Why Plan for Natural Hazards in the City?

Natural hazards impact citizens, property, the environment, and the economy of the City. Earthquakes, flooding and severe weather occasions have exposed the City residents and businesses to the financial and emotional costs of recovering after natural disasters. The risk associated with natural hazards increases as more people move to areas affected by natural hazards.

Even in those communities that are essentially "built-out" (i.e., have little or no vacant land remaining for development), population density continues to increase. It is common in Temple City for property owners and developers to demolish existing dwellings in the multiple-family (R-2 and R-3) residential zone(s), and replacing them with a more intense (higher density) development.

The inevitability of natural hazards, and growing population and activity within the City create an urgent need to develop strategies, coordinate resources, and increase public awareness to reduce the risk and prevent loss from future natural events. Identifying the risks posed by natural hazards, and developing strategies to reduce the impact of a hazard event can assist in protecting life and property of citizens and communities. Local residents and businesses can work together with the City to create a natural hazard plan that addresses the potential impacts of hazard events.

GEOGRAPHY AND THE ENVIRONMENT

The City of Temple City is comprised of 3.85 square miles and is situated in the Los Angeles Metropolitan area *(see map 4).* The City is located in the West San Gabriel Valley and is approximately thirteen miles northeast of Downtown Los Angeles. The Los Angeles harbor is approximately 28 miles southwest of the City. The terrain is considered flat with little change in elevation; the average elevation for the City is roughly 381 feet above sea level.

CITY HISTORY

Behind the story of the proud family bearing the name of Temple, lies the romance of missions and ranchos, the gallantry of the pioneering dons and beautiful señoritas, and the history of the San Gabriel Valley including the derivation of many of the street names in Temple City.

William Workman was an Englishman by birth. In 1823, he met John Rowland at Taos, New Mexico, and accepted him as a partner. Both Workman and Rowland married Spanish women. During the revolution in Texas, they were forced to flee with their families in fear of their lives.

They had heard of a fair land in the west and decided to see for themselves. They followed the old Chihuahua trail through Silver City, Yuma, and Palm Springs, west of

the area now known as the Salton Sea to Indio and through the Cajon Pass. The journey covered approximately 1,200 miles. The party that arrived in California consisted of 40 persons, including riders at the head, scouts, and roustabouts with pack animals, herds of cattle, and covered wagons.

After leading his friends to the beautiful San Gabriel Valley, Rowland and his friend Benito Wilson petitioned the Spanish government at Monterey for some of the San Gabriel Valley Mission lands. Rowland and Workman were granted the "La Puente" site, which consisted of 48,000 acres. It was there where they built ranchos and settled down. They paid a sum of gold and promised to care for the Indians that were already living on the land, in accordance with an agreement made with the San Gabriel Mission priests and the governor.

William Workman became acquainted with Pliny Fisk Temple, who married Workman's daughter. Pliny had been baptized in the Catholic faith at the San Gabriel Mission shortly before accepting the Christian name of Francisco P.F. Temple.

Temple was the son of Pliny Fisk Temple of Massachusetts. Pliny's eldest brother, Jonathan, or Don Juan as he became known in Alta, California, was the first merchant of the Pueblo de Los Angeles in an adobe building at the intersection of what is now Spring and Main Streets. They later built the first important buildings there, including a market, a theater, and a courthouse. In 1841, at the age of 17, Pliny Fisk Temple joined his brother at the Pueblo de Los Angeles.

That same year, the Workman-Rowland party arrived in Los Angeles from Santa Fe, New Mexico, which was then part of Old Mexico. The party was the first immigrant caravan to travel the trade route to Southern California. Trade caravans, which ran from Santa Fe to Los Angeles and back in the early 1830's were the only overland connection Los Angeles had with the East. The Workman-Rowland expedition brought rugs, blankets, and other native goods from Santa Fe. Workman and Rowland did not make the trip for commercial reasons, however, they intended to settle in the San Gabriel Valley with their families.

In 1850, "Templito," or "Little Temple" as Pliny had been nicknamed by the natives because of his five feet, four inch height, was granted the Las Merced Rancho 12 miles east of Los Angeles where he made his home. He planted a vineyard of 30,000 vines, 30 acres of fruit trees, and a beautiful garden. This was near the site of the original San Gabriel Mission founded by the Franciscan Fathers next to the rich bottom lands of the San Gabriel Rivers called "Rio de los Temblores", or "River of the Earthquakes."

During the years at La Merced, 11 children were born to Pliny and his wife; the 10th child was Walter P. Temple. In 1903, Walter Temple married Laurenza Gonsalez, a member of an early Spanish-California family, who, it has been said, was related to half the residents of San Gabriel. Some years later, Temple purchased 400 acres of land four miles east of San Gabriel, which had been part of Lucky Baldwin's vast Rancho Santa Anita.

Envisioning a community where people of medium income could afford to live and own their homes, he divided the area into lots and laid out the park facing Las Tunas Drive. He named other streets after those close and dear to the family, such as Workman, Kauffman, Temple and Agnes. Bond issues initiated by Temple were responsible for street paving and electrification.

He also petitioned the Pacific Electric Railway Company to extend its Los Angeles to Alhambra line to a depot adjacent to Temple City Park. Residents and merchants attributed the steady growth of Temple City to the extensions of the railway to the community.

In 1936, the town officially was designated Temple City, but remained a City in name only until after the post-World War II population explosion and incorporation of the community on May 25, 1960.

HISTORICAL NATURAL HAZARDS

Natural hazards are also a part of the history of Temple City and the surrounding communities. However, the City (and the area before the City incorporated) has never proclaimed a local disaster. Flooding in the Los Angeles area was recorded as early as 1771, when the San Gabriel overflowed its banks destroying crops planted near the original San Gabriel Mission. Spanish missionaries documented flooding along the San Gabriel and Los Angeles Rivers in 1779. Early documentation of rainfall demonstrated drastic variations in climate. In 1883-84, the rainfall was 38 inches and in 1889 the rainfall was 34.84 inches. Settlers and historians documented the great floods of 1844, 1865, 1884, and 1889. Large amounts of debris flowing in the rivers, due to heavy rain and flash floods would eventually collect creating natural dams in the river resulting in wide spread flooding through out the valley.

As quickly as the rains arrived they also subsided. In 1844-46 a drought was recorded, and temperatures reached a soaring 110 degrees in October of 1846. This was taking a severe toll on cattle and horses. Without modern technology there was no way to predict the severe rainstorm and temperature drop that would occur on December 24, 1846. Nearly 12 inches of rain fell in a 24-hour period accompanied by a dramatic drop in temperature resulting in a large loss of cattle and horses.

The flood of 1914 was not considered the worst; however, by this time there were new obstacles that contributed to flooding. Railroad bridges were supported by pilings in close proximity to each other and served as a barrier for debris and rocks in the water flow. The collection of debris occurred quickly causing flooding and the destruction of farmland and dwellings, as well as the destruction of many bridges.

The flood of 1914 was the catalyst that formed the Los Angeles County Flood Control District. In the years 1917 and 1924 two major bonds were passed that started construction of a flood control system. In 1930 construction on dams in mountain canyons had started to control water flow and provide reservoirs. In 1941 construction had begun on the Santa Fe Dam, but was halted in 1943 due to World War II. After the

war construction was started in 1946 and due to metal shortages to construct the slide gates the project was not completed until 1949.

The Santa Fe Dam was authorized by the Flood Control Act of 1936 and one of several projects used to manage water flow. In the early part of the century (1900) it was determined that the San Gabriel needed to be controlled in order to control flooding. Three dams were constructed north of the Santa Fe Dam. In 1934 the Cogswell Dam was constructed 18 miles north of the Santa Fe. In 1935 the Morris Dam was constructed six miles north of the Santa Fe and in 1939 the San Gabriel Dam was constructed, which is nine miles north of the Santa Fe. The Whittier Narrows Dam is eight miles downstream and was not constructed until 1957. Water spreading grounds did not begin construction until 1951 and were completed in 1991.

The first earthquake recorded in the area was in 1769. A group of Spanish missionaries had moved from San Diego to an area, that is today, known as Turnbull Canyon. This earthquake was believed to reach a magnitude of 6.0. While exploring the area there was evidence of frequent earthquakes chronicled in their diaries. On March 11, 1933 at 5:54 p.m. the Long Beach earthquake struck with a magnitude of 6.3. The Whittier Narrows earthquake occurred on October 1, 1987 with a magnitude of 5.8. The second recent major event was the Northridge earthquake that occurred on January 17, 1994 reaching a magnitude of 6.7.

HIGHWAYS AND ROADS

The City has one state highway that is located within the City that accommodates major traffic flow for the City. There are no freeways located within the City limits; however, there are three freeways within close proximity. The three freeways that are located near the City are: Interstate 605 (San Gabriel River Freeway), which is located 5 miles east; Interstate 10 (San Bernardino Freeway), which is located 2.6 miles south; and Interstate 210 (Foothill Freeway), which is approximately 3 miles north of the City.

California State Highway 19, which is also known as Rosemead Boulevard, is an arterial north/south road that is positioned along the western edge of the City. In addition, Temple City Boulevard, Baldwin Avenue, and Santa Anita Avenue are other north/south collector roads within or adjacent to the City. The City also has two arterials that run east/west, Las Tunas Drive and Lower Azusa Road *(see map 1).*

RAIL SYSTEM

The only railroad system located in the City is the Union Pacific Railroad, which runs along the southern border, and travels from the west/northwest to east/southeast. The railroad is located between Rosemead Boulevard and Temple City Boulevard *(see map 5).* Union Pacific and Amtrak utilize the same rail system, providing transportation services for both commercial and light rail passengers, however, there are no stops or passenger stations located within the City. The nearest station is located in City of El Monte, which is a few miles south of the City.

AIR TRAVEL

The El Monte Airport is a Los Angeles County facility and accommodates private aircraft up to small corporate jet aircraft. The facility also houses several flight schools for private pilot training in both fixed wing and rotary aircraft.

BUS TRANSPORTATION

The City of El Monte, adjacent city south, is home to a major transportation terminal, the Los Angeles County Metropolitan Transit Authority (M.T.A.). This terminal carries approximately 20,000 commuters during the week to and from Downtown Los Angeles. The El Monte Terminal is also served by Foothill transit, which provides transportation from Downtown Los Angeles to as far east as Claremont and Chino.

In addition, the City provides Temple City Dial-A-Ride, which is a small bus (up to 10 passengers) that provides transportation for residents who are either 60 years of age or older, or who have either a physical, psychological, or developmental disability.

MAJOR RIVERS

The nearest major rivers are the Rio Hondo and the San Gabriel, which are managed by the Los Angeles County Flood Control District. These rivers do not have any potential impact on the City. Normally these rivers are dry and only carry a significant amount of water during a major rainstorm. The Rio Hondo River and San Gabriel River vary in width and depth. The depth ranges from a minimum of 10 feet to a maximum of 15 feet. This Los Angeles County Flood Control District has completed water channel projects, within the last 20 years, which will accommodate heavy rainfall and a large volume of water without rising to, or cresting, the levees.

CLIMATE

The climate of the City can be characterized as Mediterranean. The average monthly temperature in the City ranges from 47.2 degrees in the winter months to 85.8 degrees in the summer months. Temperatures can vary over a wide range, particularly when the area receives strong Santa Ana winds. These winds will produce higher temperatures and very low humidity. During 2004, the highest temperature was recorded in September at 101 degrees and the lowest in January at 41 degrees.

The average rainfall for the City is approximately 18.55 inches per year. However, the term “average annual rainfall” can be misleading, because over recorded history the area has had in excess of six inches of rainfall in a 24-hour period during El Nino. In the mid 1800’s the area experienced as much as 38 inches of annual rainfall.

Further more, actual rainfall in Southern California tends to fall in large amounts during sporadic and often heavy rainstorms, rather than consistently over storms at somewhat regular intervals. In short, rainfall in Southern California might be characterized as “feast or famine” within a single year. Because the metropolitan basin is largely built

out, water originating in higher elevation communities can have a sudden impact on adjoining communities that have a lower elevation.

MINERALS AND SOIL

The characteristics of the minerals and soils present in the area that encompass the City indicate the potential types of hazards that may occur. Rock hardness and soil characteristics can determine whether or not an area will be prone to a significant seismic event, such as earthquakes, landslides or liquefaction.

The Department of Mines and Geology completed a study for the El Monte Quadrangle. This is an area east of Los Angeles that is approximately 62 square miles. This area includes Azusa, Arcadia, El Monte, Montebello, Monterey Park, Pico Rivera, South El Monte, San Gabriel, San Marino, Rosemead and Temple City, as well as several Los Angeles County Unincorporated Areas.

Liquefaction-induced ground failure has historically been a major cause of earthquake damage in the southern California region. During the 1971 San Fernando and 1994 Northridge earthquakes, significant damage was done to roads, utility pipelines, buildings and other structures in the Los Angeles area. This was caused by liquefaction-induced ground displacement. Although some damage that was realized within the City, liquefaction did not occur during these events in the El Monte Quadrangle. Areas most susceptible to liquefaction-induced damage are underlain by loose, water-saturated, granular sediment within 40 feet of the ground surface. These conditions exist for the City and surrounding area.

The City is made up of loose sandy soil, gravel, sediment, and silt layers. Some portions of the City also have a shallow water table that is located within 40 feet of the surface. If a major seismic event were to occur reaching a magnitude of 6.7 to 7.0, or greater, liquefaction could occur depending upon peak ground acceleration. Although landslides can be induced by seismic activity, the City is not located in an area where landslides would present a hazard.

OTHER SIGNIFICANT GEOLOGICAL FEATURES

The City, like most areas in the Los Angeles Basin, lies over or near an area of one or more known earthquake faults, and potentially many more unknown faults, particularly so-called lateral or blind thrust faults.

There are many faults that can affect the Los Angeles Basin. The following is a list of faults assembled from the Department of Mines and Geology that could have a potential impact on the City:

- San Andreas
- San Gabriel
- San Jacinto
- Newport Inglewood

- Palos Verdes
- Whittier
- Santa Monica
- Sierra Madre
- San Jose
- Clamshell-Sawpit
- Puente Hills Blind Thrust
- Raymond Hill
- Workman Hill

The Los Angeles Basin has a history of powerful and relatively frequent earthquakes, dating back to the powerful 8.0+ San Andreas earthquake of 1857 (that did substantial damage to the relatively few buildings that existed at the time). Paleoseismological research indicates that large (8.0+) earthquakes occur on the San Andreas Fault at intervals between 45 and 322 years, with an average interval of 140 years. Other lesser faults have also caused very damaging earthquakes since 1857. The most notable include the 1933 Long Beach Earthquake, the 1971 San Fernando Earthquake, the Whittier Earthquake of 1987, and the 1994 Northridge Earthquake.

POPULATION AND DEMOGRAPHICS

The City, has a population of approximately 35,400 people within an area of 3.85 square miles. The population of the City has steadily increased from the mid 1800's through 2000, and increased 7.3% from 1990 to 2000, according to the 2000 United States Census Bureau. The City contains the following demographics: 38.6% Asian, 37.7% White, 20.5% Hispanic, 2% Multi-racial, 1% Black and 0.2% classified themselves as being another race not listed. [a]

The dense population in the San Gabriel Valley creates risk factors. For example, more people living on the urban fringe can increase risk of fire. Wildfire has an increased chance of starting due to human activities in the urban/rural interface, and has the potential to injure more people and cause more property damage. But an urban/wild land fire is not the only exposure to the City.

In the 1987 publication, *Fire Following Earthquakes*, issued by the All Industry Research Advisory Council, Charles Scawthorn explains how a post-earthquake urban conflagration would develop. The fire would be started by fires resulting from earthquake damage, but would be made much worse by the loss of pressure in the fire mains, caused by lack of electricity to power water pumps, and/or loss of water pressure resulting from broken fire mains.

Furthermore, increased density can affect risk. For example, narrower streets are more difficult emergency service vehicles to navigate, the higher ratio of residents to emergency responders affects response times, and homes located closer together increase the chances of fires spreading.

The City is experiencing a great deal of in-fill residential construction, which will likely increase the population over the next few years. This creates greater service loads on the built infrastructure, including roads, water supply, sewer services, and storm drains.

Natural hazards do not discriminate, but the impacts in terms of vulnerability and the ability to recover vary greatly among the population. According to Peggy Stahl of the Federal Emergency Management Agency (FEMA) Preparedness, Training, and Exercise Directorate, 80% of the disaster burden falls on the public. Within that number, a disproportionate burden is placed upon special needs groups: women, children, minorities, and the poor.

The ethnic and cultural diversity within the City, suggests a need to address multi-cultural needs and services. Vulnerable populations, including seniors, disabled citizens, women, and children, as well as those people living in poverty, may disproportionately be impacted by natural hazards. Although the percentage of poverty in the City (9.3%) is about 4.9% lower than California's (14.2%), 6.4% of the people living in poverty in the City are under 18 years old, and 0.8% are over 65.[a]

Examining the reach of hazard mitigation policies to special needs populations may assist in the increasing access to services and programs. FEMA's Office of Equal Rights addresses this need by suggesting that agencies and organizations planning for natural disasters need to identify special needs populations, make recovery centers more accessible, and review practices and procedures to remedy any discrimination in relief application or assistance.

The cost of natural hazard recovery can place an unequal financial responsibility on the general population, when only a small proportion may benefit from governmental funds used to rebuild private structures. Discussions about natural hazards that include local citizen groups, insurance companies, and other public and private sector organizations, can help ensure that all members of the population are a part of the decision-making processes.

LAND AND DEVELOPMENT

Development in Southern California from the earliest days was a cycle of boom or bust. The Second World War, however, dramatically changed the cycle. Military personnel and defense workers came to Southern California to fill the logistical needs created by the war effort. The available housing was rapidly exhausted and existing commercial centers proved inadequate from the influx of people.

Immediately after the war, construction began on the freeway system that has forever reshaped Southern California. Home developments and shopping centers sprung up everywhere and within a few decades the central basin of Los Angeles County was virtually built out. This pushed new development further and further away from the urban center.

With the insufficient supply of housing and the recent increase in housing prices, more and more people are moving further away from Downtown Los Angeles. However, Temple City continues to receive proposals from developers that demolish its old housing stock and replace them with denser residential developments.

HOUSING AND COMMUNITY DEVELOPMENT

In the City, the demand for housing surpasses the available supply, and the recent low interest rates have further fueled the demand. In addition, Temple City Unified School District has a strong reputation, which also contributes to the demand for housing. The following is a description of the existing housing stock in the City:

Table 2-1. Types/Number of Housing Units in Temple City

Total Housing Units	11,706
Single Family Units	10,240
Multiple Units (2+ units)	1,408
Mobile Home	53
Source: 2000 U.S. Census Bureau	

Approximately 58% of the housing units in the City are owner occupied. The median cost for a house in the City is approximately $234,800.[a] In recent years the prices of housing have amplified; the latest figures from the California Association of Realtors show that in March 2004 the median price was $442,500 and in March 2005 the price increased to $530,000, an increase of nearly 20%.[b]

With the recent growth in the housing market, the demand for low to medium priced housing has also increased. The City unfortunately does not have offer a first-time home buyer program, a affordable housing program or a senior housing program.

The City and the Community Redevelopment Agency are both interested in maintaining and enhancing the quality of life in the City. The CRA offers grants to assist qualified homeowners in correcting municipal code violations and making repairs to their homes that affect health and safety issues. The City participates in the Los Angeles County Community Development Commission's Community Development Block Grant program, which provides loans and grants to eligible homeowners to make certain authorized improvements to their homes. The City's CDBG allocation for the year 2006 will be approximately $335,000.

There is an increased (or decreased) concentration of resources and capital in City. The best indicator of this fact is the increasing (or decreasing) per capita personal income in the region since the 1970's. Per capita income is an estimate of total personal income divided by the total population.

This estimate can be used to compare economic areas as a whole, but it does not reflect how the income is distributed among residents of the area being examined. The City's per capita personal income is also increasing relative to California's and the United State's average per capita incomes, resulting in a more/less affluent community than the average population.

Subtle but very measurable changes occur constantly in communities that increase the potential loss that will occur in a major disaster. There are number of factors that contribute to this increasing loss potential. First, populations continue to increase, putting more people at risk within a defined geographic space. Second, inflation constantly increases the worth of real property and permanent improvements. Third, the amount of property owned per capita increases over time. Information from the U.S. Census Bureau shows gains in average housing standards.

Table 2-2. Housing Characteristics in 1975 and 1998

Amount of Property per person	1975	1998
Increased Size of new homes	1,645 sq. ft.	2,190 sq. ft.
% of homes with 4 + bedrooms	21%	33%
% of homes with 2 ½ or more baths	20%	52%
Source: U.S. Department of Census		

If we look at the greatest recorded earthquakes in American history, and compare the level of population and development today with what existed at the time of the event, the scale of potential damage is staggering.

Table 2-3. Estimated Damage from the Largest Recorded American Earthquakes

1811-12 New Madrid EQ	Series of 4 EQs over 7 weeks
Estimated insured damage if happened today $88 Billion	
1886 Charleston EQ	M7.3 in Charleston, SC
Estimated insured damage if happened today $10 Billion	
1906 San Francisco EQ	M8.3 Significant fire following damage
Estimated insured damage if happened today $36 Billion	
Source: Risk Management Solutions	

EMPLOYMENT AND INDUSTRY

The City primarily consists of smaller businesses, most of which are located on 25-foot wide by 110-foot deep lots within the downtown. These smaller sized commercial units are occupied mainly by smaller businesses, most of which would fall into the retail or services

type category. On the other hand, the City is for the most part known for its concentration of bridal shops along the downtown; 13 total along a 1 1/2 mile section of Las Tunas Drive.

Educational, health and social services industries accounted for the largest percentage (18.9%), followed by manufacturing (11.6%), services (11.5%), and retail trade (11.2%). The City also has significant employment in finance, insurance, and real estate (9.1%); Arts, entertainment, recreation, accommodation and food services (7.1%); wholesale trade (6.1%); and construction (5.8%).[a]

Mitigation activities are needed at the business level to ensure the safety and welfare of workers and limit damage to industrial infrastructure. Employees are highly mobile, commuting from surrounding areas to industrial and business centers. This creates a greater dependency on roads, communications, accessibility and emergency plans to reunite people with their families. Before a natural hazard event, large and small businesses can develop strategies to prepare for natural hazards, respond efficiently, and prevent loss of life and property.

TRANSPORTATION AND COMMUTING PATTERNS

Temple City is the 52nd largest city in Los Angeles County Area. Over the past decade, the Los Angeles County has experienced rapid growth in employment and population. Private automobiles are the primary means of transportation in Southern California and in the City.

However, the City meets its public transportation needs through a mixture of a regional transit system (MTA), and the local Dial-A-Ride that provides transportation services to residents over 60 years of age, as well as residents with disabilities. MTA provides a bus service throughout the City, as well as a light rail services to nearby cities. The MTA has one station located in Pasadena, which is known as the Gold Line, and is approximately 4 miles northwest. A Metrolink station is also located 3 ½ miles southeast, in El Monte. Both of these light rail trains provide transportation throughout the Los Angeles metropolitan area.

The City is primarily a “bedroom community”, where the mean travel time to work is just over 30 minutes. This suggests that population growth is a more suburban phenomenon, where residents work in the City but live in other communities. However, a rapid growth rate in the high technology industry has attracted commuters to travel in the opposite direction as well, with more than one in three jobs in cities are filled by nonresidents.

The City does not have any major freeways running within the City limits, the closest freeway being Interstate 10 (San Bernardino Freeway), which is 2 ½ miles south of the City. Rosemead Boulevard, California State Highway 19, is the heaviest travel street within the City limits. Traffic counts estimate that there are nearly 90,000 motorists that travel along this State Highway daily. In addition, Temple City Boulevard, Baldwin Avenue, and Santa Anita Avenue are other north/south collector roads within or adjacent to the City. The City also has two arterials that run east/west, Las Tunas Drive and Lower Azusa Road.

It should be noted that there are four major bridges along essential roads within the City that span over the Los Angeles County Flood Control District's Eaton Wash *(see map 1).* In terms of importance, the most significant bridge in the City is located along Rosemead Boulevard south of Broadway, located along the west border of the City; the second most important bridge is located along Las Tunas Drive west of Rosemead Boulevard, located along the western border of the City; and the third bridge is located along Lower Azusa Road east of Encinita Avenue, located near the southwest border of the City. It should be noted that the bridge located along Rosemead Boulevard is owned and operated by the California Department of Transportation. Even though the City would not be responsible for repairing the bridge if it were damaged, it would still affect the flow of traffic through the City.

If any of the above-mentioned bridges were to collapse in the event of a natural disaster, traffic patterns would be tremendously affected. As daily transit continues to rise, there is an increased risk that a natural hazard event will disrupt the travel plans of residents across the region, as well as local, regional and national commercial traffic.

Localized flooding can render roads unusable. The City is fortunately not designated in a flood zone; however, a severe winter storm has the potential to disrupt the daily driving routine for hundreds of thousands of people. Natural hazards can disrupt automobile traffic and could even shut down local and regional transit systems.