1. My focus is going to be on the geospatial data and tools available to examine digital equity issues in NH. I do so as a representative of the NH GRANIT System, which is the state's public GIS clearinghouse. We are located at UNH, and are active in a broad range of activities – many of which result in data that can help inform discussions around digital equity issues.

2. Our charge: Mapping economic inclusion asset providers and disseminating information about them to LMI individuals, families and communities.
   But first, I want to present at least one national organization's definition of digital inclusion.
   And why digital inclusion? It is a required condition to achieve digital equity. In particular, I will start by looking at access to broadband.

3. I want to begin by introducing a project that we became involved in almost 10 years ago – and that's the NH Broadband Mapping and Planning Program. The program was funded for 5 years by the NTIA, and involved a broad range of activities – including working at the regional and community levels on planning and capacity building issues. But I am going to focus on the broadband mapping component where we described where broadband is/is not available to residents of NH. Because that foundational data is necessary in order to know where there are gaps in availability, and therefore is an important piece of the digital equity discussion.

4. The NTIA project was then followed by 2 smaller efforts funded by the Northern Border Regional Commission, where we worked primarily with communities and organizations in the northern part of the state. However, on the mapping side, we continued to map broadband availability statewide.

5. This is one of the last statewide products we generated two years ago – showing where broadband is available. One thing to note at the outset – we adopted the FCC definition of broadband that required download speed of 25 or more Mbps and upload speed of 3 or more Mbps. So areas that are served are displayed in the bright fuschia color. You can see that while essentially all of the state had internet service at that time, large portions of the state did not have service that met the broadband speed thresholds.

6. Looking at the numbers behind the map - as a state the data suggested that almost 95% of the population was served. However, when you look at the county level numbers the picture is very different. Note that over 20% of the residents of Cheshire and Coos Counties do not have access to broadband.

7. (no text)

8. FCC Map – Fixed Broadband Deployment. The source of the map and tabular data – the Form 477 data submitted by providers to the NTIA twice/year. Provides data for every state/US territory on fixed broadband coverage.

9. Here we look at just NH, and this seems to suggest that all of the state is served by at least 2 broadband providers. We know that's not the case, however, as we are contacted by residents who simply do not have service.

10. The site itself has some great capabilities. For example, I can zoom in to a location, click on any census block, and discover who providers service and the type and speed of service they provided. Here I click on our current location and the site is reporting that there are 3 fixed residential providers delivering service and 3 satellite providers. Note also that I can report an error by clicking on the fuschia icon.

11. Can also do comparisons. Here, have compared the state of NH to national numbers – looking at % of population with access to multiple broadband providers. You can see that NH fairs slightly above average, with 92% of the rural population being served by 3 or more providers compared to 75% nationally. However, we know there are some serious limitations with the data – related to accuracy, resolution, and currency.

12. (no text)

13. Census block resolution – means that if any single address in a census block is served, the entire block is considered to be served. This may be adequate in urban areas, but not in more rural areas

14. New rules

15. NTIA- also initiating a project that goes beyond the 477 datasets: the National Broadband AvailabilityMap

    3rd party datasets – state government, local/tribal governments, owners/operators of broadband networks, educational institutions, nonprofits and cooperatives

    Described as a full GIS (and not just a map), with capabilities to compare data across multiple sources (and therefore identify discrepancies in areas served/unserved), produce reports and analyses, etc.

    Because it includes publicly available and non-public data, it will only be accessible by state and federal partners. So useful for state decision-making, but not clear to me how, in NH for example where the regional planning agencies work closely with communities on this topic among many others, how this data can be used. Perhaps the guidelines will change as the pilot progresses.

16. Moving on to mapping economic inclusion asset providers, I would like to present one web mapping application we worked on last year to help inform discussions in the state related to the NH School Connectivity Initiative - efforts to expand K-12 broadband access and improve digital equity in New Hampshire. Purpose of the application: Consolidate available data and inform stakeholder discussions by providing an easy to use mapping tool.

    In this application, we built the tool in the ArcGIS Online environment. But there are definitely other options, as we will see from Kevin's remarks.

    Opening page – shows location of target schools and fiber target school districts
    Last updated: November 2018. 744 views

17. I can zoom into a location and click on any school to retrieve information about it ...
    Or I can retrieve information about the district itself, in this case looking at fiber target school districts.

18. I can also display additional data sets that may help inform a discussion around digital equity. Here we see a school district in Raymond where the income of the host census tract is considered moderate. Note it represents a designated qualified opportunity zone.

    Here I've clicked to retrieve the actual numbers behind the income data ...

    And now I've displayed the banks that have either a main office or a branch office within or in close proximity to the district.

19. So the tool has a lot of versatility. I wanted to just take a moment to emphasize that the tool is bringing together data from multiple sources into one online map viewer. One of the questions I think it would be interesting to get your feedback on is what other datasets would be valuable to consider including.

    Income brackets are based on Census tract Median Family Income (MFI) as a percent of Metro Area MFI, as of 2017.

    "In May 3, 2018, New Hampshire Gov. Chris Sununu nominated 27 census tracts to be designated as Opportunity Zones, a federal program encouraging economic development and investment in low income areas around the country.

    Investors can defer capital gains on earnings that have been reinvested in the zones through Opportunity Funds. Opportunity Funds are private sector investment vehicles that invest at least 90 percent of their capital in Opportunity Zones. Long-term investments maintained for over 10 years do not have to pay additional capital gains taxes on earnings from Opportunity Zone investments."

    So there are a dozen or data sets presented in the web map. They can be displayed individually or in combination. And each can be queried to determine the characteristics of the feature that is mapped.

20. I mentioned just a moment ago that there are other options besides ArcGIS Online. Here is a map hosted on the NCDE (National Center for Digital Equity) website that uses PolicyMap as a tool to present/visualize data.

    You'll see some overlap in the data sets presented.

21. The data is not just for New Hampshire and there are some different options – here, for example, I've added providers of technical support as we saw in an earlier slide that having broadband service is not enough ... People need to be able to use it.

    So I hope we can have a discussion about the data you think would be useful to include in these kinds of web maps, and effective ways to present it.