Our Crumbling Infrastructure

"Thou, Lord, in the beginning hast laid the foundation of the earth; and the heavens are the works of thine hands."
—Hebrews 1:10

IN THIS SCRIPTURE, THE Apostle Paul speaks of the foundations of heaven and earth that were laid down by the powerful and everlasting hands of the God of the universe. The Bible's earliest record in the book of Genesis provides us with a colorful, although brief, account of the mighty works of old, when the earth was being established and prepared by our loving and eternal Heavenly Father as a home for his future human creation.

RECOLLECTIONS OF THE LOGOS

Among the wise sayings of Solomon are also included, in more detail, the Logos' firsthand account of the wonderful creative works of his Father. He acknowledged, "The LORD possessed me in the beginning of his way, before his works of old. I was set up from everlasting, from the beginning, or ever the earth was." (Prov. 8:22,23) Students of the Bible have pointed out the fact that the word 'LORD'

as it is used in this scripture identifies the everlasting and great God of the universe, the Heavenly Father.

In the book of Proverbs, Solomon's writings provide a most remarkable and interesting record of the foundation work concerning our planet earth. The Logos [*Word*, Greek] was the first creative work of God, and recalls, "When there were no depths, I was brought forth; when there were no fountains abounding with water. Before the mountains were settled, before the hills was I brought forth: While as yet he had not made the earth, nor the fields, nor the highest part [the chief part, *Marginal Translation*] of the dust of the world." (vss. 24-26) In this wonderful account, the Logos here refers to the future creation of man who would crown the highest, or chief part, of the dust of the earth.

Continuing with his account, the Logos next says, "When he prepared the heavens, I was there: when he set a compass [circle, *Marginal Translation*] upon the face of the depth: When he established the clouds above: when he strengthened the fountains of the deep: When he gave to the sea his decree, that the waters should not pass his commandment: when he appointed the foundations of the earth." (vss. 27-29) Here the Logos speaks of the preparation of the 'heavens' and the 'foundations of the earth.'

As a witness to the love and harmony that filled this most wonderful scene, we read, "Then I was by him, as one brought up with him: and I was daily his delight, rejoicing always before him; Rejoicing in the habitable part of his earth; and my delights were with the sons of men."—vss. 30,31

THE FOUNDATIONS OF MAN

Having learned from a firsthand witness of the magnificent manner in which our earth was established and the many intricate processes it passed through many long ages ago, we here give consideration to the foundation substructure that forms our present world order. There are many facets to this underlying arrangement, and each one must work in harmony with all of the others to make commerce and daily life dependable.

Infrastructure refers to the foundation, basis or underlying framework upon which a particular community or institution is established and depends. Numerous basic services, facilities, equipment and institutions make up the daily operation of a community as well as its growth and development. These may include a broad range of public utility, communications, transportation, financial and many other systems.

All communities, whether large or small, depend on highways, bridges, railroads, airports, seaports and other forms of public transportation. They also depend upon water and sewage systems, and gas, oil, hydropower and various forms of energy to heat and light their homes and to provide a safe and secure environment for its citizens. The modern communications field includes vast networks of telephone and internet facilities. In addition, there are laws and law enforcement, as well as education and research facilities which play major roles in our modern world. Hospitals and many kinds of health services are also required.

COMPLACENCY

A complacent attitude among many city, state and federal officials throughout America, and also in other parts of the world, has led to a very serious and steadily worsening situation that needs to be addressed and acted upon. The problems are great in many places, and there is an urgent need to rebuild the infrastructure systems. In some cases there seems to be an unwillingness to address the mounting problems, or to consider the catastrophic consequences of failing to do so.

A DRAMATIC REMINDER

The nation's largest city was again suddenly reminded of the age and deteriorating condition of some of its major infrastructure systems during a normal busy working day in July of this year. The sense of urgency and awakening concerning this serious situation was captured by *New York Times* staff writers Ken Belson and Anthony De Palma who submitted an article (July 19, 2007) under the caption "Asbestos and Aging Pipes Remain Buried Hazards."

Their report in part reads as follows: "Exploding steam pipes and manhole covers popping loose and flying skyward, a constant in New York for decades, had all but disappeared in recent years. But the city got a reminder of the vulnerability of its aging infrastructure yesterday when a 24-inch-steam pipe that was laid in 1924 exploded in Midtown (Manhattan) near Grand Central Terminal, leaving one person dead and more than 30 injured. Mayor Michael R. Bloomberg said cold water apparently got into the pipe, producing a change in pressure and

the blast. Because the pipe was near a water main, the explosion sent water, steam and debris skyward. Kevin Burke, chief executive of Consolidated Edison, which operated the city's steam network, said that during rainstorms yesterday pipes could have been surrounded by cold water, causing dangerous condensation.

"Burke said that 11 valves in the network of pipes feeding the area were shut, cutting off steam to 15 to 20 buildings nearby. There was no work being done on the pipes before the incident, but after the morning rain, crews inspected them and found nothing of concern. The pipe that burst is part of an underground network that Con Edison acquired in the mid-1950s, when it absorbed the old New York Steam Corporation, which started selling steam to Manhattan buildings in 1882. The steam company's huge generating plants once powered elevators. But as electricity became more widely available the demand for steam power leveled off.

"Now the steam is used to spin turbines that make electricity in Con Edison plants. After that, it is piped to about 1,800 customers in Manhattan, mainly large buildings. In most cases, the steam provides heating and, with the help of compressors, air-conditioning.

"The event yesterday stoked fears not just because of the power of the blast, but because many of the city's oldest steam pipes are covered with asbestos for insulation, and those around the accident could be at risk if they inhale significant amounts of tainted air. That was the fear back in 1989, when Con Ed was criticized after a major steam pipe explosion near Gramercy Park for waiting four days

before notifying residents of the area about possible asbestos contamination. Asbestos is a known human carcinogen. Asbestos-related diseases, however, are generally linked to sustained exposure in an industrial setting over many years.

"Yesterday, Con Ed said almost immediately that it assumed that the blast had released asbestos into the air. The company said it was testing for asbestos in the air and in the material that settled onto the streets after the steam abated. The City Department of Environmental Protection also said it was testing for asbestos in the surrounding neighborhood to determine the extent of any contamination. The worries are not new. Between 1986 and 1997, at least a dozen steam pipes ruptured, killing several people, injuring many others and, in several cases, sending asbestos-laden mud into the air.

"Only a handful of steam pipes have exploded in the past decade, but the threat remains because the 105 miles of steam mains and service pipes that pump steam beneath the streets of Manhattan are near other utilities, including gas and electrical equipment. Buried so close together, problems with one system can often affect others, infrastructure experts say."

New York Times staff writers Belson and De Palma have reported on a very serious condition that poses a major threat to the daily lives and routine of millions of citizens in this great city. The threat, however, focuses on only one of the many other infrastructure systems that also need immediate attention, not only in New York City, but also in countless other communities throughout the United States.

DISASTER IN MINNEAPOLIS

A few weeks after the steam pipe explosion in New York, the nation was again abruptly awakened to the fact that America's infrastructure systems are in need of immediate attention. This occurred during busy evening rush hour traffic in downtown Minneapolis, Minnesota when a major eight-lane interstate highway bridge, I- 35 W which spans the Mississippi River, suddenly collapsed. The bridge was crammed with dozens of vehicles, and the death toll stands at 13 at the time of this writing, several days after the event. Many more were injured and missing when the massive structure plummeted more than 60 feet into the Mississippi River.

Minnesota Governor Tim Pawlenty declared a peacetime emergency for the state, activating the State Emergency Operations Center in the wake of the collapse. The Coast Guard also closed a nine-mile stretch of the river to conduct search and rescue operations in response to the tragedy. Pawlenty ordered an immediate inspection of all bridges throughout the state that were similar in construction and design. Later at a press conference the governor cited three such bridges that are located in St. Cloud, Sandstone, and Osceola, Minnesota.

WARNINGS ISSUED

To make matters worse, it has been reported that Minnesota state officials have been warned of problems developing on the interstate bridge for several years. Because of this situation, it was recommended that it be inspected on an annual basis, and in a 2006 report it was suggested that the bridge be

reinforced with steel plating. Although officials waited to consider other options, the eight-lane bridge was in the midst of repairs at the time of the accident.

THE AFTERMATH

This was one of the busiest stretches of highway in the state and was used by more than 140,000 people every day. The disruption to traffic patterns, and the commuters who need to use them throughout the metropolitan area of Minneapolis-St. Paul, will be massive throughout the cleanup operations and the rebuilding of a new structure.

HIGH RISK DAM

Turning our attention to another area of America's failing infrastructure systems, we note a CBS news report that was given on August 20, 2007 by CBS News transportation and consumer safety correspondent Nancy Cordes. Under the caption "Is A Major U. S. Dam At Its Breaking Point?" with the subheading 'Wolf Creek, largest dam east of the Mississippi, at High Risk for failure' we quote in part: "Stretching a mile from end to end, the gigantic Wolf Creek Dam is vital to southern Kentucky and northern Tennessee preventing the periodic flooding that once plagued the cities and towns along the 700-mile Cumberland River. But Wolf Creek Dam is in trouble.

"The problem is about 250-300 feet below us in the rock, says Mike Zoccola who is with the Army Corps of Engineers, which recently designated the dam at 'high risk' for failure, requiring emergency measures to reduce an imminent risk to human life. The devil is in the design. Wolf Creek was built

on porous limestone. Over time, water has seeped into cracks in the rock, eroding a Swiss cheese of holes and caves. A sinkhole could cause this entire earthen embankment to collapse. The first town downstream is Burkesville, Kentucky. The state has handed out warning radios to all 1,700 residents.

"There are currently 3,500 dams in the United States listed as unsafe and the list is growing faster than the rate of repair. They may not all be as big as Wolf Creek Dam, but when they fail, the results can be catastrophic. In recent years, fears about dams giving way have forced evacuations in Maryland, Massachusetts and Missouri. Seven lives were lost last year when a dam broke in Hawaii.

"The American Society of Civil Engineers gives the infrastructure report of the nation's dams a 'D' and called for fully funded dam safety programs in all 50 states. If you live downstream from the dam, it doesn't matter whether the dam was attacked by terrorists or whether it failed because of fatigue and age and lack of repair. The people downstream are all impacted the same."

A GRIM REMINDER

As a result of these and other recent breakdowns in America's complex infrastructure systems, many people are being grimly reminded of the overpowering devastation that occurred in the summer of 2005 when hurricane Katrina slammed ashore in the vicinity of New Orleans, Louisiana.

At that time the levee and flood wall system that had been put in place to protect the city and its extensive metropolitan area failed catastrophically. Many levees collapsed well below the design

threshold that had been designed and constructed, while others collapsed after a brief period of overtopping which caused serious erosion of the earthen levee walls, another serious design flaw. It was noted that the levee system failed in numerous places, and approximately 80% of the city of New Orleans was flooded. Many innocent people died, and others were injured while the loss in property and human misery can hardly be calculated.

AN ENGINEERING DISASTER

After hurricane Betsy in 1965, heavy flooding brought awareness and concern regarding the possible danger from other hurricanes. Congress then gave the United States Army Corps of Engineers sole authority to design and construct a new and modern flood protection system as part of the infrastructure of New Orleans and surrounding area. After the disaster of hurricane Katrina, engineers and others from around the world proclaimed that the flooding was the worst engineering disaster in the history of the United States.

TIME TO REBUILD

These recent events, and many others, stand as warning signs that the infrastructure systems in the United States are aging and that some may have been poorly constructed, while others may have serious design flaws. These are not isolated instances, and countless examples could pose problems in the future with catastrophic results. From Boston, Massachusetts to Los Angeles, California and from Duluth, Minnesota to Houston, Texas, American cities are now entering a new phase of middle age and the infrastructure that is

propping them up is showing multiple signs of strain.

Many of Chicago's systems date from the early part of the 20th century, and city officials are faced with tough decisions as to what to fix first. The aging infrastructure below the city's bustling streets is an enormous liability, and the cost to modernize these systems would be staggering. Miles of underground water and sewage pipes are nearing the end of their expected life. Electrical systems that continue to operate with outdated components and equipment are decades old, and struggle to handle the increasing demand for power.

Recently, The American Society of Civil Engineers estimated that it will take 1.6 trillion dollars over the next five years to put the nation's roads, bridges, dams, water systems, and airports back into good working order. They point out that replacing old parts in a labyrinth of cables, tunnels and piping, often extending hundreds of feet below the ground's surface, is a very difficult and dangerous procedure. Furthermore, the fact that all of this infrastructure equipment may be crowded together into very small spaces makes the risk of accidents even worse. When one component goes wrong, other parts may also fail. A water main break may wash out the street above, or rupture a nearby gas line.

A NEW WORLD ORDER

Although commendable, man's best efforts to seek a better way of life for himself and others often fail. But God has been preparing a new and lasting rule for man that will not become old and will not deteriorate. When the present nighttime of

sin and death has passed, the world of mankind will then be under the administration of an entirely new order. Christ and his faithful church members, who have accepted the present Gospel Age call to follow him, will then have the wonderful opportunity of lifting up mankind and instructing them in the ways of truth and holiness. The world will also experience a massive rebuilding and reconstruction period.

The revelator describes this wonderful scene. He writes, "I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea. And I John saw the holy city, new Jerusalem, coming down from God out of heaven, prepared as a bride adorned for her husband. And I heard a great voice out of heaven saying, Behold, the tabernacle of God is with men, and he will dwell with them, and they shall be his people, and God himself shall be with them, and be their God. And God shall wipe away all tears from their eyes; and there shall be no more death, neither sorrow, nor crying, neither shall there be any more pain: for the former things are passed away. And he that sat upon the throne said, Behold, I make all things new. And he said unto me, Write: for these words are true and faithful."—Rev. 21:1-5

FIRM FOUNDATIONS

The city that was called 'new Jerusalem' had "twelve gates" which represent the twelve tribes of Israel. (vss. 12,13) "And the wall of the city had twelve foundations, and in them the names of the twelve apostles of the Lamb." (vs. 14) "And he that talked with me had a golden reed to measure the

city, and the gates thereof, and the wall thereof. And the city lieth foursquare, and the length is as large as the breadth: and he measured the city with the reed, twelve thousand furlongs. The length and the breadth and the height of it are equal. And he measured the wall thereof, an hundred and forty and four cubits, according to the measure of a man, that is, of the angel."—vss. 15-17

LASTING BEAUTY

The twelve foundations of the city were garnished with precious stones to emphasize its lasting beauty. (vss. 19-21) Continuing, the revelator said, "I saw no temple therein: for the Lord God Almighty and the Lamb are the temple of it. And the city had no need of the sun, neither of the moon, to shine in it: for the glory of God did lighten it, and the Lamb is the light thereof." (vss. 22,23) Beautiful symbols describe the grandeur of our loving Heavenly Father's ultimate purpose for his creation.

NOTHING TO DEFILE

"The gates of it shall not be shut at all by day: for there shall be no night there. And they shall bring the glory and honour of the nations into it. And there shall in no wise enter into it any thing that defileth, neither whatsoever worketh abomination, or maketh a lie: but they which are written in the Lamb's book of life."—vss. 25-27

We have God's positive and unfailing assurance that all things will be made new and all injustice and unrighteousness will be put away. Our Lord Jesus' wonderful kingdom of peace and truth will soon be administered to bring this promise to fulfillment in the affairs of all the families of the earth. ■