5-1973

A Review of Commercial Renewal Districts With Possible Applications to Logan, Utah

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A REVIEW OF COMMERCIAL RENEWAL DISTRICTS WITH POSSIBLE APPLICATIONS TO LOGAN, UTAH

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF LANDSCAPE ARCHITECTURE

in

Landscape Architecture and Environmental Planning

UTAH STATE UNIVERSITY
Logan, Utah

1973

ACKNOWLEDGMENTS

I wish to express my appreciation to Vern J. Budge, my major professor, for the very useful advice and counsel he has given me. Thanks are also due Professor Burton Taylor and Professor Craig W. Johnson for their assistance.

To my wife, I am most grateful for her patience and encouragement throughout my graduate program.

Maw-Shyong Jean

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by

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Utah State University, 1973

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This thesis identifies and reviews problems of and the methodology for solving these same problems that confront many of the central business districts in most cities in the United States. Population. street systems, traffic control, parking, and land use as well as street appearance are considered. Problems of congested traffic, shabby, out-of-date and even dilapidated store fronts, as well as pollution, street construction, parking availability are all very real problems in city centers. Contemporary concepts, approaches, ideas of landscape architects and city planners are examined and applied to solving these problems. The commercial district of Logan, Utah is considered, the problems are identified, and the methodology for solving these problems is applied to this particular situation.

(131 pages)

CHAPTER I

INTRODUCTION

Each year more and more Americans move to the cities--from 56 percent in 1954 to over 70 percent in 1965. Each year cities and city centers continue to grow at an increasing rate. As a result, adequate planning, efficient government, and sensitivity to the environment are lost.

City centers, which are overcrowded and oversized, are becoming less desirable as a place for people to shop, work and enjoy life. Uncontrolled, they are rapidly becoming the source of our country's most disgraceful problems: crime, slums, pollution, race hatred, juvenile delinquency, and every form of human conflict. These overcrowded and oversized city centers condemn their people to shop without pleasure, walk in fear, be exposed to the hot sun, drive slowly, face interminable intersections, view unsightly buildings and bold and garish neon lighting and many other minor but unpleasant experiences.

The centers of many smaller cities are not yet large enough to have felt the impact of these problems. However, examples of rapidly growing and crowded community centers are readily evident. Some communities with outdated master plans or no plans at all have not been able to cope with this growth and exhibit many common problems such as:

1. Conflict between pedestrians and vehicles.
2. Lack of parking facilities.

3. Strip commercial development.
4. Mixed land use and poor integration of business administrative entertainment, and cultural centers.
5. Visual pollution, smoke, dust, and noise.

The purpose of this thesis is to identify such problems common to small community centers and then to suggesting approaches, techniques, and methodology to solve them. Once identified, the components of individual problems such as population, street systems, traffic, parking, land use, and appearance will be disucssed. Logan City center will then be examined to find the problems that may exist, and recommendations for their solution will be made.

CHAPTER II

A REVIEW OF THE HISTORY OF THE CITIES OF THE UNITED STATES

The history of the cities in the United States really began in the eighteenth century when white caucasians immigrated to America from Europe. From their beginning, these cities were open and free; none were ever walled in. Because of this, towns in the United States were designed differently than anything to be found in Europe and Asia. There was obviously plenty of land, and the early settlers established ample lots with wide streets and individual homes on their own lots unrelated, except in spirit, to their neighbors.

Before and during the nineteenth century, horses and hors drawn conveyances were common on the streets of American cities. This factor helped develop the typical American city pattern--an expandable grid, without boundary or form and the "main street" which became the prime location for commercial, administration, entertainment, and cultural development.

At first, American cities were static and grew very slowly because America had an agricultural economic base. The population ratio between city and country was balanced. Transportation was simple, traffic was slow, and parking was not a problem.

From the middle of the nineteenth century on, American cities experienced great changes because of the Industrial Revolution. The most varied innovations were mechanized production, mechanized

transportation, new building materials, and techniques. As a result, the basic character of the cities, and the lives and needs of their inhabitants were no longer the same.

The basic changes in the cities that have taken place are:

1. Mechanized production. Large factories were built during the Industrial Revolution that were usually located near the edge of the cities to provide convenience to the customer and near the highways or railroads to provide easy access to transportation facilities. These large factories required a great number of employees, who lived near the factories. Hence, the cities and the country lost their balance because so many people came to cities seeking jobs. At this point, traffic became a problem during the rush hours of beginning and ending work shifts.

2. Motorized traffic. New motive forces in transportation were devised. Railroads, streetcars and automobiles became the chief methods of travel. Of the three, the automobile, or car, became the main means of transportation. They had higher speeds and were highly maneuverable which extended the influence of any given city and decreased the time of travel between the burgeoning popularity of automobiles necessitated spiraling highway construction. Consequently, the cities grew rapidly, swallowing up and absorbing the adjacent small towns, as businesses developed along the highways. The cities, by expanding along the highway routes, thus began to develop into satellite shapes.

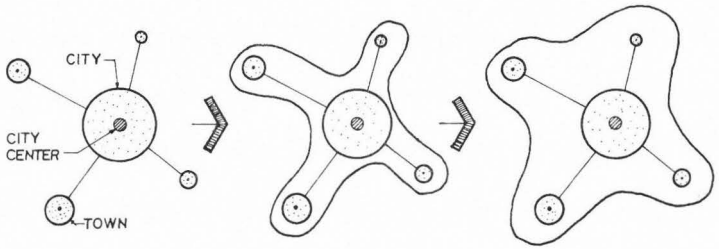

Figure 1. The shape of a city's continuous growth by following the highway route.

3. New building materials and techniques. Technology and industry have produced many new building materials and devices, such as steel, concrete, glass, plastic, aluminum, elevators, electricity, air conditioning, and computers, as well as many other materials and forces. Commercial interests have utilized these scientific advances to construct skyscrapers, high rise office buildings, huge centers, business complexes, shopping centers, high rise apartments, and even small, well designed residential buildings. These commercial and industrial advances have improved the capability of business to better meet the needs of the buying public, generally raise the standard of living for

millions of Americans. Unfortunately, these technological advances have also caused environmental problems. One example is skyscrapers, the planning of which has never really been controlled from the beginning. Their influence upon surrounding structures and districts causes certain problems:

a. The high rises were often surrounded by too little horizontal space and lower structures clustered close by decayed in their shadows.

b. The skyscrapers were usually near or in the central areas of the business districts, where the streets were narrower, traffic was more congested, and the nuisances resulting from overcrowding were greater. During rush hours, thousands of people poured out into already congested streets within a few minutes, creating monumental traffic jams and disrupting larger areas of the surrounding districts.

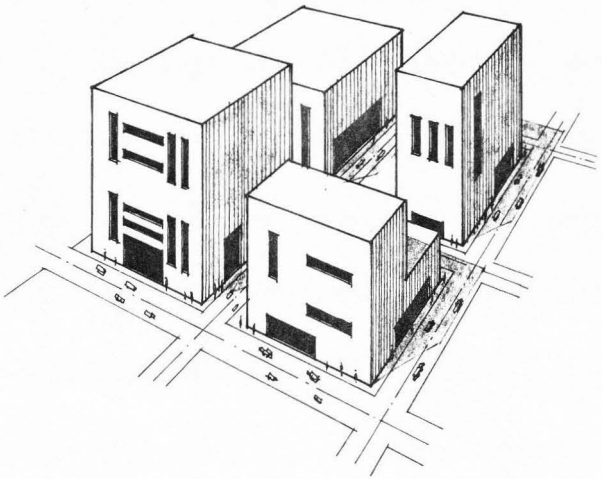

Figure 2. The skyscrapers in the central areas of business districts of big cities.

The skyscrapers should have been controlled by planning. It would have been wise to have planned them before they were built.

After the turn of the twentieth century, the rapid onslaught of the industrial and mechanical revoluations continuously disrupted the old balance between town and country, creating numerous great conurbations and giant metropolises and causing small towns to keep growing and expanding. Rapid increases in population, and the use of private automobiles has literally put the nation on wheels and exerted tremendous pressures on city centers. This expansion has gradually spread from the centers to surrounding residential areas.

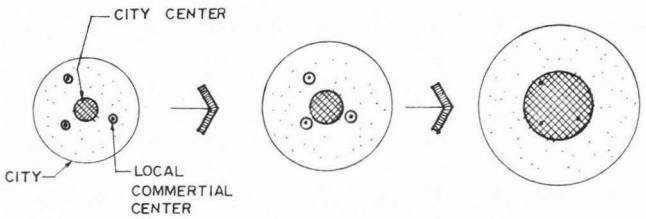

Figure 3. The city centers change from smaller to larger.

The structure of the city centers than changed: former residential areas decayed, and blight and slum areas began to appear. People then had to choose whether to live in the sub-standard conditions where

there was less sunlight and fresh air, or to have their energy sapped by the daily travel to work. Those in the lower income brackets never really had a choice.

On the other hand, unwholesome conditions in the central area of large cities have tended to force decentralization because of existing high site values, high taxes, racial problems, obsolescence and decay of housing, congestion and dangers from criminal elements, noise, smoke, dirt, and lack of open spaces and facilities for recreation. When this occurs, the death knell of the city has sounded and unless prompt and expensive action is taken, the city center will decay until the city as a viable unit has ceased to exist. It may be too late for the larger cities to solve these problems, but public awareness is increasing and smaller cities with populations of 25,000 should have an excellent chance to be saved from decay by good planning principals which are already known to be effective.

CHAPTER III

SURVEY AND ANALYSIS OF THE CITY CENTER TO IDENTIFY THE PROBLEMS BASED ON POPULATION, STREET SYSTEM, TRAFFIC, PARKING, LAND USE, STREET APPEARANCE AND AIR POLLUTION

Population

Rapid, increased population from immigration is the biggest problem in the center of cities and this includes the small as well as larger cities. As increased numbers of people continue to immigrate to the larger metropolitan areas, and added pressures on the city centers will eventually choke and stifle them.

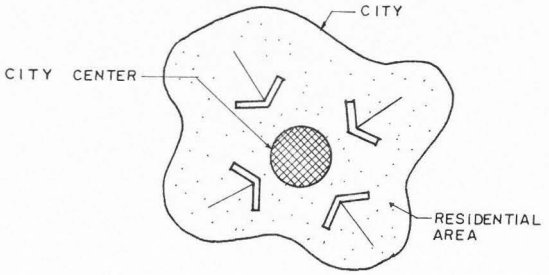

Figure 4. The continuous pressures on the city center.

Cities which have experienced rapid influxes of population have many problems in common:

1. Crowding and congestion. Too many people are concentrated on too small a land surface. This caused crowding and congestion.

2. High priced real estate. Land prices in the city centers continue to rise because of demand for the limited real estate available. The land owners, in order to counteract rising costs or to profit from their existing real estate, built higher buildings or added on to existing buildings, such practices covered the whole surface of the original lot. Thus, the gardens, open spaces, fresh air, and sunlight that once made the city centers pleasant to shop and work in are no longer prevalent.

3. Automobiles. The number of automobiles in the cities increased proportionate to the population. This caused terribly congested traffic conditions in city centers during the daytime period. Traffic control is both difficult and expensive because of limited access to and exits from the relatively sma-l city centers.

4. Highway construction. Highway construction and upkeep costs, to provide more freeways and service roads to the cities, have skyrocketed.

5. Parking. Parking for automobiles has become a serious problem. Parking space is severely limited, resulting in multi-level parking plazas that are expensive, but they do better utilize available surface space.

6. Land use. Land use in the city centers is chaotic. Residential and light industrial sectors are intermingled, caught and held within the center area because of the city's rapid expansion.

Street Systems

The street systems of metropolitan areas and city centers are of perhaps greatest importance to the cities in that they are the major routes for pedestrian and vehicular traffic, as well as the channels for most services and supplies. Some of the problems of the street systems in the city centers are:

1. Inadequate design. Most of the street systems in the older and larger cities were designed to satisfy the requirements of horse and buggies rather than high speed automobiles and trucks. It is extremely expensive to widen streets, by purchase and construction, to meet the requirements of high speed traffic.

2. Speed traps. The major highways usually go directly through the narrow main streets of small town city centers, slowing and congesting traffic.

3. Inefficient street patterns. Most of the street systems in American city centers were designed in grid patterns. Such grids do not lend themselves to irregular topography, however. San Francisco is an excellent example. When a grid pattern is forced over rugged terrain, the resulting unnecessary cuts, fills, and step grades are expensive, ugly, and inefficient. Under such conditions, the cost of installing storm sewers, is prohibitive.

4. Wasted space in grid system. Frontage on both sides of main streets are built solid when the grid pattern is utilized. These massed constructions resemble carved blocks with just enough space left to channel vehicles and pedestrians. The connections between the

spaces form numerous intersections which are the main element that causes traffic control problems and congestion. Street systems designed in this pattern are a waste, of a common mold, create disturbances, and are long out of date.

Traffic

Traffic in city centers involves a number of factors such as pedestrian travel, shopping opportunities, sight seers, services and suppliers, and local and pass-through vehicle traffic. Common traffic problems in American city centers are:

1. Overcrowding and congestion. "There is scarcely a city in the United States whose streets are not congested with passenger and freight traffic."[1] This results from:

a. Traffic funnels. Bad street system design allows the main street in the city center to carry most of the two-way pass through traffic.

b. Too many intersections. Numerous cross-sections or blocks in the city center streets are too close together and require traffic regulation by semaphores (light) or signs that slow down or stop traffic at intervals to allow pedestrians to cross the street. Malfunction of the lights, rush hour conditions or unfavorable weather conditions can cause colossal traffic jams and mixups.

c. No modern planning. Lack of scientific, up-to-date master plans to guide the city zoning and street development.

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[1]Howard K. Menhenick, Local Planning Administration (Chicago: International City Managers, 1948), p. 90.

d. Limited traffic space. Because of very limited space in most city centers, pedestrians cross streets, local traffic seeks parking, service vehicles load and unload, and through traffic proceeds, all within severely limited areas. Any infringement on one function or another function, accident, or mixup can only result in traffic congestion or stoppage.

e. Rush hours. At the peak rush hours, which are about from 8:00 to 8:30 AM (going to work) and 5:00 to 6:00 PM (leaving work), all types of traffic enter the streets at about the same time, taxing the existing space and regulation capabilities.

2. Risky and troublesome. Traffic in the city centers today is inconvenient, hazardous and costly to the people.

a. Inconvenient. In congested city centers, cars move slowly, and parking is hard to find.

b. Hazardous. Pedestrians are exposed to vehicle traffic that can be dangerous, especially under stress conditions. Smoke, dust, and engine exhaust does little for one's health, especially when long exposure is experienced. Service vehicles entering and leaving the traffic pattern for service calls represent a real hazard.

c. Costly. A trip to town involves gasoline and upkeep expenses, time, and physical stresses that are reflected in indirect costs, such as personal inefficiency, increased consumption of alcohol and tranquilizers, and missed appointments, as well as possible accident costs.

3. Unfavorable physical conditions. In most city centers, pedestrians are exposed to direct rays of the hot sun, and reflected heat from pavement, road surfaces, and buildings which make walking and shopping unpleasant during warm season months.

Parking

Parking is a big problem in city centers throughout the United States. Following are the typical problems in the city centers:

1. Lack of parking spaces. "There is scarcely a Central Business District in the United States that is not handicapped by a lack of an adequate amount of automobile parking facilities."[2]

2. Impediment of traffic flow. Cars parking along street curbs present another problem slow down to seek or stop to enter an available parking space along the street. Leaving a parking spot also creates problems in heavy traffic.

3. Inadequate off-street parking. Lack of parking space at the rear of shops, large department stores or office buildings causes real inconvenience to people. Who wants or is willing to walk half a mile if it is at all possible to obtain a parking place closer to one's destination?

4. Too much sun. Most of the large off-street parking lots that are available near large department stores or office buildings are exposed to the hot sun and have little if any landscaping.

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[2]Menhenick, Local Planning Administration, p. 109.

5. Time wastage. The lack of parking space represents a great waste of time and materials because a driver has to spend time to find a parking space near his destination. Sometimes he may have to park some distance away then spend considerable time in walking to his destination.

Land Use

Land use in city centers includes several types, such as administrative, commercial, residential, light industrial, and heavy industrial. Some related problems in city centers are:

1. Zoning inadequacies. Mixed land use is the major problem in most of the city centers. Mixed land use means that areas which should be used for strictly commercial or industrial purposes actually contain sections that are devoted to residential use or vice versa. Such mixed land use has caused such problems as:

a. Deterioration of the city centers.

b. Enlargement of city center areas.

c. Mixed up traffic.

d. Blight and slum areas near the city centers.

e. Changes in the structural pattern of city centers.

f. Strip development along main highways.

2. Misused space. The spaces in the rear of most commercial buildings as well as residential encloves have not been used properly. Instead, they are often used ill kept parking lots, junk storage areas. garbage disposal or trash burning, and storage or working yards. Consequently, such spaces are usually a mess.

3. Scattered public buildings. Local, state and federal government buildings as well as public buildings are located too far from each other and are hard to identify. To conduct diversified yet necessary activities or legal business in these buildings, one must park repeatedly or travel tiresome distances on foot. In both cases, inconvenience is experience, time is lost and risks, either driving in traffic or crossing it as a pedestrian, are increased.

4. Lack of central malls or plazas. Most centers of smaller communities lack well designed and landscaped open areas or plazas for public gatherings, casual meeting places or malls conducive to relaxation. Without such facilities, people in this kind of community do not have a chance to socialize casually and comfortably while carrying out their necessary daily activities.

Appearance

People come to city centers not only to work, play, shop, take care of various legal matters, but also just to look. People look for local landmarks, examine and go through buildings, look at lamp posts, pavings, posters, signs, graffitic trees, and each other. These, together with all of the other objects that can be seen comprise the visual environment or total appearance of a city center.

The problems of visual pollution most often found in centers are:

1. General unattractiveness. Chastic and uninspired architecture, dilapidated or old fashioned street fixtures, such as lamp posts, trash receptacles, fire hydrants, and bus benches contribute to a "bad" or

unattractive appearance. In fact, one hideous building or street fixture can ruin an otherwise pleasant scene.

2. No design coordination. The correlation of the street fixtures and buildings to the city center design is ignored. This is because they are designed as individual objects instead of being considered one part of a cohesive whole. The result is visual confusion.

3. Garish signs and lights. Many signs and neon advertising lights are bold, blatant and garish. They display inadequate design if nothing else.

4. Discordant store fronts. The store frontages facing main streets are often non-functional, poorly kept up, or clash in design.

5. The city centers lack landscaping. Little, if any, consideration is given to plant trees along the sidewalk. flower boxes, malls or plazas with rest benches, statuary, fountains, etc.

6. The backyards of buildings in the city centers are usually dirty, unorganized, deteriorated, and unkept.

Pollution

Pollution is one of the biggest problems in the cities of today. Pollution includes smoke, soot, noise, exhausts, chemical wastes, and trash produced by public utilities, industrial plants, domestic heating plants, households, motorized traffic, and sewage plants. These pollutants are dumped into the air, water, and on the ground. In most city centers, motorized traffic is the major offender; they produce most of the air and noise pollution.

> Further investigations have revealed that in cities where pollution is greatest, there is a higher than normal percentage of respiratory diseases. Of the total number of deaths caused by infections and by parasitic diseases, 85 percent are said to be due to microorganisms whose principal means of access to the human body is the upper respiratory tract.[3]

Such air pollutants not only damage the health of the people, but they also damage many other things such as some plants and animals, and some building materials subject to corrosion.

1. Smog has a number of components with corrosive action.

2. Smog reduces available sunlight. The degree of overcase depends on the quantity of air pollutants as well as meteorological conditions.

3. Smog components also attack the exteriors of buildings, discoloring their facades, and necessitating periodic cleanings.

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[3] J. L. Sert, Can Our Cities Survive (Cambridge, Mass: Harvard University Press, 1947), p. 118.

CHAPTER IV

A BRIEF REVIEW OF CONTEMPORARY CONCEPTS, APPROACHES AND IDEAS FOR THE DESIGN OF CENTRAL BUSINESS DISTRICTS IN SMALL COMMUNITIES

Street Systems

The street systems in smaller communities already have many problems in need of solution. Some new concepts and ideas for alleviating some of these problems are:

1. Specialized street design. Each street should be designed to serve its specialized function. Various types of streets would serve various zones. Since city centers are places where people congregate to shop, work, seek entertainment and do business, some streets should be reserved for pedestrians, some for service vehicles, some for bicyclists, etc. Vehicle traffic on such special streets would be minimized or eliminated.

2. Reorient buildings. Buildings in city centers should be situated to face inwards towards their service roads and the heart of town rather than outwards to the traffic arteries. The latter, freed of building lines and numerous intersections, will tend to develop as efficient, free-flowing avenues, broad compositions in their own right. When such planning is implemented, buildings of a central area will appear as freely disposed masses rather than as continuous street frontages among which the pedestrian will walk freely without fear of vehicles.

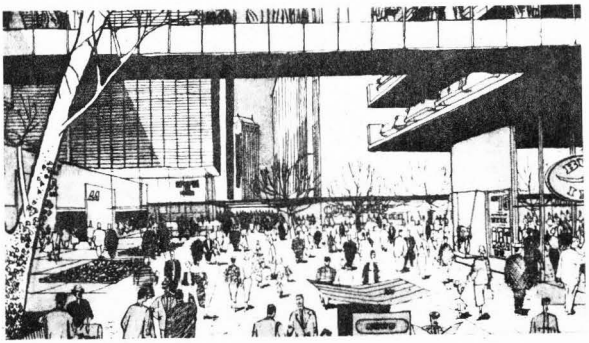

Figure 5. The central business area in Fort Worth, Victor Gruen.

3. Street changes. Main streets may change to one of two types.

a. Instead of the old constant-width road pattern, they may be changed to a system of progressive width, given a curved form, or reduced in width, essentially become free-form avenues. Such varied width design will, apart from forming compositions about street intersections, make the street itself into a series of relatively constricted spaces that expand to provide recesses from the traffic flow. Widened spaces can be formed by setting buildings back behind the street frontage. These free-form streets provide a series of changing views of open and closed perspective running into infinity. The curves

of the streets should be as gentle as possible and be engineered to conform to natural lines rather than exact geometric configurations.

b. Both ends of a main street may be closed and the intervening space be formed into a series of precincts, each with its own particular function and character. Thus, a main, large scale shopping center may be constructed that bristles with life and movement. An office zine might be established that is more open and green and generally quieter than the shopping zone; and a civic center or administration center, more monumental and formal than the other areas, might be developed.

4. Perimeter roads and parking. A ring or loop road at the edge of the town center could act as a distributive road, around which traffic could circulate to the most convenient parking places. People could choose the spot closest to their destination, then park their cars and enter into the heart of the center by foot. This ring road should not be used primarily as a relief road for through traffic. Instead, such traffic should generally be dealt with before it gets too far into the heart of town.

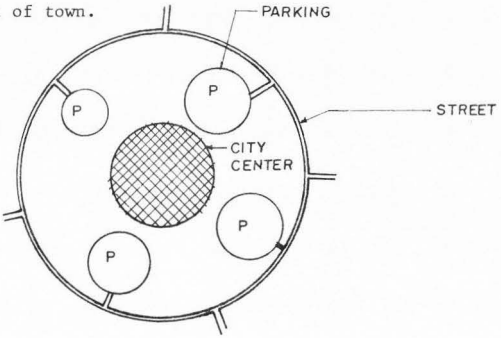

Figure 6. The relationship between parking and city center.

5. Convenient walking distances. Everything in the well planned town center must be within easy walking distance of the ring road. Since about 300 yards is the longest distance most people are willing to walk, the center should be restricted in size to a diameter of 600 yards, or about 60 acres.

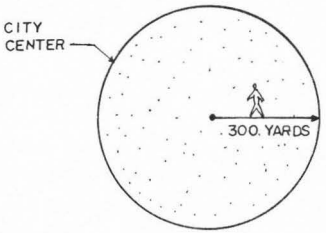

Figure 7. The size of a city center.

6. In-motion perspective. Spaces for pedestrians should be designed in terms of people in motion. The visual, physical and auditory environment through which an individual passes should be designed to fulfill specific functions. For pedestrians who move at a slow speed, the visual environment is never static. A person constantly in motion has varied viewpoints from constantly changing positions. The essence of a pedestrian's experiences is the process of movement through a sequential and variegated series of spaces. His movement should function to activate his kinesthetic experience by a

series of interesting rhythms and variations in speed and force. The qualities of moving up and down on ramps and steps, passing under arches and through buildings, narrowing and widening spaces, long and closed views, and stopping and starting are all qualities which make a vital experience for the pedestrian and his mobile point of view.

7. Multi-level streets. There is one solution to the possible conflict that may arise from the requirements of through-traffic and the need for an undisturbed central core. This would be to provide through-roads, either above or below the normal street level. But the elevated highways and tunnels are very expensive and should be restricted to positions where no other solution is possible. The general principle in two level schemes should be to keep pedestrians on the general level of the center and channel motor cars, parking, and servicing either below or above them, and preserve the central area for the primary use of pedestrians.

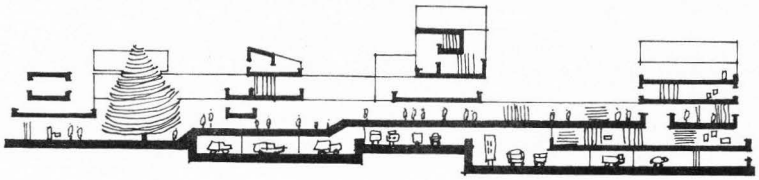

Figure 8. The separated levels of pedestrian and automobile traffic.

Traffic

In city centers, traffic is usually heavy and complicated. Too many types of traffic are funneled into such small areas, that constant conflict results, especially between vehicles and pedestrians. Some solutions are listed below:

1. Redesign of the street systems. This was discussed in the "street" section of this chapter.

2. Engineer for fast traffic. Since walking is one of man's natural functions, special consideration should be given to providing avenues or paths for going from one place to another afoot. Such pedestrian paths would enable people to walk freely among stores, casually pause in front of shops where they could examine window displays at ease without being disturbed by noise and dust.

3. Separate people and cars. One of the first prerequisites for all well planned city centers is the separation of pedestrians and automobiles. Motorized vehicles must be able to park within short walking distances of all buildings within the central core in order to provide adequate services, but the land inside these perimeters should be reserved for pedestrian use and screened from the noise and generated by motor traffic.

4. Prohibit through traffic. All pass-through automobile traffic should be prohibited from town centers. As little service traffic as possible should be allowed to enter.

5. Perimeter road placement. The ring traffic should pass outside the town center yet be as close as possible, without infringing on the core space.

6. Traffic control aids. Street lighting, traffic signals, signs, safety islands, traffic ordinances, and police, and many other expedients have already been successfully employed in other cities to help ease the burden of traffic problems. They certainly can be used profitably in renewed city centers.

Parking

Parking space is any place where vehicles may be left. The function of the parking space is simply the accommodation of a stationary vehicle for a given length of time. Parking problems have been of serious concern in town centers all over the country. Some solutions and ideas follow:

1. Parking space composition. The parking spaces should be formed as part of the central area building composition. They should be attractively designed.

2. Nearby parking. Parking facilities should be near any given area or building. The maximum distance that people will walk from a parking lot to their destination is about 300 yards.

3. Perimeter parking. Cars should be intercepted by parking areas on the perimeter of the city center. With the removal of unsuitable buildings, the area of town centers will shrink considerably. Most, if not all of the renewed city core, will be within easy walking distance from the perimeter. It would then be feasible to draw off a large percentage of the cars by locating the parking lots within easy access of the main traffic routes skirting the area.

4. Shop or store parking. The owners of buildings, such as department stores, shops, cinemas and offices, should provide enough parking spaces for their customers.

5. Easy access. The parking lot should have easy access to the main road.

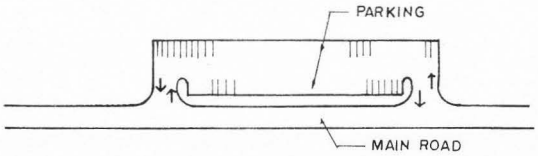

Figure 9. The access from the main road to the parking lot.

6. Multi-level parking. A multi-story or underground car parking system may be necessary if enough land is not available.

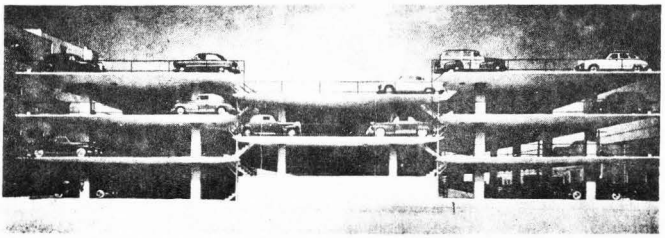

Figure 10. The multi-story parking.

7. Under park parking. Another possibility for parking space, is underground facilities built beneath a public park or green walking space or even a public sitting area. This would not only save surface land but also be convenient for the pedestrian, who could be in the center of the city almost immediately just by walking up to the ground

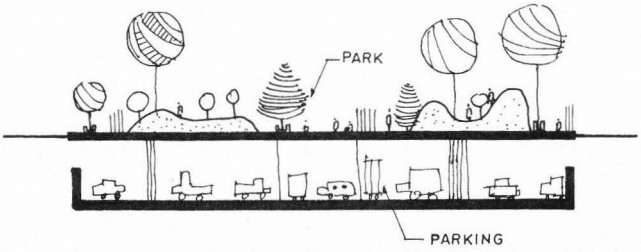

Figure 11. Parking lot underneath the public park.

Land Use

One of the most important parts of any city plan is land use and its distribution throughout the city centers. Wise land use tends to balance the desire for central location against the crowding and congestion. The following are some concepts and ideas for solving the problems in the town centers:

1. Zone but don't mix. The town centers should include the chief administration offices, businesses, entertainment and cultural areas each in their own zone. Government offices, for instance, placed

in an entertainment area or zone. Yet, the area relationships should be close enough to allow or even encourage social cohesiveness. If there are proper controls and planning, and the primary character of each area is not destroyed, it is desirable to have some overlapping functions, for if the center is to be really attractive, interest and liveliness must be sustained in all its parts. This can only happen when there is some mixing of building uses, resulting in contrast in architectural character and in the drawing together of people using the same center for different purposes.

2. Renew by removing. All the conflicting building uses or unsuitable buildings should be removed from inside the city centers, permitting the size of town center to be reduced.

3. Gossip centers. The town centers need open areas or daily lmeeting places for public gatherings, such as public squares and promenades, where people can go to see and to be seen, to meet friends and sweethearts, to make new acquaintances, to discuss politics and sports, to tell of their lives, loves and adventures, or to comment on those of others. Citizens of these areas could enjoy the best the community could offer them in terms of amusements. Mr. W. Gropius of Harvard University thinks that it is necessary.

> They thought the idea of a square with arcades around it to give protection from sun and rain belonged too much to former times, and that it did not fit in with things as they are today in the United States. So I wondered whether it was just being old-fashioned of me to suggest it to them. Now I know they rejected it because they did not know it. They had never seen it, they had never experienced it, so they could not conceive of it.[4]

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[4] J. Tyrwhitt, J. L. Sert, E. N. Rogers, The Heart of the City (New York: Pellegrini and Cudahy, 1952), p. 74.

4. Control building size. The size of buildings located in city centers should be controlled. This can be accomplished by figuring the floor area by floor space index, that is, the ratio between the total area of the floors in a building and the area of the site upon which it stands. In computing the floor space index, the floor area of the building is taken as the sum of the roofed areas of the building at each floor level, and the site area includes half the width of the adjoining streets plus any pedestrian ways, internal access roads, or small planted areas. Under a floor space index system the developer can provide his accommodation in a twenty-story building occupying a fraction of a site, or a two-story building covering the whole of it.

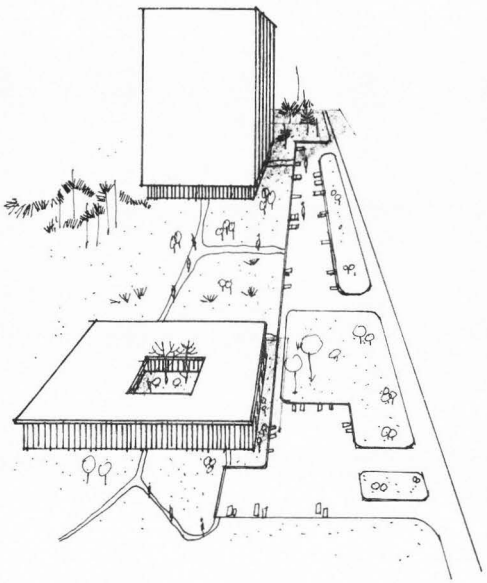


Figure 12. The building composition which is under the floor space index system.

5. Define land requirements. Local planning administration agencies have made studies of statistics of approximate typical land requirements in many American cities. The land use has been broken down into residential areas, commercial areas, industrial areas, streets, etc.

Table 1. Approximate land requirements in American cities.[5]

Use	Net acres per 100 persons	Percent of developed area
Residential	3.0	40
Commercial	0.3	3
Industrial	0.5	7
Railroad property	0.4	4
Streets	2.7	30
Parks and playgrounds	0.6	6
Other public uses	0.5	6
Semi-public uses	0.3	4
Totals	8.3	100

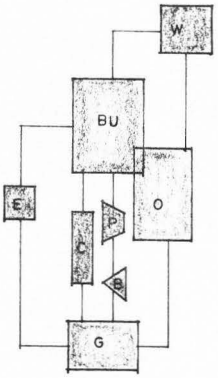
6. Zone relationships. The idea of relationships of zones in town centers was summarized in Town Design written by Mr. Frederick Gribberd and published in 1962. His main points were:

a. Offices are placed between business areas and central government areas.

b. Central government areas are next of office areas, making it more convenient for the professional people.

c. Cultural buildings, such as libraries or concert halls are situated adjacent the business area, making it more convenient for the business people and helping to make the cultural area more lively.

[5]Menhenick, Local Planning Administration, p. 116.



B: Business areas
G: Central government
O: Office area
C: Cultural area
E: Entertainment area
P: Professional building
B: Bank
W: Wholesale warehouse

Figure 13. The idea of relationships of zones in town centers.

d. The solicitors, doctors, architects, and other professional people may be located close to the cultural buildings to assure these people greater use of those buildings.

e. Banks should not be placed in the midst of cultural and entertainment areas. The ideal position is somewhere between the administrative and the office zone and business area, if possible.

f. Wholesale warehouses are located in the rear of the business and office areas, making them more convenient to both these areas.

Street Appearance

The city center is a thing that is seen, and since the visual sense is a channel to the soul, that which is seen ideally should be as beautiful as man can make it. The city center must work properly and be economically sound, but it also should give pleasure to those who look at it. In other words, technical solutions to functional problems should be fused with aesthetic awareness.

The entire town center should be beautiful. This does not mean that it should merely have some fine parks and noble civic buildings. It means that the whole environment, down to the almost insignificant details, should be beautiful. All kinds of objects, such as buildings, lamp posts, pavings, posters, and trees--all of them--together with all the other kinds of objects that are found in the town center, should contribute to the whole, yet each one of them should be aesthetically satisfying.

Trees, plants, water, sun, shade, and all the natural elements friendly to man should be found in town centers, and these elements of nature should harmonize with the buildings and their architectural shapes, sculptural values, and color. Landscaping must play a very important role. The whole should be so arranged as to please man and to stimulate the best in human nature. All the elements that commercial and business centers have banned from the city in their ruthless

urge for speculation should be reinstated in these centers of community life. Harmony in such places is only possible when all parts are subject to a whole, and we should now recognize that nobody really benefits from individualism carried to extremes.

The style and size of buildings in the town centers also needs to be considered. The differentiation of scale can be expressed in the heights of the buildings. Many of them should be walkups, two to three floors, covering vast extensions of land. Elements in these low buildings should be those which need to be near to the pedestrians in their daily walks. There also should be high tower elements, with elevators. All intermediate heights could easily be omitted. This contrast of low and high, of slablike towers and patios, and of open and enclosed spaces would provide visual stimulation in these core areas.

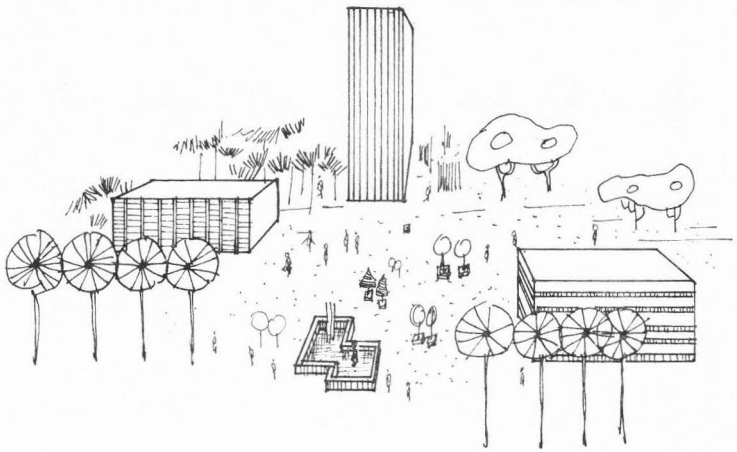


Figure 14. The composition of the buildings in the city center.

Pollution

Pollution problems must be solved so human beings can live in an environment where the air and sky are clearer.

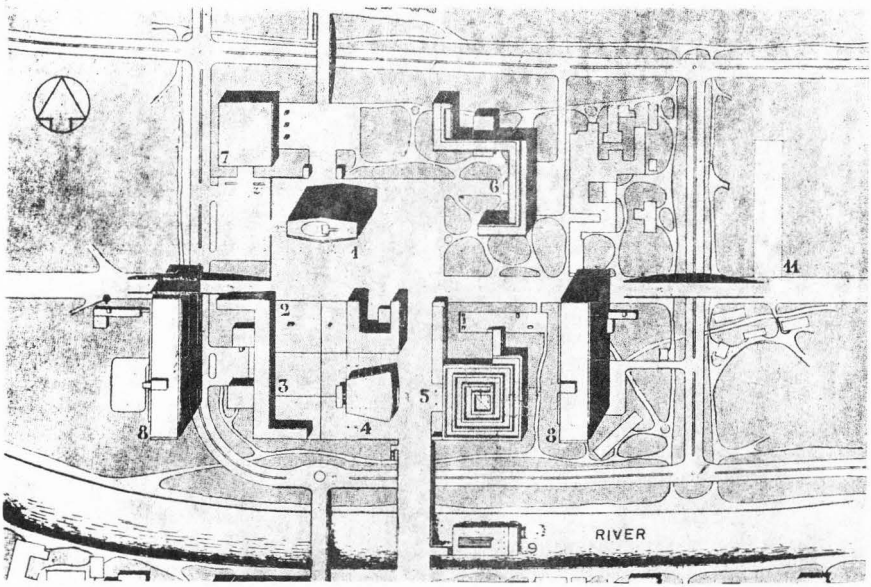
1. Prohibit motorized traffic in city core. The best way to reduce the smoke and noise and increase the sunshine in the city centers is to reduce or prohibit motorized traffic from entering.

2. Simple building spacing. Increasing the spaces between buildings would help clear the air by providing better air circulation. The situation would be further improved if the buildings were surrounded by trees, since the leaves of trees act as filters of the air, absorbing dust and organisms from the atmosphere.

3. Winds and industry. Industrial areas should be located with greater consideration for prevailing winds and topography.

Examples

1. LeCorbusier's beautiful scheme for the bomb-damaged center of St.Dié is based on a cross-path pedestrian circulation (as opposed to the traditional crossroad center) superimposed over a ring road. The principal buildings are associated with a large rectangular pedestrian plateau, around which the motorists circulate on a ring road. Wide footways run from each side of the plateau and bridge over the ring road to connect up with the adjacent industrial housing areas.



1. Administrative center
2. Travel center
3. Restaurants
4. Community center
5. Museum
6. Hotels
7. Store
8. I.S.A.I.

Figure 15. LeCorbusier's beautiful scheme for the bomb-damaged center of St. Die´.

2. A proposal for "Metrotown" center which is designed around Baltimore.

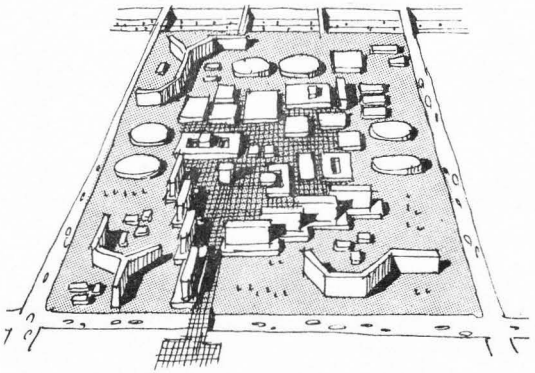


Figure 16. A proposal for "Metrotown" center.

3. The city center at Hook, England, which was designed by a team of architects and planners working with the London County Council. A central commercial spine lying in a valley is served by a vehicular level with a pedestrian level above. The pedestrian level leads off as paths into the surrounding residential areas.

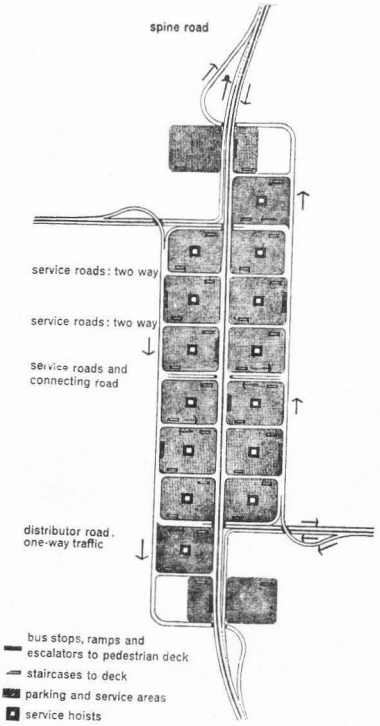


Figure 17. Ground level road and servicing systems in the central area.

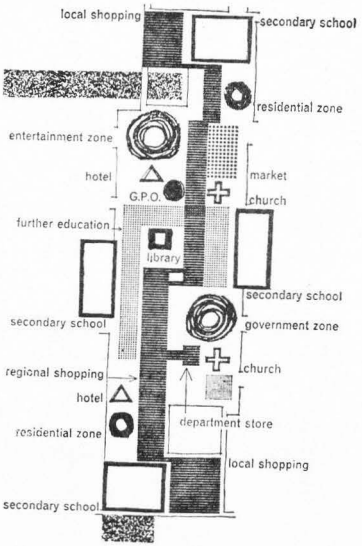


Figure 18. Major use zones on pedestrian level.

CHAPTER V

A BRIEF SURVEY OF LOGAN CITY USING DRAWINGS AND ARTICLES BASED ON: SITE CHARACTERISTICS; GEOLOGICAL, CLIMATOLOGICAL CONDITIONS; ECONOMIC AND EMPLOYEE TRENDS; TRAFFIC AND TRANSPORTATION SITUATIONS; POPULATION TRENDS; EXISTING UTILITIES AND SITE ENGINEERING DEVELOPMENTS; HISTORY; ETC.

Logan City and Vicinity

Logan is a small city of about 22,500 inhabitants located on the bench and floor of the east side of Cache Valley in northern Utah. The east side of the city lies at the mouth of picturesque Logan Canyon. Logan River runs from the canyon and passes through the southern part of the city before wending its way across the valley floor to enter the Bear River and eventually Great Salt Lake. The west side of Logan is on the valley floor and abuts agricultural areas with open views.

Three small towns are located within short distances to the south of Logan--River Heights, Providence, and Millville. River Heights has about 1,000 inhabitants, Providence has about 1,600, and Millville has about 450. Small cities to the north are North Logan, Hyde Park and Smithfield. North Logan has a population of about 1,400, Hyde Park has about 1,000 and Smithfield has 3,400 citizens.

The central business district is located near the geographical center of town. Main and Center streets form the commercial crossroads.

United States highways 89 and 91 pass through the central business district.

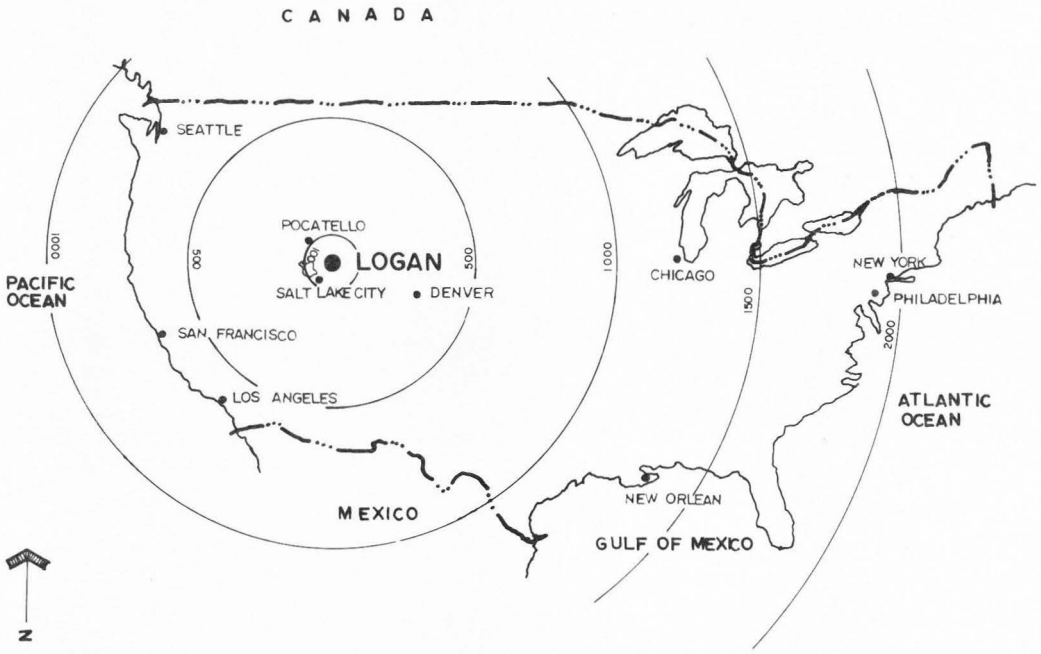
Utah State University, Utah's land grant University, an LDS (mormon) temple, and an LDS Tabernacle are three of the main points of interest in Logan.

History

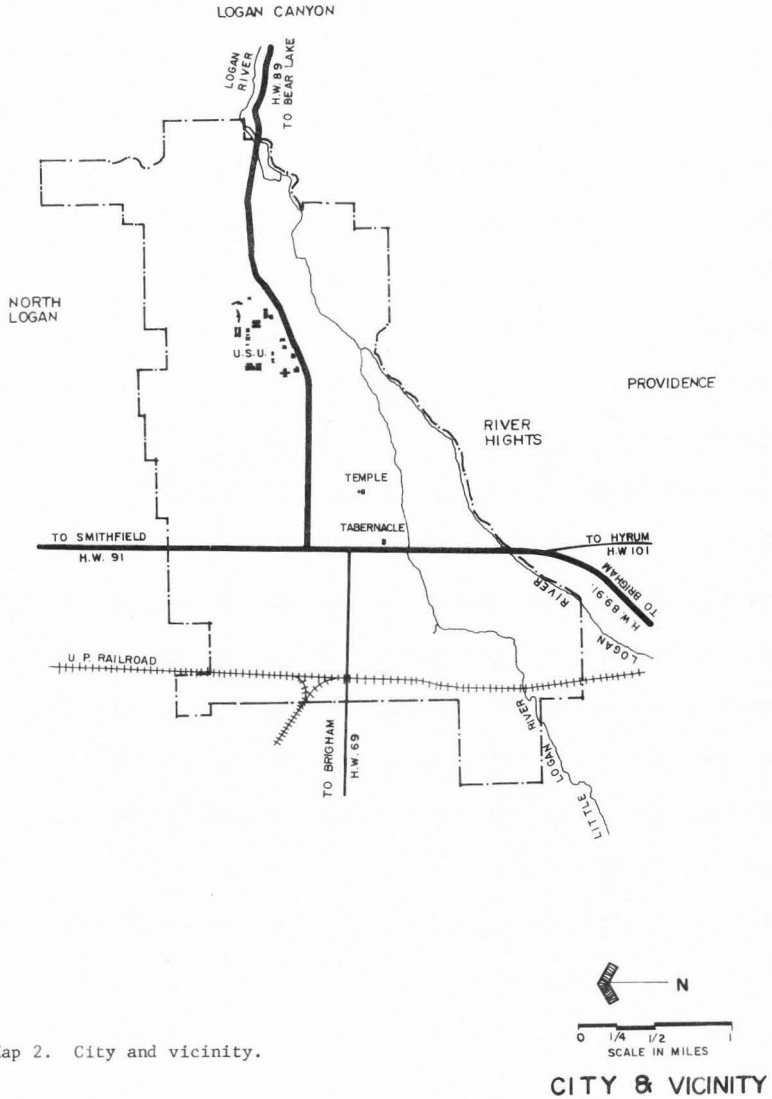
Cache Valley was actually discovered by Jim Bridger and his fur trapping companions long before it was settled by Mormon pioneers, religious refugees from the eastern and mid-west United States. In fact, the valley was named after the practice to trappers to cache or hide their accumulated furs from the Indians in this area.

Brigham Young, an early day Mormon leader first sent white settlers to the valley in 1856 when he dispatched seven Mormon families to settle Maughan's Fort, site of present-day Wellsville, located at the southwest end of Cache Valley. Three years later, two groups settled at the present site of Logan. One group of thirty families came by way of Maughan's Fort and four families came from where Providence now stands. Logan derives its name from an old Indian chief named "Logan" who befriended the early white settlers.

The first houses were constructed of logs hauled from Green Canyon located north of Logan. Most had sod roofs and dirt floors and were built on both sides of Center Street facing each other for about two blocks. Summer months of that first year were full of activity.



Map 1. Location map.



Map 2. City and vicinity.

June 6, 1859 the pioneers arrived and by October 1 they had drawn lots for their land, built their houses and fort and had started to erect a town hall. One month later, they started to build a log school house and lengthened the fort another block west. Within five years, Logan had become the main settlement in Cache Valley.

In 1873, a narrow-guage railroad was started and finished to connect Logan with Brigham City located at the eastern base of the Wellsville mountains that form the western boundary of Cache Valley.[6] That same year the Tabernacle was started; it was finished three years later. The 1870's were years of building with stone. One year after the stone Tabernacle was finished, ground was broken for the LDS Temple, a particularly significant building for the predominant Mormon population. By May 1884, the majority of temple work was done. It is 171 feet long and 95 feet wide, not including the annex which is built on the north of the Temple. It is 86 feet high to the square, the four towers at each corner of the building are 100 feet high. The tower on the east end of the Temple is 170 feet high, and the one on the west end is 165 feet high. These two towers are 30 feet square.

By 1890, Logan had entered an era of brick buildings, some thirty years after Logan had been a string of log cabins along Center Street. It was emerging as a beautiful modern city, becoming the business, educational, political and religious center of Cache Valley.[7]

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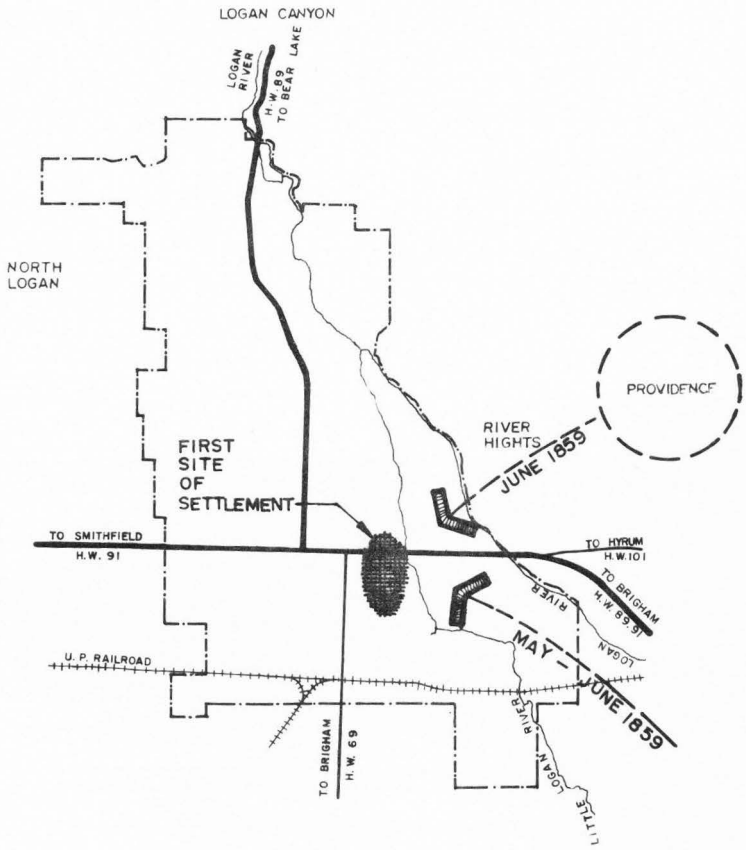
[6] E. W. Tullidge, History of Utah

[7] Cache Valley Centennial Commission, The History of a Valley (Salt Lake City, Utah: Deseret News Publishing Company, 1956).



Map 3. History.

Population Study

Logan City contains about 50 percent of the Cache County inhabitants. A high birth rate coupled with a comparatively low death rate causes Logan to have one of the highest natural rates of increase in the nation. Between 1870 and 1970, a 100-year period, the population of Logan increased from 1,757 to 22,402 people, an average growth rate of 30.8 percent per decade. The last ten years growth rate was 19.6 percent, an increase of 3,671 people.

Table 2. Resident population in Logan City.

Year	Population	Number increased	Percent increased
1870	1,757		
1880	3,396	1,636	93.3%
1890	4,565	1,169	34.4%
1900	5,451	886	19.4%
1910	7,522	2,021	38.0%
1920	9,439	1,917	25.5%
1930	9.979	540	5.7%
1940	11,868	1,889	18.9%
1950	16,832	4,964	41.8%
1960	18,731	1,899	11.3%
1970	22,402	3,671	19.6%

One prediction of population growth from 1980 to 2020, has Logan scheduled for a growth rate of about 2 percent per annum from 1970 to 1980; 1.25 percent to year 2000, and 0.75 percent from years 2000 to 2020.

Table 3. The prediction of resident population in Logan City

Year	Population	Number increased	Percent increased
1980	26,880	4,476	20.0%
1990	30,260	3,380	12.5%
2000	34,040	3,780	12.5%
2010	36,590	2,550	7.5%
2020	39,325	2,735	7.5%

Logan City has large percentages of its population in college and retired. Many retired Mormon people move to Logan or nearby towns to participate in the religious ordinances in the Temple.

Table 4. Percentages of population residing in Logan

Age	1960	1970
Under 5	13.3%	9.3%
5 - 9	9.5%	7.3%
10 - 14	7.5%	7.2%
15 - 19	11.3%	14.2%
20 - 24	16.2%	22.0%
25 - 29	7.9%	7.9%
30 - 34	4.7%	4.7%
35 - 39	3.9%	3.2%
40 - 44	4.2%	3.4%
45 - 49	3.9%	3.6%
50 - 54	3.4%	3.2%
55 - 59	3.2%	3.0%
60 and over	10.9%	11.0%

Existing Transportation

Highways

Logan is served by two main federal highways--U.S. 91 and U.S. 89. U.S. 91 traverses the length of the Cache Valley and connects Logan with

Ogden and Salt Lake City to the south, and with Pocatello, Idaho and the Pacific northwest to the north.

This highway passes through Logan as Main Street, so that all traffic coming from either south or north, has to pass through the city center. Average traffic counts at the corner of the Fourth North and Main streets were 13,125 cars daily in 1960 and 20,000 cars daily in 1968 coming from the south. From the north, there were 13,125 cars daily in 1960 and 16,700 cars daily in 1968.

U. S. 89 enters Logan through scenic Logan Canyon from northern and eastern points. This highway enters Logan on Fourth North and connects with U.S. 91 at Main Street. Average traffic counts for this highway were 7,000 cars daily in 1970 and 13,850 cars daily in 1968.

Bus

Four schedules daily through Logan are maintained by Overland Greyhound Buslines which make important connections at Ogden and Salt Lake for eastern, western, and southern points. In addition, Cook Transportation Company maintains a bus schedule between the business district and the University.

Railroads

Logan has excellent facilities for rail freight but no facilities exist for passenger service closer than Ogden, about 48 miles to the south. Logan is served by two daily freight schedules of the Union Pacific, which provides direct rail connections to all major points.

Airlines

Sunvalley Key Airlines provides daily air freight and passenger service out of the Logan Airport, located three miles north of Logan. This "feeder line" connects with the large airport at Salt Lake City which is served by United, American, Western, Texas International and Hughes Air West airlines. In addition, two charter flight services are available.

Existing Land Use

The total area within the corporate boundaries of Logan is about 4,000 acres. The 1962 survey and inventory of existing land use shows:

Table 5. Existing land use.

	Acres	Percentage
Streets and highways	800	20.0%
Residential	1,360	34.5%
Commercial	87	2.0%
Industrial	33	0.8%
Churches	47	1.0%
Agricultural	750	19.0%
Schools and Parks	157	3.9%
Railroad	48	1.2%
Vacant	650	16.0%
River	38	0.9%
Canals	30	0.7%
Total	4,020	100.0%

At the present time, Logan is principally a residential city, made up of a mixture of single family, two family and multiple family dwellings. There is the necessary commercial and service area, but little heavy industry. In fact, the local Chamber of Commerce is on record as being against heavy industry unless it is non-polluting. Business

leaders in the valley are actively seeking the establishment of light industrial plants in the area however.

Logan is zoned into eleven categories. From the Logan City Zoning Ordinance, which was passed by the board of commissioners of Logan City in 1968, one can find the details about the use regulations of each zone.

Table 6. Logan City zoning categories.

Zone	Regulation
Residential zone	R-1
Residential zone	R-1A
Residential zone	R-2
Residential zone	R-2A
Residential zone	R-3
Residential zone	R-4
Trailer court or mobile home park zone	T-1
Commercial zone	C-1
Commercial zone	C-2
Commercial zone	C-3
Manufacturing zone	M-1

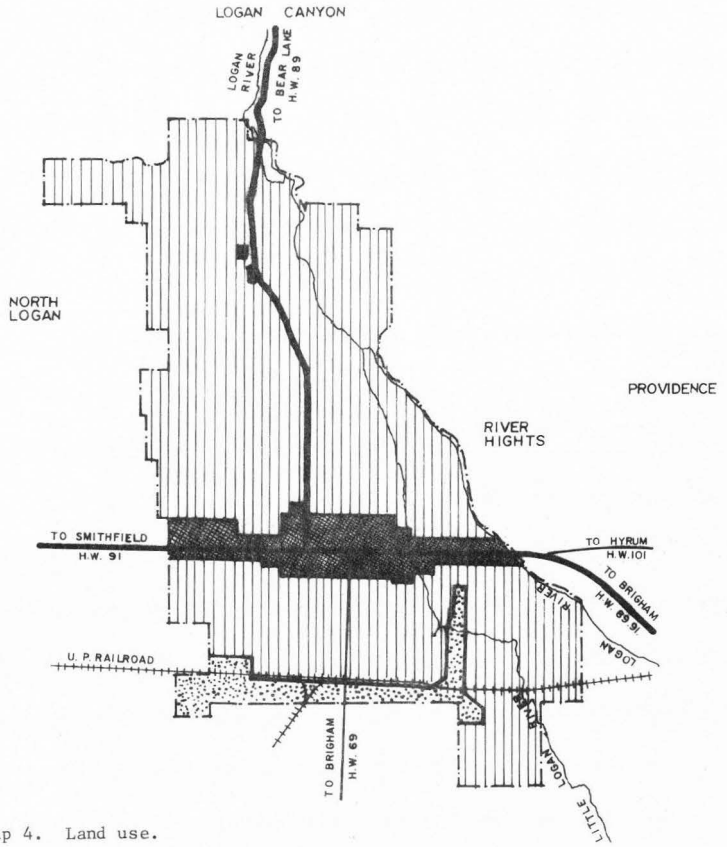
Existing Utilities

Electric power

Logan has its own municipal power plant located in Logan canyon, and has four substations in the city boundaries. Electrical supplies are ample, dependable, and sold at reasonable rates which encourages industrial development in the Logan area.

Natural gas

Mountain Fuel Supply Company is the major distributor of natural gas in Logan City. Its service lines transport gas from the main



Map 4. Land use.

fields in southwestern Wyoming, the Uinta Valley in northeastern Utah, and in northwestern Colorado. A ten inch high pressure line comes in from west-bound fifth north street. A six inch line turns right at Main Street and forms the main service line for the central business district.

Water

Culinary water supplies (40 second feet) are ample for the city and flow from a large underground spring about six miles up Logan Canyon. The system's three-million-gallon storage reservoir always experiences an overflow. Water from this supply requires chlorination only occasionally. Water temperature at the springs is 40 degrees Fahrenheit, and it is 44 degrees Fahrenheit as it flows from the taps in the city. Water for the central business district area comes from the main storage reservoir, located at the east boundary of the city, by a 24-inch steel pipe. This main line crosses the Logan golf course and comes down seventh north. A 10 inch cast iron water pipe at Main Street is the chief water supply line to the central business district.

Drainage

Logan is situated on the west slope of the Wasatch Mountain Range. The slope at Logan goes down from east to west. A 48 inch pipe collects all the sewage and transports it by gravity flow to a 462 acre lagoon system located several miles west of town on the valley floor.[8]

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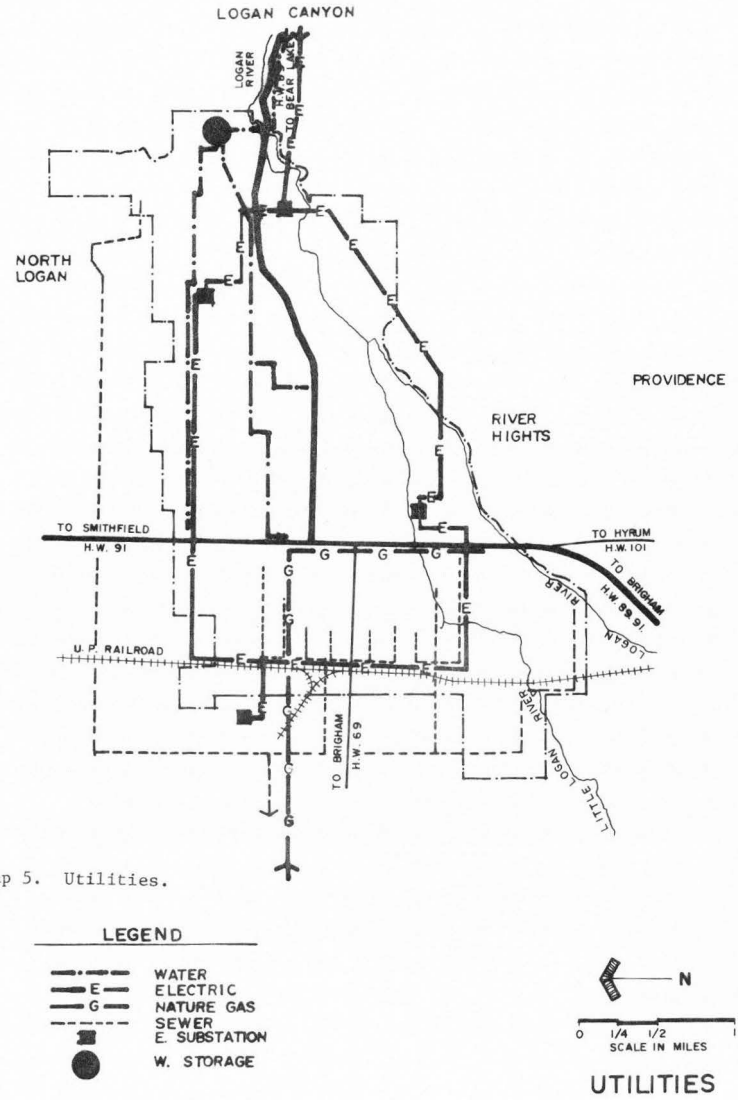
[8]Logan City Engineer Office, Logan, Utah (1973).



Map 5. Utilities.

Topography

Since Logan is located on a bench of the foothills of the Wasatch Mountains, its topography varies. Elevations from east to west range from 4,840 to 4,460 feet above sea level respectively. Contours follow the north south orientation of the Wasatch Range. The central business district elevation fluctuates from 4,520 to 4,540 feet above sea level, a difference of only 20 feet.

Slope

The following map shows the slope of Logan City. The various percentage of slopes are broken down into six categories: 0-3 percent, 3-6 percent, 6-10 percent, 10-15 percent, 15-20 percent, and 20 percent and up.

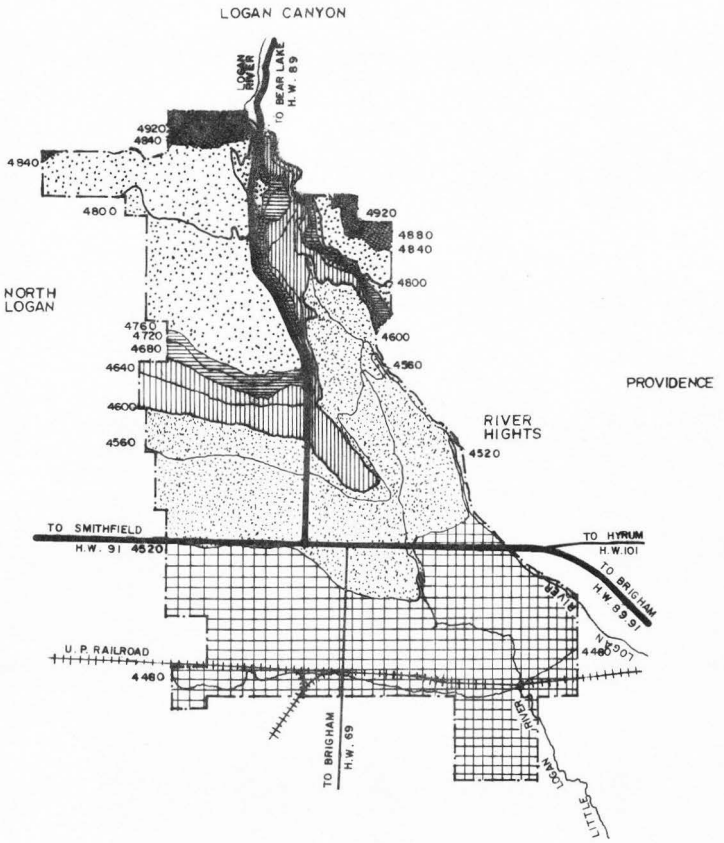
The slope at Logan City varies from 0 to 20 percent, from east to west. The slope at the central business district is from 0 to 6 percent. It is suitable for building, paved roads, walks, playgrounds, etc.

Soil Survey

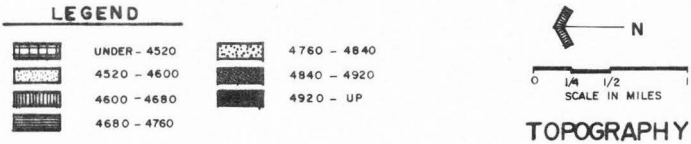
The soil at Logan City has been divided into these categories: (1) Steed gravelly loam (PG 03); (2) Greenson loam (IR 31); (3) Ricks gravelly loam (BG 03); (4) Sterling gravelly loam (SN 03).

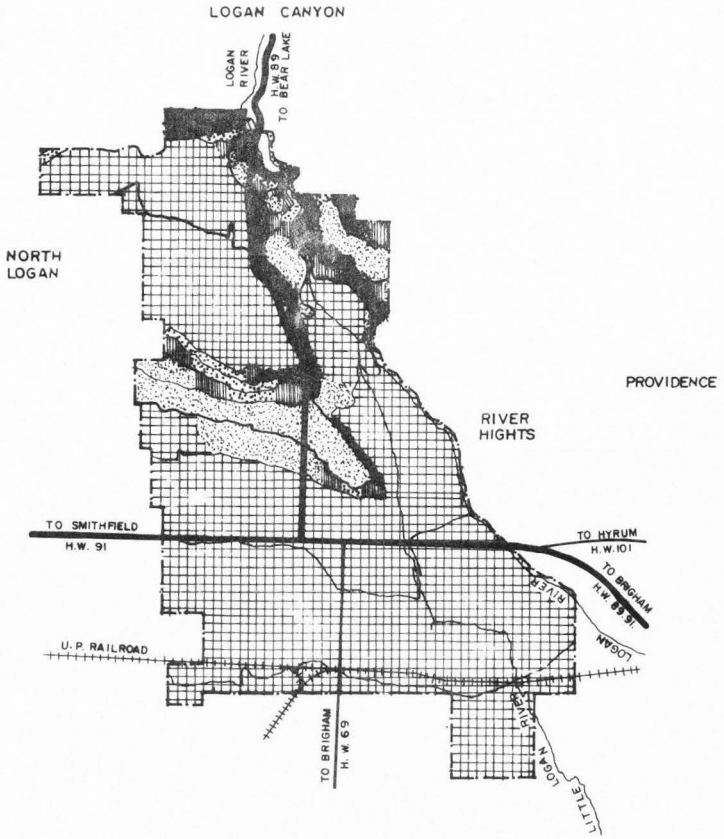
Steed gravelly loam (PG 03)

Slope from 0 to 3 percent ($\frac{PG\ 03}{A}$ = 0 to 1 percent; $\frac{PG\ 03}{2B_1}$ = 1 to 2 percent).



Map 6. Topography.




LOGAN CANYON
LOGAN RIVER
H.W. 89
TO BEAR LAKE
NORTH LOGAN
PROVIDENCE
RIVER HIGHTS
TO SMITHFIELD
H.W. 91
TO HYRUM
H.W. 101
TO BRIGHAM
H.W. 89 91
LOGAN RIVER
U.P. RAILROAD
TO BRIGHAM
H.W. 69
LOGAN RIVER
LITTLE
LEGEND
0 - 3 %
3 - 6 %
6 - 10 %
10 - 15 %
15 - 20 %
20 % - UP
N
0 1/4 1/2
SCALE IN MILES
SLOPE

Map 7. Slope.

This soil occurs mostly on nearly level to gently sloping alluvial fans and river flood plains. It is somewhat excessively drained, and permeability is moderately rapid. It hold 3 to 3.75 inches of available water in a 5-foot profile. Water tables occur below 45 inches. Surface soil depth varies from 7 to 14 inches. The soil conditions from 0 to 28 inches are as follows:

0-5 inches. Dark grayish-brown gravelly loam, very dark grayish-brown when moist. Weak to moderate fine granular structure; slightly sticky and slightly plastic; abundant fine roots; 25 percent gravel; mildly alkaline; moderately calcareous; clear smooth boundary.

5-11 inches. Dark grayish-brown gravelly loam, very dark grayish-brown when moist. Weak fine and medium granular mixed with weak medium and coarse subangular blocky structure; slightly hard friable; slightly sticky and slightly plastic; plentiful fine roots; 35 percent gravel.

11-17 inches. Dark grayish-brown very gravelly sandy loam, very dark grayish-brown when moist. Weak medium and coarse subangular blocky structure; 65 percent gravel and cobble.

17-28 inches. Grayish-brown very gravelly loamy sand, dark grayish-brown when moist; 80 percent gravel and cobble.

Greenson loam (IR 31)

Slope from 0-6 percent ($\frac{\text{IR 31}}{2B_1}$ = 1-2 percent, $\frac{\text{IR 31}}{4C^{-}}$ = 3-4 percent, $\frac{\text{IR 31}}{5C^{-}}$ = 4-6 percent).

0-3 percent. The surface soil ranges from 12-19 inches thick. The depth to the water table ranges from 30 to 60 inches, much of the soil has been artificially drained. This soil is poorly to moderately well drained, and permeability is moderate. It holds about 10 inches of available water in a 5-foot profile.

3-6 percent. The surface soil is 8 to 16 inches thick. This soil is moderately well drained. Soil conditions from 0 to 23 inches are as follows:

0-7 inches. Gray loam, very dark-gray when moist. Weak fine granular structure; slightly hard, friable, slightly sticky and slightly calcareous; mildly alkaline.

7-16 inches. Gray loam, very dark-gray when moist. Moderate medium granular structure breaking to moderate fine granular.

16-23 inches. Light brownish-gray loam, dark grayish-brown when moist. Weak very fine subangular blocky structure.

Ricks gravelly loam (BG 03)

Slope from 0-3 percent ($\frac{BG\ 03}{A^-}$ = 0-3 percent).

The surface soil ranges from 4 to 12 inches in depth. The gravel content varies from 15 to 35 percent in the surface soil. It holds about 3.5 inches of available water in a 5-foot profile. The soil condition from 0 to 18 inches are as follows:

0-4 inches. Brown gravelly light loam, dark brown when moist. Mixed weak medium subangular blocky and weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; plentiful fine roots.

4-9 inches. Brown gravelly light loam, dark brown when moist. Moderate medium subangular blocky structure breaking to weak medium granular.

9-14 inches. Brown gravelly light loam, dark brown when moist. Weak medium subangular blocky structure.

14-18 inches. Brown gravelly heavy sandy loam, dark brown when moist. Weak medium subangular blocky structure.

Sterling gravelly loam (SN 03)

Slope from 6 to 20 percent. ($\frac{SN\ 03}{8D}$ = 6-10 percent, $\frac{SN\ 03}{E}$ = 10-20 percent).

6-10 percent. This soil is somewhat excessively drained, and permeability is moderately rapid. It holds 3 to 3.75 inches of available water in a 5-foot profile. The surface of soil is 10-18 inches thick.

10-20 percent. The surface soil is 14-20 inches thick. Run off is medium, and the erosion hazard is moderate.

The soil conditions from 0 to 27 inches are as follows:

0-9 inches. Dark grayish-brown gravelly loam, very dark brown when moist. Moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; 30 percent gravel.

9-16 inches. Dark grayish-brown gravelly loam, very dark brown when moist. Weak fine subangular blocky structure; 50 percent gravel.

16-27 inches. Pale-brown very gravelly sandy loam, grayish-brown when moist; 80 percent gravel.[9]

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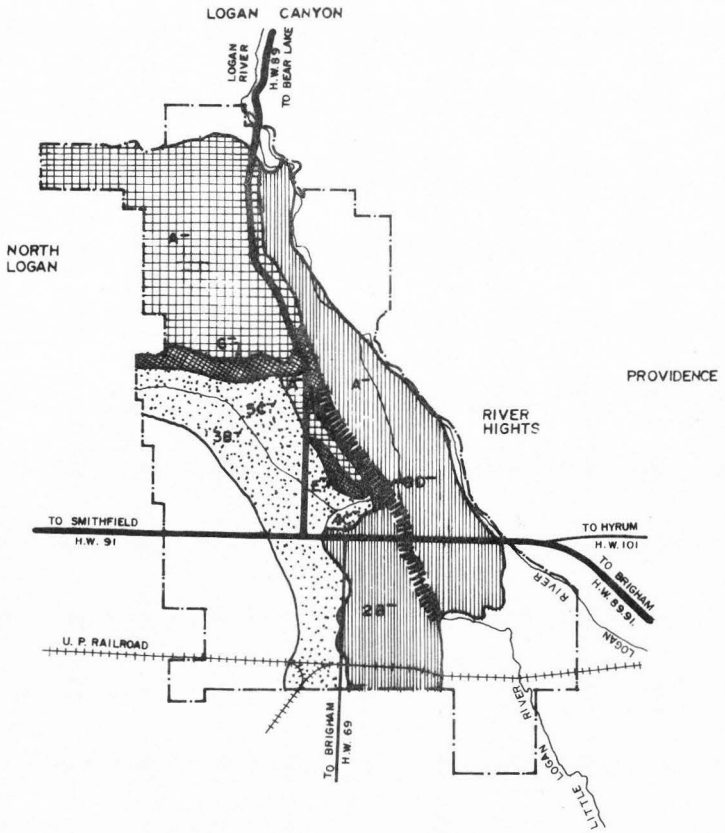
[9] Soil Conservation Office, Logan, Utah (1973)



Map 8. Soil survey.

Geological History

Cache Valley soils were formed by silt and clay deposition in prehistoric Lake Bonneville which covered the valley in ancient times. Streams flowing into the Lake, deposited coarse particles near the edge. Fine and very fine particles were carried farther and settled out in the still water nearer the center of the lake. Thus the lowlands are composed of fine-textured soils, and the higher border areas are made up of coarser materials. Because the lake level fluctuated through the centuries, many sand and gravel lenses (aquifers) were formed throughout the soil profile. The gravel aquifers do not extend to the valley center, but slowly pinch out east of the Salt Lake Base and Meridian. The 40 to 60 foot gravel aquifer forms such an aquiclude. The sand lenses continue to the valley center, but are very intermittent.

The Logan area is in the middle Rocky Mountain province, and includes two northwardly extending prongs of the Wasatch Mountains--the Wellsville Mountains on the west and the Bear River Range on the east. Cache Valley is essentially a graven between the two prongs. Within the area, Pre-Cambrian and all subsequent geologic systems, with the exception of the Permian, are represented.

The geology of Logan City is divided into three main parts--Qltg, Qlts, Qay and Qag at the surface, and Tsl structure underneath the surface.

Qltg and Qlts. Conditional lake shore features (terraces, spits, and bars). Qltg--gravelly. Qlts--sandy.

Qay. Relatively younger alluvid deposits, chiefly along active streams.

Qag. Collubium and alluvium. Mostly stone and unfit for agricultural crops.

Tsl. Salt Lake formation or group. Continental sandstone silt, and pyroclastic. Ricks--generally very light-colored, well-rounded fragments derived from earlier formations and cemented with calcium carbonate.[10]

Schools, Churches, and Recreation

Schools

Utah State University is third largest of the three universities in the State of Utah, with a yearly enrollment of over 8,000 students. Since its founding in 1888, the university has made steady, healthy growth in studentbody, enrollment, faculty, curriculum, and facilities. Utah State University has a graduate school as well as eight colleges and 50 departments.

Logan has two high schools: Logan Senior High located at 163 West First South, with an enrollment of about 950 students; and Logan Junior High School, located at 875 North Second East, with more than 1,000 students.

There are six elementary schools in Logan: Adams Elementary, 530 North Fourth East; Ellis Elementary, 348 West Third North; Hillcrest

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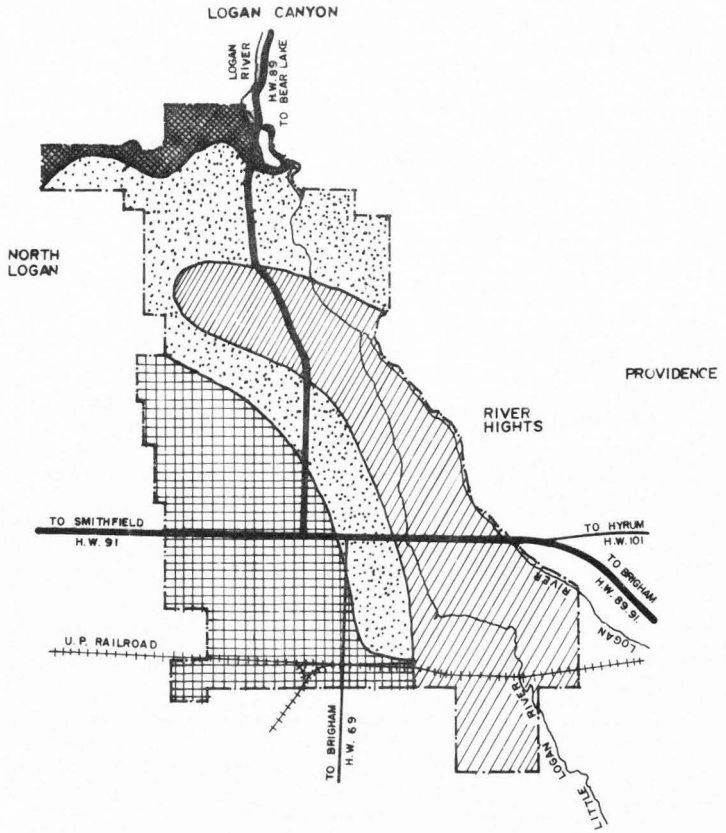
[10]Geologic Atlas of Cache County, Utah (1973).



Map 9. Geologic.

Elementary, 960 North Fourteenth East; Riverside Elementary, 1075 Sumac; Wilson Elementary, 89 South Fifth East; and Woodruff Elementary at 143 South Second West.

Churches

The predominant church in Logan, as well as Cache Valley, is the Church of Jesus Christ of Latter-day Saints (Mormon). Among other denominations with fine buildings and substantial congregations are Roman Catholic, Presbyterian, Baptist, Jehovah's Witnesses, Episcopal and Independent Bible.

Recreation

Logan Canyon provides year-round recreational opportunities. Numerous camping facilities are located along the Logan River or nestled among the pines and are Forest Service maintained. Fishing, deer and elk hunting in season, hiking and skiing and snowmobiling in the winter are the main activities.

Logan Canyon also is noted for the beautiful fall foliage that attracts photographers, both professional and amateur, year after year to capture the blazing reds, yellows, and various shades of gold and green in the canyon. Boating, both motor and sailing, water skiing and swimming as well as fishing are also available at Bear Lake about 40 miles from Logan through the canyon.

Three main parks are available for public use without charge.

Central Park, located at 85 South Third East, has tennis courts, picnic facilities (tables, shelter, drinking fountains, garbage cans, rest rooms), playground facilities for children, large field space

(ball diamonds in summer, ice skating in winter), and inside facilities for winter ice skating use. A stream adequate for wading and tubing flows through the park.

Willow Park, located at Fifth West Sixth South, has plenty of open green space, a playground for children and picnic facilities (picnic tables, drinking fountains, fire pits, restrooms, a softball diamond, a small amphitheater, a large communal outdoor fireplace, and several enclosures where several species of exotic birds, water fowl, and animals are kept. A shallow stream also wanders the length of this large park.

Adams Park at 495 East Fifth North is adjacent to Adams Elementary School. It has play-ground equipment for children and open green space with picnic facilities.

Since Logan is a county seat, the county fairgrounds are located within its boundaries. The grounds are located next to Willow Park and contain a rodeo arena, buildings for displaying agricultural and homemaking arts, 4-H projects, chickens, rabbits, and cattle, sheep, swine, and horses.

Logan also has an 18-hole golf course located in a beautiful setting near the mouth of Logan Canyon. A municipal swimming pool with shallow and deep sections was constructed at the Junior High School. Public swimming is also available at Sky View High School in Smithfield, seven miles north, and at Utah State University, in the recently constructed Health, Physical Education and Recreation building.

An indoor roller skating rink, a bowling alley, four film theaters (one outdoor drive-in), one stage theater and a very active community arts program offer ample opportunity for balanced year-round recreation.

For skiing enthusiasts, an excellent resort, Beaver Mountain Sports Area is located 18 miles up Logan Canyon. Slopes range from 7,500 to 8,500 feet above seal level. Three double chair lifts and a power lift run from Wednesday through Sunday. A lodge, ski rental and repair shop, ski school with top notch instructors, and adequate parking are some of its features.

Climate

The mean annual temperature from 1936 to 1965 at the Utah State University weather station was 48.6 degrees Fahrenheit.

The surrounding mountains combined with other tempering influences provide the Logan area with an envigorating climate. Although winter temperatures can plummet to 30 degrees below zero, they do not stay there long. Summer temperatures are tempered, usualy 10 to 15 degrees cooler than Brigham City, just over the mountains. Moderate weather changes and gradual seasonal change help alleviate weather "monotony." Four distinct seasons are experienced.

During spring, the average temperature (1936-1965) is 46.1 degrees Fahrenheit. There is still a 50 percent probability of freezing temperatures after the first week in May, and a minimum of 32 degrees or lower has been recorded as late as June 12.

In the summer, the average temperature (1936-1965) is 66.1 degrees Fahrenheit. Summer arrives rather abruptly the first part of June with

warmer and drier weather. The mountains to the south and southwest and the Great Salt Lake about 30 miles distant, help to deflect, or moderate warm air currents from this quadrant. Maximum temperatures of 100 degrees or higher have been recorded only five times in the history of the Utah State University station. The last time was July 1960. Nights are cool.

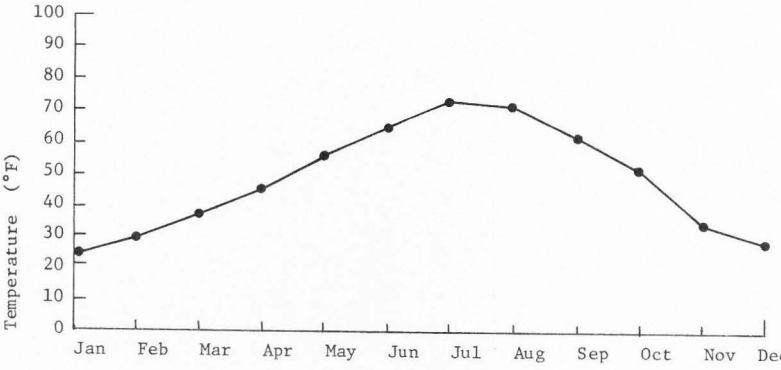
Fall average temperature (1936-1965) is 53.0 degrees Fahrenheit. Crisp cool weather ushers in the fall season, and frosts can be expected rather early, usually before mid-October. The earliest occurrence of freezing temperature or lower is September 14.

The winter average temperature (1936-1965) is 26.9 degrees Fahrenheit. Winters are usually cold but not severe. The valley is sheltered somewhat from cold Canadian air masses by the blocking effect of the Continental Divide and other mountain ranges.

Total average precipitation is 17.38 inches per year. Spring is the wettest season of the year as nearly 40 percent of the annual total precipitation falls during March, April and May. The largest daily rainfall measured was 2.02 inches in June 1964.

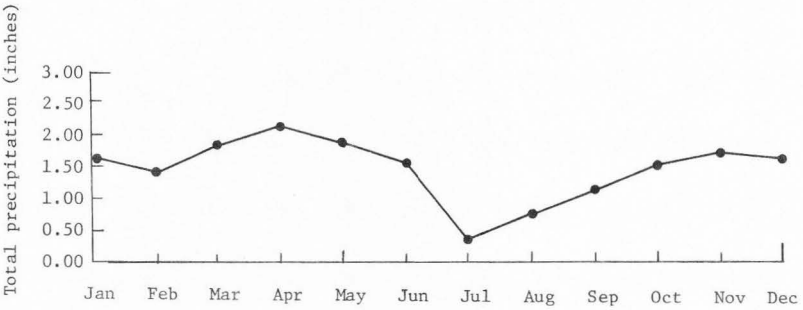
The average total snow is 65.3 inches per year. Snow depths reached a maximum for a month of 43.7 inches in January 1949, and a daily maximum of 15.0 inches in January 1954.

The relative humidity is low because generally lower temperatures prevail and the lower average temperatures in the winter. The low humidity prevailing in Logan is also of economic significance in minimizing metal oxidation, rotting of wood, mildew formation on fabric and in slowing the corrosive process.



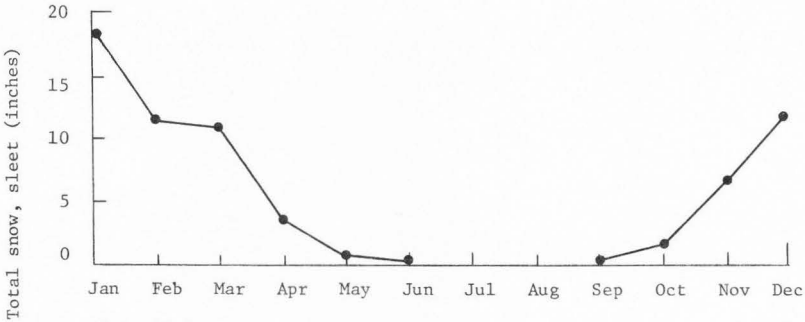
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average daily max.	32.3	37.8	46.4	59.2	60.0	74.7	87.6	86.0	76.4	63.4	43.9	36.4
Average monthly	23.7	28.9	36.5	44.4	56.6	63.7	73.1	71.6	62.5	51.5	35.5	28.6
Average daily min.	15.0	20.2	26.5	36.4	44.3	50.4	58.5	57.3	48.6	39.6	27.0	20.8

Figure 19. Logan USU climatological summary monthly average 1936-1965.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	1.62	1.49	1.81	2.09	1.88	1.51	0.39	0.75	1.06	1.50	1.71	1.57
Greatest daily	0.92	1.13	1.33	1.73	1.34	2.02	0.65	1.19	1.75	1.23	1.35	1.46

Figure 20. Logan USU climatological summary monthly average 1936-1965.



Mean	18.4	11.8	10.9	3.4	0.4	0	0	0	0	1.6	6.8	12.0
Max. monthly	43.7	27.0	26.5	14.8	7.2	0	0	0	0	16.0	23.5	33.7
Greatest daily	15.0	14.0	12.8	8.0	7.2	0	0	0	0	6.5	10.5	9.5

Figure 21. Logan USU climatological summary 1936-1965.

Crisp, cool winds usually come from the east down Logan Canyon in the morning, and warm winds come from southwest by Sardine Canyon in the afternoon. The high Wasatch Mountains to the east stop the strong, cold winds coming from Bear Lake, and the mountains at the south and southwest slow down the winds coming from the south and southwest.

The following tables show the avera-e monthly wind speed, greatest daily wind speed, the average monthly wind direction and the direction of the greatest daily winds.

Table 7. Average monthly wind speed.

	Speed (miles per hour)			
Month	0-6 AM	6-12 AM	12-18 PM	18-24 PM
January	6.4	5.5	5.5	5.0
February	5.8	5.3	3.3	3.8
March	12.6	7.2	6.5	9.0
April	11.0	6.8	7.1	7.9
May	11.7	7.3	6.4	7.7
June	10.2	6.7	5.0	7.5
July				
August		no record		
September				
October				
November	7.4	4.8	3.0	5.0
December	4.6	5.1	4.2	4.7

Table 8. Greatest daily wind speed.

Month	Speed (miles per hour) 0-6 AM	6-12 AM	12-18 PM	18-24 PM
January	31	23	42	23
February	30	22	22	32
March	20	20	14	21
April	28	20	18	23
May	36	24	19	22
June	26	19	13	23
July				
August		no record		
September				
October				
November	23	18	10	19
December	23	25	18	18

Table 9. Average monthly winds direction.

Month	Directions 0-6 AM	6-12 AM	12-18 PM	18-24 PM
January	E	SW	SW	S
February	E	E	SW	SW
March	NE	NE	SW	NE
April	NE	S	NE	E
May	E	N	S	E
June	E	E	S	E
July	E	E	SW	SW
August	E	E	SW	SW
September	E	E	SW	SW
October	E	E	SW	SW
November	E	E	N	E
December	E	SW	SW	E

Table 10. Direction of the greatest daily winds.

Month	Directions 0-6 AM	6-12 AM	12-18 PM	18-24 PM
January	SW	N	SW	SW
February	E	E	SW	E
March	NE	NE	SW	NE
April	E	NE	SE	E
May	E	E	N	SW
June	E	E	SW	E
July				
August		no record		
September				
October				
November	E	E	N	E
December	E	SW	SW	E

Sun diagrams are included to show the locations and altitude for 40 degrees north latitude, which is the closest latitude to the Logan agea. By lining up the north arrow with that of the siet, the direction of sun rays may be found in relation to the time of day during the various seasons of the year.

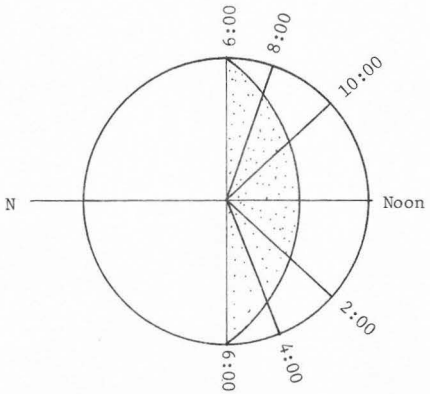
Employment Trend, Occupation Survey and Income Situation

Cache County has shown a steady increase in employment since 1952. Except for self-employment, the rate of increase has been 2.2 percent per annum from 1952 to 1969.

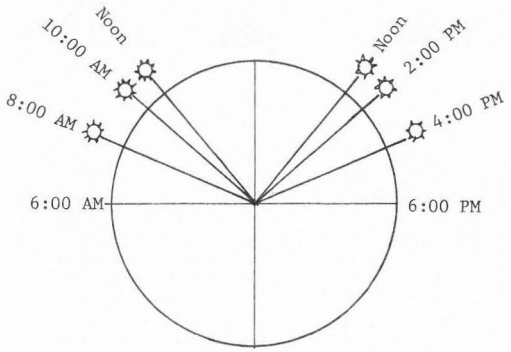
In the nine years between 1960 and 1969, the work force in Cache County increased 2,265 (19.5 percent). Nonagricultural jobs increased by 3.619 (46.8 percent), but agricultural jobs continued to decline from 1960 through 1969 by almost 900 (about 46 percent).

Spring and Fall

AM-PM	Azimuth	Altitude
Noon	180° - 0'	50° - 0'
10:00-2:00	138° - 0'	41° - 0'
8:00-4:00	110° - 30'	22° - 30'
6:00-6:00	90° - 0'	0° - 0'



Sun Asimuth

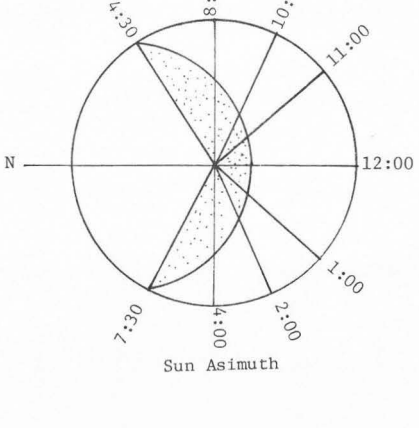


Sun Altitude

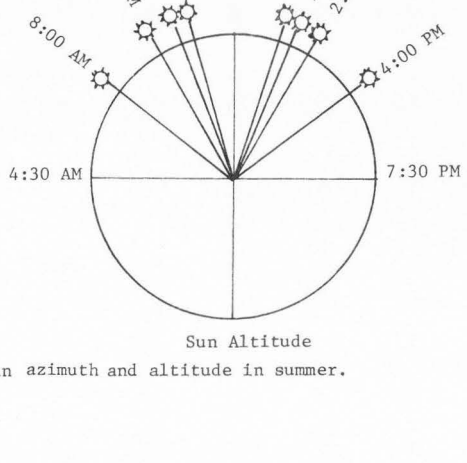
Figure 22. Sun azimuth and altitude in spring and fall.

Summer

AM - PM	Azimuth	Altitude
Noon	180° - 0'	73° - 30'
11:00-1:00	138° - 0'	69° - 0'
10:00-2:00	114° - 0'	60° - 0'
8:00-4:00	89° - 0'	37° - 30'
4:30-7:30	59" - 0'	0° - 0'



Sun Asimuth

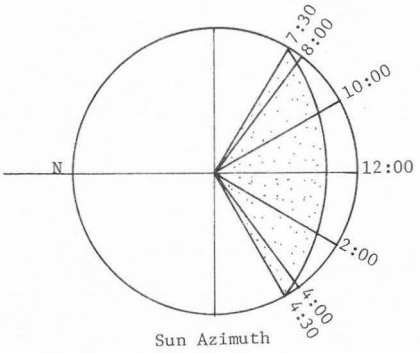


Sun Altitude

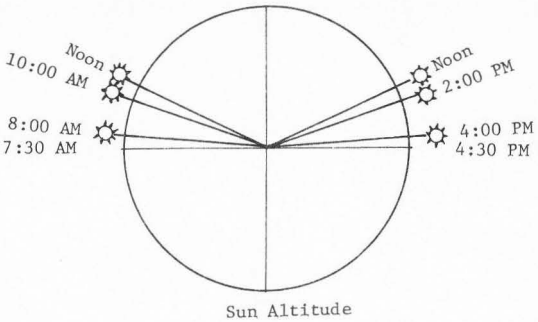
Figure 23. Sun azimuth and altitude in summer.

Winter

AM - PM	Azimuth	Altitude
Noon	180° - 0'	26° - 30'
10:00-2:00	150° - 30'	20° - 30'
8:00-4:00	127° - 0'	5° - 30'
7:30-4:30	121° - 0'	0° - 0'

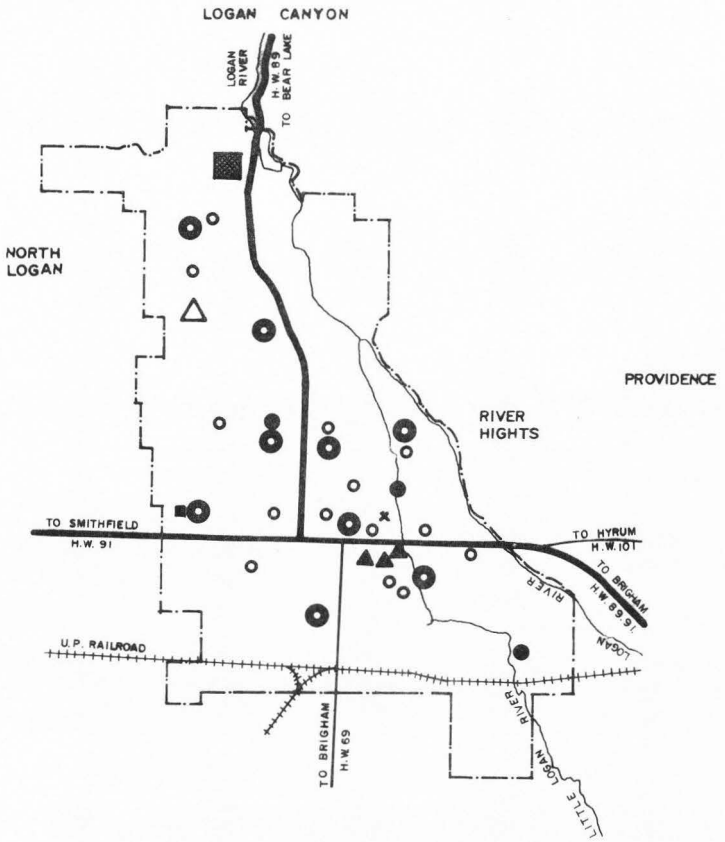


Sun Azimuth

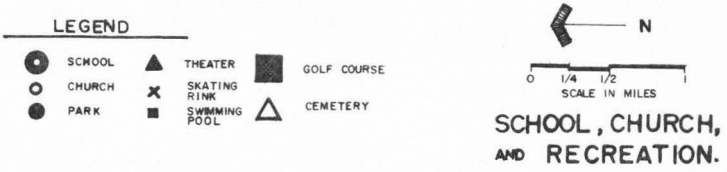


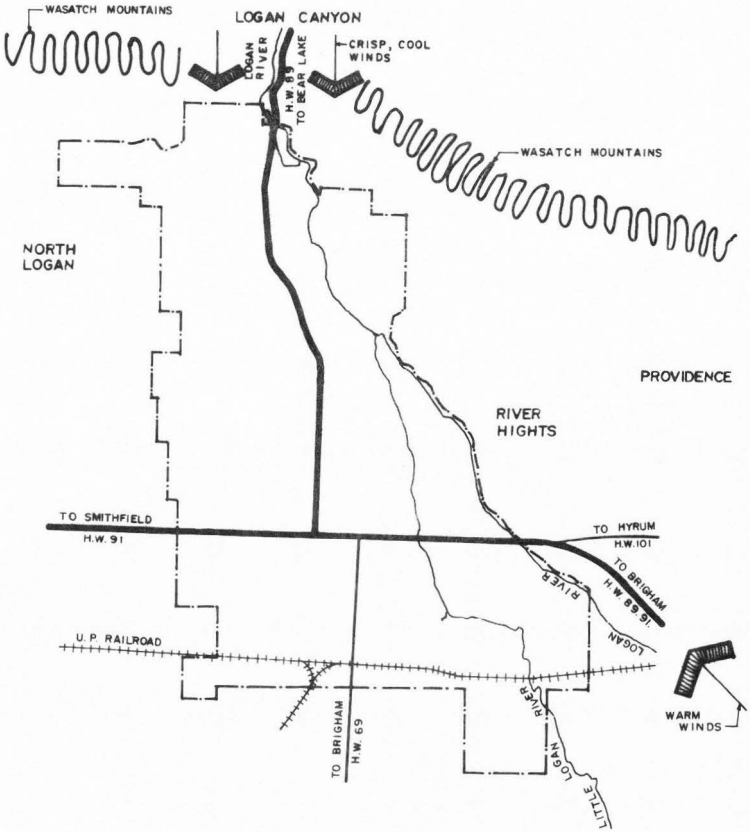
Sun Altitude

Figure 24. Sun azimuth and altitude in winter.



Map 10. School, church, and recreation.





Map 11. Climate.

Logan City has the largest work force of Cache County, especially in the nonagricultural jobs. About 70 percent of the work labors are at Logan City, and about 72 percent of the work force is males.

Table 11. Employment trends in Cache County 1960-1969.

Year	Total labor force	Unemployment number	rate	Total employment	Agri. employ.	Nonagri. employ.
1960	11,565	558	4.9%	11,007	1,956	7,730
1961	12,010	660	5.5%	11,350	1,850	8,130
1962	12,220	520	4.3%	11,710	1,890	8,463
1963	12,520	630	5.0%	11,890	1,730	8,824
1964	13,090	920	7.0%	12,160	1,670	8,934
1965	13,320	830	6.2%	12,480	1,440	9,508
1966	13,580	600	4.4%	12,960	1,310	10,166
1967	13,610	630	4.6%	12,980	1,270	10,223
1968	13,830	720	5.1%	13,110	1,150	10,625
1969	13,830	770	5.5%	13,500	1,200	11,349
1970	15,465	862	6.0%	14,540	1,260	13,280

A study of four selected employment categories--government, trade, manufacturing, and construction in Cache County between the years of 1960-1969 showed that: (1) government employment increased from 2,922 to 4,902 (67.7 percent); (2) trade employment rose from 1,782 to 2,259 (26.7 percent); (3) manufacturing employment increased from 1,107 to 1,774 (60 percent); and (4) construction employment increased from 450 to 640 (42.2 percent).

In the 5-year period from 1965 to 1970, the numbers of professional workers needed by employers show the largest rate of growth (331), and the clerical workers show the second largest rate (260. Managerial workers showed the smallest growth rate for the 5-year period (29). Workers with sales occupations showed the next lowest growth rate (75).

Table 12. Percentage employed in various occupations*

Occupation	1965 Number	1965 Rate	1970 Number	1970 Rate
Professional, technical	1,421	15.0%	1,752	16.0%
Semiprofessional	682	7.2%	817	7.4%
Managerial	401	4.2%	430	3.9%
Clerical	1,710	18.1%	1,970	18.0%
Sales	571	6.0%	646	5.9%
Service	1,425	15.1%	1,660	15.2%
Skilled	1,308	13.8%	1,510	13.8%
Semiskilled	769	8.1%	865	7.9%
Unskilled, others	1,179	12.5%	1,306	11.9%

*This data provided by Logan Employment Security.

Large percentages of Logan families were in the $7,000 to $9,999 income range in 1959. In 1960, 46 percent of the people showed an income of $10,000 and over.

Table 13. Percentages of families in various income categories.*

Family income (dollars)	1959	1969
Under 1,000	3.6%	3.0%
1,000 - 1,999	7.5%	4.7%
2,000 - 2,999	10.2%	7.1%
3,000 - 3,999	13.0%	9.0%
4,000 - 4,999	12.5%	7.8%
5,000 - 5,999	13.5%	6.8%
6,000 - 6,999	10.7%	7.6%
7,000 - 9,999	18.0%	9.0%
10,000 and over	11.0%	46.0%

*1960 and 1970 census of population by the Bureau of the Census.

CHAPTER VI

AN IDENTIFICATION OF EXISTING UNDESIRABLE FEATURES OF THE LOGAN CENTRAL BUSINESS DISTRICT

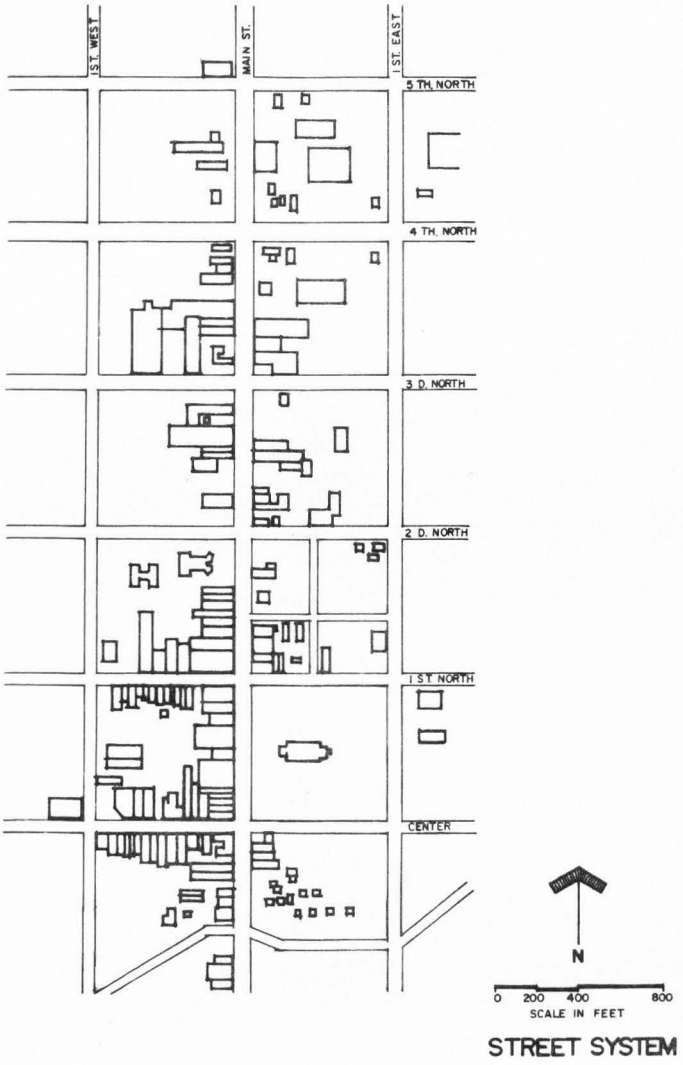
Street System

The major problems of the street system in the Logan central business district are:

1. Main Street is dominated by automobile traffic channeled through the central business district.
2. All the streets in the business district have to serve all functions of vehicle and pedestrian traffic.
3. Buildings in the central business district face toward the automobile arteries.
4. The business district forms a long north-south strip causing extensive walking for pedestrians.
5. There are too many intersections in the area which cause traffic congestion and delays.

Traffic

Main Street is the major automobile and truck traffic route. All traffic from the south enters Logan on Main Street and either leaves town by Highway 91 to the north and Fourth North (Highway 89) to the east, or stays in town. Traffic from the north enters on Main Street, and either exits by Highway 91 to the south and Fourth North (Highway 89) to the east, or stays in town. Traffic from the east on Highway 89



Map 12. Street system.

enters on Fourth North and is funneled onto Main Street where it can exit south or north on Highway 91 or stay in town.

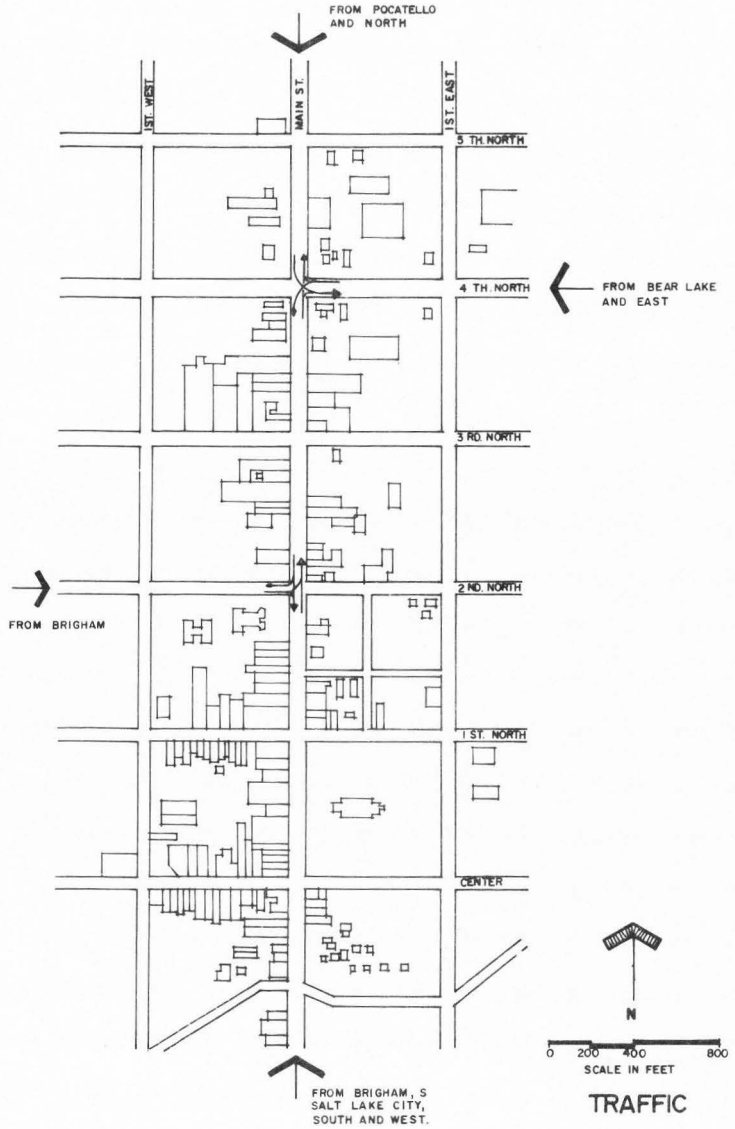
Statistics obtained from the Utah State Department of Highways, indicates that approximately one-half of all passenger cars and slightly less than one-half of all trucks are entering, passing through, and leaving the Main Street of Logan.

Pedestrian traffic is congested in the downtown Main Street area. The major problems in the Logan central business district are as follows:

1. Vehicle traffic on Main Street is overcrowded and congested.
2. The functions of pedestrian and vehicle traffic are not controlled evenly in the central business district.
3. Main Street functions as a distribution, and as a by-pass road.
4. Pedestrians are exposed to dangerous automobile traffic. There are also many inconveniences for pedestrians desiring to shop both sides of Main Street.
5. Pedestrian and automobile traffis is intermingled.

Parking

Parallel parking is required along both sides of Main Street while 60 degree angle parking is allowed along Center and First North. The parking of cars along the street curbs has long been recognized as a principal cause of traffic congestion. Vehicles entering and leaving the traffic pattern from parking spaces along the curb, coupled with the slow movement of vehicles seeking parking space cause the problems.



Map 13. Traffic.

Figure 25. Main Street traffic facing north.

Figure 26. Main Street traffic facing south.

Off street parking space has been provided by most large department stores and supermarkets and some of the smaller commercial shops. However, the parking space standards recommended by Fredrick Gibber in his book Town Design: "Twenty parking spaces are required for every 100 feet of Main shopping frontage" has been adapted as a standard. Todays actual parking requirements are far in excess of this antiquated standard. Thus, the off-street parking provided is already proving inadequate.

Land Use

Land surface in the Logan central business district is covered with administrative, public, cultural, business, residential, recreation, and church buildings as well as warehouses, streets, and hard surfaced parking areas.

The problems of land use in the Logan central business district are:

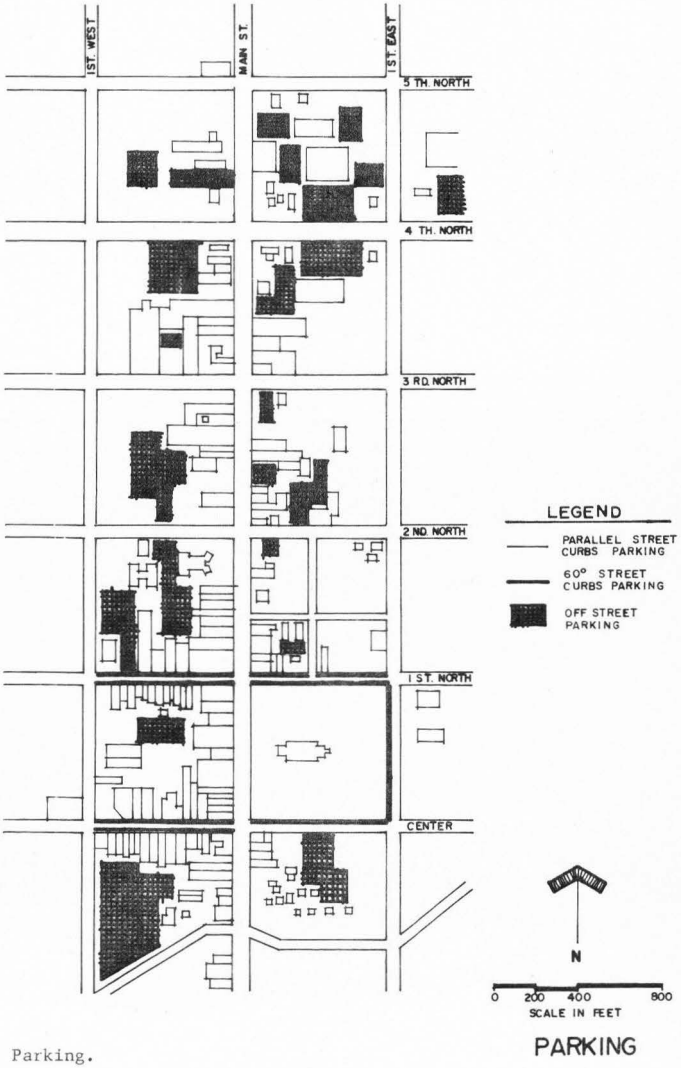
1. Each function of land use is mixed and overlapped because they are without proper controls and planning.

2. The central business district area is dominated by the business buildings.

3. Major traffic arteries pass through the central business district and dominate the area.

4. The administrative area is scattered out too much and it is hard to identify.

5. Residential buildings are located within the central business district.



Map 14. Parking.

Figure 27. Parallel street parking.

Figure 28. Off street parking.

6. Many spaces at the rear of the buildings are used to store junk, used as garbage disposal areas, or used for general working areas. These practices certainly detract from the appearance of the central business district.

7. Lack of open space for people to use for casual meeting and gathering.

8. Size and architecture of buildings are not controlled.

9. Many dilapidated buildings still stand in the central business district.

10. Warehouse buildings stand in the middle of the central business district.

Street Appearance

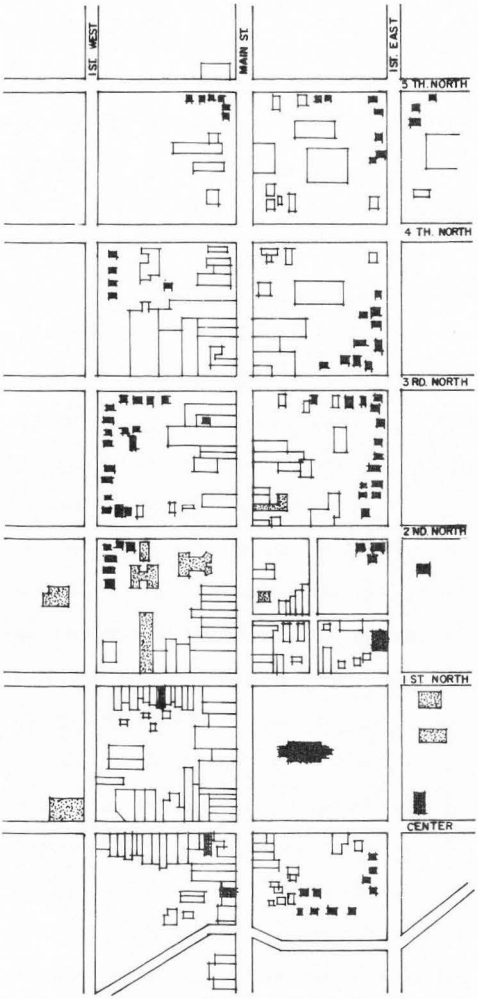
The general appearance of Main Street in Logan is anything but attractive:

1. Many buildings are dilapidated and many back yard parking areas are dirty, cluttered, and ill kept.

2. Both sides of Main Street lack attractive plantings of trees, flowers, or shrubs.

3. A number of garish signs, both printed and neon, are distracting and offer excellent examples of visual pollution.

4. Some of the street fixtures such as drinking fountains, fire hydrants, trash can receptacles are out of date, are in the wrong location, or are not functioning correctly.



LEGEND

- PUBLIC BUILDING
- CHURCH
- RESIDENTIAL BLDG.
- RECREATION BLDG.
- COMMERCIAL BLDG.

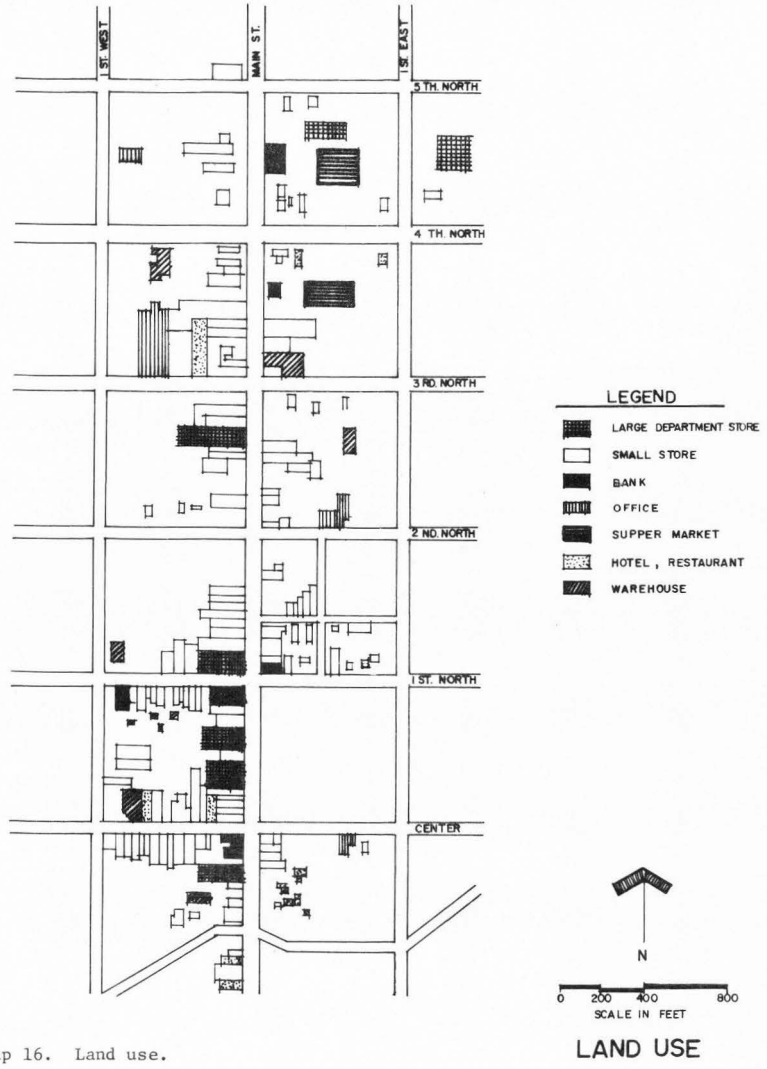
N

0 200 400 800

SCALE IN FEET

LAND USE

Map 15. Land use.



Map 16. Land use.

Figure 29. Residential building in the central business district.

Figure 30. Warehouse building in the central business district.

Figure 31. Shabby appearance of building

Figure 32. Buildings, signs, lightposts, electric wires, etc., display a jumbled or confused appearance.

Figure 33. Backyard parking.

Figure 34. Backyard parking and storage.

CHAPTER VII

EXAMPLES OF CENTRAL BUSINESS DISTRICT RENEWAL

The problems in central business districts have been recognized and felt by people throughout the United States. City center renewal has become necessary for many cities where these problems have reached critical proportions. Many cities have successfully renewed their city centers, such as Central Plaza, Canton, Ohio; Nicollet Mall, Minneapolis, Minnesota; Knoxville, Tennessee; downtown Sacramento, California, etc.

Logan city center has not reached the critical point, by any means, but the continuous expansion of the city and city center will cause real problems in the not-to-distant future. The need for renewal is evident, and it certainly will be less expensive to care for these problems within the next few years than to put them off indefinitely. Utilizing the experience gained by those cities that have renewed their centers, Logan could benefit aesthetically, socially, and economically.

Following are some examples of city center renewal, pinpointing the changes and the methodology.

Central Plaza in Canton, Ohio is one of the earlier examples of private investment renewal in a public right-of-way. This project marked the rebirth of the old public square in the heart of downtown, and is an example of how a simple concept, carefully matched to a

Figure 35. Central Plaza, Canton, Ohio.

limited budget, can change the face of an automobile dominated business district. Featured were two small buildings (art display/information center and snack shop), and an outdoor cafe-type plaza convertible to an ice skating rink; a water fountain, a display plaza.

Traffic in this area has been reduced to one lane on each side, with some of the side street parking still available. Trees were planted to beautify this area.

Downtown Sacramento, capital city of California, is another excellent example.

Figure 36. Downtown Sacramento, California.

Main street in the downtown area, was a major traffic route. The most outstanding changes that were instituted are:

1. Main Street was blocked to automobile traffic and used for pedestrians only.

2. Mini-buses are used in the central business district to carry shopping passengers.

3. Sculptures, fountains, shelters, display booths, an information center, etc. were built in the open space that originally was the automobile traffic right-of-way.

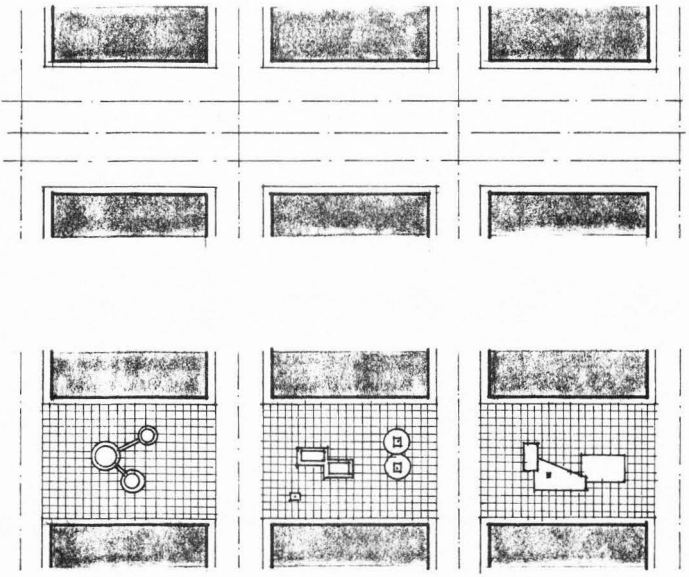


Figure 37. The change of street system in downtown Sacramento, California.

This urban design plan was prepared for the development of the city central area in Birmingham, Michigan. The areas of refinement include entrance corridors, streetscope, business and public signs, lighting, parking, and preservation of open space.

Figure 38. Urban design plan in Birmingham, Michigan.

Automobile traffic route was blocked at the outskirts of the central business district and streets were changed into parking lots, and many trees were planted within the area.

Planned in accordance with a thoroughfare and parking study, the initial phase of a potential pedestrian mall was implemented in Ann Arbor, Michigan. Known as the Promenade, this city center modification permits vehicular traffic, and some onstreet parking. This enhances the dimension and character of pedestrian environment on the city's

main shopping street. The removal of parking at the end of blocks allowed the introduction of trees and benches. Special paving and other street facilities were used to create a pedestrian scale and achieve a unified streetscape in an area of varied building facades. Funding for the project was accomplished by a combination of city funds, the creation of a special assessment district, and earnings from the Elizabeth Dean fund, willed to the city for the conservation of its landscape character.

Figure 39. Street in Ann Arbor Promenade.

In Minneapolis, Minnesota, Nicollet Mall involved the renewal of an eight-block area, extending southward from the Gateway Center, along the previously heavily travelled Nicollet Avenue.

The major changes and methods used were:

1. The reduction of the transitway to a 24 feet width, and expansion of pedestrian areas to three to four times their previous size.

2. The insta-lation of 4-inch high curbs to line the transitway. These provide demarcation lines between pedestrian and bus areas.

3. Specially designed lights, bollards, walls, planters, trash receptacles, bus shelters, flower containers, pedestrian signals and pavings were all created to be unique to the street.

4. Special features: i.e., a special fountain, or a unique clock were used to create more detailed identity within the development.

5. Trees were used to define areas and break up vistas. They were selected to provide strong contrast in form, color, and texture as well as seasonal variety.

6. By using highly refined materials such as granite, bronze and cast iron, an elegant urban street was created as opposed to one of a more informal, suburban character.

7. Full renewal work cost $3,875,000. The downtown council, via bonds raised $2.7 million that will be repaid by periodic assessments to the store owners. Federal beautification funds provided $485,000 and $385,000 came from a federal transportation grant.

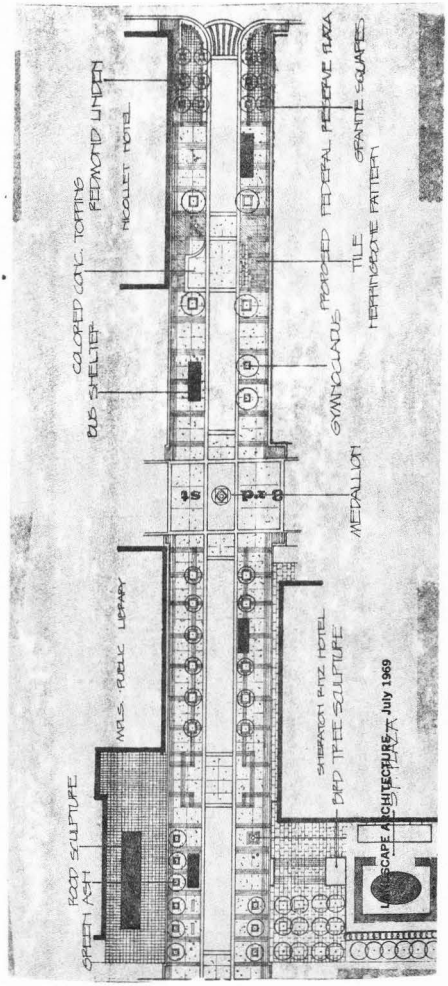


Figure 40. Renewal of Nicollet Mall, Mineapolis, Minnesota.

CHAPTER VIII

RECOMMENDATIONS FOR THE LOGAN CENTRAL BUSINESS DISTRICT

The ideas and methodologies mentioned in Chapter VII and the concepts, plus the ideas, which were discussed in Chapter III, are here combined to form recommendations for improving the Logan central business district. The following recommendations offered under the headings of street system, traffic, parking, land use, and appearance.

Street System

Since one of the major problems in the central business district is the main traffic routes through the area, one alternative would be to exclude all streets in the business district.

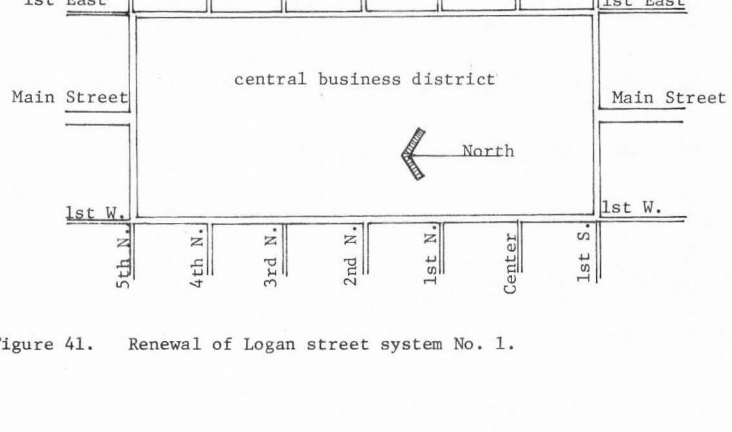


Figure 41. Renewal of Logan street system No. 1.

This could be accomplished by blocking both ends of Main Street, Center, First, Second, Third and Fourth North streets. The resultant area gained could be changed to open spaces or arranged for public uses.

A new loop or ring around the outskirts of Logan should be considered. The central business district renewal at Birmingham and Michigan were much improved by this method.

Another alternative would be to reduce the automobile traffic lanes, and expand the size of pedestrian walking space.

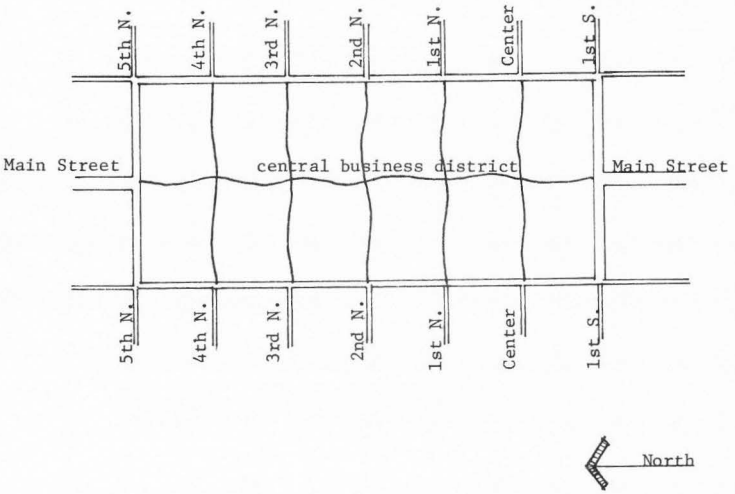


Figure 42. Renewal of Logan street system No. 2.

The automobile traffic lane between First South, Fifth North, and between First East and First West streets could be reduced to two lanes for a total width of 28 feet.

The pedestrian paving could then be expanded from 10 to 35 feet on each side of Main Street, and 20 feet on each side of Center, First North, Second North, Third North and Fourth North street. This plan would allow the progressive width and curved form of the street in the central business district to be designed. Construction of a new freeway or loop route would then be manditory.

The central business district renewal at Ann Arbor City and Nicollet Mall, Minneapolis, are good examples of this kind of improvement.

Traffic

An ideal method for good traffic control would be to separate all the traffic type functions--pedestrian, automobile and service--from each other. The major change of traffic in the central business district would naturally follow the change of street systems.

If the first alternative for changing the business district street system were adopted, traffic would flow according to the diagram below. All the local shopping traffic would use First East or First West. Four traffic lanes would be adequate for this purpose. Advanced street lighting, traffic signals, safety islands, signs and markings of all kinds would need to be installed.

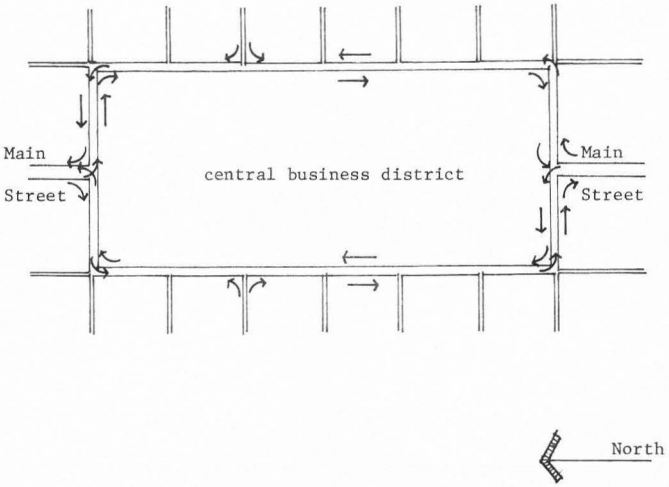


Figure 43. Renewal of Logan traffic system No. 1.

Only pedestrian and minibus traffic would be permitted in the central business district. The minibus could be used to carry shoppers around in the business area.

All through traffic would move around the outskirts of Logan if the suggested freeway or loop route were built.

If the second alternative for changing the street system were adopted, vehicle traffic would be allowed in the central business district, but speed would be greatly minimized. Pedestrians would have the priority in the street. Distances from parking to shopping or business destinations for pedestrians could be kept well within the 300-yard comfort limit. More area for pedestrian traffic would

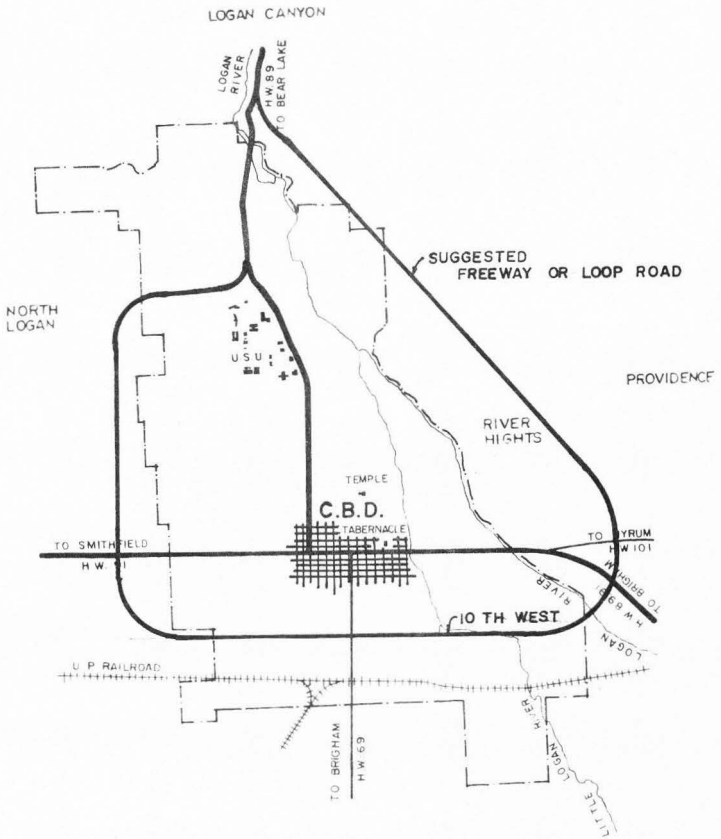


Figure 44. Suggested new freeway or loop road for Logan City.

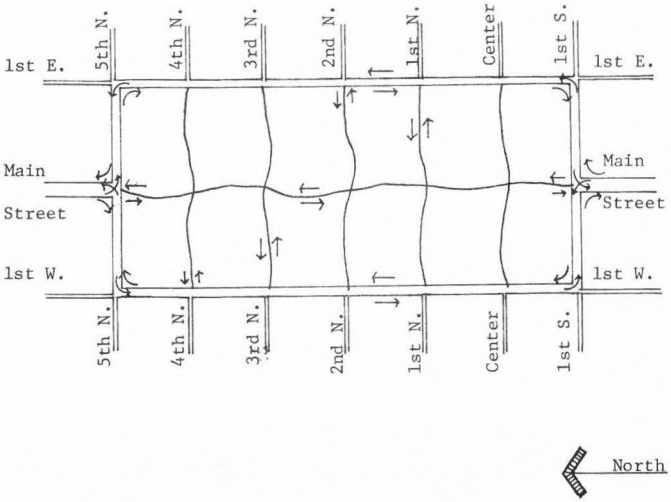


Figure 45. Renewal of Logan traffic system No. 2.

vastly increase the safety margin and enjoyment of the shopping experience. All through traffic would use the suggested new freeway or loop route.

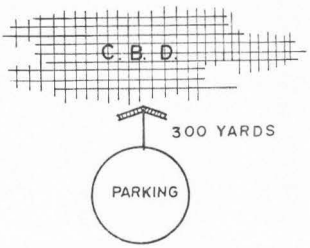


Figure 46. The relationship between parking and central business district.

Parking

As discussed in a previous chapter, parking spaces in the Logan central business district are inadequate. Because more parking spaces will be needed in the near future, several possibilities exist for improving the situation. One would be to improve, enlarge, or construct parking lots in the back of all shops, large department stores, offices, and public buildings. The owner of buildings should provide sufficient parking spaces, and the cost of the construction should be the owner's expense.

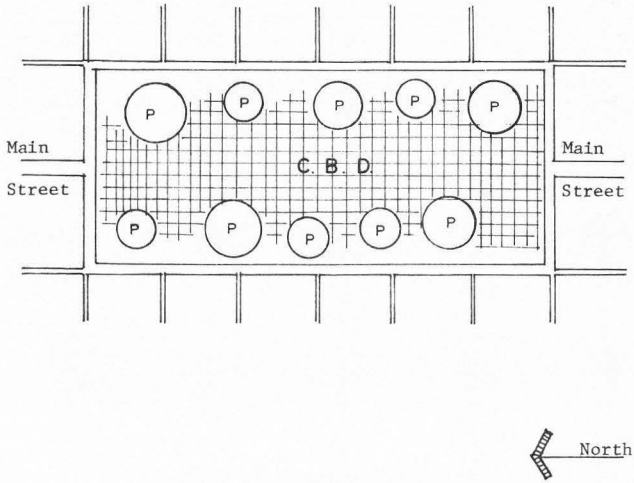
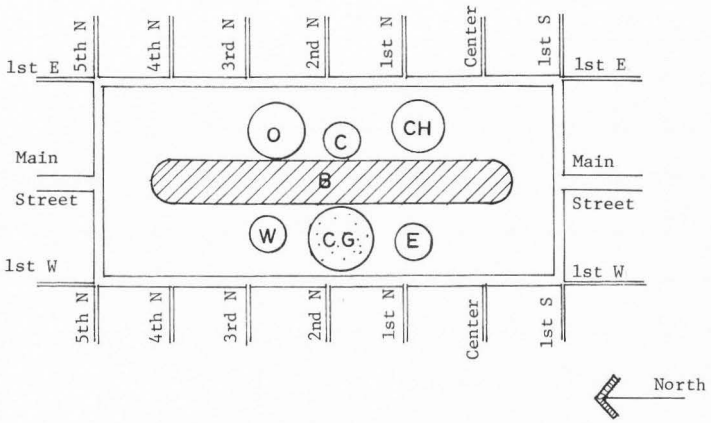


Figure 47. Ideas of parking lots in central business district.

Parking lots could be formed as part of a building's construction. If the owners of buildings do not have sufficient parking spaces for their customers, multi-story or underground parking could be provided. Were parking lots well landscaped and designed, aesthetic benefits would gain economically.

Land Use

Under alternative one, land within the Logan business district could be better utilized by adapting the design below. Several advantages would be gained.



B - Business
C - Cultural buildings
CG - Central government
CH - Church
E - Entertainment
O - Office
W - Wholesale warehouse

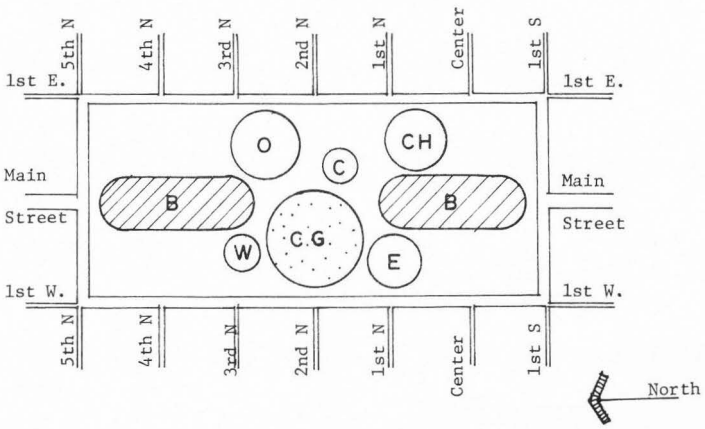
Note: The circles are showing the location and size of each land use.

Figure 48. Renewal of Logan land use system No. 1.

The existing chamber building, court house, county jail and city department offices could be kept. New buildings and new land development would still be necessary to develop a large central government area. With this design, office buildings would be close to the business area, entertainment facilities would be close to business and central government areas, and cultural area also could be located close to the business area. Warehouses and storage areas should be located to the rear of business and office buildings.

Under this set up, certain disadvantages also would exist. The business area could eventually dominate the whole central core. The central government and office areas are separated by the business area, which would tend to interfere with the space-mass relationship, and the relationship between central government and the cultural area would be separated by the business area.

Another design for Logan's central core would resemble Figure 49. With this arrangement, the existing chamber building, court house, county jail and city department office, could be utilized. The central government would be enlarged and business buildings would be separated into two distinct areas. The central government area should become the central core. Offices, cultural facilities, and entertainment facilities would be clustered around the central government area and between business areas. Spatial design would be improved and the relationship of one area to another should prove to be beneficial.



B - Business
C - Cultural buildings
CG - Central government
CH - Church
E - Entertainment
O - Office
W - Wholesale warehouse

Note: The circles are showing the location and size of each land use.

Figure 49. Renewal of Logan land use system No. 2.

Private investment may be utilized in the open area for small buildings such as cafes, outdoor display areas, information centers, etc.

Some disadvantages would remain, however. The cost of eliminating present business buildings will be large, and the projected two-sectioned business area may not be adequate. Large and multistory department stores will be needed, which are expensive to construct. All the buildings in the central business district should be designed to look inward toward the center open area, this again at additional expense. Residential buildings, or any conflicting unsuitable

building would have to be moved out of the area and all proposed new building and sites should be designed according to F.S.I. system. Last but not least, strip business development, beyond the central core would have to be prohibited to protect the city center.

Appearance

Some suggestions designed to improve the appearance of the Logan central business district are:

1. The design of spaces should be thought of in terms of people in motion.

2. Lights, fountains, post boxes, sculpture, planters, walls, trees, water, sun, and shade should be considered in the designed or the open space area.

3. The composition of buildings in the central business district needs special consideration.

4. All of the dilapidated or run-down building structures need to be remodeled or reconstructed.

5. Considering the cold winters and hot summers, proper facilities should be provided for people walking or sitting during extremes of temperature.

6. The special requirements of clearing snow in the winter season need consideration. Steps and small sharp corners should be avoided.

7. Air movement through and within the central core must be charted and manipulated. Trees can be planted and barriers built to act as wind breaks or to channel air flow. The crisp, cool winds

usually come from the east, down Logan canyon in the monring, and warm winds come from the southwest via Sardine Canyon in the afternoon. Vertical and horizontal building masses also can effectively modify wind problems. Designing buildings and tree plantings to take advantage of winter sun, morning sun or evening sun should also be considered.

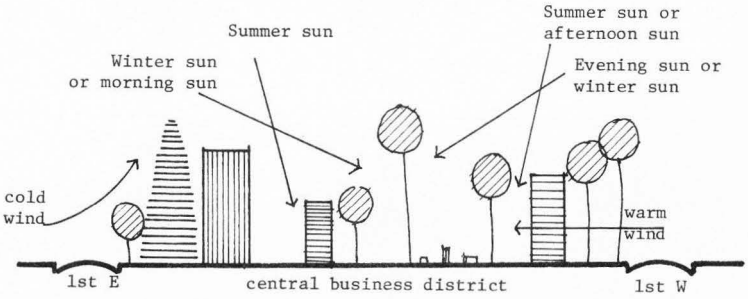


Figure 50. The consideration of winds, sun, trees for design in central business district of Logan.

CHAPTER IX

CONCLUSION

Before the nineteenth century the cities in the United States were static, with horse drawn vehicles moving through the streets. After the Industrial Revolution the cities changed entirely. Many people moved into the cities for employement. The streets of the city center began to be congested by automobiles, trucks, and people. New skyscrapers were built, which crowded the city center, causing many problems for traffic and parking during the rush hours. The cities began to experience many problems that definitely detracted from their inhabitants living and enjoyment. The problems existing in the central business districts of most American cities today can be summarized as follows:

1. The daytime populations of central business districts are too great.

2. Streets serve all kinds of traffic functions. Main street, where the central business district is usually located, is usually the major route of automobile traffic, including local and through traffic.

3. The central business district has too many automobile traffic lanes, and too many intersections.

4. Parking space and other facilities in the central business district are severely lacking.

5. Buildings in the central business district face the traffic arteries from both sides of the streets.

6. Land use is mixed, and too many unsuitable buildings are standing in central business districts.

7. Open spaces, gardens, fresh air and sunlight, and shady places to gather and visit, are either lacking or very limited.

8. Landscaping is poor, street fixtures are outdated, many buildings are old-fashioned and/or delapidated and advertising lights are too bold, blatant and garish in the central business district.

9. Air pollutions by smoke and noise are at extreme levels.

Most central business districts have these problems because they have not kept pace with the advances in city planning since the Industrial Revolutions. The up-to-date concepts and ideas for central business districts are summarized as follows:

1. Streets should be designed to serve specialized functions.

2. All the streets and automobile traffic should be excluded or minimized in center cores.

3. The ring or loop road at the edge of the central business district should be used as a distribution road. Freeway or loop roads at the outskirts of the city should be built for the use of by-pass or through traffic.

4. Adequate parking should be provided near each building for customers and clients. Ideally, the parking spaces should be formed as part of the central business district building structures.

5. The multi-story or underground car parking should be built if land surface is not available.

6. Buildings in the central business district should be built to fact inward toward the open spaces. The buildings should be developed as a broad composition, and be controlled by the F.S.I. system.

7. Land use functions should not be mixed or overlapped unless there are proper controls and plans to protect the primary character of each area.

8. Daily meeting places for public gatherings should be provided.

9. The central business district area should have sufficient open spaces for public use.

10. The appearance of the central business district should be designed with all the beauty and imagination of human creativity.

Logan City is a major business center for Cache Valley and northeastern Utah. The employment opportunities are excellent (5 percent annual increase), the populations income is high (46 percent of the families had an income of $10,000 or more in 1970). The population increase per annum is about 2 percent. Logan has an excellent potential of developing and expanding the central business district.

The Logan central business district has problems in common with other American city centers (see Chapter II). Two major problems in the Logan central business district are the automobile dominated main street, and the lack of a master plan for controlling the growth of the business district. In the Logan central business district, traffic is congested, parking is insufficient, land is misused, and the general appearance of the area is poor.

The need for renewal of the Logan central business district is evident. Many of the problems mentioned in Chapter VI already exist

in Logan. Since Logan is the major business center for Cache Valley, it is in a dominant position for serving as an example of central core renewal for other cities.

Comments for the renewal of the Logan central business district are summarized as follows:

1. Street system. The first choice for renewing the Logan central business district should be the exclusion of the streets entirely. This would give the people of Logan the best opportunity to enjoy their central business district. They could walk and shop freely without the fear of automobiles, and they would have the opportunity to enjoy the open, plaza like effect that such an arrangement would provide. Such total commitment to change would be expensive however.

A second choice for changing the central core would be to reduce automobile traffic by narrowing the present four-land traffic to two lanes and then pave and expand the size of pedestrian walking areas to utilize the newly acquired space. The cost of this renewal would be less expensive, the central business district would remain essentially unchanged as far as buildings and parking are concerned. If the funds in the budget are available, the first possibility of renewing the street system should be emphasized.

2. Traffic. The first priority for improvement and development should be First East, First West, First South and Fifth North streets, by forming a distribution road system around the central business district. A minimum of four traffic lanes and new street lighting, traffic signals, safety islands, and signs should be developed.

To further modernize Logan traffic, a new by-pass freeway, or loop route around the outskirts of the city should be constructed as soon as possible.

3. Parking. Adequate parking spaces in the back of shops, large departments, offices and public buildings is well within the realm of possibility. These parking lots as well as those already in existence should be landscaped and designed for ease of entrance and exit.

4. Land use. The first choice of reorganizing land use for the Logan central business district should be alternative No. 2, proposed in Chapter VIII. The central government area should have the dominant position. The relationship between the central government, business, cultural buildings, offices, and the entertainment zone should then be very close. Again, however, the major disadvantage for this alternative would be the immediate expense. More buildings would have to be constructed and more land would have to be purchased. Alternative No. 1, also discussed in Chapter VIII would cost less. If the budget funds are available, alternative No. 1 should be used. However, open spaces should still be provided.

5. Appearance. The Logan central business district should be well designed and landscaped to achieve the most aesthetic qualities for people to enjoy and see. Priority should be given to the planting of trees, the use of planters for flowers and shrubs, repair and replacement of the old fashion street fixtures, and the upkeep and modernization of store fronts.

Some of the local Logan people want to develop a shopping center in or near the Logan City boundary. By studying the history of

American cities in Chapter I, one can see that Logan City may well expand its city boundaries to include a shoppwng center as an expedient move. As a result, Logan will crease in size and the central business district will be disrupted. The renewal of the Logan central business district would prevent this happening.

Considering the present economic situation, the renewal for the Logan central business district could still be kept to a minimum, and acceptable results can be achieved. The Central Plaza in Canton, Ohio is a good example of what can be accomplished on a limited budget. There, an automobile-dominated street was changed entirely. Such an option is open to Logan.

In any renewal project the financial cost for construction will be large, and time for completion will be long. One way to accomplish a project of this nature is to divide the total project into several phases and set a time limit for each phase. For example, allow each phase one year and assign phase I for developing the street system; phase II, enlarge parking areas; phase III, tear down or clean up the unsuitable buildings in the central business district; phase IV, develop a central government area, and phase V, complete miscellaneous problems that might still exist. By following this schedule for each phase, progress would be rapid and extensive. A good example of such renewal is Nicollet Mall, in Minneapolis which was a five-phase program, and it was completed in six years.

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