

# **BROADBAND DEPLOYMENT ADVISORY COMMITTEE (BDAC)**

**Broadband Infrastructure Deployment Job Skills and  
Training Opportunities – Working Group**



# We want to cover today

- **Opening Remarks by Chair and Co-Chair**
- **Acknowledging Team Members**
- **Updates on calls and subgroup meetings this quarter**
- **Working Group charges we focused this quarter**
- **SMEs We Invited**
- **Key and relevant Takeaways from SME's**
- **Initial Recommendations Thoughts**
- **Report structure we are suggesting**
- **Update on Workforce related industry efforts**
- **Open floor for comments and discussion**



# Opening Remarks

- **Chair: Leticia Latino van Splunteren**

CEO, Neptuno USA Corp

[lletino@neptunousa.com](mailto:lletino@neptunousa.com)

- **Co-Chair: Rikin Thakker**

VP of Telecommunications and Spectrum Policy, MMTTC

[rthakker@mmtconline.org](mailto:rthakker@mmtconline.org)



# Working Group Members

\* Main BDAC Members

1. Leticia Latino\* (Chair)
2. Rikin Thakker\* (Vice Chair)
3. Nayef Abu-Ageel
4. Miranda Allen
5. Earl Buford
6. Kelleigh Cole\*
7. Todd Crump
8. Robert Debroux\* (Alt. Tim Ulrich)
9. Douglas Dimitroff\*
10. Bill Esbeck
11. Debbie Goldman (Alt. Zane Farr)
12. Michael Hain\*
13. Kyle Hitchcock
14. Donald Knife
15. Eve Lewis\*
16. Charles McKee\*
17. Marquita Rockamore (Alt. Tondi Allen)
18. Grant Seiffert
19. Steve Sellenriek
20. Dileep Srihari\*
21. Brent Skorup\*
22. Curt Stamp\*
23. Tom Struble\*
24. Larry Thompson\* (Alt. Julie Darrington)
25. Jenifer Vanek

# Updates on calls and subgroup meetings this quarter

- **Working Group Calls – Bi-weekly (10 calls this quarter)**
- **Three subgroups based on “Key Stakeholders”**
  - Employers
  - Workers and Students
  - Public and Private Providers of Training and Education
- **Subgroups meet via conference call bi-weekly**
- **Focused on the first three charges this quarter**
- **Main effort was on discovery sessions with external SMEs**
- **Started discussion on the final report structure**
- **Have been gathering resources (white papers, reports, studies..) and sharing on centralized drive.**

# Sub-Groups Proposed Categories Discussion

## **Stakeholder Centric:**

- 1. Employers** (e.g. Wireless, Cable, WISP, Private, not-for- profits, governmental, sponsors of Apprenticeship Programs, trade associations)
- 2. Workers and Students** (e.g. trainee, apprentices, High- school students, College students)
- 3. Public and Private Providers of Training and Education** (e.g. Higher Education Institutions, 2 Year Technical Community Colleges, Other Training Providers)

# Working Group Charges

- **Develop recommendations to make more widely available and improve job skills training and development opportunities for the broadband infrastructure deployment workforce.**
  1. **Identify any gaps** in broadband infrastructure deployment skills that could inhibit the pace of deployment of **fixed and mobile broadband connectivity** across the nation.
  2. For each issue identified, **formulate possible solutions that stakeholders** could implement. Proposed solutions, to the extent possible, should be **adaptable and scalable** to different deployment areas and technologies to encourage widespread adoption.

# Working Group Charges

3. **Recommend possible steps** that stakeholders could take to **attract more skilled professionals** to join the broadband infrastructure deployment workforce.
4. Identify any **existing job skills and training programs** that could serve **as a model** for stakeholders in developing measures to bridge any skills gaps in broadband infrastructure deployment.
5. Recommend possible **performance metrics to gauge the effectiveness** of existing and future job skills and training programs and develop steps that can be taken to continually improve the effectiveness of such programs.

# Focus this quarter

- **Charges:**

- Identify Stakeholders (**presented on Sep 19th Meeting**)
- Identify and **validate** Skills Gap (Charge 1) **DONE**
- Formulate Solutions and Recommendations (Charges 2 & 3) **In progress**
- Training Programs and Performance Evaluation Criteria (Charges 4 & 5) **In progress**

- **Approach:**

- Working group Expertise
- Subject Matter Expert Calls
- Research
- Comparing notes and collaborate with other industry workforce groups

# Gaps validated by SME's:

Lack of public awareness of job opportunity in this field	5	★	
Unattractive Compensation(Salary and benefits) for a Tough Job	4	★	
Lack of Broadband Technical Careers Options (In General)	3	★	
Lack of Support from Employers and Industry to upskill current workers	3	★	
Commercial Challenges for Individuals or SMB's to comply with Broadband Companies Deployment requirements	3	★	
Lack of Technical Career Paths for youth	2	★	
Unusual demand of skill force (Small Cell, 5G)	2	★	
Youth Discouragement (by parents and teachers) to go into "skilled" trades and become "ditch diggers"	2	★	
Insufficient Government Funding	1	★	or unawareness
Bad Industry Reputation and Public Relations	1	★	
Old vs. New Workforce Disparity (more retiring than joining)	1	★	
Lack of practical day to day Field Experience	1	★	
Lack of universal terminology and defined general standards	1	★	DOL classes
Lack of practical knowledge in the engineering courses at the college level	1	★	

# SMEs we engaged: 20

- **Rod Olson:** CEO, Vernon Communications (Westby, WI)
- **Chad Young:** CEO, Norvado (Cable, WI)
- **Scott Crockett:** Ericsson, Subcontractor Services
- **Tim Armstrong:** Ericsson, Training Facility Manager
- **Chad Menon:** Ericsson, Sourcing
- **Shane McBride:** Ericsson, Subcontractor Services
- **Lesley Liarikos:** Vice President, Towers Systems South
- **Duane Macentee:** *National Wireless Safety Alliance (NWSA):* Industry Certification  
<http://www.nws-a.org/>
- **Todd Schlekeway:** *National Association of Tower Erectors (NATE):* National trade association <https://natehome.com/>
- **Nick Rogness:** *Golden West Telecommunications: Rural Telco*  
[www.goldenwest.com](http://www.goldenwest.com)

# SMEs we engaged: 20

- **Mike Wilson:** Mitchell Technical Institute: [www.mitchelltech.edu](http://www.mitchelltech.edu)
- **Jon Kerr:** Director of Basic Education for Adults, Washington State Board for Community and Technical Colleges
- **Will Durden:** Policy Associate for I-BEST, Washington State Board for Community and Technical Colleges
- **Paul Kostner:** Utility Construction Technician Instructor, Broadband Academy. Wisconsin Indianhead Technical College
  
- **Local Government/Other Representatives**
  - Mayor Claudia Cubillos (President Miami Dade County League of Cities (MDCLC), Mayor of City of El Portal, Fl)
  - Commissioner Keon Hardemon (VP of MDCLC, Commissioner City of Miami District 5, Fl)
  - Commissioner Andreana Jackson (City of North Bay Village, Fl)
  - Chief of Staff James McQueen (City of Miami District 5, Fl)
  - Jane Henry, CEO of SeeHerWork (minority owned, safety gear)
  - Chris Taylor, COO of SeeHer Work (minority owned, safety gear)

# Subject Matter Experts - Questions

- **We used Standardize questions to guide each conversation and to provide responses consistency.**
- **Some of the General Questions for SMEs were:**
  - What is your educational background?
  - How did you enter this field?
  - What positions/titles/roles have you had in your company/association?
  - From your perspective, what is the greatest Broadband workforce human resources need? **HIRING/RETENTION/TRAINING/COMPETITION**
  - Are you aware (or forecasting) a Workforce Shortage? If yes:
    - In your opinion what are the top reasons why we are experiencing/forecasting a Workforce Shortage?
    - How is your company/association addressing the situation?
    - What can be done to resolve those challenges?
  - Are you familiar with any government programs or government funding that can help ease the situation?

# Key takeaways from Workforce SME sessions:

- There's a ***Broadband Identity Crisis***, **why?**
  1. **Unawareness and lack of promotion/branding** is the industry's worst enemy and impacts all three stakeholders:
    - a) **Employers:** Are not familiar with Government programs, grants and apprenticeship opportunities and are struggling with both economic and HR aspects of recruiting, training and retaining employees.
    - b) **Workers and Students:** Workers don't know how to advance their career or upskill themselves, they don't understand their career path and often join the workforce through word of mouth and without a clear goal. Students don't know what Telecom/Broadband is but do know about Wi-Fi, The Internet or 4/5G (whatever the carriers are promoting at that time). They don't know there are solid careers in this industry.
    - c) **Public and Private Providers of Training and Education:** There are successful local programs developed but they have issues recruiting/attracting students and the gap won't be bridged unless these programs can be scaled nationwide. According to SME's all professional technical programs have advisory groups that help coordinate between educators and industry to provide update on curricula and skills needed but somehow there's still some disconnect between industry and training providers.

# Key takeaways from Workforce SME sessions:

- There's a ***Broadband Identity Crisis, why?***
- 2. **Lack of Standardization of Broadband Jobs Codes/Classes at the Department of Labor (DOL) Level. The Bureau of Labor Statistics (BLS) database needs to update job titles in Broadband industry to be able to gather critical statistic for all three stakeholders especially data related to compensation and workforce size. Currently BLS shows slow or no growth!**
  - a) **Employers:** There is no centralized Salary and Wages Database for the industry, hence there is compensation disparity. Currently, demand is so high that employees are willing to change jobs for a \$1 difference in hourly wage. This causes a great expense for employer as its left with the training and on-boarding costs but not resource. If the wages were standardized and known this would be minimized. Telecom's salaries are lower that other industries, including construction.
  - b) **Workers and Students:** The lack of standardized job titles for Broadband Workers makes it hard for them to perceive it as a career. Workforce struggles even explaining what they do for a living. We have to bring the "cool" back into these careers. The BLS is often used by guidance counselors to assist students in determining what occupation to go into.
  - c) **Public and Private Providers of Training and Education:** To establish any Program Career pathway, Training providers need to show both high demand and good wages are available to the Workforce Development Council and Employment Security data. No data is available for them to prove so.

# Key takeaways from Workforce SME sessions:

- We are experiencing a ***Broadband Identity Crisis, why?***
- 3. **Lack of Industry wide Broadband Certification Standardization which makes Workforce training confusing and chaotic for all stakeholders. There are some certification options (i.e NWSA's) that are being recognized and requested by the industry and by DOL and TIRAP.**
  - a) **Employers:** They have to make a lot of decisions revolving training: In House vs. Off-Site, which training certificates to request, creation of its own career paths and standardization, Salary Range based on training level and certifications. Different customers might require different certifications from different training providers, making it very difficult and costly to comply.
  - b) **Workers and Students:** The lack of standardized industry certification becomes a high entry barrier for workers and students, as they don't have a clear path towards becoming an industry wide certified Broadband Technician. The cost of the trainings and certification makes it also challenging to join workforce.
  - c) **Public and Private Providers of Training and Education:** It is challenging to establish any Program Career pathway, without having industry wide recognized certification. Associations such as the NSWA is tackling this challenge by partnering with technical schools and have students in these trade schools take the written exam that NSWA has developed before going into industry. Then 6-9 months after being in industry they come back and test on the practical aspects. This enables them to earn TTT1 certification.

# Key takeaways from Workforce SME sessions:

- We are experiencing a ***Broadband Identity Crisis, why?***
- 4. **Industry confusion regarding where should the Workforce Training funds should come from?. Government or Industry? SME's consensus is both, but in a coordinated effort.**
  - a) Employers:** Most are trying to solve their workforce issues in their own way. This creates more industry workforce segmentation. Training costs are contained and training focus is on 'putting off fires' rather on creating career paths.
  - b) Workers and Students:** In some instances workers and students are paying their own way towards certification or CDL's licences. There are however also cases where they are benefiting from Pell's Grants or by being sponsored directly by the employer.
  - c) Public and Private Providers of Training and Education:** Several Industry Associations have already programs that benefit from Government Grants and Funding and which mission is to educate the Broadband Workforce, however it doesn't seem to be enough to really be incidental in helping close the Workforce Gap in the timeframe the industry requires.

# Additional relevant input from SME's:

- Mitchell Technical Institute: had SEVEN (7) grads in May and there were over 100 job openings.
- Norvado, WI: Biggest challenge in rural area is competition for skilled IT professionals, not field workers.
- Ericsson: For every 10 'suitable' candidates only 1 or 2 pass the background check or drug test.
- Ericsson, Tower Systems: Workers more motivated for hourly salary than for overall company benefits.
- SeeHerWork: Many industries face labor shortage with coming retirements; could market for youth or focus on women; **Generation T (Trades)** is getting lost, companies (like LOWES) are committed to recruiting the current workforce that is not college educated; ill-fitting safety gear for women is a deterrent. <https://www.wearegenerationt.com/>

# Additional relevant input from SME's:

- With difficulty recruiting, they are preferring to recruit people with basic (construction related) experience and train them in-house.
- Downside of on the job training is length of process and overstaffed crews (i.e. 4-person crew plus 1 trainee).
- Money, benefits and travel requirements are all key components of retention.
- **Hiring in Rural Area –**
  - It's culturally different and there is a lack of amenities. The rural area is a slower pace of life and not much traffic.
  - Have strong ties and relationships with the community and local colleges that makes recruiting more “streamlined”.
  - Pay the industry ‘standard rates’ and have a robust benefit package.

# Additional relevant input from SME's

## Local Government:

- Commissioner Hardemon, City of Miami District 5: – ‘Provide the training to the government and it can open up programs for the public, and you will have the individuals, lots of workforce available as long as you train on the job’. The government sector can assist in launching programs for eligible workers as long as the industry provides the training material.
- Mayor Claudia Cubillos – she highlighted that job skills and training needs to start at a local level, and maybe even with local officials as the industry’s first universal class of students. Emphasized the powerful aspect of including veterans and minorities and appreciated the educational initiative of the industry and private sector bringing broadband and telecom awareness to the public sector.
- Commissioner Andreana Jackson – Sea level rise, sea walls; 5G technology to inspect seawall integrity will be an easier process than what is currently being done. She understands the importance of being educated about next generation technology to make better decisions for its constituents.



# Initial Recommendations: Branding and Promotion Efforts

- **Broadband as a specific umbrella in DOL job codes/classes. DOL needs to update to reflect current demand and as a data and statistic gatherer.**
- **Branding and identity: Centralized effort so the momentum is gained. There needs to be a consolidated movement/program for broadband and some type of coalition needs to be formed. There must be a central clearinghouse for all things workforce-related. Where stakeholders are working together not against each other.**

# Initial Recommendations:

## Supporting new workforce: Students at all levels

- **Increasing awareness of opportunities, career path, educational routes, and specific occupational options:**
  - Scholarships/sponsorships from trade groups and companies.
    - Employers highlight 100% job placement, job guarantee if meet requirements, and do programs.
    - Highlight investment in continued training.
  - Increase understanding of the career path.
    - Change the perception of the industry to students, parents, and guidance counselors. Attend Tradeshows, conferences, and find communication boards to engage these stakeholders.
  - The perception the industry does NOT support attractive jobs
    - Development of Broadband Associate/Bachelor
    - Development of Broadband minor (wireless and wireline)
    - Change perception of instability, seasonal and low paying.
    - Apprenticeships: TIRAP

# Some Examples of Successful Programs and Funding Sources:

- **Possible Successful program to model from:**
  - WRTP/Big Step: <https://wrtp.org/>
  - Susan Harwood Grants from DOL  
<https://www.osha.gov/dte/sharwood/>
  - John Deere Apprentice and Sponsor programs  
<https://www.deere.com/en/our-company/john-deere-careers/dealer-technician-training/jd-tech/>

# Some Examples of Successful Programs and Funding Sources:

- **Integrated Basic Education and Skills Training (I-BEST) Team Teaching Model.** The I-Best model has been designated by the U.S. Department of Education as one of the most significant national innovations.

<https://www.bellevuecollege.edu/bats/i-best/>

- **Broadband Academy Online Teaching Model:** Key to scalability: Generic of foundational training and online delivery. <https://www.witc.edu/continuing-education-and-training/professional-development/broadband-academy>

# STRUCTURE OF THE REPORT:

- 1) Introduction and Background**
  - **Working Group Charges**
- 2) Identification of Stakeholders**
  - **How the report is structured**
- 3) Skills Gap for Broadband Deployment and Associated Challenges**
  - **Why do we have skills gap? (three sub-sections, one per each subgroup)**
  - **Results in Brief or Summary of Challenges and Solutions (response from the working group members to the questionnaire)**
- 4) Proposed Solution – How to attract more skilled professionals**
  - **(has to be adaptable and scalable)**
  - **(has to be applicable to different deployment areas and technologies)**
- 5) Examples of Successful Job Training Programs**
  - **Recommendation on Nationwide Roll Out**
- 6) Performance Metrics to gauge the effectiveness**
- 7) Definition/Terminology/Glossary of terms**

# Update on Workforce related industry efforts

- **Several industry initiatives around Broadband Workforce Development Activity.**
- **Objectives coincide on Identifying Mutual Organizational Goals, Synergies, Resource Sharing and Collaboration Opportunities**
- **Discussions on the need to have an Industry-Wide Workforce Development Steering Coalition/Council**
- **Desire to develop an Industry 2020 Workforce Development Road Map and to recognize the urgency in solving the workforce Skills Gap.**
- **Collaboration is KEY and stakeholders are open to it.**

# Our plan going forward...

- Last Group Call for 2019 will be held on December 9<sup>th</sup>, 2019 and subgroups will have one more call after that.
- Subgroup calls will resume on January 13, 2020.
- Next quarter our focus will be:
  - Start organizing data gathered in report format
  - Focus on recommending steps to attract more skilled professionals (Charge 3)
  - Focus on identified potential model training programs (Charge 4)
  - Start discussions on performance metrics to gauge the effectiveness per stakeholder. (Charge 5)

# Closing thought from one of our SME's

**Mitchell Tech: What would you like to see the FCC/industry do to help with awareness?**

*'The industry has to get out and promote itself. Increase awareness. Offer more scholarships. Sponsor students. **There are so many employers so if they all did a little of this, awareness would drastically increase.** Employers need to engage early with students and help with recruitment'*

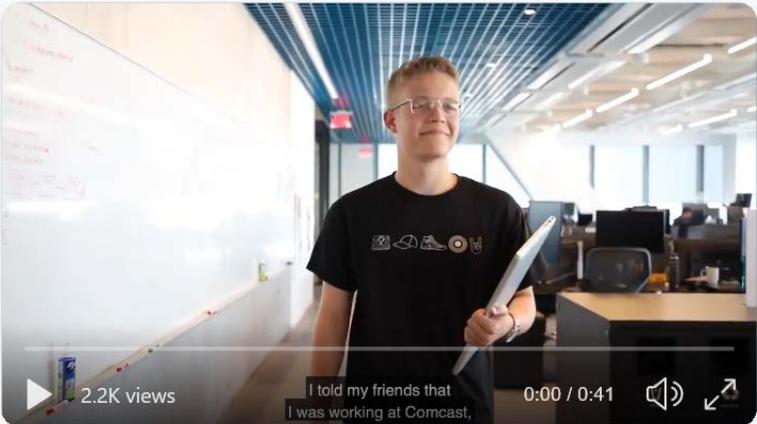
# Industry Engagement and collaboration is the KEY

**‘The coordinated involvement of big broadband corporations is key to implementing successful workforce development solutions’.**

Comcast Retweeted

**Comcast Careers** @comcastcareers · Oct 31

Hear why @Comcast is a great place to start your career journey. We have a variety of roles for the current student or recent graduate ranging from internship and co-op programs to rotational opportunities. Come #CreateTheFutureWithUs! Learn more: [comca.st/36msOtQ](https://comca.st/36msOtQ)



2.2K views | I told my friends that I was working at Comcast, | 0:00 / 0:41

35 | 7 | 29

**AT&T** 135.8K Tweets **Following**

**AT&T** @ATT · Nov 11

This #VeteransDay we salute those who serve & who have served



13 | 28 | 128

Show this thread

**Sprint** @sprint · Oct 11

Sprint is proud to be the founder and generous supporter of the 1Million Project. Today, the 1Million Project is celebrating its third anniversary of providing free devices and internet connectivity to students who don't have it at home. (1/2)



2 | 10 | 17

Show this thread

# Leverage social media and be visible!

**#BroadbandWorkforce**

**#WorkforceDevelopment**

**#TelecomCareers**

**#apprenticeships**

**#CoolJobs**

# **OPEN FLOOR FOR COMMENTS AND DISCUSSION**

# BACK-UP SLIDES

- There is a pay issue at least for graduates. We suspect this is industry wide: In looking at the pay the graduating students received, telecom is lower. Mitchell Tech students are comparing telecom to the varying jobs below. When students are comparing what they get for their two-year associates degree they do look at PAY:

DIVISION	PROGRAM	2014	2015	2016	2017	2018	2019
ENGINEERING	TELECOM	\$17.60	\$17.48	\$17.86	\$18.50	\$18.36	\$19.05
	SCADA	\$19.86	\$23.33	\$24.76	\$24.28	\$26.88	TBD
	IST	\$14.34	\$17.76	\$16.62	\$21.60	\$18.67	TBD
	SATCOM	\$20.18	\$20.10	\$21.37	\$23.52	Retired	N/A
CONSTRUCTION	ECM	\$15.55	\$15.60	\$16.46	\$17.00	\$17.37	TBD
	HCT	\$12.50	\$13.30	\$18.00	\$19.40	\$17.36	TBD
	MANUF/MACHINING	N/A	N/A	N/A	N/A	\$21.76	TBD
	WELDING	\$16.63	\$16.80	\$18.25	\$17.68	\$23.00	
	ADBC	\$13.78	\$14.37	\$17.31	\$16.91	\$17.72	TBD
AG/TRANSPORTATION	PRECISION AG	\$16.32	\$17.15	\$18.05	\$17.64	\$16.53	TBD
	FARM PWR/DIESEL	\$15.99	\$14.50	\$16.46	\$14.67	\$18.52	TBD
	AG	\$14.65	\$15.18	\$15.44	\$15.25	\$16.49	TBD
	PWSPT	\$12.77	\$12.57	\$12.67	\$13.03	\$15.02	TBD
ENERGY	EUST	\$18.31	\$26.37	\$21.76	\$28.38	\$24.29	TBD
	WIND	\$17.81	\$18.67	\$20.88	\$19.50	\$19.59	TBD
	PL (includes UT)	\$20.39	\$20.93	\$20.96	\$19.61	\$22.17	TBD

2019 Data will be available after 3/1/2020

Source: MTL Graduate First Destination Data Report