THE DEVELOPMENT OF RECREATIONAL AREAS
AND ROADSIDE IMPROVEMENTS FOR
SMALL TOWNS IN WESTERN OREGON

by

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A Thesis
Presented to the Faculty
of the
School of Forestry
Oregon State College

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science
March 1942

Approved:

Professor of Forestry
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The purpose of this thesis was to produce a text which could be used as a guide for anyone wishing to develop roadside improvements and recreational areas for small towns in Western Oregon, and to devise a second plan demonstrating how it might be possible to use this text in an original program of community improvements for selected small towns in the Willamette Valley.

The importance of this investigation lies mainly in whether or not the community improvement program could be carried out so that its benefits could be derived. However, the writer, working on the assumption that things that are worthwhile will come to pass eventually, attempted the investigation with this belief in mind, regardless of immediate successes or failures. When a program of this nature is put into action, its importance would be felt not only by individuals and communities, but by the whole State of Oregon as well.

Towns and communities in Western Oregon in which this work was carried on would realize both social and recreational benefits from the development of roadside improvements and recreational areas. The need for such improvements has been justified many times, and need not be repeated here.

The State of Oregon is fast becoming a mecca for travelers, tourists, and vacationists. These people are lured here by the many attractions
Nature has to offer. However, recent statistics lead us to believe that the majority of the people see the country only from their car window, and it is natural for them to carry away with them a picture of our roadsides, towns, and the immediate surrounding countryside. If the roadsides and towns they pass through have been made more attractive by the effective use of trees and shrubs, think how their impression of our state will be improved.

The development of community parks has heretofore lacked scientific planning, and there is a new field open to the recreational engineer if this type of development could be carried out on a sufficiently large scale. At this time forestry student graduates interested in recreation find the possibilities of securing work in this field definitely limited. Community park planning is a new field open to him, if he is only willing to develop it. Thus, a program of community improvements is important, not only to the community and the state, but to a profession which could make these developments possible.

In order to best attack the several problems, I will take them up one at a time as listed in the first paragraph. Part I of this thesis will be devoted to the originating of a guide for developing community parks and roadside improvements. This plan will tell how these improvements are made, how to go about selecting a suitable site, and will then carry through in chronological order the basic steps of inventory, planning, and development necessary for the construction of any public use project. The plan will be made as practical as possible so that the information gathered there-in can be applied in the field with as little difficulty as possible.

The second problem taken up in Part II will be to construct a plan whose primary objective will be to devise a means for putting the guide developed in Part I into actual practice. It will offer possible solutions as to who will do it, how it may be financed, and solutions to maintenance and administration
problems. Thus, the whole problem of a community improvement program is covered. Aids in finding the solutions to the several problems presented were obtained from several sources. Personal observations and interviews were some of the more valuable, while research readings offered a stable background to return to. A survey conducted was a successful means of obtaining pertinent information which was of value.

CHAPTER II
A DEFINITION OF TERMS

The most important words, the words that most need defining, are contained in the title of this thesis. A clear understanding of their meanings as applied here is necessary if the reader is to come to terms with the author.

Webster's definition for "development" is, "the process by which a tract of raw land is converted into an area that is usable for a certain purpose." Obviously, this would involve all the processes that are necessary to make the land usable. Therefore, whenever the word "development" is used in this treatise, it shall include inventory, planning, and the development phases which go into the making of a park. There is one exception—that is when the word "development" shall apply to the construction work that takes place after all planning is done. Then it shall be synonymous with construction, taking in all the work that is necessary to carry out the park plan. This change of meaning will be easy to detect by the context in which it appears.

Another important word that needs defining is the term "plan." It will be used here in two different ways. The first meaning shall be that of a method or scheme of action, or a way proposed to carry out a project. This interpretation is used in Part I of this treatise, which has to do with the development of a guide for park and roadside developments. The other definition is that in
which it means a draft or form (a representation drawn on a plane). Here it is applied to the base map on which developments are plotted, and includes also the landscape plan.

Another important word which should be defined is "recreational area." A strict definition of this would be an area in which one seeks to recreate or refresh himself through a diversion, such as play. Recreational area as referred to here shall refer specifically to an area for recreation in the form of a park. This park shall be a forested area, at least in part, and it shall be a natural park which will fit into a rural atmosphere. It shall serve small towns and rural communities with populations from a few hundred to several thousand. The terms recreational area, town park, and community park shall be considered synonymous in usage.

Next the term roadside improvements should be defined. This term is usually applied very loosely. It may mean roadside structures, erosion control, beautification, aqueducts or ditch development, obliteration of borrow pits, plantings for shade, or the development of complete parkways. Roadside improvements shall be limited in this thesis by two qualifications: purpose and location. As stated, these improvements shall be for small towns in Western Oregon. Their purpose shall be one of beautification. All improvements shall be made with the objective in mind of improving the landscape at or near towns, and especially along the main-traveled roads. Secondly, these improvements shall be located in the immediate vicinity of the town's entrances. As each case will be different, no standard figure can be made to govern distances. However, that road distance shall be utilized for this work which is necessary to create the effect desired.

Last, the term Western Oregon should be defined and limited. Western Oregon is used in reference to that part of Oregon which is west of the Cascade Range summit. The investigation as carried out in this thesis was a localized study confined almost entirely to the Willamette Valley. However, with this exception,
the term shall apply to that territory west of the Cascade Range summit.

PART I
A TEXT FOR THE DEVELOPMENT OF
RECREATIONAL AREAS AND ROADSIDE IMPROVEMENTS

In the development of any project which must stand the test of use and time, there are certain steps to be followed, of which the planner must be aware, if the project is to successfully fulfill its purpose for any length of time.

These steps are integral parts of the whole plan, and they should be considered one at a time in the order of their priority in the development of any public-use project. They are: inventory, planning, and development. They should all be answered as to how it is to be done, who is going to do it, and by what means it is to be done, before even the first step is taken.

A. RECREATIONAL AREAS

CHAPTER III
SELECTION OF THE SITE

The first step that must be taken before the development of a town park or community recreation area is the selection of the site.

Site location is quite important, many times determining the extent to which the park is used and its service to the community. For a small urban area it should be located somewhere near the town, within easy walking distance of its populace, for many of them may not own cars. Here a medium must be strived for, as a park located too near the city center loses much of its sylvan charm. For a rural farming community the area may be located two or three miles or farther from the community center, as in this type of community, invariably everyone has transportation of his own. Thus, it may be noted that transportation
plays an important part in the determining of the location of any park site or recreation area.

In making this selection there are several other things to be considered as equally important. One of these is the presence of some attraction. This does not necessarily mean that it has to be something of special note. On the contrary, many a serviceable park has been blessed with nothing more than a grove of trees. If such is the case, however, it is almost imperative to couple with this an open area or field. An area selected bordering a lake or stream is one of the more desirable types, as it offers added opportunities to recreate. It is essential that the site chosen has some attraction—and offers variety for its users.

Another factor to consider is the topography of the land. While some changes in topography are highly desirable to add interest and diversity to the park, this should be kept within reasonable bounds. On the whole the area should have a certain uniform levelness, and good drainage is imperative.

The last point to consider, and perhaps the most important, is size. This should be governed by the estimated present use and expected future use. Too often a park is constructed on an area which is only adequate for its present use, and with no regard for future development to accommodate the increased use the future will bring. Many times the park is made to fit the area, rather than the area chosen to fit the park. Too often the site is taken because it can be "conveniently obtained." Of course, sometimes the only site available is not of sufficient size, and then the only recourse to take is to keep an eye out in an effort to increasing that property through future purchase at the first opportunity.

Thus, in selecting the recreation or park site, one should consider location, as governed by the present transportation system, the attractions offered by the area, topography and size, always keeping in mind the increased demand brought on by greater future use.
CHAPTER IV
THE INVENTORY

The first step after the selection of the proper site is to take an inventory. This involves not only a physical inventory of the area to find out what is present to work with, but a demand inventory to determine what the potential users desire in the way of recreation. Closely correlated with this question are those of who the users will be, and what intensity of development is desirable.

Physical inventory. In making the physical inventory the very first thing to be done is to look over the area to determine what unfavorable conditions exist, if any, that might curtail public use in any manner. This is usually known as a pest survey. Listed under this might be mosquitoes, ants, poison oak, poison ivy or brambles. Inquiry from reliable sources should be sought to include the spring, summer, and fall seasons, if a personal survey is impossible at these times. Many times any one or a combination of these pest factors will render a park practically useless. It may outweigh all advantages present with resulting costs of eradication or control prohibitive.

The next step taken upon finding the area free of pests is to lay out the boundaries. This should be done with a high amount of accuracy, and information on the original survey and boundaries should be checked to insure this. Then the park site is mapped, if possible. A topographic map should be made showing one or two foot contour intervals. The contour interval will vary depending upon the size of the tract and its physiography. For tracts of ten to twenty acres or less the smaller contour interval is desirable, while in parks up to sixty acres five feet would be better. The topography map will be useful in laying out roads, trails, and in selecting the various areas for different kinds of recreation activities.
Another map should be made showing cover types. This map should be made very carefully and should be intensive in nature. It should show tree groups by species and with careful notes for trees that are of special value for shade, size, screening, or some other aesthetic or utilitarian purpose and are to be safeguarded. They may be designated, for example (3/100), indicating diameter B. H. and spread. Shrubs and other low growth areas should be plotted in, species by groups being indicated. All grass and open areas, down to and including small glades, should be shown. On this same type map or on a separate drainage map should be shown the presence of all bodies of water—streams, rivers, springs, ponds, and lake or river borders. Type maps are extremely useful in planning and locating the various "use areas," overlooks, trails, and picnic spots. They are of invaluable aid if a planting plan is needed by indicating the areas to be planted and the shrubs or plants that may be successfully grown as shown by the indigenous species.

If the area has any historical value, or other interesting landmarks, these should be noted too, i.e., city park at Dayton, Oregon, is site of historical blockhouse of Fort Sheridan.

The last item of the inventory should include an investigation into how much money is available for park development expenditures.

Socio-economic inventory. The demand, or socio-economic, inventory should be made at this time before any further work is done. Careful questioning in gathering this inventory material is necessary, and a good deal of thought should be put into the analysis of it in determining the results. It is from this information that the planner determines the form of recreation activities to develop, and the kinds and types of facilities to construct. In fact, the whole development scheme is based on this analysis.

The first question we must find an answer to is "Who will be the users?" Then: Of what economic class are they? What is the proximity of the users? Will it serve more than one town or community—and how scattered are the users? What size
population must it serve? Is it just for the town or for the surrounding community? On the average, what age class or classes will use it? Is the kind of employment of the majority rural or industrial? To what extent are the people educated? Is it to serve a rural or urban community? All of these questions will aid in answering the first question of "Who will be the users?"

The next question of importance is "What do these people want in the way of recreation? Will they want swimming, boating, fishing, wildlife, and picnics? Or would they prefer volleyball, horseshoes, baseball, and a community house for public gatherings?"

And last, we should know how much they want. How much leisure time do they have available? Will it be in the evenings or on weekends?

Analysis of inventory. Now that the inventory is all compiled, it must be analyzed and made workable. The demand inventory should answer the question, "What types of recreation are desired by the potential users?" Our physical inventory gives us a survey of what the area has to offer to meet the demand. If the natural advantages do not coincide with the demands, artificial development must be made wherever possible. The amount of work of this nature that can be done is of course controlled by the money available.

CHAPTER V

THE PLANNING PHASE

Planning principles. Parks are developed for human use and enjoyment, therefore all work done to make a park should be for a practical use. There are several principles that one should follow in planning a park if he wants to attain that objective of practical use. They are circulation, balance, or order, and cleanliness and unity.
Circulation has to do with traffic flows, both by car and foot. Good circulation will allow for free movement of cars or persons to all use areas of the park, will promote use of all types of recreation offered, and will handle peak loads on weekends and holidays without undue congestion.

Balance or order is the simple and orderly arrangement of all use areas and units within them. They promote recreational use in all parts of the park, good circulation, and any helter-skelter facility placements are avoided.

Neatness and cleanliness in a park is an important factor in increasing the enjoyment of the uses and promoting greater use. Easy maintenance is essential and proper waste disposal a necessity. These are promoted by unity of planning, also, which is the relation of each recreational unit and facility to the others and to the park as a whole.

With these principles in mind the next step is to use them as a guide in the location and selection of the park sites or use areas. The first real problem in the physical planning of a park is that of road location, or circulation.

**Circulation.** The roads or roadways in a park constitute the framework of the entire park design.

To promote good circulation and use of all areas, results show that a circular drive is one of the best. Good traffic flow is attained, and easy access can be had to all use areas. Parking may be handled in several ways; some areas along the drive designed to handle a limited number of cars is one method. In addition, a larger parking area is useful to handle overflow crowds on weekends or holidays. The large area should be located in proximity to the major use areas; it should be comparatively level and preferably one which has no recreational value or supports no tree growth. Care should be taken in the location of picnic areas not to make them too close by, because of the likelihood of excessive dust. Parking areas should be large enough to serve maximum use, but not so big as to encourage random driving.
Trails along with roads complete the framework of park circulation. They connect recreational units and are a source of recreation also. Trails to nearby attractions should start from the campground which occupies a predominate position in the area. They should be made enjoyable by connecting points of scenic value, overlooks, tree groups, and view points.

Park sites. There are several things to consider in the selection of each recreational site, each one depending upon the particular use to which it is to be put.

The picnic area should first of all be one of comparatively level, well-drained ground where water is accessible. A wooded place along a stream, scenic points with shade, groves of trees, and similar points are preferable where a certain degree of shelter and atmosphere can be obtained. The site should be clean, with comparatively little ground cover. For those who like more privacy when picnicking, some tables should be placed at various picked spots, i.e., along streams, knolls, or other secluded spots. The large picnic area may have a community kitchen along with several other smaller stoves and fireplaces. Drinking water should be piped close by for the convenience of the picnickers. Tables may be of two types, individual or family tables and the group type. Tables for group picnics (churches, unions, and community organizations of all types) should be placed near the community kitchens. These may be constructed to hold from twenty to forty people. Garbage cans should be handy but not conspicuous, and an incinerator may be constructed well out of the way. Toilets should be indicated by signs rather than the presence of paths. Fireplaces should be placed away from inflammable timber. Naturalistic conditions should be preserved as much as possible, seclusion and an atmosphere of outdoor spaciousness should be attained when possible.

Another recreational unit is the play area for small children. This area
should be located close by the picnic spot where it will allow easy supervision and guidance by the parents. Swings, pools, sandboxes, chutes, and teeter-totters should all be constructed in rustic design to fit into the surroundings.

The play field may offer anyone of several activities for the younger set. A ball-diamond is essential with a football field optional. An open field is the ideal location for these sports, and for this reason was previously suggested as a requisite for any park. Space for parking should be given consideration close by any ball field. Several smaller areas to handle other activities such as lawn tennis, lawn bowling, handball, and horseshoes could be placed at the edge of the ball field or in the immediate vicinity. Screen plantings are useful in placing these in close proximity without inter-game interference.

Along with these three general use areas are several other equally important recreational pursuits which can be made available, but due to their character or required location have to be excluded from the above. Provided a stream, lake, or river is present, facilities for swimming, canoeing, and boating should be provided.

The beach may be improved, dressing rooms constructed, springboards, life-guard facilities, and even a boat house provided. Some communities may desire a community house, dance stand, or outdoor theater. A community house should be centrally located, while the outdoor theater site should be in a natural bowl, slope, or river terrace. Another feature of interest is a wildlife area. Located in a partially wooded lot of several acres and fenced in for deer, small game and birds, this unit is many times the most popular spot in the park. This ends the discussion of the selection and brief description of the recreational sites. Next the administrative site is taken up.

Many community parks will have little direct supervision. This may be due to lack of funds for a caretaker or supervisor, or there may be little actual
need for supervision. However, direct park administration is desirable, and where there is a need and funds are available, it should receive serious consideration. Closely tied in with the administration site is the service area. These two areas can often be combined, and in the case of a small community park, it is usually advisable. Thus, with the caretaker's house, workshops, garage, and boathouse on one site more efficient management and better public service is attained. Public service must be considered in the location of the wildlife area and swimming facilities. It is suggested that the administration-service site be located with reference to their position at a place where the caretaker can look after both efficiently relative to public duties.

The above discussion gives the planner an idea of what developments can be made in a community park in reference to recreation activities, a little information on site selection, and the relation and functions of one area to another. Regulations. Next the park planner must have a knowledge of some of the regulations governing structures and recreational facilities that go into developing each area. Exact specifications for structures need not be brought out in this article, for they can be obtained in "The Recreation Handbook" or similar books. However, information of a more general nature may be brought out here that may help to complete the picture and show how each unit fits in without disrupting the natural harmony of the landscape.

First, artificial structures should be made as inconspicuous as possible. They should be constructed of native materials if available, rustic designs fit in well and are harmonious with the landscape. Economy in construction is many times very important, and simple, solid structures prove the best. Colors which fit in well with the natural landscape are forest service green, weathered wood grey, stone grey, creosote-brown or gray, and tobacco brown. These colors hold for natural colors or structures that have to be painted.

Campfires, tables, and fireplaces should be scattered, but care must be taken that a helter-skelter effect is not the result. Balance and order in
planning require that some system or order of arrangement be attained; this can be done and still promote an informal appearance. Arrangement of structures should be planned for easy maintenance and good circulation.

In laying out trails it is well to remember that they have a utility objective as well as a recreational value, in that they should connect and promote travel between two different points. A few of the musts which the developer must consider, and a few regulations controlling him in certain other activities follow:

First among this group is camp sanitation. Location of toilets and garbage pits in relation to the water supply should be carefully planned, as the possibility of pollution is directly proportional to the distance and direction of sub-soil drainage. Flies are a source of food contamination and disease, and all refuse pits and containers should be adequately covered and constructed at a safe distance from all picnic areas. Toilet covers should be fly-proof and tight fitting.

All refuse that is not buried should be burned as soon as possible. Incinerators are ideal for this, and a proportionate number should be planned for. Refuse containers should be placed where their use will be promoted, yet, if possible, they should be inconspicuous. A well-planned, clean camp ground (with proper waste disposal facilities) is an asset to any park and invites use.

Dust from the road or parking areas is sometimes a source of discomfort. Prudent location of picnic spots will often eliminate the dust problem entirely, and also avoid the necessity of maintenance cost for dust settling operations.

The next consideration the planner should consider is that of fire protection. Natural and artificial firebreaks may be of some value, although on small park areas their importance is diminished proportionately. Fireplaces and barbecue pits should never be built near fire hazards of any type. Easy
maintenance and clean campgrounds help.

Public contact and posters are other means of fire prevention. Posters, however, should be placed discreetly, for too many not only tend to thwart their objective, but are unharmonious to their surroundings.

There are several things the park planner can do to protect the recreationist from himself. One of these is the construction of guard rails by steep banks, the placing of warning signs, and adequate life-guard facilities if bathing is one of the activities offered. Then there is the problem of protecting the area from the users. Picking of flowers, destruction of native shrubs, the hacking of trees, and the chopping of some for firewood are examples of destructive practices. The first of these is partly a problem for the administration, and signs help a great deal. Adequate provisions for a source of firewood will practically eliminate the destruction of trees for this purpose.

Planning procedure. With the above "regulations" in mind, and with the information contained in the section on planning principles and site selection, the planner is ready to devise some orderly procedure to carry out his park development. His first step is to make a plan for the proposed park on paper. Enlarging somewhat upon the scale of either the topographic or type map taken in the inventory, a large base map is prepared with all park boundaries carefully plotted in.

Next, each recreational site to be developed is selected and sketched in. Both the topographic and type maps are used in this work. From these maps the ground character, timber and cover types, and drainages are easily seen, and site selection is simplified. Now, with the use of the topographic map, the main drive is plotted in on the base map. The two most important factors governing its location are topography and circulation, for the road should touch
the main use areas where feasible. Results show that a circular drive ful-
fills this last objective very well, and is the preferred type in most parks.
Trails connect use areas and points of interest, some wandering at random/
touching the park's scenic spots, and others used as utility trails, and are,
therefore, more direct and straight cut. With the location of all trails on the
map, the circulation plan is finally complete, and the general outline of the
park takes shape.

To complete the picture, the more detailed work of plotting in each recreation
facility must now be done. From an analysis of the inventory the planner has al-
ready determined the present expected use and has some idea of the future demand.
To ascertain the number of facilities he needs, a process of dividing the theor-
etical number of people who will use them at any one time by the number each
will accommodate is necessary. One community kitchen is usually ample for even
a large park. Individual stoves may serve one to several tables, depending upon
size and construction. Tables may seat from four to ten persons, with the group
type accommodating up to forty. In construction of toilets, one seat for every
ten persons of one sex is considered about right. One good sized ground inciner-
ator is usually sufficient for the disposal of waste, and others may be dug when
the first one serves its length of usefulness. Playground equipment may be
practically limited to one of each type of apparatus until further use demands
more. Future use will help determine if more than one ball diamond is necessary,
and the same rule applies to lawn tennis, bowling, or horseshoes.

All recreational units should be developed with the idea of future expansion,
based on actual use data or observations which show a definite demand for more
equipment or enlargement of that already in use. The practice of developing one
workable unit at a time, so that it may be available for public use, is good plan-
nning practice. This is known as the "one unit" plan of development. An immediate
working plan might call for several areas to be put into use as soon as possible, but at the same time additional developments should be allowed for as they are put to greater use in the future.

As for plotting each recreational facility on the base map, this should be done as accurately as the scale of the map will allow. Actual position of each one depends on topography, ground cover, and other local conditions. However, some degree of order should be attained if balance and unity are to be realized. The entire effect should be one of informality, continuity, and a harmonious blending into the landscape.

Briefly, then, in preparing the development plan on a base map, the order of procedure is as follows: the use areas are first sketched in, then the main drive, and after that the trail system; all recreational facilities of immediate necessity, with allowances for future developments are plotted in last in each of the recreational units.

Landscape plan. At this time, some mention should be made of a supplement to the basic development plan just completed, in the form of a landscape plan. Specific planting plans and the selection of plant materials, however, cannot be made at this time. Actual development work must first be well along. However, a general picture can be drawn of what should be accomplished, and how it may be done.

The community park as described in this thesis is essentially a "natural" or rural park. For the most part it is located outside of the city or town. Its surroundings are the countryside, its atmosphere is rural—one of fields, trees, and wooded glades. Any landscaping done then should facilitate these features within the park itself. Structures can be made to fit into their environment in a harmonious manner, and unsightly conditions can be concealed. Still other advantages of landscaping will be discussed later.

The wooded area on the park site may be divided into two parts, the forest stand and the forest margin. The forest stand is important, it provides shade,
shelter, privacy, beauty, and atmosphere. It is the basis from which all work is done, as well as the example. Scattered tree clumps, woodland areas, and shrubs along park borders, which maintain the entirety of the park area should be preserved at all costs. Forests usually have three strata: the tall trees, an understudy of smaller trees, and larger shrubs, and the ground cover. This should be kept in mind in the planting of all new plantations; forests should be blended into the meadows and the boundaries fitted into the landscape. The forest margin is a transition zone. Trees taper off into smaller ones, the taller shrubs to shorter ones and finally to ground cover and grass. In replacing this transition zone, if the need arises, one should first make a measured cross-section of a similar intact one. Identify the species starting with the dominant ones first, and working down. The measured cross section imitated with corresponding species and care in spacing will give an adequate reproduction of nature's plantings.

The planting plan for the park is an artificial means of carrying out the objectives of the landscape plan. The construction of roads, structures of all kinds, and numerous recreational facilities tend to mar the landscape even though care is taken in their construction and location. Plantings conceal, modify, and create a medium through which artificial developments will not detract from the overall picture of the forest primeval. The four following types of plantings are used to carry out this objective:

The first is known as screen planting, and is used to screen or conceal, as the name implies. Unsightly conditions such as borrow pits, and eroded or cut banks may be completely hidden from view. Partial concealment of such utilitarian features as toilets or parking areas is many times essential. Screen plantings are also used to provide an air of privacy, as for individual picnic sites or benches at scenic spots.

Foundation plantings are the second type, and are widely used in the case of certain structures and most buildings. They create a medium through which the structure will become an integral part of the landscape. Good examples of
A need for this type might be on the administration site (residence and service shops) and the bathouse.

Another type, known by the general term of utilitarian plantings are very useful. They may control the directions of paths, walks, or trails, or indicate table locations. One other important use is to hold earth banks in place.

The last classification is that of general plantings. These may accentuate points in design, furnish shade, or frame vistas. A few additional notes may be added here about application to specific areas. Existing trees and shrubs along the boundary of parking areas should be preserved as a foundation of screen planting. Naturalistic conditions should also be preserved as much as possible around all picnic grounds. This will promote seclusion and an air of outdoor spaciousness. Screen plantings are very useful in utilizing one area for several activities. This may be done by "screening" one from another by plantings. A good example might be found on the play field, where lawn tennis courts could be separated from a bowling ground or horseshoe pits.

A little should be said here about plant materials to be used in the planting plan. One general rule that is usually applicable, is to use only native species in selection. There are a few exceptions, of course, exotic species might be used around the administrative site. Roadside planting might be another exception, when you wish them to take on the form of a formal planting.

A word might well be said about the size of shrubs and trees to be used for planting. Two factors determine size, they are—what is economical to move (up to 6' when necessary), and are they of sufficient size to minimize removal by the public?

This short treatise concludes the discussion on the planning phase of community park development, and now the plan can actually be applied to the proposed park site.
CHAPTER VI
THE DEVELOPMENT PHASE

The last step in the development of the park is the application of the plan in the construction work. In this discussion the construction will be carried through from start to finish in a logical order of development. However, it may transgress to some extent from the procedure that would have to be applied in some parks where each immediate working plan may differ. Each individual park will be different in this respect as to development, and the developer should realize the limitations imposed and act accordingly.

Application of the working plan in development may be divided into three separate parts; preliminary work, construction work, and landscaping. Some overlapping of these three phases may take place during development, but they are distinct and separate, generally, as far as chronological order is concerned.

Preliminary work. Preliminary work in park development takes in all that is done to prepare the area for the actual construction work. First of all, the boundaries of the park site should be checked. If there are no fences or other artificial indications, and no natural indications of the dividing lines, these lines should be run in and staked out. Next, using the base map, the main drives and roadside parking areas are run in. All curves and grades should be located carefully.

The "area divisions" are now staked out. This includes the administration site, service area, recreation sites, viewpoints, and emergency parking areas. With each area located, the position of each recreation facility or structure within them can be established according to the base plan. The last measure before actual construction work is to mark all the trees that should be removed,
taking special note as to stumps and brush.

**Construction work.** Construction work includes the clearing of the road right-of-way, and trails, and a general clean-up of the area. Deadwood, brush, and stumps are removed. Each recreational site is cleaned-up and trees removed when needed. Trees in the main picnic and play areas are climbed and the limbs removed up to approximately one hundred feet.

Next the road is graded and graveled along with each parking area, and the trails are improved. If water must be brought in from an outside source, the ditch for the pipe line can be dug and the pipe laid. Other axillary water pipes can be extended to the picnic grounds, the ball field, and drinking fountains located at various points. Additional grading work may be done on the athletic field and stream bank at the swimming pool.

**Boundary posts, guard rails, etc.,** are set out next. An entrance sign may be constructed and posted at the park gate. If the park is to have a wildlife area, it may be fenced off at this time. Next, the construction of the recreational facilities and building structures is carried out. The utilization of native materials in this work is highly desirable; from both an economical point of view and the rustic effect that is attained. Trees cut in thinning operations may be used for guard posts and rails, and picnic equipment and play apparatus, and foot bridges. Some of the material may be utilized in making fireplaces, barbecue pits, stoves, retaining walls, and bathhouses. Additional construction work includes a caretaker's house (optional) and service sheds, toilets, stove shelters, log tables, and benches.

Along with construction work some preliminary planting may be made. These will be determined by the length of time it will take plantings to develop, their immediate importance, and special use. Suggested early plantings might include trees for shade (picnic spots), and plantings for circulation control.
Landscaping. The last step in park development is the landscaping of the area. Some consideration was given this in planning, where balance and harmony of a completed landscape composition was the ultimate objective. However, to accomplish this, a little practical advice on how to attain it through the choice of plant materials is in order.

First, all plantings may be classified as belonging to one of four general types: foundation, utilitarian, screen, and general. In selecting plant materials for these, consideration should be given, first, to the color and texture of the over-all picture. Points of interest may be brought out in the park by using plants of varying tones and shades, so that a picture of ever-changing aspect will be present throughout the year. Both variations in foliage and structure can be used to an advantage to provide this interest.

Another important point to consider in selecting plant materials is the matter of size. In practically all public service areas the ultimate picture is the one that should be pleasing as well as the present. Long range planning should be the major objective. Plants grow at varying rates and many a design has been ruined by failure to take this factor into consideration. Unless there is a real necessity for the creation of an immediate effect by using very large stock, it is usually cheaper and easier to plant the smaller or medium sizes. A rule of thumb that might apply here is that longevity is closely related to the rate of growth, that is, rapidly growing plants are weaker and shorter-lived than those which reach maturity more slowly. With few exceptions, native materials should be the keynote. The developer can seldom go wrong by selecting plants from materials found growing on or near the planting site. The plants will be hardy, easy and relatively cheap to procure, harmonious in design, and economical. However, these wildings have
their drawbacks. Usually they are difficult to transplant; the mortality being several times that of nursery-grown stock. This is their main disadvantage, although they usually require greater care and maintenance for a longer period. Nursery grown stock is easier to transplant and hardier, for they have been root pruned and "hardened." Disadvantages of nursery stock is the higher cost and loss in natural appearance.

In the selection of native materials the choice of individual plants depends upon several things. Exposure is important. Plants growing well separated in a fairly open area are usually better adapted to transplanting than those found in thickets or in deep shade. Usually they are thriftier, better shaped, and have a good root system. The fact that young plants are usually more adapted to moving than older ones should also be considered. Vigor is another thing to consider in the choice of individual plants. This can be told by several symptoms, some of which are: length of annual twig growth, size of buds, the rate of wound callusing, and color of bark fissures. Twig growth should average between four and eight inches, according to species. Buds should be plump and well filled; the color of the bark fissures should always be lighter than the bark surface; and if any wounds are present they should be healing well. Structure and plant habit should also be considered in plant material selection. Shrubs selected should be husky; however, tall, leggy ones may be used for background planting. Trees should be shapely without injured leaders or split crotches. Single evergreens should be well-rounded, evenly branched, and bushy to the ground. All plants should be looked over very carefully for signs of insect or disease attack as a last precaution to insure selection of good stock.

To aid in the choice of native species which can be used here in the
the Willamette Valley, the following list has been compiled from "Shrubs and Trees for Western Oregon--Native Shrubs" by Munice C. Brandt:

**NATIVE SHRUBS AND TREES**

FOR USE AS PARK PLANTINGS IN THE WILLAMETTE VALLEY

(If any of these shrubs are not plentiful in nature or prove difficult to transplant, they may be propagated by cuttings or seeds.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Description</th>
<th>Use</th>
<th>Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackberry</td>
<td>18'x30'</td>
<td>Rough vine with good fall color and edible fruit</td>
<td>Natural area for color</td>
<td>Propagate by layering or cutting</td>
</tr>
<tr>
<td>Cascara</td>
<td>18'x30'</td>
<td>Large shrub or small tree Yellow-orange in fall</td>
<td>Good tree for mass specimen or screen age sun. Cuttings. Good along creeks</td>
<td>Likes good soil &amp; moisture</td>
</tr>
<tr>
<td>Cucumber Vine</td>
<td></td>
<td>Coarse vine, interesting fruit &amp; dainty white flowers</td>
<td>Natural areas</td>
<td>Fairly tolerant</td>
</tr>
<tr>
<td>Dogwood</td>
<td>8'-30'</td>
<td>Tree-size shrub with big white flowers in spring. Red fruit in summer, red to purple fall color</td>
<td>Mass or specimen tree. Along streams</td>
<td>Tolerant of deep shade; leaves curl in full sun. Needs good drainage &amp; soil</td>
</tr>
<tr>
<td>Douglas hawthorne</td>
<td>10'-25'</td>
<td>Tree-size shrub with loose cluster of white flowers in May. Shiny black fruit in summer. Thorny.</td>
<td>Specimen or tall hedge</td>
<td>Seems fairly tolerant</td>
</tr>
<tr>
<td>Blue Elderberry</td>
<td>10'-20'</td>
<td>Large shrub or small tree White blossoms in spring. Blue berries in summer. Large fern-like foliage</td>
<td>Individual clump or large shrub masses</td>
<td>Succeeds in shade or large shrub masses</td>
</tr>
<tr>
<td>Ferns</td>
<td>6&quot;-4'</td>
<td>Great variety of ferns valuable for evergreen foliage. Most are evergreen</td>
<td>Valuable for growth in shade and in front of taller plants</td>
<td>Varieties for sun or shade, according to native location.</td>
</tr>
<tr>
<td>Gooseberry</td>
<td>3'-6'</td>
<td>Rather rough. Resembles garden variety</td>
<td>Filler in shrubbery masses</td>
<td>May propagate by layering or cutting</td>
</tr>
<tr>
<td>Hazelnut</td>
<td>6'-15'</td>
<td>Large shrub, of interest all year. Catkins in Feb. Nuts in fall</td>
<td>Shrubbery mass or border specimen or shade</td>
<td>Does well in sun or border specimen or shade</td>
</tr>
<tr>
<td>Indian peach</td>
<td>6'-15'</td>
<td>Beautiful shrub in spring Drooping clusters of white flowers</td>
<td>Large border shrub</td>
<td>Sun or partial shade</td>
</tr>
<tr>
<td>Mock-orange</td>
<td>4'-9'</td>
<td>Large shrub of rather coarse growth. Fragrant white flowers in June</td>
<td>Excellent for shrub border. Use alone also</td>
<td>Tolerates any moderately good soil. Likes lime soil</td>
</tr>
<tr>
<td>Ocean spray</td>
<td>6'-8'</td>
<td>Beautiful shrub with leaves like Ninebark. Cream-colored foamy blossoms in July</td>
<td>Border or specimen</td>
<td>Any good soil. Partial sunlight for blossoms</td>
</tr>
<tr>
<td>Name</td>
<td>Size</td>
<td>Description</td>
<td>Use</td>
<td>Culture</td>
</tr>
<tr>
<td>------------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Oregon grape</td>
<td>3'-7'</td>
<td>Very good broadleaved evergreen shrub. Yellow bloom in April &amp; blue berries in summer</td>
<td>Borders. Groups or specimen</td>
<td>Leaves turn yellow in open sunshine. Difficult to transplant.</td>
</tr>
<tr>
<td>(large)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon grape</td>
<td>1'-2'</td>
<td>Low evergreen with similar leaves in fronds like ferns plantings. Resembles holly</td>
<td>Specimen or screen shrub</td>
<td>Likes shade &amp; good soil</td>
</tr>
<tr>
<td>(small)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon myrtle</td>
<td>10'-30'</td>
<td>Large handsome broad-leaved evergreen shrub. Leaves have pungent odor. Compact &amp; round in form</td>
<td>Specimen or screen shrub</td>
<td>Tolerant of shade</td>
</tr>
<tr>
<td>Oregon crabapple</td>
<td>10'-20'</td>
<td>Small tree or large shrub Pink &amp; white blossoms in spring. Purple &amp; yellow fruits in summer</td>
<td>Best in mass or long fence row</td>
<td>Prefers sunshine to blossom well</td>
</tr>
<tr>
<td>Red flowering currant</td>
<td>4'-6'</td>
<td>Good shrub with carmine-pink bloom in April-May. Avoid placing near yellow flowering plant, as Oregon grape</td>
<td>Specimen or border</td>
<td>Prefers partial sun for good blossoms. Needs little water.</td>
</tr>
<tr>
<td>Salmon berry</td>
<td>4'-6'</td>
<td>Leaves like red flowering currant. Large white blossom in spring. Distinctive fruit orange, in summer</td>
<td>Shrubbery border or foundation plantings</td>
<td>Should do well under cultivation</td>
</tr>
<tr>
<td>Scotch broom</td>
<td>4'-8'</td>
<td>Appears evergreen with green stems all winter. Bright yellow blossom in May</td>
<td>Soil binder on banks, border or screen</td>
<td>Prefers good drainage but will grow anywhere. Needs little water. Control maybe necessary, spreads.</td>
</tr>
<tr>
<td>Serviceberry</td>
<td>6'-15'</td>
<td>Shrub in poor dry soil Tree in rich moist soil White flower in April Black &amp; blue fruit in summer</td>
<td>Fence row, screen or shrub mass. Good for continuity of bloom</td>
<td>Will survive with little water. Sun or shade ok.</td>
</tr>
<tr>
<td>Snowberry</td>
<td>3'</td>
<td>Blue-green foliage, waxy white berries that last through winter</td>
<td>Useful for berries against dark background. Border or foundation</td>
<td>Easily grown. Sun or shade. Needs no water if in shade.</td>
</tr>
<tr>
<td>Sumad</td>
<td>6'-15'</td>
<td>Brilliant colored leaves of yellow &amp; red. Adds a great deal of color in fall</td>
<td>Specimens or group</td>
<td>Shade or partial sun</td>
</tr>
<tr>
<td>Thimbleberry</td>
<td>4'-6'</td>
<td>Resembles salmon-berry, leaves not shiny, not as neat in habit, but useful. Flowers in early summer, red fruits later</td>
<td>Border or low screen</td>
<td>Needs sunshine</td>
</tr>
<tr>
<td>Vine maple</td>
<td>7'-20'</td>
<td>Shrub or small tree. Green bark. good irregular shape Scarlet in fall. Star-like leaves</td>
<td>Border or screen or specimen</td>
<td>Delicate open form in shade, more dense in sun. Little water in shade.</td>
</tr>
<tr>
<td>Name</td>
<td>Size</td>
<td>Description</td>
<td>Use</td>
<td>Culture</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>--------------------------------------------------</td>
<td>-------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Willow</td>
<td>4'-12'</td>
<td>Yellow stems in winter. Catskins in spring, grey-green leaves. Many varieties.</td>
<td>Shrub mass</td>
<td>Propagate easily by cuttings. Sun or partial shade</td>
</tr>
<tr>
<td>Azalea</td>
<td>3'-8'</td>
<td>Deciduous &amp; evergreen varieties. Pink &amp; white or yellow blossoms in May.</td>
<td>Flowering shrub for border specimen</td>
<td>Easily transplanted</td>
</tr>
<tr>
<td>Rhododendron</td>
<td>6'-10'</td>
<td>Large broad-leaved evergreen shrub with leathery dark green leaves &amp; large heads of pink flowers in May &amp; June.</td>
<td>Specimen or border</td>
<td>Deep humus soil &amp; moisture. Partial shade good. Difficult to transplant.</td>
</tr>
</tbody>
</table>

Additional shrubs and trees to be used for park planting in the Willamette Valley:

Hardy shrubs for different environmental conditions and special uses:

Shade:
- Azalea
- Dogwood
- Hazelnut
- Oregon grape
- Sumac spp.
- Red elderberry
- Snowberry
- Black haw
- Arrowwood

Dry site:
- Indian Currant
- Fragrant sumac
- Pacific dogwood
- Scotch broom
- Snowberry (shade)

Wet site:
- Alder
- Swampazalea
- Red osier dogwood
- Swamp rose
- Willow
- American elder
- Arrowwood

Steep banks:
- Sweet Fern
- Sumac spp.
- Scotch broom
- Salal
- Indian currant
- Hawthorne

Hedges:
- Mock orange
- Arrowwood
- Chinquapin
- Douglas

Additional trees for different environmental conditions and special uses:

Alkali soils:
- Black Locust
- Oregon maple

Sandy soils:
- Willow
- Western red cedar
- Birch
- Plane tree

Wet soils:
- Alder
- Ash
- Aspen
- Balsam fir
- American larch
- Maple:
  - red
  - silver
- Oaks:
  - red
  - white

Tree hedges:
- Douglas
- hawthorne
- Western hemlock
- Englemann
- spruce
- Western yew

Native conifers:
- Western hemlock
- Douglas fir
- Western red cedar
- Howland white fir
Exotic deciduous trees for Administrative Site and Main Drive Plantings

(Note: Although native trees should be the key note, there are a few exceptions in which exotic trees may be used to good advantage.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Size(height)</th>
<th>Shape</th>
<th>Special interest</th>
<th>Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawthorn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Carriers</td>
<td>30'</td>
<td>Round head</td>
<td>Handsome shiny leaved tree</td>
<td>Ordinary soil</td>
</tr>
<tr>
<td>b. May flower</td>
<td>20'</td>
<td>Round head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horse chestnut</td>
<td>90'</td>
<td>Oval or pyramidal</td>
<td>Handsome tree with 5-pointed foliage. A street tree.</td>
<td>Tolerant</td>
</tr>
<tr>
<td>Mountain ash</td>
<td>35'</td>
<td>Round head</td>
<td>Ornamental. Red berries in fall</td>
<td>Loam</td>
</tr>
<tr>
<td>Maple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Norway</td>
<td>90'</td>
<td>Round head</td>
<td>Gives fall color. Good street tree</td>
<td>Grows even in poor soil</td>
</tr>
<tr>
<td>b. Oregon</td>
<td>125'</td>
<td>Round head</td>
<td>Yellow in Fall. Street tree</td>
<td>Tolerant of any ordinary soil</td>
</tr>
<tr>
<td>c. Sugar</td>
<td>120'</td>
<td>Dense oval</td>
<td>Yellow-green in April. Street tree.</td>
<td>Tolerant</td>
</tr>
<tr>
<td>Oak, red</td>
<td>70'</td>
<td>Broad</td>
<td>Red color in fall</td>
<td>Gravelly clay soil</td>
</tr>
<tr>
<td>Black locust</td>
<td>60'</td>
<td>Open and irregular crown</td>
<td>Fast growing tree</td>
<td>Intolerant Rich loam soil Old fields</td>
</tr>
<tr>
<td>Oriental</td>
<td>100'</td>
<td>Round head</td>
<td>Showy large leaves Large tree Street tree</td>
<td>Intolerant Moist mineral soil</td>
</tr>
<tr>
<td>Sycamore</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black walnut</td>
<td>80'</td>
<td>Round head</td>
<td>Large tree, Fruits Nuts</td>
<td>Very intolerant Deep rich moist soil</td>
</tr>
</tbody>
</table>
After the choice of plant materials is made the transplanting of the small collected trees and shrubs must be made in the case of the native species. First, the proper season for transplanting determines when the planting should take place. It is true that trees and shrubs are many times moved every month of the year. However, it is also true that plants moved during periods of rapid growth tend to suffer more than usual. The best time to transplant is that period in which the plant is in a dormant stage. In the Willamette Valley where the winters are mild, planting can be done in most cases in early fall without fear of losses due to frost. As a general rule evergreens can be most successfully moved earlier in the fall and later in the spring than deciduous plants.

Plants may vary a great deal in adaptability in moving. Species with tight compact fibrous root systems will adjust themselves more easily than those with sparse elongated root systems. Some plants may need preliminary treatment in root pruning to prepare them for transplanting, however, more careful digging and taking a larger ball of earth with careful maintenance will suffice just as well in many cases. In digging most small deciduous plants can be moved bare rooted, but evergreen and larger deciduous trees should be moved with their root systems intact, and an undisturbed ball of earth around the root.

Delaying the digging until the soil is in a suitable condition is good practice. The soil should be dry enough so that it will not puddle, but not so dry that it will puddle. Digging methods depend upon the watering habits of the species and the individual. Plants which have been root-pruned or naturally grow in the open have a compact and well balanced root system and are the best to move. Plants that are bushy or low-headed should have their tops tied before digging. This will decrease breakage and makes both digging and handling easier. Digging should be done with a sharp spade, starting far enough away from the plant that the majority of the important fibrous roots will be secured.
A good practice previous to hauling is to tie the small shrubs in bundles, or heel them in. The extent of root exposure that plants will stand varies a great deal. The drying out of the roots and top is one of the greatest causes of the death of transplanted stock. Special care should be taken on hot, dry, or windy days. In moving stock to the planting site it is necessary to heel in all plants if they are not to be planted immediately. Frequently watering of all stock heeled in is good practice.

In transplanting trees and shrubs too much attention cannot be given to adequate soil preparation. The holes should already be dug upon the arrival of the plants. If the soil is unfavorable to plant growth the holes should be dug big enough that from six inches to several feet of good soil may be replaced around the plant. Holes for deciduous stock should be made big enough to permit the roots to spread out in their normal manner. The sides of the hole should be straight with a flat bottom. Holes for ball stock should be at least one-fourth larger in width than the ball, and several inches deeper. The use of humus as a backfill is very successfully used to insure the best possible root growth. Backfill soil should be friable and free from lumps or stones.

In the planting of stock an important objective is to set the tree or shrub as close as possible to the same depth as it originally grew. As previously mentioned the plant should be placed in a hole with a prepared bed of good top soil and adequate drainage should be assured. The roots of the plant should be spread in their natural position, and fine top soil worked around them. A slight tamping of the soil will prevent any air-pockets, after which the hole is filled with water.

In transplanting trees and small deciduous stock an additional precaution should be taken in the form of pruning. This is done to help compensate for the root loss a plant invariably suffers in moving. However, drastic pruning is not
necessary if adequate water and cultivation will be assured in maintenance.

For trees one inch or more in thickness or over five feet tall it is usually wise to guy or stake them. This may be done by driving in one stake alongside the tree, two stakes opposite each other, or three at equal distances. A soft rope or wire through a piece of hose are best as binding material in attachments. Another type of support is the guy wire, but it is not desirable or advisable in any public use area where there is considerable danger of people tripping over them.

This completed the discussion on planting, and also the short treatise on landscaping of the park area. Thus the three basic steps of park development have been carried out, and the next step is to apply these rules in the development of a roadside improvement project.

B. ROADSIDE IMPROVEMENTS

CHAPTER VII

SELECTION OF THE SITE

In developing roadside improvements for town approaches, the same basic procedure will be used as for recreational areas. First, the site for improvement will be selected, then an inventory will be taken, plans drawn, and the final work of construction carried out.

In selecting the sites for roadside improvements for a town there are several important considerations to be made. First, one must decide whether or not the improvements to be made will justify the cost. Of course, it is hard to measure scenic values in the terms of dollars and cents, but one can try to visualize the completed picture and decide whether or not a substantial improvement can be made. Some town approaches are already attractive, mainly through
the efforts of nature, while others are a disgrace to the community whose approach they herald.

After deciding what improvements are needed and justifiable, the next step is to investigate to determine whether adequate right-of-way is available. This is very important and will determine in many cases whether or not any planting work can be done. An eighteen foot road with a forty foot right-of-way is not considered wide enough for any planting. The eleven feet that are left on either side of the road is needed for slopes, and the upkeep of the banks and gutters. Too, the possibility of future widening of the road should discourage such close planting, if practical and scientific planning is to be considered. Any tree planting done under these conditions will have to be forced on private property adjoining the right-of-way. This would necessitate acquiring the permission of the land owner, and his wishes will perhaps determine to some extent the character of the planting done.

A sixty foot right-of-way with an eighteen foot road is considered wide enough for informal planting, while if the road is a twenty-four foot one, the right-of-way would be considered too narrow. An eighty foot right-of-way with an eighteen foot road gives ample room for effective informal planting, the type of planting most applicable in this work. A hundred foot right-of-way with a twenty-four foot road makes possible the most attractive informal plantings. Right-of-ways of more than one hundred feet are especially desirable and most effectively adapted to informal plantings, the additional space allowing a much greater variety of arrangement and natural disposition. A one-hundred-fifty foot right-of-way is considered adequate to save existing plant growth along main highways and should be acquired when practical.

Thus, it would seem that at least a sixty-foot right-of-way would be required for roadside improvement of the informal type. However, improvements
can be made on a slightly smaller width with the permission of the land owner, although this is far from an ideal arrangement.

Another thing which must be considered is the length of the area which is to be improved. This depends upon two things; first, just what measures are necessary to obliterate undesirable areas along the roadside, and what is their range from the town's edge. Secondly, what distance will it take to make a perfectly natural transition from the country roadside to the city streets. In selecting a site for a roadside improvement project one should consider practicability, right-of-way, and length of roadway to be developed.

CHAPTER VIII

THE INVENTORY

Socio-economic inventory. An inventory should be taken for the area. The socio-economic phase of this work would be to determine the town size (population), the character and general economic class of its residents, and the amount of highway traffic passing through. Population figures can be taken from county, city, or state records. The general economic status of the people can be determined sufficiently for the planner's purpose by the appearance of the town and its dwellings, along with the presence and type of industries. Highway traffic figures are only important for classifying the highway according to the amount of use. All federal highways (U.S.) are primary highways, while many of the State Highways are secondary ones.

Physical inventory. In making the physical inventory, the first step is to construct a base map of the highway strip to be developed. The scale used depends upon the length of the project, but one to fifty, or one to one-hundred is considered about right. One to fifty is the regulation for highway construction and is used in most cases, while one to one-hundred can be used where the
project extends for over a mile. However, the amount of detail necessary to
give a clear picture for the planner's use should be the governing factor; the
base map can always be made in several sections using a larger scale when
necessary.

The first thing that is plotted on the base map is all of the details of
the highway itself. These include the center line, the road edges, intersections,
and the imaginary right-of-way lines. Next, the physical details surrounding the
highway are sketched and plotted on the map. These include the edge of the
shoulders, ditches, slopes, culverts, telephone and power poles, highway signs,
guard rails, bridges, and fences. Then the existing plant growth by groups and
individuals, including shrubs, trees, and grass areas should be put on the map.
With this information plotted on the base map a preliminary field check is made
noting observations on the base map of anything with importance in determining
phases of the planting plan. These include the marking of undesirable areas to
be obliterated by plantings, possible view sites from which existing growth must
be cut, and zone limits for each type of planting. This concludes the field work
phase of the physical inventory. The only thing left unaccounted for is an inven-
tory of money the community has available for the development of the project.

Analysis of the inventory. The planning phase for the development of road-
side improvements is an important one. The inventory taken for the sole purpose
of aiding the planner in constructing the best plan possible; all the construct ion
work done and the ultimate effect obtained depends on just how well the planner
does this job.

The first thing he must do if he is to take advantage of the information
collected in the inventory is to analyze it, and obtain the answers to his main
problems which will guide him in his work.
One of the questions he must answer is what intensity of development is the most desirable. Any plantings made at the town approaches must fit in with those of the existing main streets. Money may be an important controlling factor, for the trees used in formal plantings are usually exotics and cost accordingly.

Another question is what type of development should be carried out. Fortunately, for rural communities and towns his choice is limited, and he can determine from his inventory the type which will be in complete harmony with the rural environment. This is best achieved by a type known as the "informal rural." It consists of three different zones of development, graduated from an informal type through a transitional zone to a formal character. Other problems the planner faces is how to obliterate undesirable areas, and how to control eroding banks; however, these are more of a landscaping problem.

CHAPTER IX
THE PLANNING PHASE

Now, with the problems as to intensity and type of development solved, the planner can go ahead and prepare his landscape plan for the development of the area.

The landscape plan. From the base plan blue-prints are prepared and taken into the field. All tree growth to be removed is plotted on this map, along with the locations of all grading work that must be done. This includes obliteration of construction and scars, and sub-grading, which takes in the flattening of slopes, the widening of paths along the highway to insure proper location when the grading takes place.

Copies are also made from the base plan and enlarged to a scale of one to twenty. These will have to be made in several sections in order to cover the entire roadside strip to be improved. A tentative planting layout is then made out in the office as follows: The three plant zones of development, as determined...
in the field have been plotted on the enlarged sections (scale one to twenty), and it is these which determine the types of plantings to be made. They will be taken up separately, starting with the informal zone type, which is the first one encountered as the town is approached. The location of each tree, shrub mass, and areas to be sodded or planted to grass will be plotted on this planting plan.

The purpose of this zone is to make the highway roadside attractive by replacing trees which were removed in the clearing of the right-of-way and adding others in an effort to restore nature's handiwork. The central idea of all plantings is to carry out a rural atmosphere and make an environment harmonious with the country side. This is done in two ways, by the use of native-grown plants, and by arranging them in an informal manner.

All plant materials in this zone should be arranged informally, following the principles of nature. Nothing should appear superfluous or tacked on to make the roadside look "arty." Trees are gregarious and social by nature, one species usually predominating in a group. They always grow informally, with irregularity and variety as the rule. The same environmental habits are true for shrubs also. Trees and shrubs planted along the roadside should be scattered by groups and individuals. The "line" of irregularly spaced plantings should vary, at some places approaching the edges of the highway shoulders, outside of the possible road widening zone, and at other places should be located back from the highway at the far edge of the right-of-way limit. Care should be taken in planting under telephone or power lines, as the taller species will interfere as they get older. Then they must be topped, spoiling the effect for which they were planted.

The second method of promoting a roadside environment which is in harmony
with the existing rural countryside, is through the selection of native plant materials. Too much stress cannot be placed on the fact that the shrubs and trees should be indigenous to the region. They should be of the same species as those which grow around them, or if there is no existing plant growth, they should be of the same type as those which used to grow there before man upset nature's cycle. It should be mentioned that this informal zone is the most important of the three, because the ultimate effect to be obtained is the most difficult, a complete lack of formality of any kind should prevail and a corresponding increase in roadside charm will result. This zone is also the longest section of the roadside strip to be improved, the other two sections being comparatively short.

The second zone of development is called the transition zone. Its purpose is to act as a buffer between the informal plantings of the first zone and the formal plantings of the third, and to modulate the effect of their meeting. It is a combination of the two types of plantings, with the shrubs and trees so arranged as to soften the contrast between two opposite types of plants. Needless to say, it contains both methods of plant arrangements, with a gradual blending in of one type into the other. The selection of plant materials for this transition zone is important, if the proper change from one type to the other is to be accomplished successfully. It should include species characteristic of both zones, but a third and very important class of plant materials must be added to this list. They must be neither entirely native or non-indigenous species, and not entirely suited for either strictly formal or informal plantings. Here is the secret of a successful transition, along with correct arrangement, of course.

The third zone or formal type may be summed up briefly as a street planting. It should have all the characteristics of this type of planting, including the two important elements of arrangement and appropriate species. The arrangement is definitely formal with the trees planted in straight rows. It extends
to the streets already planted in the town, to the town edge where the transition planting starts. The trees are exotic species common to all street plantings in Willamette Valley towns; few shrubs are used in this type of planting, with individual landowners filling in this phase on their own adjoining properties.

This ends the discussion of plant material arrangement and character for the three zones which are necessary to beautify the highway roadside, and effect a transition between the rural countryside and the town streets.

Roadside vegetation. To complete the planning phase of this work a brief treatise will be made on the five special or different types of roadside vegetation, their uses, how to select them, and a table listing trees and shrubs by zones and species for use as roadside plantings in the Willamette Valley.

There are many different ways in which roadside vegetation can be used to beautify, and also serve the utilitarian purpose of traffic safety and increase the life of the roadway. In other words, they may be used not only to increase the charm of the countryside, but also to serve in other important capacities. Five types of roadside vegetation are commonly used, and their arrangement and position along the highway is not only determined by their charming appearance, but usefulness as well. These new uses have no bearing on previous methods of arrangement as listed by zones. They are merely additional uses which will improve both the appearance of the roadside, and serve in an utilitarian manner.

Trees are mainly important as a background along the highways, but they can be placed so as to perform other important functions, as well as to beautify. Small trees (17'-25') high can be used on lower slopes and on deep fills to level out land contours. Another use that is a great aid to traffic safety is the planting of a group of trees as a warning sign on the opposite side of highways in line with side roads. These trees warn the driver that he must slow down when approaching the main highway; the same idea carried out at road curves tells the
driver that the road makes a bend.

Shrubs are extremely valuable for utilitarian purposes as well as aesthetic. Dwarf shrubs (2'-4' high) can be planted at wing walls, culverts to check erosion, and as a background for highway signs to make them stand out to the passing driver. Medium shrubs (4'-7' high) can be used to level out low fills and are useful at large, At bridge heads they do not hide the bridge head, yet soften the effect. Tall shrubs (7'-12' high) are used on lower slopes and on deep fills to round out the ground contours.

Grasses are next to trees in importance as roadside vegetation. Grasses like sunshine and therefore find favorable conditions for growth by the highways where it is sometimes hard to maintain good growing conditions. Grasses are considered the best preventative of erosion known, not withstanding the attractive clean appearance they give the roadside. One precaution should be taken where there are asphalt roads, and that is not to plant grass too close, as it holds moisture and will cause deterioration of the pavement.

Another type of roadside vegetation is vines. They are extremely attractive on fence rows along the highways, however, they may also be used to check erosion on steep slopes.

Native flowers are protected by law in this state along our highways, and their existence should be encouraged, as they add to the roadside charm and require no special care.

Plant material selection. In selecting plant materials for roadside use great care should be taken to get hardy trees and shrubs. The open exposure, no protection from sun and wind, and nature of the site, along with the suction of fast traffic, are not conducive to good growing conditions. One of the most difficult problems is to get vegetation to grow under these circumstances. Transplanting native species is an especially risky business if not handled with great
care. Nursery grown stock is harder than species collected in the field, but it may be difficult to get the native species desired. The best size to transplant trees is those which are ten to twelve feet high or have a diameter of one to two and one-half inches about six inches from the ground. Shrubs are best for this between two and four feet high. All trees should be strong and healthy with straight trunk and uniform, well-developed crowns.

Methods of digging, transplanting, planting, and staking trees and shrubs will not be reviewed here, as those procedures have already been covered under "Parks." However, it might be mentioned here that guying and staking are important for trees planted in the open along roadsides to insure straight growth, for they are subject to the unbroken forces of the winds.

Below is a table listing shrubs and trees by species for the different zones, which can be used for roadside improvement projects in the Willamette Valley.

<table>
<thead>
<tr>
<th>TREES</th>
<th>SHRUBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1. (Informal)</td>
<td>Zone 2. (Transmission)</td>
</tr>
<tr>
<td>Douglas fir</td>
<td>Oregon ash</td>
</tr>
<tr>
<td>Douglas hawthorn</td>
<td>Oregon maple</td>
</tr>
<tr>
<td>Oregon ash</td>
<td>Mountain ash</td>
</tr>
<tr>
<td>Oregon oak</td>
<td>English hawthorn</td>
</tr>
<tr>
<td>Cascara</td>
<td>Flowering peach</td>
</tr>
<tr>
<td>Salix spp.</td>
<td>Flowering crabapple</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Scotch broom</td>
<td>Oregon grape</td>
</tr>
<tr>
<td>Wild currant</td>
<td>Hazel-nut</td>
</tr>
<tr>
<td>Cascara</td>
<td>Azalea</td>
</tr>
<tr>
<td>Mock-orange</td>
<td>Clematis (vine)</td>
</tr>
<tr>
<td>Sumac spp.</td>
<td>Ocean spray</td>
</tr>
<tr>
<td>Red elderberry</td>
<td>Rhododendron</td>
</tr>
<tr>
<td>Snowberry</td>
<td>Red Flowering Currant</td>
</tr>
</tbody>
</table>
Now that the plant materials have been selected and plotted on the enlarged section of the planting plan, this tentative plan is reviewed in the field. Here additions and correction are made, and then the final plans are prepared in the office. A complete report consists of an index or title sheet, summary sheet, and the planting section sheets.

CHAPTER X
THE DEVELOPMENT PHASE

With the plans completed, they are taken into the field and the development work is carried out accordingly.

Landscape-forestry work. The first phase of this work is called landscape-forestry work. It has to do with the selective cutting and grubbing of existing growth. Some trees may have to be moved back from the roadway and others of a defective character may have to be removed. Brush should be cleared and grubbed, taking care to leave all the desirable tree and plant growth. Trees to be left are carefully pruned and treated surgically if necessary. A three foot space may be grubbed out around some of them to promote fast growth.

The amount of landscape forestry work done depends entirely on the existence of plant growth. In some cases there will be none, while in others it may even entail the cutting out of vistas in wooded areas.

Grading preparations. The next job to be done is the preparation of the planting and seeding areas. These areas have previously been located on the construction map. The first grading work to be done is of a general nature which includes the obliteration of any old construction scars. Then, the rough or sub-grading is done. This includes the flattening of slopes, widening of shoulders, widening of ditches, and the location of paths. Tree pits are also dug along with the preparation of planting beds. The last stage is called finished grading, and
includes the rounding of slopes and all raking work done before seeding grass.

Soil improvement work may be necessary, and if so, it should be done by moving of top soil to the planting pits or the use of fertilizer.

Planting and maintenance. Little need be said about the actual planting process, as this has been discussed before. It is common practice to set the trees out first to form the background for the planting scheme, and give them a head start on the faster-growing shorter-lived shrubs and vines. Grass may be procured by either seeding or by sodding if none is present. Unfortunately merely setting out the planting materials does not insure their growth. They must be staked, fertilized, sprayed, watered, and cultivated. Growing conditions along highways are adverse to plant life, and man must make up for this through careful maintenance.

CHAPTER XI

APPLICATION OF THE TEXT

Part I of this thesis has three alternative uses: it can be used by a town or community as a practical guide in the development of a recreational area or park; or in making roadside improvements in a community beautification program. Secondly, it can be used by the Recreational Engineer as a guide in park construction. And third, it was primarily to be used by the Oregon State College Forestry students in a program of park development and roadside improvements in small towns in the Willamette Valley.

Communities. Little need be said for its use by communities in which it is to be used as a guide in a cooperative effort by the local citizens. It may be used merely as a guide or a practical reference in conjunction with a consultant's advice, i. e., landscape architect or recreational engineer, or it may be followed in detail if it is their sole source of information.
The title Recreational Engineer as applied to park development is almost unknown here in the West, and until very recently in the East almost all rural parks were laid out with a landscape architect as consultant. Landscape architects have stayed within the field of urban park planning and development almost without exception, and as yet the rural field remains untouched. As the demand for the scientific planning and development of small town and rural parks increases, so does the need for trained men in this field, and for forestry school graduates in recreation in particular, this guide for park development should prove to be of practical assistance.

Oregon State College recreation students in Forestry. It is in reference to this third use, i.e., to forestry students at Oregon State, that Part II of this thesis is written. However, before taking up this plan for the accomplishment of a community improvement program and the investigation that was made, it might be well to discuss briefly the general aspects of initiating a program of this nature as an aid to other persons or organizations with this objective in view.

PART II
A PLAN FOR THE ACCOMPLISHMENT
OF A COMMUNITY IMPROVEMENT PROGRAM ... 

CHAPTER XII
NATURE OF THE PLAN

The nature of this second investigation is of a hypothetical nature in several aspects. This is due to a lack of both factual material and proof. As previously stated, this is an original thesis in many aspects, and especially is this true in determining how to put the formulated plans for park and roadside improvements into action. In many cases several possibilities of action are suggested in hope one will be found feasible for each situation.
CHAPTER XIII
INITIATION OF THE PROJECT

The development of parks and roadside improvements as a means of community improvement are both desirable. They should be considered as one program; however, it should be taken into account that there will be many cases in which only one would be feasible. This condition may arise from any one of a number of sources. A lack of sufficient community funds, lack of proper site, and a deficiency of local interest are common drawbacks. Although the initiation of both types of improvements would be considered optimum, either one can stand alone on its own merits and should be considered a big step in the right direction. In initiating a community improvement program there are several methods of procedure and means of attack that can be used.

Who to contact. The first question that arises is where to start and who to contact. There are several alternatives, but perhaps the best choice in towns the size of these indicated here is the mayor. He is usually the best-informed person on community affairs, and as the head of the local government everything must have his sanction. Other sources to contact which may prove to be helpful are the local Chamber of Commerce, members of the city council, and local community and town clubs. These may include such organizations as the Lions's Club, Elks, local booster clubs, and garden clubs. The last named is an especially good source, for they are usually sympathetic to any community improvement program.

Methods of contact. There are several ways to make contacts once the selection is made. One is to use the indirect method of correspondence, and, if interest is shown, follow it up by a personal interview. A second method is to eliminate the first step and contact the party directly. The first method
saves time in eliminating those communities which have no interest in such a program, while the second has the advantage of personal contact in which the program may be "sold" only through a more complete description.

Selling the program. Directly related to this last method is the question of arousing interest in such a program. It is true that the future of a wide-scale program of this type for a number of towns would be extremely curtailed, if applied only to those towns who were in unison with the program upon first approach. Therefore it is justifiable at this time to set down some of the advantages to be gained by a community, as an aid in putting over an improvement program.

A town or community park is not only an attractive feature, but the mark of a progressive community, interested in civic improvement. Such an area has both recreational and social value. The individual will benefit through increased outdoor exercise. Group sports such as those participated in by churches, clubs, and unions are one of the main use activities. Social values may be recognized in several ways. The community park may prove to be the meeting place for many social groups and their activities. Child delinquency problems are often almost solved through the development of a clean wholesome atmosphere for supervised play. Summer programs are popular with courses taught in swimming and other group activities.

A great deal can be said for the development of roadside improvements. A town thus made more attractive has a definite appeal to the tourist or the home-seeker. Not only is a good impression of the town retained, but a good impression of the people that live there. Benefits derived do not take on only a localized aspect, as the county and state are benefactors as well.
The following treatise will apply only to the investigation that was carried out by the writer in attempting to put a program of park development and roadside improvements into action for small towns in the Willamette Valley. Although it was impossible in this case to carry the project through to its completion, a discussion will be made of the various possibilities for carrying out each method of development.

The survey. The first thing done in this investigation was to conduct a survey. The purpose was to determine community interest in the desirability of roadside improvements and park development. The survey was made by the use of a form letter. Fifty copies were made and sent out to mayors of towns in Western Oregon. They were limited to Western Oregon and had to be on either a primary or secondary highway. Populations ranged from 227 (Monroe, Oregon) to over 3,000 (Hillsboro, Oregon). The general rule of 200 to 3000 population was used as a standard deviation limit. The necessity of a highway location is obvious from the practical standpoint of road improvement. While a lower limit for population was chosen to insure adequate park use.

The letter form of survey was selected because it was economical and time-saving, although the personal interview type would have undoubtedly secured better results from a percentage standpoint. Ten replies were received, all of which were favorable to the community improvement idea. Regimenting these further, I found that there was quite a range in interest shown. Some merely endorsed the idea, while others were more specific, mentioning what they had already done along this line, what some of their problems were, and asking for advice. A brief resume is as follows:

1. Independence: a park area to be developed, and roadside improvement project site.

* Copies of reply received from each in appendix.
2. Oswego: planning to purchase park site.

3. Beaverton: property for a park yet to be developed. $100 in 1941 budget for park development.

4. Woodburn: has a five acre tract with little development.

5. Multnomah (personal interview): a twenty-acre tract given to city for park.

6. Amity: in favor of community improvement projects.

7. Newberg: 

8. Jacksonville: 

9. Halsey: 

10. Hubbard: 

11. Myrtle Point: 

From this preliminary survey, it was apparent that there was work that needed doing in this field. Although no follow-up was made in any of the above cases, a hypothetical plan was set up at this time for carrying out inventory and planning work. The actual application of this would have to wait for official approval.

Substantiation of procedure. At this time it might be well to substantiate the procedure practiced here. At the present moment, it would seem that the cart had been put before the horse, due to the fact that a plan is being developed for carrying out planning and inventory work for towns in which no personal contact had been made officially authorizing such work. However, due to the uncertainty of getting a number of different agencies to cooperate, anyone of which could render the whole plan useless by failing to come through, this paradox in procedure was necessary. Too, because the results of the preliminary survey were very successful for an indirect method of contact, it was felt that very little difficulty would be experienced in getting official authorization when the parties were contacted personally. In other words, the real problem, then, was to get backing
to finance an inventory and planning program; until that was secured it was not only impracticable to make definite promises, but dangerous, due to many implications which would arise, if specific problems were talked over and definite arrangements appear to have been made.

Division of the problem. This development plan for the construction of community improvements will be divided according to application rather than entirely on the basis of function. It was planned to have Oregon State College recreational students in forestry do the inventory and planning work, while the actual development work and maintenance would be individual projects to be carried out by each community, if they so desired. The work done by these students was to cover as many towns as practical in the summer of 1941. Then these towns with their park and roadside plans made, were ready to go ahead and carry out the construction work.

Inventory and planning phases. A description on how the inventory and planning phases were to be carried out is as follows: A glance at a map of Oregon showed that the largest percentage of these towns interested in the improvement project were well grouped as to location. This was further born out when a copy of their positions was plotted on paper, and when the Oregon State College arboretum was used as a center point, an arc having a scaled radius equal to eighty miles included all but two of the towns. These were Myrtle Point and Jacksonville. It was decided to exclude these two towns from any immediate development plan for the sake of practicability and economical operation.

The remaining nine towns in this proposed working circle averaged fifty-two miles from the center point. The shortest distance was to Independence (17 miles), while the longest distance was to Beaverton and Multnomah (74 and 75, respectively.) It was decided that the most practical means for carrying out inventory and planning work would be by means of a mobile crew which could travel
from town to town or commute between a headquarters set up at the Arboretum and the town project being developed. The Arboretum was decided upon as the best available spot for headquarters, as it was the closest place attainable with facilities of any kind.

Crew: The crew was to be composed of three or four recreation students in forestry and a foreman. It would be highly desirable to have juniors or seniors for this work who would have already had courses in Recreation Management, Plant Materials, and Landscape Planning. A better job would be assured and the students would get more out of the experience. However, the least training that would be necessary would be schooling in surveying, as offered during the sophomore year. Such a person would be useful in taking the physical inventory. Perhaps one of the most valuable assets any member of the crew could have would be a deep interest in the work being done. This would apply especially to the foreman, whose responsibility it would be to keep the project going, something that is difficult to do with a new untried plan with many obstacles to face.

There were two possibilities for wages for the crew, depending upon whether or not they would be an independent/ permanent unit for the summer, or be dependent upon some other part-time source of work for wages. The first suggested type of unit would be independent of any other source of work for income and would be able to put in a full forty-four hour week. This is the most desirable and efficient organization, but the big draw-back is to secure sufficient financial backing for the crew's wages. With a minimum wage of only $40 per month for a crew of three with a foreman at a slightly higher figure, it would amount to between $500 and $600 for the three month's work. Sources that might be approached for financial aid are the State Highway Department or other state or public agencies. Perhaps one of the most logical sources is the town itself. However, this would limit development to the larger towns that are financially capable.
The second type of unit is one which is dependent upon some other source of part-time work for financial aid. One possibility was a tie-up with the Red Hat fire fighting organization which uses the Arboretum for a base camp during the summer. The set-up would be for the crew members to divide their time between the community improvement project and earning additional wages fighting fire. The amount of time that any one crew member could spend working on the project would be one-hundred hours a month, for which he would receive $30 in NYA wages. Under this system, the personnel used would not be of such a high type as in the first case, and there would be a greater change in personnel throughout the season.

Transportation: As this is to be a mobile crew some means of transportation is necessary. Suggested possibilities are a truck or car. For so small a crew as four or five a car would perhaps suffice, although with field living equipment it would be rather crowded. Possibilities for a truck rest with the School of Forestry or the State Highway Department.

Another item of equal importance is an expense account for gasoline, oil, and car upkeep. This cost could be distributed among the towns, and when averaged on a round-trip basis at five cents a mile would amount to between $5 and $6. This cost could readily be charged off to each town, so securing an expense account in this case is no real problem.

Equipment: A certain amount of equipment would be needed to carry out the different phases of the work, but also for living while on the job. They may be divided to field, drafting, and living equipment. Field equipment* could be obtained at the School of Forestry as long as it was being used by the students, as would be the case. The drafting equipment for applying the field data in drawing up base and planting plans would be negligible, and could probably be supplied by anyone of the crew who has a school drafting set. However, the materials that will be used in the construction of these plans would cost something. Total cost

* List in appendix
for each set of plans would be between $2 and $3. Each town can cover this small cost, and it may be included in with the transportation expense account.

Living equipment, except for a portable tent, will have to be furnished by each individual (eating utensils, sleeping bag, toilet articles). A few general pieces of equipment such as a portable gas stove, gasoline lamps, and other camp necessities should not be too difficult to obtain. Eating expenses would have to be borne by each member of the crew. Through cooperative buying this cost may be cut down somewhat. A filing system and typewriter would be useful additions for recording data collected and other pertinent information.

Operation of the crew: A brief description of how this crew would operate is as follows: First, the foreman contacts the town in a pre-determined working circle that has expressed a desire for plans for community improvement, or have shown interest in this type of work. His job is to lay the groundwork for the inventory and planning work, and take care of all the details prior to the arrival of his crew. His job is an important one, and he must be well-informed in all the details of it.

It might be well to mention at this time that as the program expands the foreman's work will also include the selling of this idea of community improvements to other towns in the valley. This task requires initiative, perseverance, and a genuine belief in the benefits of such improvements. It will entail public relations work, speaking to town service clubs and other community organizations such as local garden clubs, and promoting the scheme in general. This work should become easier as towns who have already subscribed to the idea complete their developments and the results become evident.

Returning to the more specific tasks again, the foreman who is working on a town project acts as a consultant with town officials on all matters related to the improvement program. He will aid in the selection of the sites for the project to be developed (if this has not already been done), and, if the site has
already been chosen, he evaluates it. The foreman will arrange all financial matters, such as expense accounts, cost of materials, and crew wages (if the town should be the source.) He will also inquire as to what arrangements have been made for the construction of the project as a check on their future plans. Arrangements must be made for quarters for the crew if any are available, or get permission to stay on the area. After these and other details which may arise are taken care of, the foreman will send for the crew and they will immediately start in to take a physical inventory of the sites proposed for project developments.

The procedure for this work has already been outlined previously in Part I. While the crew is working on the physical inventory, the foreman can take the necessary socio-economic inventory. He can get this information from several sources, namely: Chamber of Commerce, county agent, city officials, mayor, county records, or a personal survey or questionnaire.

All base maps made by the crew for both types of improvements will be by the plane-table method. If topographic types are needed for some parks, they will be made by use of a telescopic alidade and stadia rods. One man will use the plane-table, with two men on the stadia rods, the fourth man in the crew can be swamping out lines, cutting stakes, and other general tasks. It is desirable that these men change positions, so that each may benefit from the several types of work experience. After all inventory information is gathered the rest of the work in inventory analysis and planning can be done at headquarters camp. A large base map, planting and landscape plans, and a report on the project will be turned over to each town. All development maps shall be drawn on tracing cloth to insure their permanence. An inventory of the work done and the material used for each project shall be kept by the crew. This concludes the part of the Oregon State College crew in the development of plans for community improvement projects. Now it is up to each town to carry out these plans.
Construction work. Construction of parks and roadside improvements require not only money but labor. Of course, before any community can develop either one of these projects they must have some funds. Whether or not they have money available has already been determined in the inventory, and no planning work would have been done if there was not a reasonable possibility of the project being completed. Many towns have started park funds for just this purpose, and in addition will vote city funds to be used for this purpose. However, this money has to be used for material costs.

There are really only two sources of labor at the present time that could be used for park construction. One of these is a cooperative effort in which the people of the community work together, donating their services. This scheme has been used successfully in the Middle West in small farming communities and towns.

The other, and perhaps best source, is W. P. A. labor. The W. P. A., until the start of the present war, would contribute labor for almost any worthwhile public project if plans were ready for them. A fine example of the work done is the Corvallis City Park. In approximately two years with W. P. A. labor a fine park has been made from a sixty-acre woodlot. It is doubtful whether W. P. A. labor could be secured at this time for anything but defense projects. Nevertheless, when conditions are normal again, this source should again be taken into account.

Supervision and Maintenance. Although now that all provisions have been considered in the development of parks and roadside improvements, it might be well to add a few notes about supervision and maintenance.

Supervision of community parks is optional depending upon the size of the park, the amount of use, and whether or not the town can afford it. Some may be able to pay for a supervisor who will look after all maintenance and future developments. This is the optimum condition to strive for. Others may be able to afford
only a part time caretaker for maintenance, and under certain conditions this may work out quite satisfactorily. Still others can maintain their parks through the voluntary work of a park committee. An additional source of maintenance work especially for roadside improvements would be to utilize the services of local scout troops and other youth organizations, who might undertake this work as a community service project under careful supervision.

CHAPTER XV

OBJECTIVES OF THEESIS

This ends the discussion on the development of roadside improvements and recreational areas for small towns in Western Oregon, except for the conclusions, listed in the summary. Briefly, the writer tried to accomplish the following objectives:

(1) To develop a plan that could be used as a guide or text to aid certain agencies in the planning and construction of two types of community improvements, recreational areas and roadside improvements. These agencies were to be communities who desire improvements, recreation/engineers or other individuals interested in this work, and last, a crew of Oregon State College recreation students in forestry, who were to apply the plan to a specific project.

(2) To conduct a survey to determine the interest in community improvement for selected towns in the Willamette Valley, and to discover specific needs that might be present at this time in the field.

(3) To improvise a plan by which a program of community improvements could be carried out for selected towns in the Willamette Valley, depending upon the results of the survey.

(4) To initiate this plan in the summer of 1941, carrying out the inventory and planning phases necessary to actual construction work which was to be done by the individual communities.
CHAPTER XVI

SUMMARY

Although the investigation carried out revealed that there was a definite field for community improvements in the Willamette Valley, the program for their development failed to materialize. General opinion of the plan from several sources was that it was a good idea, one of which was the Oregon Roadside Council who endorsed it whole-heartedly. However, financial backing was impossible to secure at this time although several sources were contacted. One of these was the Oregon State Highway Department and another the state National Youth Administration. Neither of these agencies were able to contribute any aid due to legal restrictions governing their respective organizations. The Works Progress Administration had labor funds available for construction work, but none for inventory or planning work where it was needed most.

However, the investigation did show that there was work to be done in the field of community improvement, its development curtailed mainly because of a lack of plans to go by, these in turn were unavailable due to a deficiency of finances with which to pay for their construction.

Obviously, the solution to this problem is to acquire finances for planning from other sources than those used in this investigation. Some of the larger towns perhaps could afford to pay for their own plans, but this would be at best only a partial solution to the overall situation. At present a satisfactory answer to this problem has not been discovered, however it is hoped that future work in this field may reveal it.

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* See Appendix for letter of approval.
With the advent of the present war, circumstances will be even less favorable for the development of community improvements of a recreational or social type than before. This, well illustrated by the fact that less than a year ago W.P.A. labor grants could still be obtained for these purposes. Now, all their efforts are limited to defense projects. Thus, where a short time ago the construction work on worth-while community projects was assured free-of-charge, now they will have to pay for it. This adds to the previous financial burdens of planning and cost of materials an additional expense for labor which in most cases forms an obligation too heavy to overcome for the average town.

After the war is over this situation should once again revert to normal and these improvements can be carried out. In fact, a six year plan is now under way in Oregon for urban and rural planning in which each political unit lists the worth-while projects it desires in order of their priority. Undoubtedly parks will take a prominent place on many of these lists along with other civic improvements.

Thus it would seem that in the near future, depending upon the world situation, conditions perhaps more conducive to community development than ever before may exist. Anyone who is interested in the type of work this offers as a career or profession should realize that there are several alternatives. Planning offers perhaps the widest field of work, although supervision is another branch with good possibilities. Consider the following hypothetical case in which a recreation planner or engineer makes a permanent stable job for himself. First, he "sells" a park development program to a county, with a contract to construct parks in five or six of its towns. After completing the parks he persuades the county to add a tax levy of a mil on
their budget for park maintenance. With his salary assured, he might take over the supervision and maintenance of this small park system. His job would be to travel from park to park handling public relations, planning future improvements, and maintaining them. The above plan was just an idea of the writer, and hypothetical though it is, it may well illustrate the possibilities open to those interested in finding a job or career in this field of community improvement work.

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Appendix A
Mayor of Scappoose
Scappoose, Oregon

Dear Sir:

This letter is being sent to you in an effort to help secure local opinion upon the desirability of roadside improvements and recreational area development for communities such as yours.

The nature of these improvements and resulting benefits can be briefly stated as follows:

Roadside improvements would entail work to a great extent in roadside landscaping and plantings. This beautification work would improve the surroundings of your town, and form a more attractive sight to the visitor or motorist passing through.

The establishment of a community recreational area or forested type of city park may involve a wide range of possibilities limited only by the intensity of development desired, from a small picnic area to a community gathering center. This park would be of value not only through the service it would render to local residents as individuals, but also as a group by providing a community center for recreational and social needs.

Your opinion on community interest in a program of roadside improvements or recreational area development would be greatly appreciated.

Respectfully yours,

Richard C. Dunlap

D:R
Oregon towns to which letter was sent:

1. Vernonia
2. Rainier
3. Hillsboro
4. Forest Grove
5. Tillamook
6. Sheridan
7. Newberg
8. McMinnville
9. Beaverton
10. Milwaukie
11. Woodburn
12. West Linn
13. Oswego
14. Dallas
15. Independence
16. Lebanon
17. Toledo
18. Springfield
19. Cottage Grove
20. Myrtle Point
21. Bandon
22. Sherwood
23. Dayton
24. Willamina
25. Dundee
26. Hubbard
27. Mt. Angel
28. Stayton
29. Jefferson
30. Philomath
31. Molalla
32. Harrisburg
33. Monroe
34. Junction City
35. Canby
36. Monmouth
37. Newport
38. Clatskanie
39. Brownsville
40. Drain
41. Halsey
42. Amity
43. Scappoose
44. Sweet Home
45. Cornelius
46. Butte Falls
47. Sutherlin
48. Jacksonville
49. Tualatin
50. Gresham
Replies received from letter survey

Amity

Yours of the third received and contents noted. Replying wish to advise that we of this city are very much in favor of roadside improvements.

Our park committee is busy cleaning up our park, cutting out dead trees, putting in new benches, etc. so as to make our park a real attractive place for picnics and for visitors.

by Dr. Charles H. Law
Mayor of Amity

Beaverton

I refer to Mr. Richard C. Dunlap's letter March 3, 1941, addressed to the Mayor of Beaverton, which has now been handed to me for reply.

The Town of Beaverton has already dedicated some property for Park purposes and included in the 1941 Budget an amount of $100.00 to start park development.

We are interested and will appreciate such information as is available as well as suggestions for development appropriate for our situation.

by R. C. Doty
Recorder-Treasurer

Halsey

I think your idea is a good one and I am all for it.

by Mayor of Halsey

Hubbard

Believe that the communities will respond 100 per cent on your highway beautifying program as well as developing beauty spots in the different communities. It certainly would be a great step forward, it would create very favorable impressions on all visitors but what is more important, it will help to bind our youth more closely to our own communities, that when they are away from home, they will get homesick after our beautiful Oregon's splendid highways. Especially if the surround-
ings are kept in such a state that it will demand respect for our sovereign State.

When traveling through our State I sometimes feel ashamed, especially when you have visitors with you, meeting those abominable auto wrecking stations everywhere. Just as soon as you meet one of those unsightly places you know that a town is on the other side of it.

Please help to outlaw such places close to the main traffic lanes and I believe we have at least taken the first step for improving the scenery.

Thanking you for presenting this vital problem of interest to us, we remain

by Garfield Voget
Mayor of Hubbard

Independence

Mayor M. J. Butler has asked me to answer your letter of March 3rd relative to roadside and recreational area improvements.

This city is interested in your subject and would like to work with your department and would appreciate any help you can give.

It has been suggested that the roadside between Independence and Monmouth be the scene of plantings but probably more urgent is the need of plantings and landscaping in our newly acquired city park.

Briefly, the city has several acres of land in what is known as the Hop Bowl, lying between the city proper and the Willamette river. The south and west portion is used for football, softball, Hop Fiesta etc. and the north portion lying between a creek and the Willamette river is being held for a picnic grounds and park. We have WPA funds available for work here but have done no work because (1) no plan has been drawn to work from, (2) we have had very little money in our park fund, and (3) we have been too occupied with a sewage system and other vital city projects.

However, if we could find a source for obtaining plantings and a plan I believe we could go ahead with work.
I trust that we will hear from you again and I am enclosing a small plan of our community for your reference.

by John E. Black
City Recorder

Jacksonville

This will acknowledge and thank you for your letter of March 3 regarding the improvements of recreational areas in our locality.

No doubt there is much to be desired on this subject. Jacksonville is situated on a state highway, and being one of the oldest towns in Oregon, has an historical interest that attracts more than local attention.

We are interested in a beautification program that would better the appearance of this place, and the local community bodies will, no doubt, be interested in such a program.

The Jacksonville Civic Club, Mark W. Seeley, President, and the Garden Club, Mrs. Ray Coleman, President and Secretary, are bodies directly interested in this work, and any suggestion you might have would be greatly appreciated by them.

The City Council will be glad to cooperate in any way possible.

by Clinton A. Smith, Mayor
City of Jacksonville

Myrtle Point

I endorse this plan one hundred per cent. Thank you very kindly.

by Jesse D. Clinton, Mayor

Newberg

I received your letter of March 3 inquiring my opinion on a program of roadside improvements and recreation area development.

I am very much in favor of roadside improvements, and assume that you have in mind such development particularly by the highway commission. Our city has long
been interested in a city park project, and in recent years has undertaken an extensive development along that line.

I hope this answers your inquiry, but if you desire any more specific information please let me know.

by George H. Leyman
Mayor

Oswego

Thank you for your letter of March 3, 1941, regarding roadside improvement and recreational area development. Your letter landed on fertile soil due to the fact that the mayor of Oswego is the counsel for the Oregon Roadside Council and has been trained for a number of years by Jessie M. Honeyman in that capacity.

Our city is very conscious of the need for roadside and community development. Our Community Club has a committee devoted to that subject, and our Chamber of Commerce has a committee actively working on the beautification of the main highway through town. Since receipt of your letter I have suggested to the president of the local Chamber of Commerce that sub-committees be set up for a survey of various portions of the city with the idea of doing such necessary clean-up and planting work as will fit best with each street.

As to the park, we have endeavored to purchase a park along the main highway, which is a nice wooded spot. But the cost involved is too great at this time for the city.

I personally believe that one of Oregon's greatest assets is the beauty of its highways and that an ideal zoning law should be prepared and should be enacted by the legislature. This should provide that the Highway Commission, or some similar body, shall have the right to approve the plans of any structure along the rural highways of the state. I only hope that such law can be enacted before too much damage has been done to the natural beauty of the state.
If you have any definite further instructions or suggestions, they will be appreciated. In the meantime, I hope you follow out your good work despite any discouragement.

by C. C. Roehr, Mayor
City of Oswego

Woodburn

We own a five-acre tract at the edge of town on which there is a fir grove for picnics and a baseball diamond. We are developing a park in the center of town, on a part of a block, with trees and shrubs.

Any program such as yours would have our support.

by H. M. Austin, Mayor
Woodburn
Mr. Richard Dunlap,
School of Forestry,
Oregon State College,
Corvallis, Oregon

Dear Mr. Dunlap:

The Oregon Roadside Council has studied with great interest your plan for the development of recreational areas and roadside improvement for small towns and communities in Western Oregon. I can assure you that such a program would meet with our hearty approval and we will gladly cooperate in any way we can best be of assistance.

Please let us know further details of your progress and do not hesitate to call upon us for any service we can render.

Very truly yours,

Mrs. Jessie M. Honeyman, President.

Mrs. Frank Smith
Executive Secretary
List of Crew Equipment needed for Inventory and Planning Work

Field equipment:

1. Plane table and tripod
2. Alidades (2) --- telescopic
   --- regulation
3. Stadia rods (2)
4. Engineers' chain and pins
5. Plumb bobs (2)

Drafting equipment:

1. Drafting board
2. T - square
3. Tri-angles --- 30-60
   --- 45
   --- lettering
4. French curves
5. Drafting implements
6. Paper --- white and yellow
   --- tracing cloth and paper
7. Lettering pen and points
8. Symbols handbook
9. Portable drafting table

Living equipment:

1. Canvas tent (for four)
2. Sleeping bags (4)
3. Portable gas stove
4. Eating and cooking utensils
5. Gasoline lamps

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Appendix B
ROADSIDE-IMPROVEMENT PROJECT

CONVENTIONAL SIGNS

HIGHWAY ENGINEERING

County line
Fence line
Unfenced prop. line
Fenced prop. line
Road sign
Side road
Foot trail
Sidewalk
Railroad
Benchmark
Bridge
Building
Water
Pipe culvert
Fire plug
Mail boxes
Guard rail
Concrete retaining wall
Telephone or telegraph poles
Power poles

Town

Right-of-way

Net Length

Recommended for Approval

Approved

CONVENTIONAL SIGNS

EXISTING PLANT GROWTH

Wood, forest, or grove
Deciduous tree shade
Evergreen tree shade
Shrub mass
Hedge grove
Clipped hedge

PROPOSED PLANTINGS

Deciduous tree
Evergreen tree shade
Small tree
Flowering
Planting group trees
shrubs
View lines
Screen lines
To be removed
To be transplanted
Small trees in groups
Large shrubs in groups
Medium-sized shrubs
Specimen tree

* TYPICAL COVER PAGE FOR ROADSIDE-IMPROVEMENT PLANS.
A TYPICAL PLANTING PLAN

INFORMAL ZONE

TRANSITION

INFORMAL RURAL PLANTING
MONMOUTH

2 miles to Monmouth

Roadside To Be Along

Plantings Made This

INDEPENDENCE

12 miles to Salem

Gravel bunkers

WILLAMETTE RIVER

NOTE: This map was inclosed with a reply to the Survey Letter and was received from Independence, Ore.
MILAGE DISTANCES BETWEEN THE OREGON STATE COLLEGE ARBORETUM AND NINE TOWNS IN THE WILLAMETTE VALLEY

SCALE 1" — 20 Miles  AVE. DIS. 52 Miles