A Study of the Street Plan of Logan, Utah

Paul Walter Gottschalk

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A STUDY OF THE STREET PLAN OF LOGAN, UTAH

by

Paul Walter Gottschalk

A thesis submitted in partial fulfillment of the requirements for

the degree of

Master of Science

in

Civil Engineering

1949

Utah State Agricultural College

Logan, Utah
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INTRODUCTION

It is the purpose of this thesis to make a study of the street plan for the City of Logan, Utah, to attempt to analyze its desirable and undesirable features as they affect the community, and to prepare a solution to eliminate, insofar as possible, the undesirable features and preserving the desirable.

In the formulation of any proposed street plan, it must be remembered that no plan may be taken as absolute. For any problem that is encountered, there are always several possible solutions. The most elaborate solution would be to proceed, irrespective of existing streets and structures, to redesign a major portion of the street system. The cost of such a solution would probably prohibit its use. On the other hand, the simplest remedy, which amounts to practically no solution at all, would require a minimum of planning and expense, and could consist merely of the erection of stop signs and barricades at points of congestion and danger. It is obvious that the practical answer lies somewhere between these two extremes, principally for economic reasons, and that answer is seen differently by different planners. Owing to the arbitrary nature of any proposed solution, therefore, it must be accepted as inevitable that no plan will completely satisfy the many persons involved in the changes it proposes.

The field of city planning is one which has been of deep interest to many professions. The engineer and architect have been chiefly concerned with the physical aspects and locations of buildings, parks, streets, and utilities. The sociologist has investigated the effect of the city plan upon the people. Similarly, the lawyer,
ecologist, and others, have all read into the plan some particular application of their own specialty. In addition, research and study exert a never ending influence upon the ever changing element which we call "good practice" or "the modern thought" in each of these professions. Obviously, anyone attempting a plan cannot be a specialist in all these related fields. A planner can, however, develop an appreciation of the work and contributions of each to the field of city planning. With such an appreciation, he will recognize the problem which requires consultation with one or more of these specialists. Furthermore, principles being evolved in city planning are rapidly assimilating the contributions of the various fields concerned, and as these principles are definitely set down, the planner will have an increasingly less difficult task in drawing up a satisfactory plan.

In the case of this proposed street plan, the design has been evolved with an attempt to incorporate the principles which currently represent "good practice". The street system, as it now exists, has been utilized to as great an extent as possible without reducing the effectiveness of the proposed plan. A greater proportion of new street system could have been introduced, perhaps with an increasing functionality of plan; conversely, a smaller proportion could have been introduced, but a decreased effectiveness would have resulted. The plan is believed to embody a reasonable relationship between the amount of new road system involved and the results obtained. It is with this thought in mind that it is presented. In other words, this plan is submitted as being neither the best nor in any way absolute, but rather as being a workable plan which the author believes to be functional.
THE EXISTING LOGAN STREET SYSTEM

In general, the streets of Logan have been laid out on the grid-iron principle. One set of streets run North and South and another run East and West. These two sets intersect at right angles and form square blocks. The street widths are very ample, and are more generous than the average widths in other American cities. However, in the original plan, no provision was made for the great difference in demands on business streets and the needs of those which are to serve solely for residential purposes. With the exception of Main Street, no distinction has been made between business and residential street widths. Thus, one street in Logan is very much like any other, except that those which are intended to be main thoroughfares are generally more adequately paved and maintained than those intended for residential use only. Even this distinction, which is far from adequate, has not been practiced sufficiently to make it effective, and experience has shown that the so-called/residential streets are subject to very heavy traffic usage. This is to be expected since their straightness and excessive widths are encouraging to through traffic. Practically every street in Logan is potentially, if not actually, subject to traffic which would otherwise travel on the arterial streets provided for such traffic. To better picture the situation, it should be noted that 100 feet of right-of-way, which is quite common in Logan, is equivalent to the land required for an eight lane highway with six foot shoulders. These disadvantages can be overcome without too much difficulty since it is usually easier to reduce the street right-of-way when it is too wide than it is to acquire additional width when it is too narrow. Furthermore, in discarding present excess right-of-way, new areas will be available which may be used for building or park space.
The Family and the Neighborhood and Their Relation to the Town Plan.

The family is the basic unit of society. It has maintained this position through the varying ages of our present civilization and remains such today. Since the position of the family has been such an important and permanent one, it follows that it should be specially considered wherever the plans of men are being evolved. The consideration of the family unit is especially important in the field of city planning, for the houses, streets, parks, factories, and places of business are built for and used by members of families. In other words, it is the family upon which any civilization or society depends. Should not the wants and problems of the family, then, be the wants and problems of the planner, whose plan, whether or not he realizes it, ultimately depends for success upon this basic unit? The answer is that no plan can be really successful if it ignores the needs and desires of the people for whom it is made. It is well to outline some of the basic needs and desires of the average family living in a community, where they work, go shopping, raise children, find entertainment, and develop their friendships. All of these activities are affected by the type of city in which the family lives, and, in turn, the degree to which these activities are successfully and conveniently accomplished has a direct bearing upon the physical and mental well-being of that family. Each will therefore be considered.

It is usually the man who is the head of the family, and as such, he must provide for them. It is he, therefore, who goes to work so that he may provide for them. In going to and from work, it is
reasonable to expect that a man wishes to do so without a disproportionate loss of time. If he takes a bus, or other form of public conveyance he does not want to walk too far to catch it, and once on it, he wishes to be transported to his destination in the shortest possible time. If he drives his own car to work, he wants to be able to drive without excessive interruption to his place of business and to be able to park within a reasonable distance of it and not have to search for a parking place. He desires to commute on an adequate street system, free from excessive congestion, and park in an off-street parking lot close to where he works. The same requirements, roughly, are desired when shopping, that is, he wishes to lose a minimum of time driving to and from the shopping center and finding a parking place.

The care and well-being of their children have always been of primary importance to parents. Such items as keeping them off the streets, getting them safely to and from school, and finding them a suitable place to play have perplexed urban mothers for generations. These items are specific problems which must be solved. Parents want to raise their children in a neighborhood which is free from heavy traffic; they want their children to be able to go to school without crossing arterial streets; they desire small play lots for their smaller children to play in and larger play fields and park areas where their older children can play their various games, without being forced into traffic laden streets. Parents who know that their children are comparatively safe, both at school and at play, have indeed been relieved of great burden. To summarize the desired safety features which would satisfy parents, we find that children should be raised in a neighborhood which has adequate play facilities, and whose streets are free
from any heavy traffic. The fulfillment of these parental desires for the safety of their children is perhaps the greatest service a planner can perform for a community.

Entertainment and recreation are occupying a position of increasing importance in the lives of Americans today. The shorter work week, combined with the myriad of modern conveniences which make work at the factory and at home much easier than it was previously, has allowed the average family to devote more time to seeking entertainment and recreation than ever before. Therefore, the city must undergo certain changes to keep up with this trend. There should be some sort of area near the home where the family can relax or stroll in pleasant surroundings. However, a park in the city will probably never replace the Sunday drive to the country or lake, and so here again we find the need for an adequate street system leading from home to the highway. This street system will also provide a route to the theatre, church, club and other terminal points in the city and must therefore meet the demands of traffic placed upon it.

The development of friendships plays an important part in family life. It is reasonable to expect that the majority of the family's friends and acquaintances will be neighbors. The type of neighborhood in which the family lives will affect this relationship between neighbors. There should be some unifying factor involved which will give the people in a given area some common tie, whether it be religious, business, or merely social. Since the first two of these ties are more difficult to attain than the latter, except in certain
in cities, it is usually the social relationship which must form the
neighborhood. A feeling of social unity may be brought about if the
people feel that they have, or are working for, something in common.

To bring about the simultaneous solution of these several
problems, a fairly new principle of city planning has been developed.
This principle is use of the neighborhood as the basic planning unit.
By this principle, a city is divided into a number of neighborhood units,
each being substantially self-sufficient, since it contains its own
primary school, shopping center, churches, park, and playground areas.
In the ideal unit, the neighborhood is circumscribed by an arterial
boundary street, which brings traffic to the unit, but does not cut
through it in any way. Within the unit, the only streets are minor
residential streets and handle only the relatively light traffic gen-
erated by the unit itself, which is insulated from the boundary streets
by some sort of parked buffer strip. (In the well designed neighborhood,
no through traffic is found on any street. Children may go to and
from school or play by crossing only these minor residential streets.)
The unit should be of such a size that a children will have to walk a
maximum distance of 1/2 to 3/4 of a mile to get to school, and not
over 1/2 mile to a playground. To accomplish this, the school should
be located near the center of the unit. The size of the neighborhood
unit, therefore, should be such that an elementary school is required
to serve the children in it. The actual area will depend upon the

1 There are, of course, certain cities in which business and religious
ties are strong, e.g., Richland, Washington, where the entire town was
devoted to atomic warfare work, giving the people a common tie. Provo,
Utah, where the population is very predominantly Mormon, is an example
of a community with a common religious tie holding the people together.
population density, and the arterial street system, and usually varies from \( \frac{1}{4} \) to 1 square mile. The school playground may also serve as a part of the park system within the unit, but in addition, smaller play lots should be located near groups of houses to serve the smaller children. The shopping center should be located near the periphery of the neighborhood, so that commercial vehicles delivering to the stores will have no need to enter the interior. Thus, in the ideal case, the neighborhood unit, being substantially self-sufficient and insulated from the heavy arterial traffic, can enjoy a quiet and undisturbed place in the city and literally "let the rest of the world go by," for it matters little whether 10 or 1000 cars per hour pass by on bordering arterial streets. The neighborhood unit, then, seems to satisfy very closely the needs and desires of the average family, for it offers a minimum of paving and maintenance thereby releasing more funds for the arterial roads. Social harmony will be naturally fostered in an area where the people send their children to the same school, mingle in the same park, and go shopping in the same stores. In addition, the lack of traffic and the noise of traffic within a neighborhood has a soothing effect upon its population.

The Demands of Business and Industry.

The requirements for streets serving business and industrial areas are essentially different from those of residential areas. Consequently they must be dealt with quite differently. In the down-town district, roadway and sidewalk widths must both be increased considerably to meet the increased automobile and pedestrian traffic. Parking space must be provided to accommodate shoppers. Arterial thoroughfares should bring traffic to and from the down-town area with a
minimum of inconvenience and time loss.

In the smaller neighborhood shopping centers the demands of traffic are comparatively light and no special provisions need be made except to provide an adequate amount of parking space.

Industry does not present a serious problem in Logan. There are, however, some light industries, wholesale firms, etc., which will make certain demands upon the street system. It is best to group establishments of this type into one portion of the town, in such a position they will have a direct access to an arterial street leading to the center of the city.

Owing to the essential differences between the neighborhood and the areas devoted to business and industry, it is necessary that these two be distinctly separated. At locations where a residential area adjoins a commercial center, a boundary strip should separate them. This strip may be nothing more than a divided street which is appropriately planted in the center and on the residential side of the street. Where business and residences are separated by a block rather than a street, a small park area should be introduced between the two to prevent an abrupt transition.
Applying the Neighborhood Principle to Logan.

In replanning an already developed area, the application of new principles may be more difficult to achieve than in the case of planning an entirely new area. Such is the case in Logan. Thus the neighborhood principle could be completely applied only with a great deal of rearrangement of the present system and would also entail a great deal of expense. The subdivision of Logan into residential neighborhoods can, however, be done to a limited degree without excessive cost. The city is therefore divided into 6 proposed neighborhoods as follows: (see also fig. 1).

I. Neighborhood no. 1 would be bounded by Main Street, 6th W. Street, and 2nd W. Street, and on the north by the city limits. The school which at present serves this neighborhood is not at all centrally located as it lies on 3rd N. Street which is near the southern extremity of the neighborhood. It is therefore suggested that the school serving this neighborhood be re-established on 5th W. Street between 2nd W. Street and 4th W. Street where it may more conveniently fulfill its purpose. Furthermore, adequate playground facilities are not available at the present school site, so it is also suggested that a park and playground be developed in conjunction with the proposed site.

II. The second neighborhood would be bounded by the proposed U.S. 91 by-pass highway on 6th W. Street, by 2nd W. Street, Main Street, and by the southern city limits. The primary school serving this neighborhood is fairly well located and is within a reasonable distance of all except the southern extremity of the area. Center Street, which
bisects the northern half is actually too wide for a residential street. For this reason it was considered that Center Street might perhaps be the logical place to divide neighborhoods I and II. This would have necessitated the moving of J. S. 39 from 2nd N. Street to Center and that in turn would have meant the abandonment of the present railroad depot. For these reasons, it was decided to keep the boundary at 2nd N. Street. Owing to the large area encompassed by neighborhood II, it is proposed that it be sub-divided should further population increases warrant it. Allowance for this future development is suggested and the location of neighborhood II-A is shown on fig. 1, with 14th S. Street acting as its northern boundary. The school site proposed for this possible residential area is located opposite the southern end of Willow Park. Shown in fig. 6 is the suggested street plan for the southern half of neighborhood II-A should the need for more residential space develop. By converting 14th S. Street into a four lane roadway, it is believed that automobiles traveling to Willow Park will be encouraged to use this street almost exclusively rather than cutting through the neighborhoods.

III. This neighborhood would have as its boundaries, 7th E. Street, Main Street, 14th N. Street, and the northern city limits. While the present school is not ideally located to serve this neighborhood, it is believed that it is located adequately enough. Traffic on 5th N. Street in front of this school is too heavy at present and for this reason, it is proposed that it be narrowed (see fig. 6), and that it be blocked off where it presently intersects 7th E. Street.

IV. This neighborhood would be triangular in shape and somewhat smaller than the others. It would be surrounded by 14th N. Street,
Main Street, the Boulevard, and Center Street. It has a school which is within reasonable distance of all points within the area.

V. Neighborhood V would be bounded by Logan River, Main Street, the Old Canyon Road, and Center Street. The school is very well located although some homes at the eastern end are somewhat distant, owing to the narrow shape of this area. A proposed major road would cut through the east half of the neighborhood in order to provide an adequate route from River Heights to the College. While such a road is not in keeping with suggested practice, it is believed that it is better to have one arterial bisect a residential tract than it is to allow automobiles to traverse several of the residential streets in crossing from one side to the other, as is now the case. Aside from this one exception, it is fairly certain that most heavy traffic will be diverted around the periphery under the proposed plan. It does not seem probable that the sparsely populated portion at the extreme east end of the neighborhood will ever be greatly developed, owing to the irregular topography and for this reason no tentative plans were made for it.

VI. This area is still undergoing development but is growing rapidly enough to warrant a separate classification. The neighborhood proposed for this tract would be bounded by the city limits on the north and east, 7th S. Street on the west, and U.S. 39 on the south. This area is at present without a school and children must travel a mile and a half to the nearest school. A school site is proposed directly north of Maple Drive which would serve the neighborhood's children, including any from the College Housing Project. Streets within this tract seem to be fairly well designed and only minor changes are proposed (see fig. 6). Future development of this neighborhood is being considered by the
Figure 1

Proposed Neighborhoods for Logan, Utah

LEGEND

- Neighborhood Boundaries
- City Limits
- Existing School
- Proposed School
- Proposed School (should future development warrant it)

Neighborhood Numbers Shown in Roman Numerals
residents themselves and consequently no provision for such development is proposed.

The Commercial District.

The presence of heavy industrial plants in Logan does not exist and it does not appear that their future introduction is either desired or probable. There are, however, certain light industries, warehouses, etc., which are present to the extent that their consideration is warranted. It is believed that an ideal site for the future location of such commercial establishments as warehouses, wholesale companies, fuel dealers, etc., is available in the western section of Logan, north of 2nd N. Street and west of the proposed by-pass highway on 6th N. Street. This area represents a location where railroad facilities exist and where residential development does not. Furthermore, there seems to be an advantage in grouping such establishments together in that they may use such facilities as streets and railroad spur lines in common, and their individual presence elsewhere throughout the city will not be a source of detriment to the residential developments. Such structures as lumber yards, grain elevators, flour mills, and the traffic which all of these generate, have no place in the well-planned neighborhood. Therefore, all such development should be encouraged to locate in this area, and their appearance elsewhere throughout the city should be discouraged by proper zoning authority. The railroad spur line which at present parallels 3rd S. Street for a distance of some five blocks, should definitely be removed so as to further discourage the encroachment of commercial interests into residential areas. An adequate route to the business district of Logan is provided for this area by 2nd N. Street. It is believed that this arrangement would be much superior to the present distribution
wherein such establishments are scattered throughout the residential districts.

**Street Types.**

In the proposed solution, six street types have been employed to meet the various demands encountered. These various cross-sections have been selected to meet the needs of through, business, and neighborhood traffic. In reviewing these street types, one thought must be kept in mind and that is that the right-of-way necessary for any street is a purely arbitrary thing and the amount needed or available will depend upon several factors, such as topography, abutting property, relative importance of the street, and others. The right-of-way shown with each type of street has been chosen merely as being representative of what might be required. There are, of course, certain minimum requirements which should be met, but these also will depend upon the afore-mentioned factors, and may be altered by them. With these points in mind, the following suggested street types are presented (see fig. 2).

**Minor residential.** The minor residential street is designed to meet only the relatively light neighborhood traffic and the roadway consists of two traffic lanes and two parking lanes. It is entirely possible that in certain districts this type will be an overdesign for the conditions encountered, but owing to unusual circumstances, such as the severe winters common in Logan, it was chosen as the minimum practical width. In certain instances, such as would be the case if the blocks were subdivided, a roadway consisting of but one traffic lane and one parking lane might prove adequate. For the present case, however, such exceptions were not considered, and their future consideration would not
seriously affect what is herein proposed.

**Arterial non-residential.** This type is intended to carry heavy traffic along a route which is either free from residential development encroaching upon it or where there is residential property abutting on one side only. Where no houses adjoin the right-of-way, parking lanes have been omitted and the roadway consists of four traffic lanes only. Where there is residential development on one side, the right-of-way should be increased to provide a parking lane on that side.

**Neighborhood boundary.** The neighborhood boundary street is designed as an arterial and should definitely be constructed and maintained as such. To this street should flow all the minor neighborhood traffic encompassed by it. Four traffic lanes and two parking lanes make up this roadway, and although this may seem excessive for certain sections of town, it must be remembered that the purpose of this street is to attract vehicles from the residential areas. The parking lanes are necessary, since many residences facing these arterials will require them.

**Divided.** This type was chosen essentially to separate residential development from business or commercial areas. Its effectiveness in so doing will be increased if the strip between the neighborhood property lines and the edge of the pavement were suitably planted. No such treatment is needed on the business side of the street and might even prove detrimental if employed. The roadway consists of four traffic lanes, two parking lanes, and a twenty-foot dividing strip in the center, which is intended to ease the transition between a business and residential area. An example of the use of this street in the
proposed plan is illustrated on 1st. S. Street between 2nd W. Street and 1st S. Street.

**Arterial business.** With the exception of Main Street, this type of street is now in general use in the downtown area of Logan. The full available right-of-way is utilized for this street and its use seems to adequately meet the demands of traffic. Slight variations in the proportion of right-of-way allotted to roadway or sidewalk widths may be made without reducing the effectiveness of this street.

**Arterial business (Main Street only).** Main Street is the only street in Logan which has a 120 foot right-of-way and therefore deserves special consideration. At present this full width is utilized in the downtown area and there appears to be no need for changing it. Outside the downtown area this width of right-of-way may seem excessive, but since Main Street also provides the route for U.S. 91 into Logan from both the north and south, it is suggested that the full right-of-way be left unchanged.

**The Boulevard.**

Under the proposed plan, the Boulevard will play a more important role than it does in the existing street system. It is planned that it serve as the main route to the College for most of southern Logan, that it act as an alternate route to Logan Canyon, and that, with proper changes, it could well be one of the major scenic drives in the City. The Logan Temple, which is undoubtedly the City's outstanding structure, should be approached by a street which will encourage visitors to see it. Similarly, the view afforded by the Boulevard of Logan Island and River Heights is another asset which undoubtedly makes a pleasant impression upon visitors. In its present state, however, the
Figure 2

STREET TYPES

Minor Residential

Arterial-Non-Residential

Neighborhood Boundary

Divided

Arterial Business

Arterial Business (Main St Only)
Boulevard is too narrow and its curves too sharp to be classified as a major street. It is proposed that it be converted into a four lane roadway, each lane being eleven feet wide, and that the curves in it be smoothed out. The only point of difficulty in doing this lies between 4th E. Street and 3rd N. Street, where a steep embankment veers off the southern edge of the road, and the Fifth Ward Church prevents further right-of-way acquisition on the north. However, this problem is solvable. Either a retaining wall could be built, or if the present road which extends up the hillside from 6th E. Street to connect it with 2nd N. Street, could be moved a little farther south, then the southern edge of the Boulevard could be widened by dumping fill dirt over the embankment.

An arterial non-residential type street is suggested for the Boulevard. Parking should be permitted on the residential side and an eight foot parking lane should be provided for this purpose.

U. S. 91 By-Pass. Statistics obtained from the Utah State Department of Highways indicate that approximately one-half of all out-of-state passenger cars and slightly less than one-half of all trucks entering and leaving Logan do so on U. S. 91, which at present follows Main Street directly through town. Many of these trucks carry a cargo which is both unsightly and disagreeably odoriferous, such as the beet pulp trucks. Furthermore, such vehicles are retarded by the slow moving traffic and signal lights which they encounter while passing through the city. There seems to be no need of forcing them to traverse Main Street when they have no business in town other than to get through it. For these reasons, U. S. 91 By-Pass Highway is proposed, which would carry traffic not desiring to stop in Logan, past it along
the western periphery of town. This highway should be of the limited access type, that is, cross streets should intercept it only at specified points and not at every block. For this reason it is suggested that all streets be blocked off where they abut this highway with the exception of 5th N. Street, 2nd N. Street, Center Street, 2nd S. Street, and 4th S. Street. This highway would enter the northern city limits on 6th W. Street, roughly parallel the western city limits, and depart on what is now Park Road (see fig. 6). The exact location of this highway is not nearly so important as the fact that it should be considered as a part of the future Logan street system. In addition to providing a by-pass route, it would also serve as a boundary street for neighborhoods I and II, and would no doubt also attract some traffic from U. S. 89 which enters west Logan on 2nd N. Street, thus further diverting needless traffic from the business area. Since it would act as a boundary street, separating a residential from a commercial area, it would best fulfill its purpose if it were a divided street, with a planted island separating the opposing lanes of traffic and the strip between the east curb and the neighborhood boundary line should also be appropriately planted.

The intersection of Center Street and 2nd E. Street. A point of definite danger in the present Logan street system is the intersection of Center Street with the Boulevard and 2nd E. Street. Owing to the topography at that point, the intersection occurs at a rise which deprives Center Street traffic of a safe sight distance. This rise, beginning at Center Street and Pioneer Street climbs sharply above the Old Canyon Road and tapers more gradually downward to the northwest. The Boulevard closely follows its summit from Center Street to 6th E.
Street. The fact that no serious accident has occurred at this intersection does not in any way testify that it is safe but rather means that people have become so aware of the potential danger there that they have learned to exercise a great deal of caution in approaching it. In addition, the curve in the Boulevard immediately adjoining the intersection is too sharp and is a source of danger in itself.

It is believed that the proposed solution of this problem is both adequate and relatively inexpensive. The solution, which is illustrated in Fig. 3, calls for the abandonment of Center Street between 2nd S. Street and the Old Canyon Road, and of 2nd S. Street between Center Street and Pioneer Street. Thus, the Canyon Road and Center Street would merge at their present point of intersection and Pioneer Street would be extended to meet them at that point. It is also proposed that the sharp curve in the Boulevard, mentioned in the preceding paragraph, be smoothed out into one more properly designed and with less curvature. To do this, it would be necessary to roof the canal for an additional distance of about 200 feet upstream from the point where it is presently roofed so that the excavation would cover it for that distance. The area between Pioneer Street and Center Street, which would be unused in the proposed plan, could be properly planted and would afford an attractive entrance to the adjoining park. To further improve the safety of this intersection, it is proposed that 2nd E. Street be narrowed to a minor residential street between 1st N. Street and Center Street to discourage traffic from using it to get to town.

The intersection of 4th N. Street with 6th S. Street and 7th E. Street. Probably the worst single example of congestion in Logan is
Figure 4

Intersection of 4th N with 6th E and 7th E streets

Legend

- Existing Right-of-Way
- Proposed Roadway
- Proposed Channeling Islands

Scale: 1" = 100'
centered at the intersection of 4th N. Street with 6th E. Street and 7th E. Street. This congestion occurs in the morning when the majority of the college students are going to early classes, and it is not uncommon to see cars lined up for a block, west of 7th E. Street, west of 6th E. Street, and south of 4th N. Street on 6th E. Street. These morning traffic tie-ups are the result of two factors. First, the cars coming up the Boulevard and 6th E. Street from the south merge with those moving east on 4th N. Street at the corner of 4th N. Street and 6th E. Street and owing to the presence of a signal at the corner, a line-up of both streams of traffic is created. Second, after both groups have merged into a single line, those vehicles desiring to turn left at 7th E. Street, if they must wait momentarily for cars moving west on 4th N. Street to pass, tie up the traffic behind them. Furthermore, since there are only two paved lanes on 4th N. Street, and since it is uphill to the College, any slow-moving vehicles, such as busses, force all traffic behind them to travel the same slow speed.

In the proposed solution, there would be no traffic signal at 4th N. Street and 6th E. Street. Fourth N. Street would be 60 feet wide, with four 11 foot paved lanes and two 8 foot parking lanes from Main to 9th E. Street. Traffic approaching 4th N. Street from 6th E. Street would be channelized before reaching the intersection and would be led into a right turn and merged with the 4th N. Street flow without conflicting movement. Similarly, vehicles desiring to turn left at 7th E. Street would be channelized before reaching that corner but would be led into a right turn and merged with the 4th N. Street flow without conflicting movement. Similarly, vehicles desiring to turn left at 7th E. Street would be channelized before reaching that corner but would be
MAP OF
LOGAN CITY
CACHE COUNTY
UTAH
forced to stop at the end of the channelizing lane before making the left turn. It is proposed that the width of both channelizing lanes be about 14 feet wide to allow unhampered movement and also provide for easier snow removal in the winter months. The details of the proposed solution are shown in fig. 4. The traffic islands on 4th N. Street where it intersects 6th E. Street serve a dual purpose in that they not only automatically swing the traffic into the correct position to approach the channelizing islands, but also may be used as a pedestrian island for people desiring to cross the street at that point.

The Old Canyon Road. Since the construction of the new Canyon Road (U. S. 39), over fifteen years ago, the Old Canyon Road has gradually disintegrated to such an extent that it is now little more than a trail in spots. This, together with the fact that it was never, at least not by modern principles, a properly designed road, has greatly detracted from what would otherwise be a desirable part of the Logan street system. The location of the Old Canyon Road along the northern edge of Logan Island affords it a great potential opportunity to be of value to the community. In the proposed plan, the old Canyon Road serves as an arterial boundary street for neighborhood V and as such must be capable of handling the traffic which will logically use it. Furthermore, since it runs alongside the Logan River for a great portion of its length, and since it provides an alternate route to Logan Canyon, it is conceivable that if it were properly designed, it would be extensively used by the people as a recreational drive.

At present, the old Canyon Road, is too narrow, improperly surfaced, and several of its curves are too sharp and have insufficient
Figure 6
Existing Street System with Proposed Changes

Legend
- Minor Residential
- Arterial Non-Residential
- Neighborhood Boundary
- Divided
- Arterial Business
- Arterial Business (Main St. only)
- Existing School
- Proposed School
sight distances. It is believed that this road could be made into a functional one with but minor improvements. It would, of course, be necessary to resurface much of the road, especially near the eastern end of town where many short sections of roadway are entirely without pavement. A minimum roadway width of twenty-four feet seems adequate for all present and near-future demands but sufficient right-of-way to satisfy an ultimate four-lane development should be retained. The removal of the sharper curves would constitute only a minor engineering task and the excavation involved would not be excessive in proportion to the merits derived.

Business district parking. The parking problem in the main business district is becoming increasingly important in Logan. It is not uncommon for a driver to circle a block several times before finding a parking space during the busy late afternoon period. This condition indicates that more space for parking must be provided in the near future. Examination of the blocks adjacent to the west side of Main Street reveals that there is enough space in the interiors to accommodate several large parking lots. The development of such parking lots would no doubt solve the parking problem downtown. At present, this space is partially used for parking, but is not nearly developed to capacity.

The block bounded by Main Street, Center Street, 1st W. Street, and 1st N. Street has at present a strip of bituminous pavement approximately 60 feet wide and 300 feet long which extends from 1st N. Street to the center of the block. Part of this strip is devoted to parking and the remainder is used as a means of access into the interior of the
block. Examination of this area revealed that enough space is available to accommodate a parking lot approximately 160 x 250 feet. Such a lot would provide parking space for about 200 cars. In addition to this parking lot, enough space is available to provide an entrance into the center of the block for commercial vehicles.

The block bounded by Main Street, 1st N. Street, 1st W. Street, and 2nd N. Street, has no adequate interior parking lots at present. The block is bisected by an alley extending from 1st N. Street to 2nd N. Street. The businesses located east of this alley are focal points for shopping traffic. Between these buildings and the alley there is sufficient space to pay out a parking lot approximately 160 x 140 feet, to accommodate 170 cars. To accomplish this, it would be necessary to remove two or three sheds which lie several hundred feet south of the County Court House.

The development of parking areas in the interiors of these two blocks depends upon whether or not the space needed may be obtained by the City for this purpose. Since most of this area is owned by businesses which would be benefited by the proposed parking facilities, acquiring the land should not be a serious problem.

Along with this development, it is suggested that parking on the streets, with the exception of Main Street, be changed to parallel parking. The lack of visibility in leaving the stall makes parking at an angle invariably more hazardous than parallel parking. Traffic in the lane alongside the parking lane, is often forced out into the center lane to avoid hitting a car backing out and in so doing conflicts with
that stream of traffic. Thus, in all cases, except where the roadway
width is extremely generous, parallel parking offers the most logical
solution. The reduction in the number of car parking stalls caused by
this change can be much more than accounted for by the interior parking
areas.

College parking. Near the College, there is enough space which
could be converted into parking lots to solve the parking problem
there. The area surrounding the stadium could undoubtedly be arranged
to accommodate at least 400 cars. The present parking area south of
the field house could be improved to become more efficient and of lar-
ger capacity. A plot of land north of the L.D.S. Institute Building
could be converted for parking purposes, and the same is true of the
area north of Millwalk's restaurant on 8th E. Street. It is believed
that a parking area about one acre in size and capable of handling from
150 to 200 cars could be developed southeast of the Main Library. Such
a parking lot could be given proper landscape treatment and would not be
a source of detriment to the campus in any way. If 6th N. Street were
cut off midway between 7th E. Street and 8th E. Street, and the west
half excavated to the approximate elevation at the corner of 6th N.
Street and 7th E. Street, and the east half filled so that it was roughly
the same elevation as the intersection of 6th N. Street and 8th E. Street,
then the two halves would be separated by an elevation differential more
than sufficient to prevent traffic movement between them. The lower
half of the street could then be used as a parking area for students from
the Forestry Department, and the upper half could be used by those desir-
ing to park near the main part of the campus. The capacity of each lot
would be approximately 100 cars. By making use of all available area for
parking lots, adequate facilities should be easily developed to handle well over 1500 vehicles. This figure is based on the assumption that the space behind the Animal Husbandry Building will ultimately be used for College buildings and the capacity of this area as a parking lot has not been considered. The parking area at the stadium will make it necessary for the students to walk farther to get from their cars to class than they are at present accustomed to walk. This detail does not deserve consideration, however, since all proposed lots are definitely within a reasonable walking distance of the campus.

Neighborhood parking. Within the neighborhoods, there will be certain buildings, notably the churches, which will attract traffic from within the unit to the extent that some parking provision may have to be made, since the two eight foot parallel parking lanes may not be adequate. At such locations, a solution could be effected by indenting the curb line a distance of some ten or twelve feet which would permit cars to park at an angle and therefore increase the number which could be accommodated in a given lineal distance. Owing to the light traffic which will use the residential streets, it does not seem probable that angle parking will be a hazard. An alternate solution to this minor parking problem would be the development of a small parking lot adjacent to the building which acts as the terminal point for this traffic. The same two solutions could be applied equally well to the parking problems which might arise at the neighborhood shopping centers.

The Wards and the neighborhoods. In considering the formation of neighborhoods within Logan, serious thought was given to preserving the present wards intact within the new system, because it was felt that the wards exert a binding effect upon the members within them and achieve
many of the same desirable features of the neighborhood, except that their influence is exerted on a much smaller group. Moreover, it seemed logical to expect that the present wards are close-knit groups, well organized and well established, and that the changing of their boundaries and membership would not be well accepted by the people affected. Furthermore, on first thought it appeared that a group of several existing wards would form an excellent beginning for a neighborhood. On closer examination, however, it was decided that the preservation of present ward boundaries was not possible in all cases, since there are no suitable streets separating the wards which could feasibly be used as neighborhood boundary arterials. Even if the preservation of the wards had been the prime factor in the proposed plan, the amount of zig-zagging and road construction it would have entailed would have made its realization clumsy and uneconomical, in addition to being difficult to attain. As a result of this situation, it was decided that the best course of action would lie in making the best use of the existing street system irrespective of present ward locations, with the hope that a suitable arrangement could be arranged with the arterial street network and the neighborhoods evolved in the new plan. Furthermore, there exists a basic difference between the ward and the neighborhood. The ward is held together essentially by religious ties, whereas the neighborhood serves more as a social unit. Thus, while the ward affects only those people with a common religious tie, the well planned neighborhood should exert a binding force upon all the people within a given area, irrespective of race or creed.

Subdivision of blocks. The greatest waste of land in Logan occurs in the center of the blocks. This condition has been brought about by the excessive dimensions of these blocks, whose general measurements are 600 feet long and 600 feet wide. It is now quite universally accepted
that lots roughly twice as deep as they are wide provide the most reasonable land use for private homes. This is indeed a far cry from the conditions in Logan where lots whose depth is four, five, and six times the width are quite common. These abnormal conditions have resulted in the creation of unsightly areas in the center of the majority of the city blocks. When Logan was first formed these large squares of land undoubtedly were cut to good use, since most everyone lived, at least partially, upon what he raised, and for this reason, deep lots which provided a large space for garden area were a valuable asset to the private owner. The day of the large family garden is past, however, and its passing has left the center of the block to become a space where unused barns and sheds gradually decay and where people unwittingly allow huge trash piles to accumulate.

The subdivision of blocks could greatly eliminate this condition by providing smaller, more usable private building lots. The design of these subdivisions is beyond the scope of this thesis but because of the important part they could play in providing future building space, a few of the possibilities will be discussed. In the case of a single block, an arrangement such as shown in fig. 7 could be employed. In this example, 40 lots with an average area of 7200 square feet would be made available, plus an acre of ground near the center to be used as recreational areas. The private driveway servicing the interior could be made as narrow as twenty feet, which would provide one driving lane and one parking lane, the latter being on the residential side of the roadway only. If a block were halved by means of a street, 48 lots could be obtained, each having an area of 7500 square feet. This condition would not represent an ideal solution, but it is far superior to the present.
situation. The chief difficulty met in the subdivision of blocks is the partial development already existing, which makes every block an individual design problem. However, despite this development, a satisfactory solution should be obtained in every case.

In those portions of Logan where no building has occurred, the conditions for producing economical, well-designed residential tracts are much more favorable. Several such tracts are proposed and are shown on fig. 6. One lies in the northwest portion of town, west of Main Street and north of 6th N. Street. Another is situated south of Millwood Park, in the southwest part of the city, and a third is in the vicinity of 2nd E. Street and 8th N. Street. These suggested developments were designed with the purpose in mind of providing a reasonable economy of land use, while at the same time locating the streets in such a manner that all heavy traffic would be discouraged from the tracts. It should be remembered that the subdivision of blocks presents a great opportunity for the future provision of building sites. Before any new additions are made to the present city boundaries, full use should be made of the present unused space within the city. This is logical, especially when viewed from a standpoint of the additional cost required to install utilities in areas not now within the city limits. If full use were made of available land now lying idle in Logan, it is not at all radical to predict that twice the present population could easily be accommodated.
THE PRESENTATION TO THE PEOPLE OF LOGAN

Obviously, this plan is intended for the people of Logan and it is they who will be affected by it. Every effort should be made, therefore, to properly introduce the purpose of the plan to the people and to gain their favor toward it. To accomplish this will be an important task. It will require some careful consideration and a great deal of energetic effort. The complete consideration of this presentation of the plan is beyond the scope of this thesis, but it is well to discuss a few of the methods which might be employed to contact the people.

1. The newspaper could play an important part in such a program by transmitting to the people such items as informative articles about the proposed plan, announcement of public planning meetings, and announcements of the progress of the Planning Commission. An occasional feature article in the Sunday paper correlating the work being planned and the principles involved, would help to secure public backing for the plan.

2. The radio could also help in the program by announcing the time of public planning meetings and also by featuring authoritative speakers to discuss the plan on the air.

3. In addition to the regular City Planning Commission meetings, large public planning meetings could be held at specified intervals at which the plan could be explained and discussed. Such meetings should be well publicized and held in a large auditorium.

4. The help which local clubs could lend the planning program through their membership could be of great importance. Members of these clubs should be invited to attend Planning Commission meetings.

5. Another good contact to the people is through the churches. Planning Commission members should visit the local Bishops and Ministers...
and gain their support of the program. These clergymen could pass on information to their members at informal social gatherings.

6. Courses introductory to city planning should be introduced in the Junior and Senior High Schools of the City. Emphasis should be placed upon "before" and "after" studies of what has been done in other cities, and the instilling of certain basic principles such as the neighborhood unit. Guest speakers and motion pictures on the subject should be allotted a generous portion of the class time.

Probably the best selling point of the new plan will be the safety it offers the children. This will probably be one of the points which the people will grasp first and, accordingly, it should be presented first. Other advantages and the planning principles in back of them should therefore be presented in a position of lesser importance than safety. Probably the people will take a much more active interest in the completion of the plan, when they learn of the safety principles involved in modern planning.
CONCLUSION

In the evolution of this plan, two factors have been placed foremost, safety and facility of movement. In most cases, these two have worked out simultaneously with very little inter-friction. This is exemplified in the proposed solution for Center Street and 2nd e. Street and also at 6th E. Street and 4th N. Street. In the few cases where these two factors worked against each other, safety was given the primary consideration, even though a slight sacrifice in ease of movement was required of some small portion of traffic. An example of this type is illustrated on the U. S. 91 By-pass Highway, where intersecting streets were blocked except at specified points, requiring some traffic to travel an additional block or so in order to reach the highway. Even in such a case, however, the inconvenience caused to very small traffic groups has resulted in the more regular flow of the major portion of vehicles, and both requirements have, for the most part, been met.

The proposed solution has been formed with an attempt to deviate from the ideal enough to make the plan feasible to carry out and yet incorporate those changes which are necessary to make the plan an improvement over the existing system. In regard to the neighborhoods, if nothing more were done than to definitely establish the boundary streets as traffic arterials, enough traffic would be diverted to them from the residential areas to effect a great improvement over the present conditions. Similarly, the establishment of U.S. 91 By-pass Highway in itself would divert enough through traffic from the heart of Logan to make the present system more workable. Thus, it is with a series of individual solutions of recognized trouble spots, with the introduction of some new street system, and with the abandonment of some of the old, that this plan has
been evolved. To be sure, if the entire town could be leveled and the
new plan formed, making the best use of all natural features of the site,
a far more functional and ideal solution could have been made. This is
mentioned only to emphasize the fact that in the case at hand it was nec-
essary to preserve as much of the existing system as possible, owing to
development along these streets.
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