

What Is Infrastructure?

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Many eyes glaze over when the word "Infrastructure" requires our attention. Most people think of such things as potholes in the street, bridges and tunnels collapsing, and power-shutdowns. We need a much more detailed discussion to understand what the upcoming Biden bill on infrastructure rebuilding is designed to address.

President Biden himself defined the term as he is using it: anything that helps people lead productive or fulfilling lives. That seems too broad a definition for conservatives, who are only interested in the physical infrastructure: roads, bridges, ports, things that one builds and rebuilds to keep functioning. But if one regards Infrastructure as everything that supports life systems, it is a much broader thing.

One can look at the human body, for example, and define its infrastructure. Skin is the outside coverage, but inside are the bones, nerves, arteries, veins, and we now know, the bacteria and chemicals that enable the other elements to work. We are, indeed, engineered structures, but our identity as a human being goes much further than that.

The human does not exist only as a machine; a robot can do that. We require care from other human beings, parents, family, community, school systems, medical care, and justice system. Few of us can live like hermits, hunting and gathering. Many of the products that sustain our lives come from far away, so the human being depends upon governments, trade agreements, and foreign sources for elements we need (think of the iPhones, with ores found mostly in China today).

The Biden plan takes the broad view of infrastructure, one more in line with the infrastructure of the individual human being. It regards systems that enable human societies to exist both technical and social. One does not survive without the other.

Societies with bad infrastructures live in chaos and anarchy, the strong dominating the weak. Those are societies that cannot feed its people, cannot provide medical care, cannot provide honest justice systems, nor honest governments. We are seeing many around the world today in chaos, violence, and anarchy or repression, living almost centuries different from the modern developed world.

The idea of infrastructure began with our first civilizations, the "fertile crescent" of Mesopotamia and Egypt. The first infrastructure they tamed and designed were water systems that were essential to agriculture. In Mesopotamia, the irrigation systems gave people protection from the inconsistencies of rainfall alone. Everything else stems from water. Water infrastructure was not only agriculture; it was also seagoing, trading, and sometimes warfare (enslaving workers while trading) and seizing resources by force.

Our own history illustrates the evolution of infrastructure. Our first national effort was the Erie Canal, a system that opened up the new lands inland from the Atlantic coast and the Great Lakes. The system made our early governments rich and gave the country a future.

Next came the railroads, transcontinental systems that made transport safe and rapid, much better than even the "Pony Express" system of horsemen who were as fast as a horse could be. Electricity was the next enormous infrastructure, permitting telegraphs, telephones, lighting. This great infrastructure was initially a benefit to the already rich, but under President Franklin D. Roosevelt's New Deal, an entire dirt-poor part of the American South benefitted through the Tennessee Valley Authority.

The New Deal built bridges, dams, ports, schoolhouses, and hospitals. Because of Roosevelt's broad vision, it also protected our forests and natural wonders; provided paid work for artists, writers, musicians and dance troops, to tour America and bring the arts and theatres to communities that never had them before.

When we consider our best cities, they benefit from the cultural infrastructure of museums, libraries, concert halls, public parks and gardens, and modern policing and justice system. They also have the physical infrastructure of paved streets and roads, modern medical care, safe water and sewage systems, and safe building codes for both public and private structures.

My next column will explore the human infrastructure upon which a modern society depends: the care of the elderly, special needs citizens (handicapped physically or mentally), and support for the survival of families in good or bad times.

687 words

Next time: human infrastructure, the social structure.

Dr. Laina Farhat-Holzman is a historian, lecturer, and author of "How Do You Know That? Contact her at [Lfarhat102@aol.com](mailto:Lfarhat102@aol.com) or [www.globalthink.net](http://www.globalthink.net).