

ANNUAL REPORT

1984 - 1985

"GOALS & OBJECTIVES"

ENGINEERING DEPARTMENT

BUILDING DEPARTMENT

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# ENGINEERING DEPARTMENT

## ENGINEERING DEPARTMENT

During 1982 and 1983, the Engineering Department performed many specific activities. Most of these activities relate to development, long-range planning, and achieving goals and objectives which were presented in our 1980-81 Annual Report as discussed below.

### ACHIEVEMENT OF 1981 GOALS AND OBJECTIVES

#### 1. To Develop and Adopt a Drainage Management Plan for Hillsboro Urban Area by March 1983:

During the past two fiscal years work has been accomplished on the drainage management plan. In 1980 all drainage basins within the immediate urban and future urban areas were identified and mapped. In 1981 calculations were made to determine the predevelopment run-off conditions and the majority of those calculations were completed prior to reductions in staff which occurred that year. In 1982-83 little work was done in completing these calculations due to reduced staff and work being spread out among the existing employees. A major effort to complete this vital planning element for the remainder of the immediate urban and soon to be designated future urban area will be started. We will complete calculations to determine the amount and rate of run-off assuming that the entire area is urbanized and fully developed. Major deficiencies and problem areas will be identified, alternative solutions presented, and their costs examined to attempt to determine the most cost-effective means of providing storm water drainage facilities and management for the Hillsboro urban area. It is expected that this drainage effort can be completed in 1984 or early 1985.

#### 2. To Develop and Adopt a Water Supply Master Plan for the Hillsboro Urban Area by February, 1983:

All technical computer modeling work was completed in 1980 jointly with the Planning Department. Through utilization of a WATSIM computer model, the necessary future main transmission line system throughout the Hillsboro Urban Area has been sized and necessary facilities identified. Preliminary cost estimates to provide these facilities were developed in 1981 and work was started on prioritizing projects for inclusion into a draft Water Supply Master Plan. The draft report was expected to be out for review in February, 1983 but work was delayed mainly because of lay-offs, several street LID's and the design and preliminary engineering of the improvement of N.E. Cornell Road. The major portion of the report has been done and a major effort should be made to complete the draft report by March, 1985.

#### 3. To Revise, Update and Adopt Sanitary Sewer Master Plan for the Entire Hillsboro Urban Area:

Work on the revision of the existing Sanitary Sewer Master Plan has not proceeded much beyond that which was done in late 1980, early 1981. Reduction in staff and additional work has further delayed this necessary work element. USA is currently hiring a consultant to do a major update of their Master Plan and a major effort should be made to update our Sewer Master Plan at the same time the Agency is completing this effort. This is necessary since most major trunk line extensions will likely be through a cooperative effort between USA, the City, and private developers. A draft report should be completed by December, 1984.

4. To Streamline Existing Map Systems within the City to Eliminate Redundant Obsolete Materials:

The Engineering Department's Drafting Section has worked very hard in the past few years to eliminate all obsolete or redundant maps within our systems. They have continued to combine old utility maps with new maps of better quality and readability. Nearly all of the Engineering Department's maps and records have been microfilmed and are now available for easy access and reproduction as necessary. Again, work to eliminate redundant files between Planning, Building and Engineering has progressed slowly due to the lack of one central counter. However, through continued cooperation between the Building and Engineering Departments, the Building Department relies entirely upon Engineering Department maps for correct utility locations and property information. Thus, the need to continue updating another set of maps within the Building Department has been eliminated. Joint efforts between the Building, Planning and Engineering Departments in the next two to three years will, hopefully, result in a computerized information system which will allow easy access for all Planning and Building information on any specific tax lot within the City of Hillsboro.

5. To Implement all or a Portion of the Capital Improvements Program outlined in the Adopted Transportation Plan by assisting Council and Street Committee with Alternative Funding Methods:

I have attached a copy of our Capital Improvements as outlined in our Transportation Report dated December 14, 1979. I have put a check mark by those projects which have been completed or are scheduled for completion with a firm funding commitment. You'll notice that many of the necessary improvements have been completed but some of the major improvements have not been started due to funding limitations. Engineering Department has attempted to secure funding from any sources. These include LID's, Federal Funding, State Funding, and private developers. We are pleased with many of the improvements which have been accomplished or will be accomplished within the next few years. We will work harder to secure funding for the other unfinished projects identified in this plan. (See Appendix A)

6. To Examine and Revise Standard Drawings for the City of Hillsboro to Reflect Recent Changes in Technology which obtain the same Quality Results with less Expense:

The City of Hillsboro's "SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" were revised in late 1980 and a new addition was printed for 1981. Redundant and ambiguous language was eliminated and new changes were made to allow different options in paving and piping construction which have proved to provide reduced costs with the same quality provided for the City and its citizens. We are continuing to update our specifications, but through work with the Oregon Chapter of the American Public Works Association, attempts will be made to adopt their standard specifications. These specifications are utilized State-wide by the majority of the cities and counties. The goal would be to look for the adoption of these specifications when they are revised in late 1984.

7. To Continue to Serve the Public by Providing Efficient, Competent, Professional Engineering Services; and,

8. Continue to Provide Professional Services to the City Council, the Planning Commission and to Local Interest Groups requesting Technical Assistance; and,

9. To Continue to Strengthen and Maintain Good Relations with the Public, other Departments, the Council, and other Public Agencies:

The Engineering Department has worked hard the past two years to be more efficient in assisting the public, other City departments, the City Council and the Planning Commission with detailed information on development proposals. We will continue to attempt to maximize our performance within the coming year.

10. To Continue Efforts to Maximize Efficiency and Affectiveness of the Engineering Department Operations and Personnel:

The Engineering Department has reduced staff in the past three years significantly. The number of full time employees has been approximately cut in half -- eight employees over the past four years. To make up for lost expertise and skills, we are continually cross-training and providing varied work assignments in many varied fields to all employees.

## MAJOR ACCOMPLISHMENTS

1. Cornell Road Phase I Improvement. In 1981 and 1982 the Engineering Department performed preliminary engineering on the Cornell Road Improvement between E. Main and Elam Young Parkway. Preliminary plans were prepared by January, 1982 and the Environmental Impact Statement was prepared by the State of Oregon and completed about August, 1982. From approximately October, 1982 to the present, the State of Oregon has been acquiring the necessary right-of-way for the improvement for this portion of Cornell Road with maps and deeds prepared by the Engineering Department. These maps were prepared to help speed and assist the State of Oregon in right-of-way acquisition process. As present schedules dictate, bids will be opened for the improvement of this portion of Cornell Road in late February, 1984. It is anticipated that major construction will be done by October, 1984.

2. Improvement to Tualatin Valley Highway between S.E. 21st and E. Main (S.E. 10th or 9th-10th Couplet), S.E. Brookwood Avenue, and Cornell Road Phase II.

During the past year through negotiations with ODOT, METRO, and jurisdictions within Washington County, highway improvement projects within the Region have been identified and prioritized to reflect Regional, County and Local needs. Through the Oregon State Transportation Commission and ODOT staff, it was decided that if ODOT supported the extension of the climbing lanes on the Sunset Highway to the top of Sylvan Hill, the Washington County jurisdictions could support funding of improvement of T.V. Highway widening (10th Street widening or 9th-10th Couplet) with Interstate Withdrawal funds (E-4). Thus, preliminary engineering is underway on this improvement project and decisions will be made by mid-1984 on which option of improvement of this portion of T.V. Highway will be selected. Right-of-way acquisition and construction are scheduled for 1985 and 1986 respectfully.

Preliminary engineering is also underway on the improvement of Cornell Road between our east City Limits and Cornelius Pass Road. Washington County is in charge of this preliminary engineering and is studying improvement of Cornell Road from our east City Limits all the way to 185th Avenue. Three alternative routes to realign Cornell Road and eliminate the dangerous intersections where Cornell Road and Cornelius Pass Road come together are being discussed. Decision on the actual alignment will be made sometime in February, 1984. Right-of-way and construction are scheduled for 1984 and 1985, respectfully, on this project. It is important to discuss this project since annexation pressure may put this roadway under City jurisdiction, and therefore, the local match could be the responsibility of the City.

In further prioritization and discussion of needs within Washington County, it was agreed upon by the Washington County jurisdictions that improvement of Brookwood Avenue from T.V. Highway to Cornell Road would be placed on back-up lists for improvement with Interstate Transfer Withdrawal funds. That final funding decision will likely be made within the next year. This street could also be funded with monies which will be generated through this program with Jobs Bill 5¢/gallon gas tax.

3. The Joint Utilities Commission Expansion of Plant Pumping Capacity.

In 1982 and 1983 the Engineering Department designed and awarded a contract for the expansion of the pumping capacity of the Hillsboro, Forest Grove, Beaverton Water System from approximately 20 million gallons per day (MGD) to a 30 MGD hydraulic capacity. The total construction cost of this project was \$266,108. and was approximately 25% below budget. I feel that the main reason that this was done was because specifications which outlined a

"performance" specification rather than detailed specifications of type and sizes of equipment. The addition of these pumps provides a cushion to all the Cities during long, hot, dry spells within the Summer when the plant is approaching capacity. Without these new pumps, our system was very vulnerable to equipment breakdown (ie. one of the pumps being lost due to mechanical failure).

4. Dilley Reservoir. In 1982 and early 1983 the City reconstructed the 1 MG reservoir near Dilley. The prior reservoir was an open reservoir which was constantly in need of maintenance and cleaning due to falling leaves, debris, and animals. Thus, the decision was made to install a new steel covered reservoir in place of the existing reservoir. A new 800,000 gallon reservoir was constructed utilizing the existing reservoir foundation base.

5. Improvement of N.E. Griffin Oaks Street. As a result of Intel's Jones Farm development, a requirement for the construction of an industrial collector road connecting N.E. 15th to N.E. 25th Avenue was made. Intel and other adjacent property owners petitioned the City for improvement of this road through a Local Improvement District (LID). This street was constructed in 1982. Nearly one-half mile of street was constructed at the total construction price of \$220,349. This was the third Portland Cement Concrete street which has been constructed in this area in the last three years. Through an evolution of design, construction methods and inspection quality control, this street is probably the finest Portland Cement Concrete street constructed in the Portland Metro Area. Based on this construction, we will continue to recommend alternate designs utilizing both Portland Cement Concrete and asphaltic cement concrete.

6. 1982-83 Overlays. As a result of the County three year Serial Levy, the City of Hillsboro received a substantial amount of funds which were available for necessary road maintenance work. During 1982 and 1983 the City of Hillsboro spent nearly \$600,000 on roadway maintenance and overlays of existing improved and unimproved streets within the City. Again, the overlay of these unimproved streets has created good public relations and, hopefully, reduced our street maintenance liability on these streets for 5 to 10 years. It should be stressed, however, that these overlays have not "improved" these roadways and they will deteriorate more quickly than the improved roadways due to lack of storm drainage or adequate base. Further, no pedestrian or bike facilities could be installed with these funds.

7. Miscellaneous Grant Projects. In 1982 and 1983 the City of Hillsboro received over \$400,000 in grant monies through the Community Development Block Grant program. With these funds the City has improved the infrastructure in both the northwest and southeast neighborhood areas identified as predominately housing residents with low to moderate incomes. In these projects, City funds were contributed for the replacement of necessary water lines, provision of off-site storm sewers, and replacement and rehabilitation of existing sanitary sewer systems. In all, approximately \$600,000 of total funds were expended to improve these roadways and other utilities and make these neighborhoods a better place to live. Major streets which were improved are N.W. Freeman Avenue and S.E. Maple Street. There were further improvements made to McKinney Park with new playground equipment, irrigation systems, sidewalk construction, pathway construction, lighting, and improvements to the existing basketball play area. The encouragement of redevelopment in these areas has been very pleasing to all involved in these projects.



## 1984-85 GOALS AND OBJECTIVES

The previous section described achievements on the previous years goals and objectives and various major accomplishments during the last few years. The goals and objectives for Fiscal Year 1984-85 are to:

1. Complete and adopt Drainage Management Plan for the entire Hillsboro Urban Area by January, 1985.
2. Complete and adopt a Water Supply Master Plan for the entire Hillsboro Urban Area by March, 1985.
3. Revise, update and adopt Sanitary Sewer Master Plan for the entire Hillsboro Urban Area by December, 1984.
4. Combine those Master Plan elements described above into a complete Capital Improvement Program (CIP) coordinated with other departments to include their capital needs over the next ten to twenty years.
5. Update existing traffic sign inventory to reflect new additions and deletions. The ultimate goal is to computerize this data for easy access, revision, and update by both Engineering and Public Works.
6. Continue to streamline existing map systems within the City to eliminate redundant and obsolete materials.
7. Coordinate with all other departments to procure new radio base unit with Public Works frequency at City Hall with remotes for the Water Department, Police Department, Engineering Department and Building Department. (This item is necessary due to continual breakdowns and malfunctions of the existing outdated base radio unit).
8. Implementation of more of the Capital Improvement Program outlined in the Adopted Transportation Program by assisting the City Council and Street Committee with alternative funding methods.
9. Cross-train all Public Works inspectors for certification as Structural inspectors, Mechanical inspectors, and Mobile Home set-up inspectors. This will allow one inspector to be able to inspect facilities from bare ground to completed structure. This will further reduce future manpower requirements.
10. Update and draw new scribe coat base maps for the entire Hillsboro Urban Area within the next three to five years.
11. Remodel upstairs City Hall to provide one common counter for Building and Engineering, and possibly, Planning activities, and provide new housing for the Community Service Unit.
12. Remonumentation of the Central Business District of Hillsboro to allow correct placement of utilities and structures as the area redevelopes.
13. Complete the Infiltration and Inflow (I&I) analysis for the remainder of the City. This program will continue to identify illegal and problem areas where unwanted water enters the sanitary sewer system, preparation of cost estimates of necessary corrections, and monitoring the flows to

determine responsibilities between the City and USA for excess water entering the sewage treatment plants.

14. Computerize the Building and Planning Department records. This would entail combining land use maps, building permits, and construction activities on a computerized data list by address and tax lot.

15. Continue to push the Region and Metro for funding of large capital improvements to our Transportation System which could be funded out of the Interstate Withdrawal funds -- namely the extension of S.W. Brookwood Avenue from T.V. Highway to Cornell Road or Evergreen Road.

16. Examine and revise standard construction drawings for the City of Hillsboro to reflect additional changes in technology. The overall objective would be to standardize our specifications with the Oregon Chapter of the American Public Works Association which the majority of the municipalities within the State of Oregon presently use. Engineering Department will work with APWA to revise their four year old document prior to adoption by the City.

17. Continue to serve the public by providing efficient, competent, professional engineering services.

18. Continue to provide professional services to the City Council, the Planning Commission and to local interest groups requesting technical assistance.

19. Continue to strengthen and maintain good relations with the public, other departments, the Council and public agencies.

20. Continue efforts to maximize efficiency and effectiveness of the Engineering Department operations and personnel.

21. Maintain the same level of responsiveness and technical assistance to the City and its public with reduced personnel levels during Fiscal Year 1983-84.

# BUILDING DEPARTMENT

## BUILDING DEPARTMENT

During Fiscal years 1981-82 and 1982-83 the Building Department continued to work with reduced staff as a result of downturns in building construction and reduced budgets. During this time the Building Department staff was reduced from six full time employees to two full time employees plus a part time building official with secretarial assistance from the Engineering and Planning Departments. Thus, the existing staff has worked extra hard to assure that an adequate level of service and inspections was provided to all buildings constructed within the City. During these two years, progress was made on the goals and objectives outlined in the 1980-81 Annual Report. The actual progress on these goals and objectives is as noted below.

### ACHIEVEMENT OF 1981 GOALS AND OBJECTIVES

#### 1. To Assure Uniform Code Interpretation and Enforcement:

During the past two years an effort has been made to insure uniformity in interpretation and enforcement of Uniform Building Code, Uniform Mechanical Code, and Uniform Plumbing Code. All staff members have attended minimum required code related classes to maintain existing certifications. Further, all members of the Building Department have been enrolled in Plans Examiner, Structural Inspector, and Mechanical Inspector-in-Training programs which allow each inspector to progress to a higher level of expertise through actual work in fields outside of their particular expertise under the guidance of other inspectors and the Building Official. This program has proved extremely valuable and the Building Department will continue to utilize these programs available through the State to maximize the effectiveness of each inspector in the field. It is extremely beneficial to have an inspector who is inspecting framing, for example, to be able to examine other related plumbing or mechanical concerns. As a result of this cross-training, many problems which could easily be buried in the finish of new buildings have been minimized, further reducing the chance of illegal work being done after the required inspections have been made.

#### 2. To Increase the Effectiveness of Internal Operations:

As existing forms and documents are depleted, new forms have been constructed to eliminate problems which have been encountered in the past and to streamline processes and/or paper work. Redundant or superfluous paperwork and records have been eliminated and base maps and plat maps have been slowly phased out over the past two years to allow for one common mapping system between the Building and Engineering Departments. Thus, another redundant set of maps needing up-dating is eliminated. Another example of ways to eliminate paper work and increased work was a development of a solar permit which allows a structural, plumbing, mechanical permit to be issued under one common form rather than under three separate forms as is the case for most larger construction projects. We have also worked hard to eliminate the need for outside consultants for structural plan reviews. The Building Official and the Chief Inspector are qualified as A-Level Plans Examiners and A-Level Plans Examiner-in-Training, respectively. Thus, unless the structures are of a highly unusual construction technique or extremely large, such as the hospital, the plan review is usually done in-house.

Attempts have also been made to make all members of the building staff (as well as those of the Planning and Engineering staffs) familiar with the

process of receiving and processing plans. Thus, a system of plans check-in, check-out and a efficient system of plans storage and cataloguing of plans for easy retrieval when necessary was established.

### 3. To Increase Service to the Community:

In an effort to increase service and information to the public we have attempted to secure publications on wood stove installation and operation, and provided work sheets and pamphlets to owners attempting to hire contractors or builders to remodel homes. The reason for this was two-fold -- 1) to allow citizens to perform the work themselves in a correct manner and 2) to warn people of unscrupulous builders and contractors who often prey on people who can least afford to have construction work redone. We have further attempted to follow up on complaints as soon as possible (hopefully, within one day). With the new Community Service Unit it has been much easier to assure prompt and efficient actions on complaints no matter what their nature. Building Department and CSU have worked in concert to process business licenses in an effective and efficient manner and to follow up where people are occupying structures not suited for their use.

### 4. To Encourage Innovation, Participation, and Involvement in Building Department Programs and its Objectives by All Personnel:

There were many problems noted in the 1981 Annual Report regarding internal communication and communication throughout the City concerning Building Permit issuance. Through a change of Building Official and reductions in staff, effective inter-office and inter-departmental communications has been a must. We will continue to work for better internal and external communications in years to come.

### 5. To Work Toward Exemption of Control by the State Fire Marshall by the End of Fiscal Year 1989:

As most members of the City Council are aware, through cooperation between the Building and Fire Departments, the City of Hillsboro achieved exemption from the State Fire Marshall in March, 1983. Due to the slow down in building activity and the increased qualifications of all personnel within Building and Fire Department, it was determined that the City of Hillsboro was ready for taking control of the Fire and Life Safety element of the Uniform Building Code. Thus, as of March, 1983, the City of Hillsboro was responsible for all plan review on any type of construction or occupancy and was able to retain those associate fees within the City for our use and enforcement of the Building Code. The achievement of our exemption from the State has further enabled our Building Department and Fire Department to have better local control over buildings being constructed within the City. There were no additional personnel hired as a result of the taking of this responsibility. In the future when building activity increases, additional personnel will likely be necessary within either department.

## 1984-85 GOALS AND OBJECTIVES

Based on the progress on Goals and Objectives presented by the Building Department for 1980-81 and the changes which have occurred within the Department since that time, the following goals and objectives are presented for Fiscal Year 1984-85:

1. To establish computer data base system utilizing a small mini-computer/word-processing unit jointly with the Planning Department to store all building permit data and information along with Land-Use matters on every lot within the City of Hillsboro on a tax lot and address basis. With the growth of the City during the 1970's and the anticipated growth in the next 20 years, our existing card file and hard paper system of storing data will become more and more burdensome. These systems are fast approaching the end of their useful life due to size and time involved with filing and assessing this data. It is anticipated that within three years from the date of purchase of a computer/word-processing system, all Building and Engineering data could be consolidated into a computer file. Once the file system is established all new data could be entered immediately. This would eliminate much of the paperwork and the current need to transfer data from one piece of paper to another.
2. To cross-train and encourage cross-certification for all building and engineering inspectors. As discussed in previous progress on the 1980-81 goals section, much work has been done to cross-train existing building department employees and engineering department employees to allow one inspector to follow the project from bare ground to finished building. This is a further way to reduce manpower requirements and time on any job. Training to date has reduced redundant inspections by various inspectors, and allowed the same quality of inspections to be performed with much less time on the job.
3. To provide better records maintenance -- It is anticipated that with the help of computerization of records, existing records can be consolidated and purged of redundant and useless information. The City of Hillsboro currently maintains almost every piece of paper work generated within the department. This is often wasteful and results in excessive storage space requirements. During the next three years we will aggressively look to eliminate redundant and superfluous records from department files.
4. To assure uniform code interruption and enforcement -- As discussed in the previous section, there will be a continuing effort to assure that inspectors attend all required schools to maintain and improve existing certifications. The department will also encourage all staff members to take any additional examinations or schooling they feel necessary to allow their work to be done in a more efficient and professional manner. This will necessitate additional travel, training and dues expenses, but the benefits are great.
5. To increase the effectiveness of internal operations -- Again, we will be working further to solidify existing working relationships with the Planning, Police and Fire Departments on any building code, or business license applications. Schooling on effective correspondence and oral communication may be stressed for certain members of the staff.

6. To provide input to the State of Oregon and possible amendments to the Oregon Codes -- The State of Oregon has a policy of amending the national Uniform Building Codes, Uniform Mechanical Codes, and Uniform Plumbing Codes to reflect specific interests within the State of Oregon. It is the goal of all building departments within the United States to provide a uniform workable code which can be established as the minimum standard guidelines for new building construction. The Building Department will continue to provide input to the State of Oregon on ways to eliminate Oregon Amendments to the Uniform Building Code, Uniform Mechanical Code, and Uniform Plumbing Code. The Oregon Amendments are often times a source of confusion and problems to architects, engineers and builders outside the State of Oregon.

7. To better coordinate, issue, or deny business licenses -- The present system of business licenses approval or denial is often times very cumbersome. The Building Department is often a weak link in the process due to structures not meeting building code requirements for the specific occupancy. Thus, close coordination with Planning, Fire Department, Community Service Unit and Administration is necessary to assure that these business license applications do not become lost or misplaced waiting for applicants to effect necessary repairs to their buildings. Building Department will work with the other departments to establish a better tracking and monitoring system for all business licenses.

## **APPENDIX A**

# **Progress on Implementation of CAPITAL IMPROVEMENTS outlined in 1981 TRANSPORTATION PLAN**





1984  
Cornell Road Improvement

Cornell Road between Tenth and Main Street one-way southbound.

1984

o Widen Cornell Road between Main Street and ~~Cornelius~~ Pass Road. **HAUTMOZU FARM INDUSTRIAL PARK**

1986

o Improve the intersection between Cornell and Cornelius Pass Roads.

o Widen Baseline Street west of Dennis Avenue.

o Realign the intersection between Baseline Road and 216-219th Avenues.

o Construct Grant Street between Sixth and Delsey Avenues.

o Construct Cypress Street between T. V. Highway and approximately 24th Avenue.

o Construct 32nd Avenue between Cypress Street and Main Street. Signalize intersection with Main Street.

o Construct 17th Avenue between Cornell Road and Sunrise Lane.

1982

o Signalize the intersection between Brookwood Avenue and T. V. Highway.

1984

o Improve the intersection between Jackson School Road, Fifth Avenue and Grant Street by making Jackson School Road one-way southbound between Fifth Avenue and Grant Street.

- o Construct Washington Street between Tenth Avenue and the intersection with East Main Street and convert the remaining portion of Washington Street to a one-way eastbound roadway. Signalize the intersections with Ninth and Tenth Avenues. Convert E. Main Street to one-way westbound between the junction with Washington Street and the existing one-way section at Sixth Avenue.

P.F. 1983-84  
CONST. - 1986

- o Design the Ninth-Tenth Street couplet **OR WIDENING OF SE 10th Ave.**

- o Construct Rood Bridge Road between River Road and the High School.
- o Establish access control or restrictions on T. V. Hwy.
- o Establish carpool, vanpool and staggered work hours programs.

#### Before 1985

- o Expand public transportation service into and throughout Hillsboro.
- o Develop downtown transit station.
- o Construct Evergreen Road between Glencoe and Cornelius Pass Roads. Signalize intersection with Cornelius Pass Road.

o Construct East Main between Tenth Avenue and 216-219th Avenues.

P.E. 1983-84  
CONST. - 1986

o Widen to install left turn lanes in T. V. Hwy. and Tenth Avenue from Cedar Street to Minter Bridge Road.

o Install a traffic signal at the intersection of T. V. Hwy. and 219th Avenue.

o Construct Jackson School Road between Grant and Evergreen Streets.

P.E. 1983-84  
CONST. - 1986

o Install the Ninth-Tenth Avenue one-way couplet system between Cedar and Main Streets.

or widening  
of SE 10th Ave

o Install new controller in signals on Oak and Baseline Streets.

o Widen First Avenue and Glencoe Road.

o Widen Cornelius Pass Road between Cornell Road and Sunset Highway.

o Improve West Main Street.

P.S.D.E.  
1986 - ?

o Construct Brookwood Avenue between T. V. Hwy. and Evergreen Street and install traffic signals at the intersections with East Main Street and Cornell Road.

1982

o Construct 25th-28th Avenues between Evergreen and Main Streets. Install traffic signal at intersections with ~~Main Street~~ and Cornell Road.

- o Construct 15th Avenue between T. V. Hwy. and Maple Street.
- o Construct 21st Avenue between Cypress and Maple Streets.
- o Construct 24th Avenue between Maple and Main Street.
- o Complete Maple Street between Tenth and 24th Avenues.
- o Construct 231st Avenue between Main Street and Butler Road. Signalize intersections with Main Street and Cornell Road.
- o Construct Witch Hazel and River Roads.
- o Construct Garibaldi Street.
- o Construct Brogden Street.
- o Complete Connell Avenue.
- o Construct Sunrise Lane.
- o Construct bikeways on ~~Greenways~~ and on T. V. Hwy.
- o Expand carpool, vanpool and staggered work hours program.
- o Review transportation planning and growth assumptions to update implementation program.