of Rota, Tinian, and Saipan in the Commonwealth of the Northern Mariana Islands (CNMI). Established in 1981, it serves a current population of 53,883, over a geographic area of 154.6 sq miles. The service territory is generally hilly with few streams and a limited number of road crossings. The population is concentrated in small villages scattered around the islands. The community is incorporated as a commonwealth. There are a many small family businesses; health, medical, and police facilities are located throughout the community on all three islands. There is a government fire department and both a public school system and many private schools. There are many other anchor institutions located within the serving area. A complete listing can be found on the NTIA ARRA BTOP website.

The demographics of the community reflect its multicultural local and immigrant ethnic roots. The indigenous ethnic population is Chamorro with a sizeable community of Carolinians. There are small, but reasonably sized, ethnic Korean and Chinese communities along with a sizeable Filipino population, all of which use their native languages. IT&E's staff provides customer service in Tagalog, Chinese and Korean languages as needed. Religious affiliations include Roman Catholics, various protestant Christian sects, Muslims, and Buddhists.

There are 20,850 households and a total population of 53,883 within the service territory. The median household income level is approximately $27,500.00. IT&E serves 53 wireless Lifeline subscribers.