

Metro21/Traffic21 Final Report – Regional Broadband
March 8, 2022

As described in the Original Tasks, Budget, and Statement of Work, Metro21 and Traffic21 are engaged in Tasks II-V of the Project: *A Connectivity Roadmap for Southwestern Pennsylvania*.

Outcomes and accomplishments of the Project’s Tasks II-III are described in the December 2021 interim report, *attached as an Appendix to this report for reference*. This report details outcomes and accomplishments related to Tasks IV-V.

Task IV. Regional Vision, Goals and Strategies

For Task IV, Carnegie Mellon University’s (CMU) Metro21/Traffic21 team (“the CMU team” including Stan Caldwell, Jon Peha, Kristin Hughes and Karen Lightman) utilized our expertise in telecommunications, smart cities technology and policy, along with industry and government trends to advise and inform the regional vision, goals and strategies, with consideration of technology investment and policy to advance economic and community development.

Specifically, the CMU team helped support the visioning exercises with various stakeholder groups from around the region. We provided feedback on which people, organizations, and areas of expertise/knowledge to include in the stakeholder groups. The CMU team presented “A CMU Update on the SPC Connectivity Roadmap” at the SPC Connectivity Roadmap | Steering Meeting #4 on January 6, 2022.

Our presentation outlined the following issues:

- Technology and policy considerations – time for action
- The policy and politics of broadband
- Outreach and communications – opportunities for next steps

The presentation was provided to all Steering Committee members and is available upon request.

The CMU team also provided feedback, comments, and edits on the drafts of the SMART Goals and Strategies memo, and provided early feedback/comments on the draft Connectivity Roadmap Report before the Connectivity Roadmap | Steering Meeting #5 on February 10, 2022. During this meeting, the CMU team provided additional feedback to help guide the final version of the report, including analysis from the survey and stakeholder meetings. The CMU team has provided guidance to the project team with respect to the creation of the State of Pennsylvania’s Broadband Authority. The CMU team also provided guidance in reference to the maps on the SPC Connected website, requesting more detailed municipal level information in order to grant a user the capability to zoom and allow statistical filtering at the municipal level.

Task V. Measures of Effectiveness

For Task V, the CMU team advised and informed the measures of effectiveness index to ensure that they accurately portray the potential impact of a regional broadband initiative, with special consideration of the innovation potential of emerging technologies being developed at CMU and throughout the industry.

Specifically, the CMU team helped the project team in developing the SWPA Connectivity Roadmap's measures of effectiveness (MOE) and targets, based on the feedback we provided on the SMART Goals and Connectivity Roadmap Report.

Continued Action and Next Steps

To help support the activities of Tasks throughout the project, Metro21 also issued regular broadband email newsletters that kept the project team abreast of relevant national and state-wide initiatives related to broadband connectivity. Past issues of these newsletters are available on the Metro21 news webpage: <https://www.cmu.edu/metro21/news-and-events/index.html>. Metro21 intends to continue issuing the broadband newsletter and will be participating in a Broadband Symposium hosted by the University of Pittsburgh in April 2022.

We look forward to the next phase of this project and are eager to engage with SPC on supporting the region to ensure that southwestern Pennsylvania achieves the full potential of funding and equitable outcomes of broadband investments. For example, we look forward to expanding the work of the CMU team on developing a public service campaign to communicate the critical importance of equitable broadband in the region. We also want to stay engaged with respect to the NTIA maps that will be coming out this year that will inform how much funding the state of Pennsylvania will be receiving in federal funding as a result of the Infrastructure Investment and Jobs Act, of which over \$65B has been designated for broadband. This is a critical time for our region and we feel confident that the SPC Connectivity Report will help position our region well for both government and private-sector broadband investments and equitable economic outcomes for our region.

Appendix:

Metro21/Traffic21 Interim Report – Regional Broadband

Submitted: December 3, 2021

[As Outlined in the Original Tasks and Budget, Metro21 and Traffic21 are engaged in Tasks II-V, as outlined in the Statement of Work.](#)

Task II. Existing Conditions Analysis

In Task II, Carnegie Mellon University’s (CMU) Metro21/Traffic21 team (“the CMU team” including Stan Caldwell, Jon Peha, Kristin Hughes and Karen Lightman) provided expertise in telecommunications and smart city technologies and policies related to broadband. Since inception of this project, the CMU team has actively engaged with colleagues at the grantee organization (Southwestern Pennsylvania Commission), sub-awardee organizations (Michael Baker and Associates and Allies for Children; as well as the sub-sub-awardees of Michael Baker) and communicated (as needed) with members of the Advisory Committee.

During Task I, the CMU team provided feedback and guidance as needed to the project team on the existing data and analysis, existing conditions reports, and connectivity index and connectivity opportunity areas. We actively participated in the design and deployment of the plan and gathering map and related socio-economic data to better understand the broadband equity gap in our region. We also leveraged our technology and policy expertise to help identify and clarify gaps in the existing conditions analysis and provide guidance on next steps and action items to remedy these gaps.

During Task II, the CMU team helped to inform the technology innovation potential of the connectivity opportunity areas and advised on government and industry trends and policy development to advance regional broadband access, which was especially useful during Advisory Committee meetings. To accomplish this last task, we brought in the expertise of Jon Peha, Professor of Engineering and Public Policy and former Chief Technology Officer with the Federal Communications Commission (FCC) to ensure that our guidance was relevant from technology/technical and policy perspectives and included consideration of the recently passed Infrastructure Investment and Jobs Act. Additionally, we provided a regular broadband newsletter to help inform Task I; this newsletter is distributed internally at CMU to faculty who are interested in the topic, and the newsletter is externally distributed, upon request.

Task III. Public Stakeholder Engagement

For Task III, the CMU team expanded to include Kristin Hughes, Professor in the CMU School of Design and an expert in user-centered design and communication. Throughout this aspect of the project, the CMU team has been drawing upon its expertise in community engagement, particularly utilizing user-center design and provided guidance to augment Allies for Children and Michael Baker in their public stakeholder activities. We helped in the design and

deployment of the community engagement workshops, as well as the survey which went to the entire 10-county SWPA region. During this task, we leveraged our extensive network of municipal and equity partners (which exceeds 200 partners) to ensure the public stakeholder population is diverse, equitable and inclusive. We also utilized CMU and Heinz College marketing and communications teams to share the survey on social media, as well as shared the survey with the Metro21 newsletter list. Metro21 also has the project posted on its website, and regularly updates its constituents on the progress of the project via its newsletter (which has a 2,000 person distribution list). News articles promoting the project were also posted on Traffic21's Smart Transportation Dispatch weekly email newsfeed with over 4,000 subscribers.

The CMU team is also supporting the activities of this project by engaging two faculty and their respective Fall 2021 courses. The first being an undergraduate Junior Communications Design Studio wherein 20 students designed and produced public service campaigns focused on equitable broadband. Throughout the course, Metro21, Allies for Children and Michael Baker met with students to help guide the content and messaging ("call to action") of the campaigns. We presented one of the student videos to an Advisory Committee meeting and used another video to help promote the survey (video forthcoming). Additionally, students presented their work to the full team (Michael Baker, Allies for Children and CMU) on November 18. We are in conversations with the Michael Baker team about next steps for these videos, as several have the potential to be utilized in future phases of this project.

In addition to the design course, we also advised the graduate level course "Elective Politics and Policy Making" taught by Rick Stafford, Distinguished Service Professor of Public Policy at Heinz College. In this course, students are studying and writing public policy briefs on the topic of broadband deployment from an equity and economic development lens. Ms. Lightman presented on the topic of broadband equity at the start of the course, and we expect to be able to share the policy briefs at the completion of the Fall 2021 semester (December 2021).

Task IV. Regional Vision, Goals and Strategies and Task V. Measures of Effectiveness

At the time of the writing of this interim report, Tasks IV and V are in process. For Task IV, the CMU team is utilizing our expertise in telecommunications and smart cities technology along with industry and government trends to advise and inform the regional vision, goals and strategies, with consideration of technology investment and policy to advance economic and community development.

For Task V, we will advise and inform the measures of effectiveness index to ensure that they accurately portray the potential impact of a regional broadband initiative, with special consideration of the innovation potential of emerging technologies being developed at CMU and throughout the industry.