



Urban Planning:

Post-Pandemic America

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# Approval Page

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# Introduction

## Purpose

The outbreak of Coronavirus Disease 2019 (Covid-19) has put viral infection at the forefront of American life; the disease has literally brought the Country and the rest of the world to a standstill. Lives have been disrupted in ways people living today never imagined possible as they are being asked to “stay at home” or “shelter in place.” These confinement mandates can be a tremendous source of hardship and economic pain. Yet, the most impactful factor of the pandemic is the fear it breeds within the public and in our institutions. How will this newfound fear of contagions affect the way American’s live, work, and interact within our communities. The purpose of this report is to use the history of two pandemics and the changes in planning which followed as case studies for how planning may be effected in the aftermath of Covid-19; focusing primarily on how it might change the guidelines for state general plans.

## Relevance to Planning

Most urban planners have little to no experience dealing with pandemics on any level as the recent focus in the field has turned away from infectious disease and realigned itself toward the implications of chronic disorders, with catch terms like healthy living, healthy communities, and environmental justice. Planners are now in uncharted territory and no one can predict with accuracy what will happen in the aftermath of Covid-19, however we may be able to garner some indication by studying the history of past pandemics.

In the nineteenth and twentieth centuries, two major pandemics led to significant change in the way urban planners addressed the connection between health and planning. By reviewing historical aftermaths, planners can gain a glimpse as to what paradigm shifts in planning occurred and how relevant these shifts may be to today’s pandemic and the way planners regulate their environment.

## Historical Introduction

The modern fields of urban planning and public health simultaneously began in the nineteenth century as a response to pandemic conditions in the United States and European cities. The problems associated with urbanization, industrialization, and immigration, coming at a time when the populations of cities were exploding, created an abundance of unsanitary conditions, which resulted in a breeding ground for contamination and a desire for a coordinated mobilization to “roll up one’s sleeves and get to work.” As a result, the built environment was significantly altered after the deaths following the Third Cholera Pandemic (Lopez, 2012).

As the twentieth century approached, Western civilization found itself with improved infrastructure, better living standards, and an increased knowledge of the origins of disease; however, this was not enough to prevent another pandemic from bringing western civilization to a standstill. The Spanish Flu or H1N1 coincided with the final days of World War I, leaving the United States decimated. What followed was a desire to reconfigure America, while strengthening its underlying health (Lopez, 2012).

## Nineteenth Century: Third Cholera Pandemic (1852-1860)

### Background

The Third Cholera Pandemic started in India and spread from the Ganges River Delta to the rest of Asia as well as Africa, Europe, and eventually North America, leaving a death toll of over one million people before it ended. This third global outbreak of cholera proved to be the deadliest and would serve as the catalyst for one of the greatest medical discoveries of all time (World Health Organization, 2017). When the outbreak reached London, it piqued the curiosity of physician John Snow who by diligently mapping cases was able to determine the origin of the disease, a water pump located at the center of the outbreak’s radius. His finding in 1854 that the disease was a waterborne contagion was largely disregarded at the time for an alternate hypothesis of miasma or tainted air that was believed to be rising from the water source (Halliday, 2001).

During the mid-nineteenth century's industrial revolution, large cities were crowded and bred polluted air and water; at the time of the cholera outbreak the River Thames was referred to as the "Great Stink" (Halliday, 2001). Urban planning as a profession was largely born from this belief that cities were disorderly, filth ridden incubators, and needed a coordinated effort between relevant parties to rectify the situation. Consequently, the second half of the nineteenth century was spent largely on upgrading tenement housing, adding urban water sources and sewage systems, and increasing open space to purify the air (Corburn, 2007).

## **Planning Aftermath of the Third Cholera Epidemic**

### **Land Use & Conservation**

The goals of environmental sanitation brought together city officials and professionals with the shared idea that by utilizing "sensory tests" of purity they could rid cities of the decaying matter, stench, and bad air responsible for disease. There was an emphasis of forming a permanent, centralized water works system, with America largely influence by England's efforts (Melosi, 2000). The mid nineteenth century was known as a period of "sanitary awakening" in the United States. The main goal for planners was to move waste as far from the public as possible, which for the first time put the burden on humans as opposed to natural sanitation efforts (Melosi, 2000).

In 1857 the Chief Engineer of the Department of Sewerage for Philadelphia, made the following statement: "There should be a culvert on every street, and every house should be obliged to deliver into it, by underground channels, all ordure or refuse that is susceptible of being diluted. The great advantage in the introduction of lateral culverts is not only that underground drainage from adjacent houses should be generally adopted, but that by the construction of frequent inlets, our gutters would cease to be reservoirs of filth and garbage, breeding disease and contagion in our very midst." These lateral extensions were then fed to interceptor lines which would carry waste from gutter and households away from city centers (Barer, 1916).

San Diego, with a population of 11,000 in 1888, was one of the first communities in the United States to pre-plan the design of its city to accommodate a modern sewer system that was capable of moving household waste to an interceptor line separate from street runoff. The connection of the lateral pipes into large street interceptors made grid pattern neighborhoods with wide streets particularly attractive during this period of pandemic prevention (see Figure 1) (Crawford, 2011).

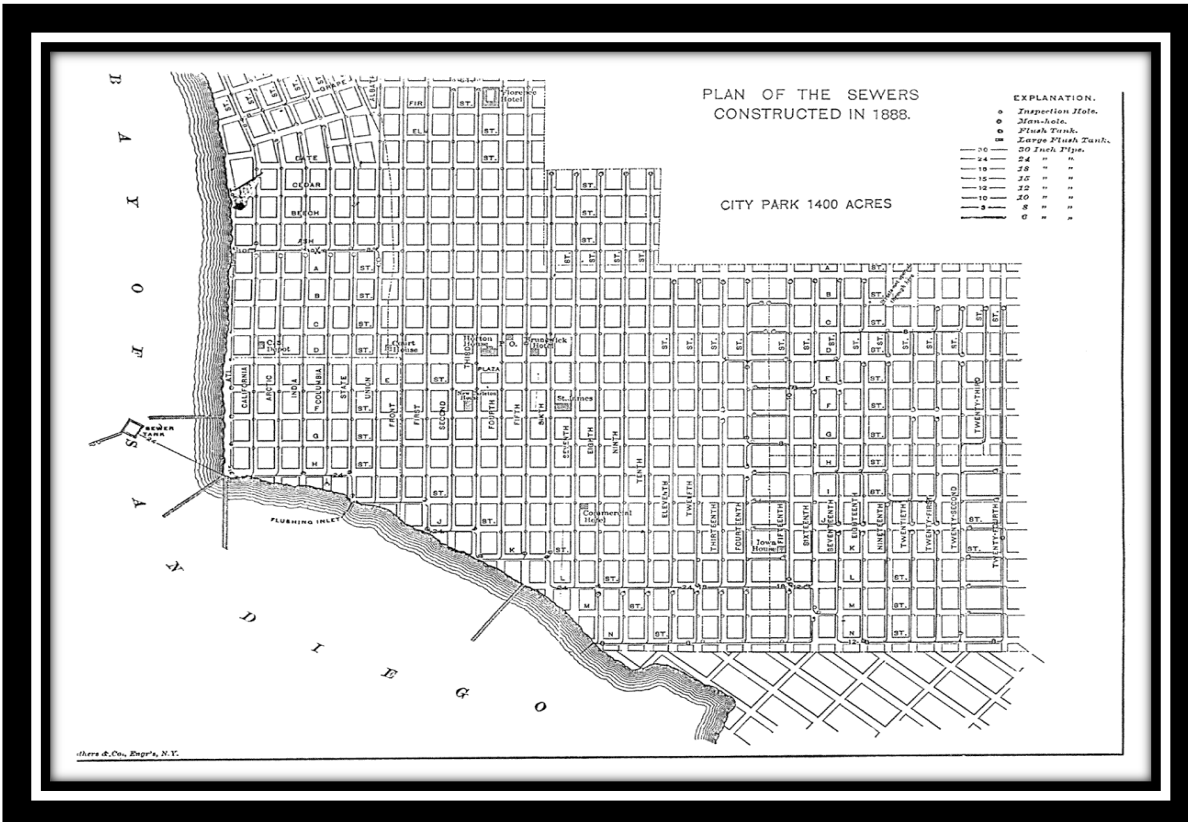


Fig. 1 San Diego Planned Grid Sewer System 1888 (Crawford, 2011)

## Housing & Environmental Justice

The push to change housing regulation in the country’s biggest city came after a group of concerned citizens living in New York’s notorious Lower East Side tenements documented their unsanitary living conditions and presented their findings to officials. This led to the establishment of the Metropolitan Board of Health in 1866, the first such board in the United States. An early publication by the board on the cholera pandemic states: “There is such an utter neglect of ventilation



and adequate means for daily scavenging and purification of the tenement blocks, that they invite and perpetuate the most pernicious infection” (Garner, 2015).

The City’s attempt to prevent cholera and other contagions led to the Tenement House Act of 1867 requiring windows in all rooms and a privy for every 20 residents, however it would prove insufficient in stopping the spread of disease. In 1879 a new tenement act was written stating that all windows must open to the exterior and not to a hallway. This led to a proliferation of what would be known as “dumbbell” tenements. Their design provided exterior windows to all rooms by configuring buildings which were separated by narrow interior air shafts (see Figure 2). However, their effectiveness in providing a healthier environment for residents would soon come into question (Chey, 2018).

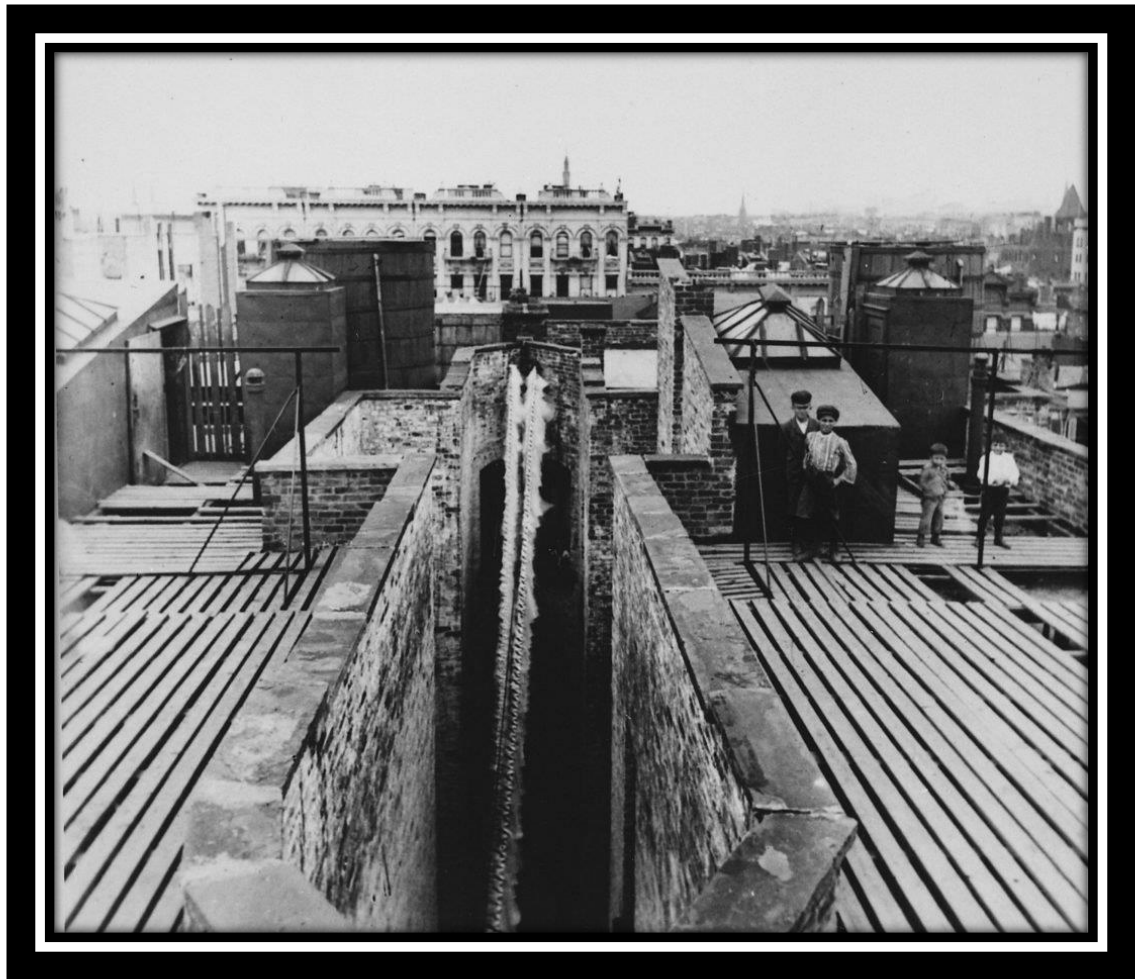


Fig. 2 Dumbbell Tenement, Circa 1900 (Etherington, 2017)

In 1901 the New York State Tenement House Act was adopted into law, angering tenement owners and those in the building trade. The report discredited air shaft design, citing the shafts as being trash filled, rat infested, fire hazards. The new 1901 law required tenements to have large courts with adequate light and ventilation for each room. Additionally, each unit would now be required to have its own modern water-closet (DeForest, 1903). Civic leader and prominent lawyer Robert DeForest (1903) states in the introduction of his book *The Tenement House Problem*: “What this one change means to the future social and sanitary welfare of the City cannot be overstated. No longer can new buildings be erected with two-thirds of the rooms dark, with narrow air shafts spreading contagion and disease throughout the community. The air shaft is no more. It should have gone years ago. In fact, it never should have existed.”

## Twentieth Century: Spanish Flu Pandemic (1918-1919)

### Background

Social distancing and sanitation remained a priority into the early twentieth century, but there was a breakthrough in 1908 when the first chlorinated water system went into operation to prevent cholera and other waterborne illnesses such as typhoid (Baker, 1948). As public water treatment spread throughout first world cities it helped alleviate a burden on planners to design with a focus on water and sanitation. However, planners remained dedicated to social distancing in order to prevent airborne contagions which had an impact on long-term illnesses such as tuberculosis, but their efforts would soon be put to the test ten years later with the emergence of a new pandemic.

The Spanish flu as it was named, more so for Spain being the singular source of contagion reporting during World War I than the country being the actual source of the virus, which to this day remains a mystery. The war came to an end in 1918, but it was bittersweet as half of the approximately 116,000 American soldiers who died did not die from enemy gunfire, but from influenza (Billings, 2005). It is estimated that one-third of the world’s population became infected, as was the case in the

United States, and 50 million worldwide perished (Centers for Disease Control, 2019 March). The 675,000 who perished in the United States lowered the average lifespan by 10 years. The death rate for those in their prime (15 to 34) was twenty times higher than in past outbreaks of influenza, with one physician noting that he was treating patients who would very rapidly develop the most voracious type of pneumonia that he had ever witnessed, saying “it is simply a struggle for air until they suffocate” (Billings, 2005).

SIX BERKELEY DAILY GAZETTE, WEDNESDAY EVENING, OCTOBER 23, 1918.


# WEAR A MASK

## AND SAVE YOUR LIFE!

The Emergency That Now Confronts Our City  
Is Beyond the Facilities of the Health Department



## The RED CROSS



**has come to the assistance of the Board of Health. Doctors and nurses can not be obtained to take care of the afflicted. You must wear a mask, not only to protect yourself but your children and your neighbor from influenza, pneumonia and death**

**"FLU" MASKS CAN EASILY BE MADE AT HOME**

The Oakland Chapter of the Red Cross has issued the following instructions for the home construction of influenza masks:

1.—Take a piece of gauze a good square.

2.—Cut this into strips 9 inches wide.

3.—Fold each strip into halves, then into fourths, making the thickness of three folds.

4.—Cut in one edge and stitch all four ends to form a bag. Make one measure across inches by six.

5.—Cut three strips of wire mesh, three inches longer than other ends, insert in strip by making loops at each in the two lower corners. Attach a loop of string long the width of the upper corners.

6.—Fasten mask by a black string.

### A GAUZE MASK IS 99% PROOF AGAINST INFLUENZA

Doctors wear them. Those who do not wear them get sick. The man or woman or child who will not wear a mask now is a dangerous slacker.

**DIRECTIONS FOR USING "FLU" MASK**

Mask should be worn with the outer side out.

If mask is used for protective purposes only, be sure to hold it every night for ten minutes in clear water.

If used to shield in sick rooms during the influenza period, you should have them in hand, changing every two or three hours, and boiling for ten minutes in clear water.

In taking care of the patient, the mask should wear a correct curve, and take it off before leaving the room. On entering the room the mask should be put on again.

OAKLAND CHAPTER AMERICAN RED CROSS

**WEAR MASKS**      GOING TO WORK  
AT WORK      GOING HOME  
GOING HOME      AT HOME

This statement was authorized at a meeting of the undersigned, who are convinced that it is the only way to stamp out the epidemic. You must do your part

## Alameda County Relief Committee

County of Alameda	Oakland Chapter American Red Cross	Associated Charities
City of Oakland	Oakland Clearing House Association	Retail Dry Goods Association
Board of Health of Oakland	Oakland Chamber of Commerce	

Fig. 3 Berkeley Gazette Newspaper Ad, October 1918 (Haynes, 2020)

## Planning Aftermath

### Land Use

The end of the Spanish flu pandemic in 1919 corresponded with the end of the Progressive Era (1890-1919). The 1920s would come to be known as the New Era. In 1920, after the death of over a half million Americans and an economy in a deep recession, candidate Warren Harding beat incumbent President Woodrow Wilson with the campaign promise: "A return to normalcy." (Faris, 2020). President Harding hired Herbert Hoover as Secretary of Commerce and one of his first acts was to commission an advisory committee on zoning regulation. Planning was a personal interest of Hoovers and he had the idea that home ownership would help both business and the public return to a level of normalcy that the President had promised during his campaign (Knack et al., 2019).

Hoover deduced that the best way to increase home ownership was through nationwide zoning standards, saying: "The enormous losses in human happiness and in money, which have resulted from lack of city plans which take into account the conditions of modern life, need little proof. The lack of adequate open spaces, of playgrounds and parks, the congestion of streets, the misery of tenement life and its repercussions upon each new generation are an untold charge against our American life. Our cities do not produce their full contribution to the sinews of American life and national character. The moral and social issues can only be solved by a new conception of city building" (Knack et al., 2019).

The Standard State Enabling Act was written into law in 1924, its main objective was the granting power that allowed a legislative body the ability to divide local government's territory into districts. It was followed just a few years later by the Standard City Planning Enabling Act which directed cities and regions to establish planning commissions who would be responsible for adopting a master plan, approving improvements, and controlling private subdivisions (Meck, 1996). The passage of these two acts resulted in a rapid expansion of planning. By 1929, 650

municipalities had established planning commissions and two-thirds of city populations lived under zoning ordinances. City planning was now happening on a wide scale and universities began offering degrees as the demand for urban planning professionals increased (Conkin, 1959).



Fig. 4 Land Use After Zoning Act (Ross, 2014)

These new acts regulating land use were deemed a government overreach by many and were expeditiously challenged in court. One case, Village of Euclid v. Ambler Realty Company would lead to the Supreme Court's landmark decision in 1926 that the Village of Euclid's zoning ordinances were a permissible act under the government police power, with Justice Sutherland stating: "The exclusion of buildings devoted to business, trade, etc., from residential districts, bears a rational relation to the health and safety of the community. Some of the grounds for this conclusion are ... aiding the health and safety of the community by excluding from residential areas the confusion and danger of fire, contagion and disorder which in greater or less degree attach to the location of store, shops and factories" (Wickersham, 2001).

## Twenty-first Century: Covid-19 (2019-Current)

### Background

One reason the Spanish flu had such a devastating impact is because soldiers fighting during the war transported the virus across Europe; today, this type of intermingling of populations is commonplace. Kate Whiting (2020) of the World Economic Forum points out that a person living in a remote village can be in a major city on the other side of the planet in under 36 hours. Additionally, population size, urbanization, and climate change will also contribute to the likelihood that we will experience more pandemics in the future. What is so remarkable is that we do not have any more answers to dealing with novel viruses than we did 100 years ago: apply disinfectant, wash hands, wear a mask, quarantine after exposure, and limit public gatherings.

### Planning Aftermath

When the pandemic ends, urban planners will face a reality like the one confronted by their predecessors whose reaction was to make cities more spaced-out, partitioned, orderly, breathable, and sanitary. Jay Wickersham (2001) in his analysis of Jane Jacob's seminal 1961 book *Death and Life of Great American Cities* discusses this type of functionalist planning or Euclidean zoning as being machine like and the exact opposite of what Jacob's believes is the vital, organic composition of a city: high density, mixed use, friendly blocks and streets, and the mixing of old and new. Today planning is somewhere in between the two as we have underlying Euclidean zoning systems but shroud planning substructure with project-specific reviews, special permits, special overlay zoning districts, and planned unit development to attempt to pull it closer to Jacob's organic vision of planning (Wickersham, 2001).

After this pandemic comes to an end it will be important for planners to find a compromise between these two extremes. One that will keep communities safe from infectious disease but will also not destroy all the positive trends in planning (eco-friendly, mixed-use, healthy communities, and multi-modal transportation). A good first step would be to consider what types of changes may be needed in updating state general plan guidelines to reflect the danger of infectious disease and

pandemics. Everyday infectious disease may not warrant inclusion in general plan guidelines, but pandemics decidedly do, as evidenced by the past destruction they have wrought, and the mitigation required thereafter. Covid-19 has confirmed that cities are not adequately prepared, and we should be giving pandemics the same reverence as floods, fires, droughts, earthquakes, landslides, and climate change.

## General Plan Guidelines

To illustrate the necessity, one can look at the most populace state's protocols as an example of state general plan guidance. *California's 2017 General Plan Guidelines* make only one brief mention of infectious disease or similar term in the entirety of its four hundred plus pages: "When housing prices rise, household occupancy rates often increase, becoming overcrowded, leading to unsafe living conditions and increased risk for spread of infectious disease" (Environmental Justice Element) (Governor's Office of Planning and Research, 2017).

If one is considering adding pandemic information to California state guidelines, the most logical place for inclusion would be the safety element, which states: "The goal is to reduce the potential short and long term risk of death, injuries, property damage, and economic, and social dislocation resulting from disasters" (GOPR, 2017). Pandemics are no less disastrous. The fact that modern-day pandemic planning is in its infancy allows for only conjecture as to what types of changes may be warranted in the future, here are some possibilities.

### Safety

Modern technology offers urban planners an opportunity that they did not have following past pandemics: the advent of smart cities and specifically virtual twinning. Virtual replicas have been used extensively in engineering, automotive, manufacturing, and construction to test alternate scenarios and do strategic planning. Cities around the world are demonstrating increasing interest as the technology improves and pricing comes down. An urban, virtual replica integrates government data, IoT, artificial intelligence, machine learning, software analytics, spatial network graphs, and real-time data sensors to create 3D, exacting versions that are constantly updating and changing as information is received. A virtual twin



of an urban environment gives planners the ability to monitor and test-alter such things as traffic, environmental conditions, construction projects, energy consumption, building occupancy, and public safety (see Figure 5) (Doyle, 2019).



Fig. 5 Digital Twin—Singapore (Systemes, 2019)

Cityzenith, a Chicago-based technology firm and leader in the industry, recently produced a white paper report detailing how virtual twins can be used to manage pandemics in real-time, coordinating and distributing information to scale (see Figure 6) (Jansen, 2020). Virtual twins can be useful in monitoring natural disasters such as floods, fires, and landslides, as well as helping to assess and implement economic recovery plans. Singapore has had a virtual twin since 2018, which the Country has been using for long-term planning, monitoring traffic flows, air quality, popular routes of pedestrian traffic, etc., and now it is mapping the progress of Covid-19 (Systemes, 2019). Virtual twinning remains a costly endeavor, Singapore paid \$73 million for their system, however with the increased likelihood of



pandemics and other disasters it may be a worthwhile, long-term solution as a safety requirement for large cities with complex interaction and risk.



Fig. 6 Virtual Twin Urban Center, Mapping Covid-19 Cases (Jansen, 2020)

## Health

The Center for Disease Control has determined that many chronic health conditions are risk factors for increased complications once an individual contracts Covid-19. Two of these chronic conditions are directly impacted by planning decisions: asthma and obesity. In turn obesity is also a contributor to more risk factors, namely heart disease and diabetes (CDC, 2020). According to the Los Angeles County Department of Public Health (2020) some of the areas being hardest hit by higher mortality rates from the virus are inner city, minority, lower income communities; the same neighborhoods which have the shortest life expectancy and the highest rates of

hospital related asthma visits (see Figures 7, 8). To illustrate the correlation the Department's data asserts there were 263 deaths from Covid-19 as of the end of April 2020 per 100,000 people living in the lowest income areas of the County, by comparison there were only 137 deaths per 100,000 in the highest income areas, where residents have the best life expectancy and lowest asthma rates.

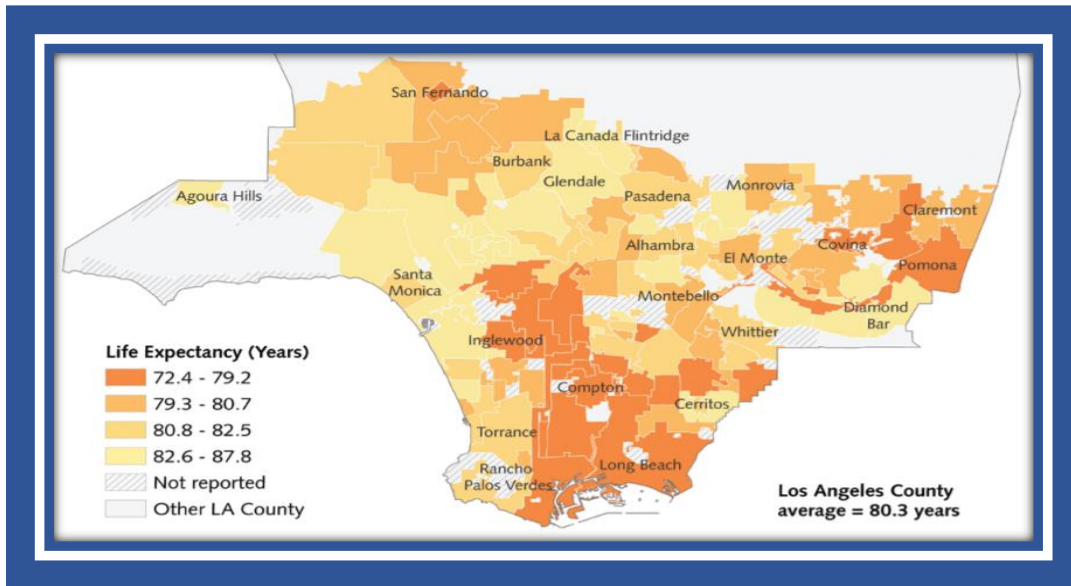


Fig. 7 Life Expectancy of LA County Residents by City (County, 2010)

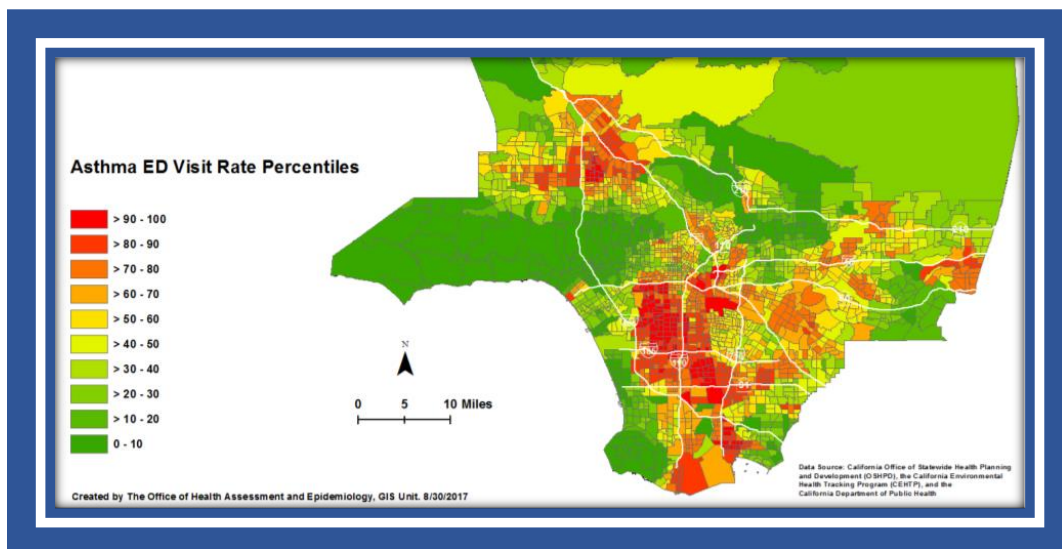


Fig. 8 Asthma Emergency Room Visits for LA County (Shetgiri, 2019)

In light of health conditions playing a central role in the likelihood of surviving a pandemic like Covid-19, its prevention warrants a renewed focus by planners; chronic ailments resulting from socioeconomic, nutritional, and environmental conditions have become more of an imminent threat than the long-term, health focus contained within general plan guidance. One consideration are the lasting impacts a sudden outlier loss of life would have on communities with high chronic disorder levels. In order to reverse these concerns, the Centers for Disease Control's 2020 initiative considers some of the most important factors in determining a person's likelihood of becoming afflicted with a chronic disease to be a lack of access to quality education, poor nutrition, insufficient outdoor space for exercise, and poor air quality; as such, these issues necessitate increased prominence within health guidelines (CDC, 2019 April).

## Land Use

Like the cholera pandemic in the nineteenth century, sewage sanitation may play a role in preventing future pandemics. According to Smriti Mallapatay in the *Journal of Nature Research* (2020) an epidemiological tool developed over the past twenty years is showing improved virus recognition. There are over a dozen groups worldwide which are monitoring wastewater for traces of coronavirus to estimate infections within communities. This method could also be used to gauge if infections return and how much they are increasing or decreasing. A single treatment plant can contain wastewater from as many as one million people, which allows for much greater testing than traditional methods and accounts for asymptomatic residents as well. Even more encouraging, is the tests can detect very slight levels of coronavirus, allowing for early detection of outbreaks. Although this type of measurement is still considered in the development stage, it is proving promising as scientists in Europe confirmed that they found the virus in one city before any cases had been confirmed. Having routine sewage testing in place as part of land use element guidance could help quickly stop the spread of viruses once they begin and negate the need for additional mitigation measures.

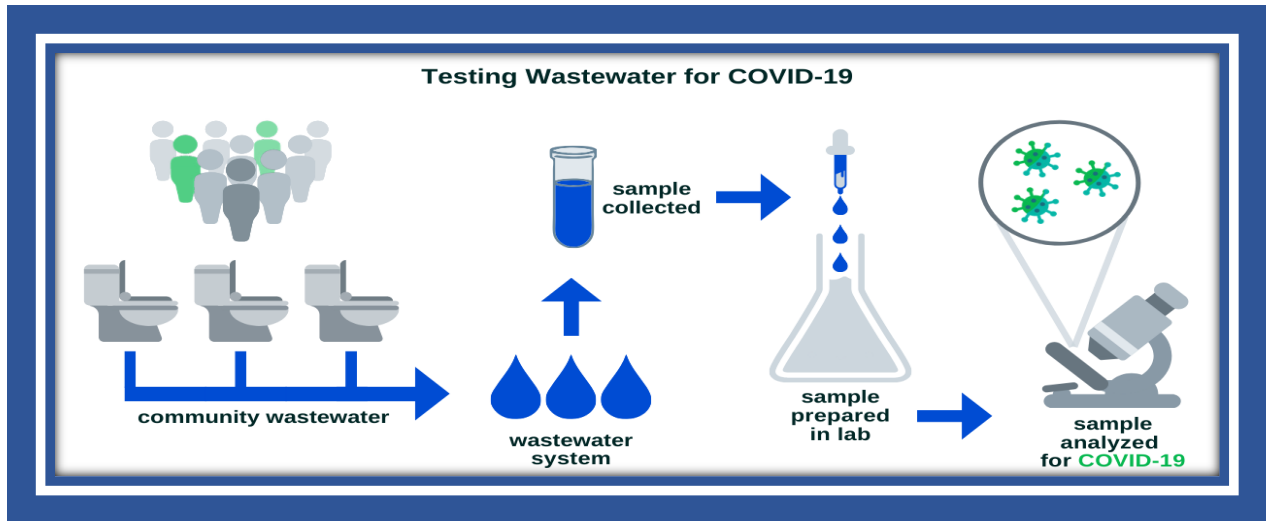
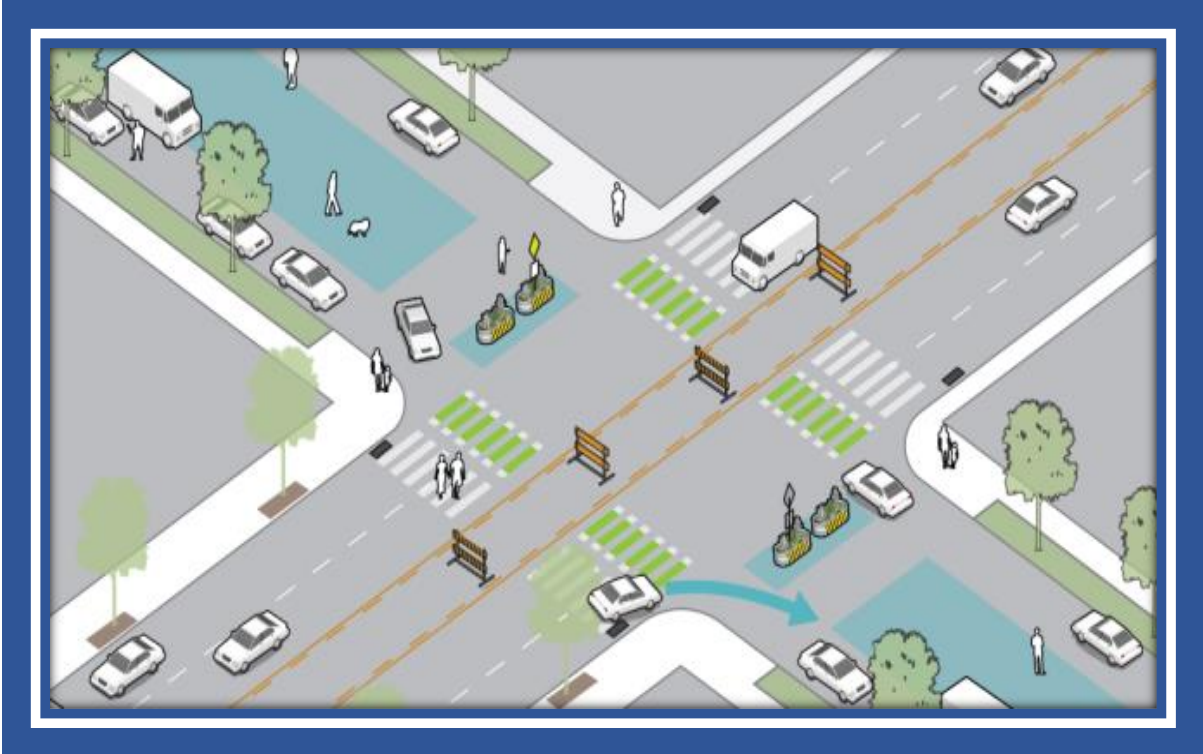


Fig. 9 Testing Wastewater (AzBio, n.d.)

## Circulation

Something else this pandemic has uncovered is the vast amount of urban space being devoted to cars. According to the National Association of Transportation Officials streets compromise 80% of public space in American cities. The Association just completed a report which details their belief that urban roadways will no longer be the sole domain of the automobile from this point on (Sadik-Khan, 2020). New and existing public streets need to be designed to move people safely around cities and to serve more than one purpose. The pandemic has exposed roads as multi-purpose, fundamental tools in risk reduction. For this reason, future street guidelines should also suit ulterior uses on local, collector, and arterial roadways (see Figures 10-15). It will not only be important for people to move safely around the city; essential workers must be able to get to their jobs; roads may need to provide space in order to access food and services; there may be a need to establish space to queue for groceries and other business; and streets must provide space for social services that will allow cities to re-open (Sadik-Khan, 2020). Additionally, the last few months have made clear that not everyone has access to open space during a pandemic and roads have been utilized as a vital resource. California's guidelines stress the need for streets to accommodate multi-modal means of transportation; however, in the aftermath of Covid-19, new guidance should be established to direct cities to consider location dependent, multi-purpose streetscapes in their transportation planning.

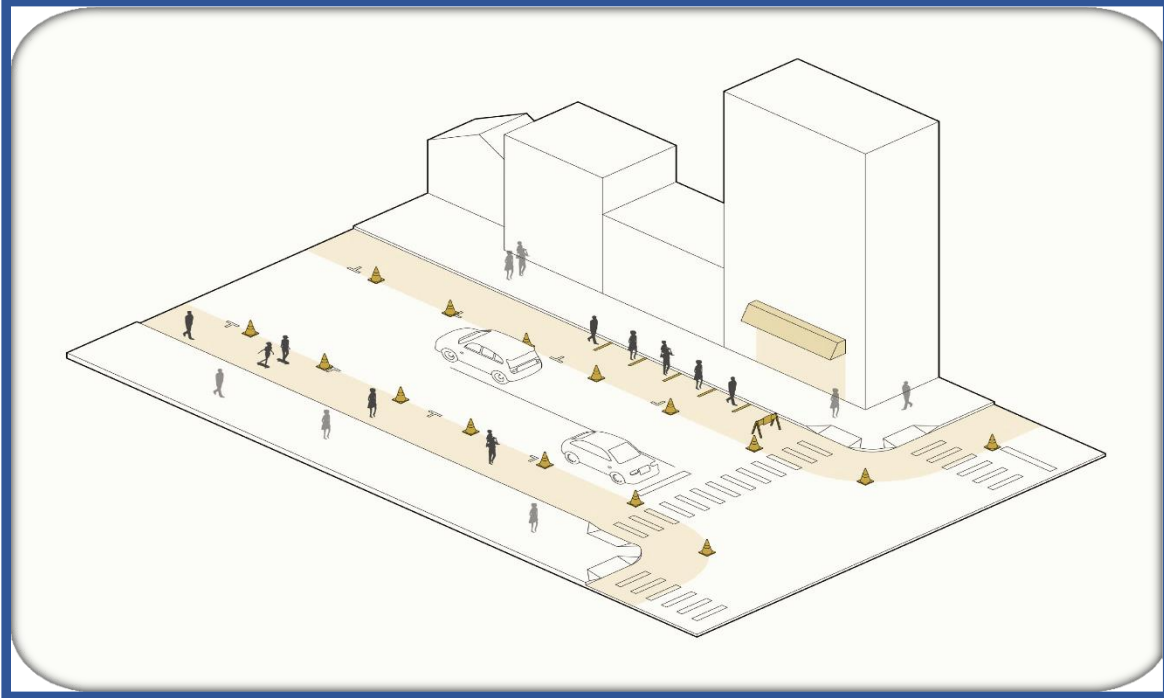


Figs. 10-11 Slow Streets (City, 2020) (Knight, 2020)



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Figs. 12-13 Pedestrian Road Expansion (Sadik-Khan, 2020)





Figs. 14-15 Temporary Street Dining Kits (Rockwell Group, 2020)





## Open Space



Fig. 16 Parc de la Distance, Vienna (Ravenscroft, 2020)

As has been the case in past pandemics, fresh air and open space are at a premium. Utilizing streets for alternate purposes can make a difference in providing impromptu space, but it does not answer the question as to how the pandemic will impact popular, public parklands. One thing to consider is that a pivot toward health will likely coincide with a desire to make cities greener and more open. In its wake, there may be renewed interest in restoring brownfield sites and other large, expensive reclamation projects. Social distancing will make big open areas assets for cities as they are one of the few public places where people can remain six feet apart in relative comfort. Moreover, open space can serve the purpose of hosting make-shift hospitals and emergency shelters. In practical terms, planners will need to make changes to open space infrastructure: wider paths and trails, separated play equipment and exercise stations, touchless drinking fountains and restrooms, and designated seating areas. Figure 17 depicts a detailed redesign of an existing park space and is followed by recommended modifications (Ministry, 2020).



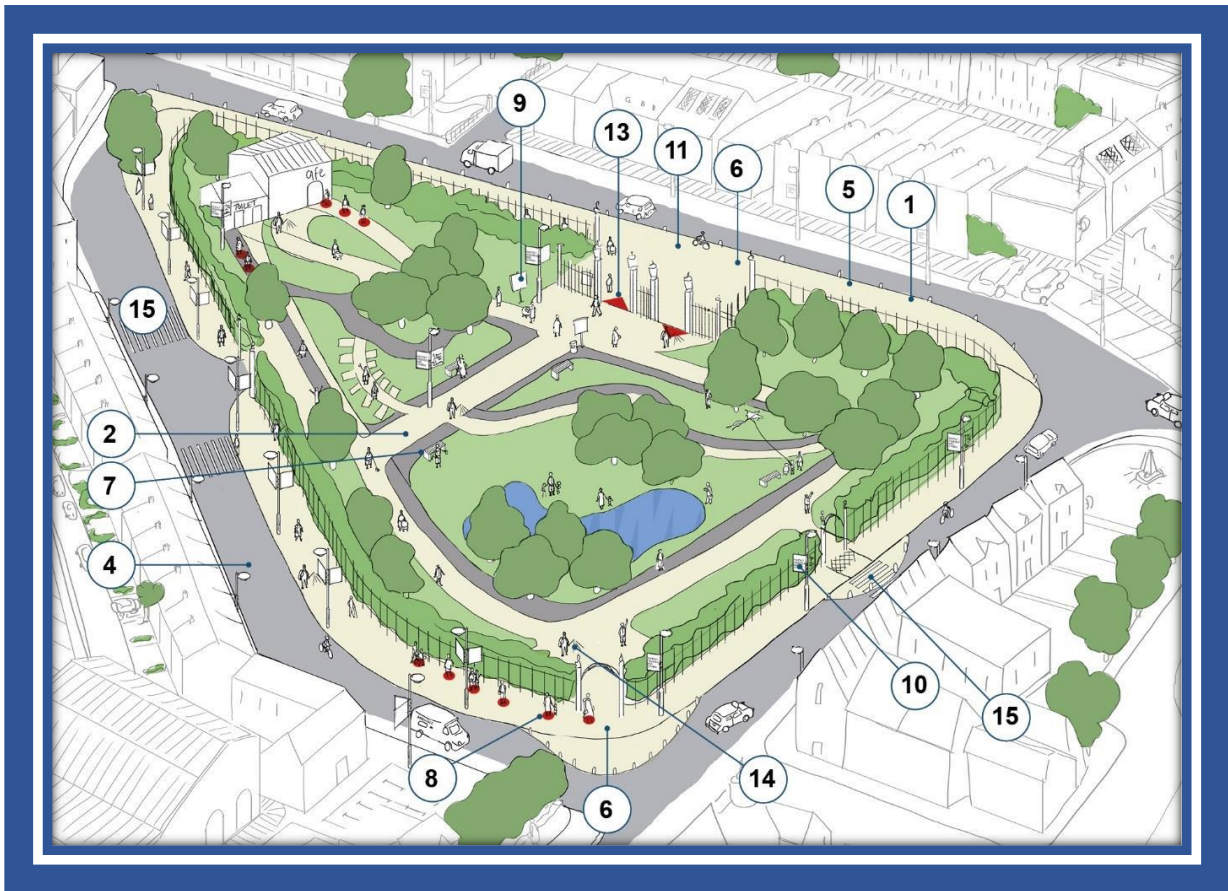


Fig. 17 (Ministry, 2020) identifies concerns and possible interventions that could be enabled for safer levels of social distancing within public parks and green spaces.

1. Widen footways on approach streets to main entrance.
2. Widen footways within park.
3. Provide flow guidance around park including consideration for one-way circulation.
4. Reduce traffic speeds.
5. Increase space for pedestrians and cycles beside park entrances.
6. Minimize congestion points, while still considering security and the needs of the disabled and elderly.
7. Reduce unnecessary obstacles (e.g., planters) and add markings on seating to maintain distancing.
8. Queue markings at main entrance, popular park destinations, and toilets.
9. Signs on social distancing and circulation, particularly at conflict points such as junctions and crossings.
10. Use existing street furniture for signing to avoid impacting on pedestrian flows.
11. Allow space where multiple queues meet.
12. Attendants to help manage queues and pedestrian flows.
13. Maximize access and introduce one-way entry and exit points.
14. Additional cleaning regime and maintenance.
15. Safe level crossing points to access park.

## Conclusion

The history of post-pandemic, urban planning reveals how far the field has ventured from its original purpose of being custodians of public health with a responsibility for sanitizing, aerating, separating, and compartmentalizing communities. Surely, the aftermath of Covid-19 will contribute to a renewed focus on these planning fundamentals. It is likely that new general plan updates will be forthcoming, detailing new safety mitigation measures, as well as providing guidance in areas such as health, land use, circulation, and open space.

One key suggestion for consideration should be the need for cities to implement pandemic, monitoring systems such as virtual twin mapping and regular sewage testing. Both techniques can aid planners in their ability to quickly act upon the needs of neighborhoods as well as look at the overall picture of a pandemic's spread throughout a city. Although these technologies are still considered in the early stages of development it is likely that the pandemic will increase and expediate their progress in becoming staples of pandemic preparedness.

A second important finding is that California and other states have given far too much reverence to the automobile in their planning guidance. Covid-19 has dramatically drawn attention to the disparity between the amount of land allotted to pedestrians versus motor vehicles. As such, future guidance should treat roadways as servicing potentially multiple purposes, especially in communities where outdoor space may be at a premium.

A final takeaway from this analysis is the importance of reducing chronic disease in connection with its increased risk of dying from a novel contagion. Current health guidance already focuses on obesity and air quality, but it is not given the immediacy it now clearly deserves. The inflated death rates in lower income, minority neighborhoods that suffer from higher rates of chronic disease requires an amended approach prioritizing air quality and further educating the public on the deadly repercussions of obesity, as well as meaningfully incentivizing healthy eating and an active lifestyle.

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