

## Defining Infrastructure

By Thomas Beck, AIA, NCARB

A number of our previous columns have touched on the topic of infrastructure including our article of August 2020 regarding the US Postal Service. Dictionary.com defines infrastructure this way:

1. the basic, underlying framework or features of a system or organization.
2. the fundamental facilities and systems serving a country, city, or area, as transportation and communication systems, power plants, and schools.
3. the military installations of a country.

Traditionally roads, highways and bridges are considered infrastructure. In 2020 and continuing in 2021 broadband communication became a more frequently traveled highway than those traversed by school buses. The existence of childcare for working parents is infrastructure. The support of our aging population is infrastructure because, like childcare, without it our country's working citizens must interrupt their contribution to the Gross Domestic Product (GDP) in order to care for their family.

If one uses a broad (and very incomplete) brush to look at the history of infrastructure in the US we can see that in the early days of our republic the Industrial Revolution was creating new methods of power generation, telephones, telegraphs, lightbulbs and much more. The US Postal service established free delivery service in cities in 1863 and free rural delivery in 1896. Commercial broadcast radio began in 1920. Broadcast TV started in 1928. In 1936 the Rural Electrification Act funded distribution of electricity to most addresses in the US. The Federal-Aid Highway Act of 1956 created our interstate highway system. In 1983 the internet was born. According to the American Jobs Plan "more than 30 million Americans live in areas where there is no broadband infrastructure that provides minimally acceptable speeds". We here in the rural town of Estes Park, Colorado, feel this pain, as our internet speeds can be as slow as 3 or 4mps when our visitors are uploading giant files of elk pictures. Not to mention trying to participate in web meetings, school classes, medical tele-health, and more in the pandemic present. As the plan states "Broadband internet is the new electricity."

So, what is and is not infrastructure is a constantly evolving list. Some things, like the natural infrastructure of the Everglades and wetlands, are back in our sights as important god given filters for our water. Man-made infrastructure now must take into account the impact of climate change. According to the American Jobs Plan "In 2020, the United States endured 22 separate billion-dollar weather and climate disasters, costing \$95 billion in damages to homes, businesses, and public infrastructure." (<https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>)

Thinking locally, how would we best invest funds to improve our infrastructure? We could improve our pedestrian options of sidewalks and trails, and bicycle friendly roads and paths. We could add to our small network of EV charging stations. We could continue to add renewables to our grid. We could fast track the installation of broadband for the entire Estes Valley, as well as make broadband affordable for businesses and for residents. We could prioritize making our medical services financially accessible to all. We could find ways to make affordable housing possible for our valued essential workforce.

We have a unique opportunity in Estes Park to utilize renewables like wind and solar to pump water uphill when the sun is shining and the wind is blowing, to store the water as stored energy. When the sun is not shining the release of the stored water would create abundant hydro energy. The Town of Estes Park could partner with the Federal Government to get this done. We have the best battery storage system currently invented. It is called "on-demand hydropower".

Infrastructure to serve every citizen of the US is necessary right now. Building new infrastructure, repairing existing infrastructure, and reimagining the definition of infrastructure will create new jobs. The Town of Estes Park is doing a good job of rolling out broadband, but we would love to see that process accelerated considerably. Perhaps grants from the federal government are or will be available to make the roll out faster and the service less expensive for us here in Estes Park.

Beck, Thomas W. "Defining Infrastructure" *Estes Park Trail Gazette*, Friday April 9, 2021, <https://www.eptail.com/2021/05/03/defining-infrastructure/>