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A resilient system is **redundant**. In other words, it has backup capacity. Do our transportation and housing systems provide redundant **access** to people and services?

Redundancy of access doesn't only mean having multiple ways of connecting people from Point A to Point B, but it means being able to access multiple services and amenities by foot or bike.

On January 2014, a couple of inches of snow hit Atlanta late in the afternoon. That day, in fear of being stuck at work, people began their commute home early in the afternoon. Atlanta, being a city that relies mostly on single-use cars as a main form of transportation, was in complete grid lock by the end of the working day. I was privileged enough to walk home. Some of my colleagues spent upwards of 17 hours in their cars, unable to pick up their kids from school. There were wrecks, stories of births on the side of the road, and cars abandoned on the highway. The city was in a complete state of chaos, followed by complete paralysis, much like the current situation, only differently.

And more recently, a major bridge connecting Atlanta to its neighborhoods on the northeast (I-85) collapsed. Atlanta's subway system is notoriously limited, with only two lines running (north to south and east to west) This event left a great portion of the population who live in the suburbs and work in the city, struggling to get to work.

Today, during this pandemic, public transportation has posed a challenge as it relates to the spread of the virus. In many cities, single car-use has remained the safest form of transportation. The problem is, there remains a great portion of the population who cannot drive or do not have the means to own a car. What's in store for them? How can they access services, and better yet, the service jobs that are keeping our grocery stores, pharmacies and critical facilities open? These three recent events in Atlanta have reinforced the notion that systems that are not redundant are less resilient. When a shock like a pandemic hit, stresses like lack of transportation or housing options are exacerbated.

Transportation modes. Cities need redundant forms of transportation so that when one fails, the others can easily ensure continuity of services. This means having multiple ways to access the same destinations, whether by train, bus, bike, car, or foot. In Bogotá, for example, 47 miles of temporary bike lanes are being opened to reduce the crowding of public transportation in response to COVID-19. Of the 47 miles, 13 miles were car lanes that were converted overnight.

Housing. This means having diversity of housing in urban centers. In this case, this diversity refers to price points so that our workforce can have access to housing that is affordable. Redundancy of access doesn't only mean having multiple ways of connecting people from Point A to Point B, but it means being able to access multiple services and amenities by foot or bike. In NYC, a city that relies heavily on public transportation, having walkable streets and services supported by density have provided continuity of life for many New Yorkers during this crisis.



Car lanes turned into temporary bike lanes in Bogotá, Colombia
Credit: Leonardo Guerrero Bermudez/iStock, via www.cityfix.com