Transcript of a Presentation by Foad Hamidi (University of Maryland, Baltimore County), December 9, 2020

Title: RAPID: Responding to COVID-19 using High-speed Mesh Wireless Community Network Internet

Foad Hamidi CIC Database Profile

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YouTube Recording with Slides

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Transcript

*Slide 1*

Alright thank you very much for the introduction and coordinating the webinar. I'm going to share my screen. Alright, so my name is Foad Hamidi. I'm an Assistant Professor in Information Systems at the University of Maryland, Baltimore County and it's my pleasure to present this research on behalf of my colleagues also at Digital Harbor Foundation and Andrew Coy and from Project Waves, Adam Bouhmad. This is a collaborative RAPID project and it's funded obviously by the NSF [National Science Foundation]. So, and the topic of the project is "Responding to COVID-19 with Community Internet".

*Slide 2*

So, across the United States there's a significant number of people who lack broadband access to internet in their households. Depending on where you look, the number varies. So according to the FCC [Federal Communications Commission], a very conservative estimate is about 23- 21.3 million people and then Microsoft also has estimated about 150, now 151 million people. So, and there is- regardless of this exact number there is definitely a significant number, and in Baltimore city where our project is located according to the 2019 US census and there was 28 percent of households that didn't have access to broadband internet. And also, the Baltimore city schools did this recent survey in response to COVID and about 24,000 students don't have access to devices or the internet connectivity during this time. So, this is obviously a problem, even in the absence of COVID, but of course with COVID there is a lot of

opportunities including employment opportunities, educational opportunities, and also access to opportunities for social interaction that people are missing out on if they don't have this internet accessibility.

*Slide 3*

So, in our project we are investigating an effective and efficient community-based approach for setting up free high-speed internet access in urban settings. So, we're looking at both the technical and the social aspects of this question. On the technical side, we are looking at how to set up mesh networks in an urban setting. So, a mesh network essentially connects to the back on internet using a wired link and then you can distribute routers, wireless routers, across a geographical space and quickly set up internet activity or network connectivity. In our case, it's the internet across the community.

*Slide 4*

So, our project involves three phases. So first, it involves setting up points of presence. So, in the city we partner with organizations that have basically points of access with good visibility. So, there should be, basically, a clear line of sight between an antenna and the routers that we want to connect with and these include very tall buildings in our city and also, for example, buildings like churches and so on that can provide this this access for us. And the city has been very generous. Our community partners have been very generous to, kind of, set up that infrastructure. The next step is going into the community and setting up routers at each house and kind of setting up sort of to make sure that the system is compatible with the household. And then finally creating online trusted information resources so that our community members can access these resources in a timely manner once they have the connectivity.

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So far, we have received some very positive feedback from the participants from a research perspective we're conducting both surveys and also interviews to understand what is the impact of having this access and I just have a couple of quotes here. I will quickly read them "[Internet connectivity] is a necessity. Everybody needs it. Everybody should have it." And another participant said "COVID is the stagnating life as we know it and having this internet is allowing life to go on!" So, we're looking forward to continuing the work and as we're going along, documenting what are some strategies for effective deployment, and also what are some barriers and how we can overcome them in the face of pandemics in the future. Yeah, I think that wraps up my talk I hope that was on time and I think I have one last slide.

*Slide 6*

So, there's a lot of people involved here. I want to thank my students and also amazing community partners: Project Waves, working on the ground setting up the infrastructure, and also the Digital Harbor Foundation, iteratively creating online resources for the community and getting feedback from

them to see what is needed. And of course, I'd like to thank the National Science Foundation for their generous award for us to be able to do this work. Alright, thank you very much for organizing this talk and I'm happy to answer questions afterwards.