



Delaware Department of Highways & Transportation

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DEPARTMENT OF HIGHWAYS AND TRANSPORTATION

The Department of Highways & Transportation is involved in meeting the total transportation needs of the State of Delaware.

As the needs of our State vary in that direction, so do the many functions of the Department in striving to reach that goal. From the very basic concept of a roadway, to appropriate accommodations for an air terminal, this Department keeps pace with the State's needs to move people and goods vital to the economy of Delaware.

On the administrative level, the Public Information Office keeps Delawareans informed of departmental affairs, and responds to requests for pertinent information. The Community Liaison Office directs its efforts towards managing the process of community involvement in highway planning. The Project Scheduling Section schedules projects by use of the critical path method network, and monitors each project from date of authorization through all the activities necessary for the project to be available for advertising. Project Scheduling will have 41 projects available for bids in FY '77. Management Systems has completed the design, and nearly all programming, of the Automated Fuel Billing System, which will eliminate a waste of time and manpower. The Roadside Control Section is in the process of developing a new billboard permit numbering system which will be implemented in FY'77. In FY '76, 122 land use plans were reviewed by the Subdivision Administration Section. In addition, the section approved land use plans consisting of 5,380 acres and 7,994 living units.

Under Support, the Bureau of Materials and Research has been conducting tests to determine the effect of de-icing salts on corrosion of bridge deck steel. The Safety Section monitors work area traffic control procedures used in highway projects, and is also responsible for the overall safety of personnel in the field, shop, yard or office. The Bureau of Traffic instituted various changes which resulted in cost savings, and implemented methods to achieve greater flexibility with the minimum staffing currently available.

The Advance Planning Section has been conducting several critical location studies, in addition to serving as the department's liaison to the Governor's Bicycle Task Force. During this fiscal year, the Office of Planning was created, which combined all the long and intermediate long range planning functions into one principal area reporting to the Secretary. Systems Planning is responsible for the long range needs, programs and plans for both highways and transportation. Planning Survey is responsible for most of the data gathering and disseminating functions. Safety Planning is responsible for coding accident reports, analysis of accident reports and statistics, and development of a traffic recording system. This section also coordinates safety improvement projects and prepares safety programs. The Environmental Studies Office continued to monitor environmental impacts, associated with the transportation system.

In Design, the Review Section is responsible for supervising the preparation of contract plans and specifications for major highway and bridge projects. A total of 72 projects were under design during the past fiscal year. These projects were distributed statewide, and varied in complexity from simple dirt road resurfacing to complex freeway design. This year, the Utilities Section acquired 275 additional utility franchises, which added 794 miles to the present system. The Department awarded contracts for 18 bridges and other structures in FY '76, with a total construction cost of \$1.5 million.

During FY '76, the Relocation Section gave assistance to 14 families and 3 businesses, and non-profit organizations.

In Operations, the Construction Section final inspected and accepted over 16 million dollars worth of projects, and is presently supervising over 93 million dollars worth of active construction. Maintenance continued to operate with a large number of inadequate equipment and shortages of material and manpower.

In the Division of Transportation, the Aviation Section was instrumental in establishing an air commuter service, from Georgetown to the Baltimore-Washington area. The Delaware Authority for Regional Transit had another successful year in terms of revenue and tickets sold. FY '76 set a record with 6,098,381 riders. Senior citizen ridership was up 9% from the previous year. The Delaware Authority for Specialized Transportation operates a fleet of approximately 40 vehicles statewide, and served 34 active user agencies in FY '76, providing 128,596 clients with 191,932 trips. The Rail Section has continued to serve as the primary staff for the Governor's office in the state's dealings with the entire northeast railroad situation. The Office of Regulatory Services is responsible for the regulation of the private railroads, and bus lines operated in Delaware.

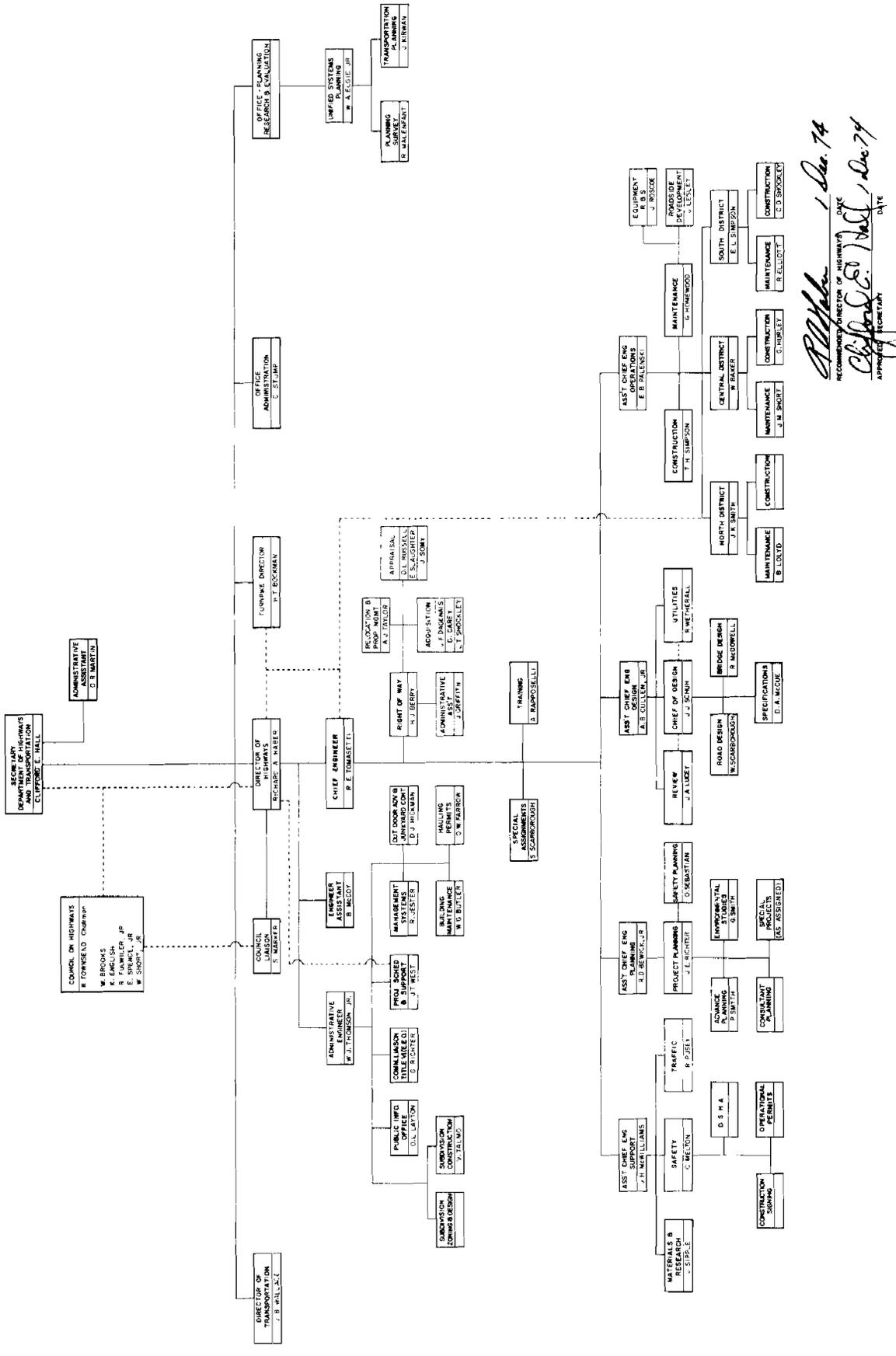
In the Office of Administration, employment was primarily confined to Maintenance personnel. The hiring freeze was adhered to in all but critical areas of the Department. Minority employment was stressed in accordance with the Department's Equal Employment and Affirmative Action Programs.

COUNCIL ON HIGHWAYS

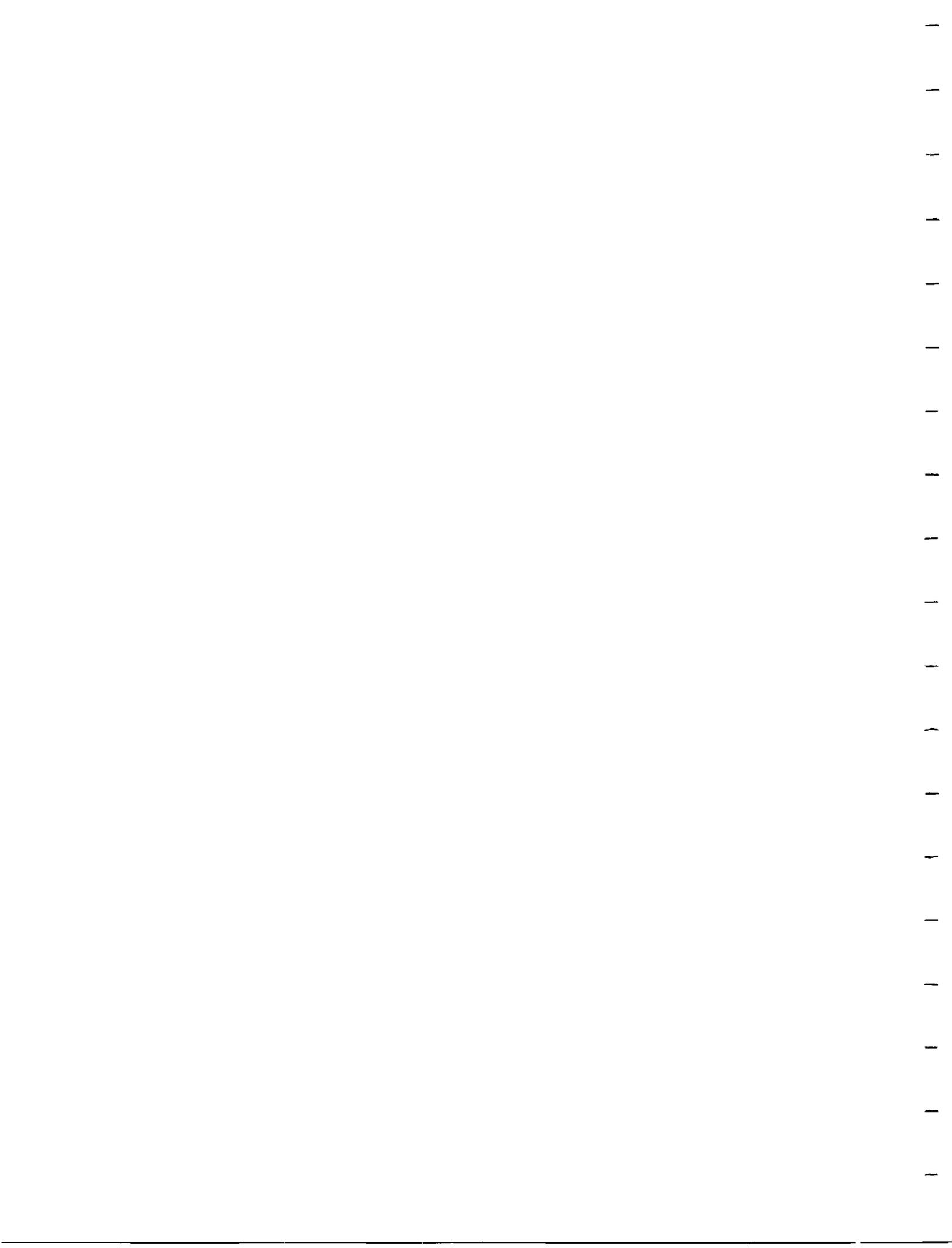
The Council on Highways is made up of seven (7) members appointed by the Governor and serves at his pleasure. The membership of the Council is composed of: one resident from New Castle County, one resident from the City of Wilmington, one resident from Kent County, one resident from Sussex County, and three members serve at large.

<u>Member</u>	<u>Term Expires</u>
Raymond Townsend, Chairman	8/9/76
Ernest S. Spence, Jr.	8/9/76
Kenneth E. English	8/9/76
William Philip Short, Jr.	10/6/76
Kathryn T. Derrickson	8/9/76
John W. Fennemore, Jr.	9/29/77
Harold N. Green, Esq.	Resigned

DEPARTMENT OF HIGHWAYS & TRANSPORTATION ORGANIZATION CHART



Alphonse 1 Dec 74
 RECOMMENDED DIRECTOR OF HIGHWAYS
 APPROVED BY GOV. BIRCHBAUM 11/18/74
 DATE
 APPROVED BY SECRETARY
 DATE



COUNCIL ON HIGHWAYS

Six meetings were held during FY'76.

Council Activities

Resolutions:

- (1) Establishment of safe and suitable bicycle paths within the State.
- (2) Signing of the Omnibus Appropriation Act (S.B. 431) by the Governor - the effect on the general public as far as maintenance on roads.
- (3) Expressing sympathy to the family of the Honorable J. Gordon Smith.
- (4) Recognition of the problem existing with the need for a pedestrian/bicycle bridge across the St. Jones River.
- (5) To request the Governor to initiate and the General Assembly enact, legislation which would allow property owners contacted relative to potential land taking, to obtain reimbursement for incurred costs.
- (6) Appreciation to Mrs. Marker, Council Liaison.

Reports:

- (1) Reports were delivered on the Bond Bill (1976) and the Budget. An amendment was prepared to the Bond Bill.
- (2) A special session was held on July 28th of the General Assembly at which time an omnibus bill was passed. The omnibus bill cut our appropriation for maintenance by \$300,000.
- (3) An amendment was made to our policy on signing for privately owned camping facilities - "expressway interchanges" should be changed to read "major roads and intersections".
- (4) A Hall of Honor was originated by the Department of Highways and Transportation, and the Council members were extended an invitation. Six men were selected to be honored this first year. The announcement was made at the Highway Day banquet.
- (5) Reports were given to the Council by District Engineers on the status of maintenance equipment during the fiscal year.
- (6) During the fiscal year the Council was kept abreast of highway projects by updated reports. The Capital Improvement Program for 1977-1982 was approved by the Council, and reserved the right to make amendments before the final approval by the General Assembly.

(7) Council members received a report on the reorganization of State Government and its effects on the Department of Highways and Transportation.

(8) The Council was given a report on the one million dollar cash callback for Farmers Bank.

DIVISION OF HIGHWAYS

ADMINISTRATIVE ENGINEER

PUBLIC INFORMATION OFFICE

A continuing program, aimed towards public awareness through dissemination of pertinent information, has been the focal point of the Public Information Office throughout the year.

Media cooperation has continued appreciably, and joint efforts are being reflected by the sizable coverage of Departmental functions.

Public meetings, supported by slide presentations, have brought considerable exposure to such subjects as Road Maintenance, and the Pitch-In Program. These slide presentations are in-house productions made possible by the photographic capabilities of the Public Information Office. In addition, the staff photographer handles all photo reproduction duties of the Department, including aerial, color, and graphics.

In an effort aimed directly at the recognition of the Department's long and proud heritage, and the people responsible for its progress, the Public Information Office established the Highway Hall of Honor. Six members were installed last year; three additional members will be recognized this fall.

This section continues to prepare special articles and reports for use by the media, and other state offices. In addition, it responds to individual public queries, and problems, in it's daily duties of keeping Delaware's public informed.

COMMUNITY LIAISON

During FY'76 the Community Liaison Office became a well established entity facilitating all community involvement for the Department of Highways and Transportation. From its initial conception in FY'74, to present, the Community Liaison Office has kept pace with the ever increasing demand for citizen participation within the transportation planning process. Community Involvement Programs have been developed, adequate criteria has been established and programs implemented, both on an intra Departmental basis and with concerned citizens.

Citizen Participation Advisory Council

The Citizen Participation Advisory Council (CPAC), established in January 1974 to increase public awareness of the Department plans for transportation improvements, has developed into a dynamic citizen advisory group with well diversified statewide representation. Invaluable advice and recommendations provide the Department with timely ideas. These ideas are incorporated in a viable and on-going community involvement process. Ms. Paula Lehrer, a CPAC member since its conception, was elected to the position of chairperson in January 1976. Through her leadership, the Department has maintained a close relationship with the citizens within the State during the development and implementation of community involvement programs.

Major accomplishments of CPAC during the year included formulation of numerous community involvement programs, significant input into the revision of the Departmental Action Plan, and sponsorship of a statewide public forum to discuss the transportation system in Delaware.

Public Meetings

Another important function of the Community Liaison Office is the coordination and moderation of all public meetings associated with transportation projects. These meetings are used throughout the community involvement process to interact with various community groups, insure that the message gets to the public and provide opportunities for interested groups to meet and interact.

Community Liaison Public Meetings in FY 1976

CPAC	12
Public Hearings	4
Formal Public Meetings	11
Informal Public Meetings	29

In addition, numerous discussions with citizens relative to transportation and Departmental policies were conducted by the Community Liaison Office.

Action Plan

Action Plan revision efforts continued throughout the year; the revision process fell behind schedule due to lack of staff, unforeseen organizational changes within the Department requiring major revisions and other problems. Anticipated completion date for the Revised Action Plan is September 1976.

Miscellaneous Activities

During FY '76, the Community Liaison Officer attended a one week course in Citizen Involvement in Highway Planning and Design offered by the Federal Highway Administration. This course detailed current Community Involvement techniques. Attendance at this school, was

consistent with the Department's continuing effort to provide the citizens of Delaware with the necessary expertise in the Community Involvement Process.

In addition, the Community Liaison Officer participated as a member on various technical teams and assisted in the successful United Way Campaign of the Department.

PROJECT SCHEDULING AND SUPPORT

Six-Year Capital Improvements Program

Governor Sherman Tribbitt has publicly announced that due to the financial difficulties of the State, the total Bond Bill for the State of Delaware in FY '77 should be limited to \$27,000,000.00. Of the \$27 million, \$11.5 million is proposed for the Division of Highways. More than three-quarters (\$8.5 million) of \$11.5 million is used for matching Federal funds. As of this date, this Bond Bill is still pending the approval of the General Assembly. The proposed Highway projects included in the Bond Bill are listed below:

	State Funds (In million dollars)
(1) Route 141 (Phase III, Prices Corner)	\$1.80
(2) Route 141 (Kennett Pike)	0.86
(3) 3rd Street Bridge (Superstructure)	1.50
(4) Concord Pike	2.407
(5) S. Chapel Street Railroad Bridge	0.43
(6) Salsbury Road (Dover)	0.208
(7) Safety Projects (Statewide)	0.25
(8) Stein Highway (Seaford)	0.60
(9) Interstate (Widening and Reconstr.) Christiana River Bridge Mill Creek Bridge Railroad Bridge Roadway	0.445
(10) Engineering Administrative Salaries, Surcharges, etc.	3.00

Project Scheduling

The Section continues to schedule projects by use of a broad version of the Critical Path Method Network, and to monitor each project from the date of authorization through all the activities necessary for the project to be available for advertising. Data relative to finance and scheduling is displayed by charts in the Office of Project Scheduling and Support.

The following major projects will be available for advertising for bid during FY '77.

CONTRACT NO.	DESCRIPTION	COST ESTIMATE (Construction)
75-08-004	King Street, Wilmington	354,000
75-04-013	Del. Rt. 10 (U.S. 13 to U.S. 113) Including Lebanon Bridge	3,250,000
75-08-005	Woodland Beach Causeway	448,953
75-09-028	Del. Rt. 141 and Del. Rt. 273	45,000
76-04-015	Bridge 290, Del. Rt. 9, New Castle	6,000
73-05-006	I-95 Off Ramp "N", and Signing Basin Road	925,000

CONTRACT NO.	DESCRIPTION	COST ESTIMATE (Construction)
75-09-026	N.C. Roads 237 & 300 Intersection Imps.	56,000
76-05-004	Section 210 Safety Imp. Projects, New Castle Co.	25,000
76-05-003	Section 230 Safety Imp. Projects, New Castle Co.	77,000
76-05-006	Section 210 Safety Imp. Projects, Kent Co.	107,000
76-05-005	Section 230 Safety Imp. Projects, Kent Co.	15,000
76-05-008	Section 210 Safety Imp. Projects, Sussex Co.	85,000
76-05-007	Section 230 Safety Imp. Projects, Sussex Co.	15,000
75-08-017	Denney's Road	908,000
76-03-020	Wilmington Blvd., I-95 to Jefferson St, Contract II	2,800,000
76-04-013	Del. Rt. 896 and Old Baltimore Pike	375,000
74-12-005	Bridge 63, Lincoln Ave., Greenmount	115,000
74-12-007	Bridge 60, Peachtree Rd., Greentree	95,000
76-03-005	Kent County Road 62	260,000
72-01-001	East Cleveland Ave. and N. Chapel St., Newark (Right-turn Lane Only)	35,000
76-01-010	Bridge 663, State Road	1,500,000
75-08-012	Limestone and Arundel Dr.	85,000
70-12-003	Del. Rt. 4 Relocation, Del. Rt. 2 to Del. Rt. 896	5,500,000
76-03-018	Wilmington Blvd. Drainage	500,000
75-11-008	West Chestnut Hill Road, Del. Rt. 896 to Arbor Dr.	425,000
76-03-003	Cedarbrook Acres Drainage Improvement	65,000
76-04-011	U.S. Route 13 & Kent Co. Road 331	56,000
76-02-001	I-95 and I-295 Signing	117,654
76-02-002	I-495 Signing	987,347
75-09-012	East Commerce & Clark Sts. Harrington	90,000
76-03-004	Railroad Ave. - Bridgeville, Drainage Project	275,000
76-05-010	Bridge 240, Sussex Co. Rd. 46	70,000
75-08-009	Faukland Road and Newport Gap Pike	425,000
75-09-011	Del. Rt. 8 & Kent Co. Rd. 104, Intersection Imp.	150,000
75-11-002	Walnut St., 14th St. to 8th St., Wilmington	400,000
75-08-019	Kent County Road 88	85,000
72-04-003	Polly Drummond Hill Rd.	475,000
75-06-017	Meeting House Hills Rd. Drainage	
75-08-018	Del. Rt. 9 from Rd. 378 to Rd. 411, N.C. Co.	475,000
75-09-030	Zebley Road and Northeast Drainage	70,000
76-05-009	Bridge 224, Sussex County, Road 546	70,000

All the projects in the 1977 Bond Bill will be available for bid advertisement, providing Bond Bill is approved in the near future by General Assembly.

Federal-Aid

These activities were transferred from the Office of Administration to the Project Scheduling and Support Office early in the fall of FY'76. The functions are primarily to control and monitor all projects financed with Federal-Aid funds from the inception of a project to completion and final billing of that project.

Status boards graphically display the progress of each project in order of insuring compliance with the ever-changing State and Federal requirements. Items of major importance are: coordinating the necessary permits, correspondence, plans and specifications, and preparing estimates from the various offices throughout the Department for submission to the Federal Highway Administration.

Separate program funds with varying percentages of Federal participation now number near forty. In addition, each fund is monitored. The Federal Highway Apportionment for 1976 was \$27,885,846.00.

FEDERAL FUNDS AUTHORIZED DURING FISCAL 1976

CONTRACT NO.	DESCRIPTION	FEDERAL FUNDS
75-08-026	P.E., Christina Marsh Interchange	540,000
76-03-009	P.E., I-95 Viaduct Widening	450,000
76-04-010	1977 Interstate Cost Estimate Study	6,800
76-02-001(2)	P.E., Signaling & Lighting, Basin Rd. Interchange to Pa.	36,000
76-01-015	C, Wilm. Blvd., I-95 Mod., Contract I	2,976,100
73-05-006	C, I-95 Ramp 'N' at Basin Rd.	796,500
75-10-001	P.E., Christiana Bypass (SR 273)	373,800
76-01-010	P.E. & C, Br. 663 at State Road	1,395,200
74-01-012	P.E., Middletown Bypass (SR 896)	210,000
75-09-009	P.E., U.S. 113, Little Heaven to DAFB	420,000
75-10-002	C, Intersection U.S. 13 at Bishop's Corner	171,200
76-04-011	P.E., Int. U.S. 13 at CR 331	1,700
75-12-006	P.E. & E, Rehoboth Bypass, Phase II	1,974,700
75-08-018	P.E., SR 9 Tidewater to Del. City	24,500
75-08-019	P.E., CR 88 & CR 334, CR 337 to SR 9	49,000
76-02-005	P.E. & C, Br. 284A on CR 284	71,700
76-02-004	P.E., CR 258 New Alignment, Ashland	30,100
76-01-007(8)	C, Bikeways, SR 72	38,100
76-04-009	P.E., Br. 91A near Kenton	2,800
76-08-015	P.E. & C, Br. 16B on SR 8	58,900
76-05-010	P.E., Br. 240 on CR 46	2,800
76-05-009	P.E., Br. 224 on CR 546	2,100
74-01-001	C, Br. 812 on CR 16, Broadkill	420,000
76-06-011	Add. P.E., R/W & Contract I, Denney's Road	845,900
74-12-008	C, Br. 195A, Wyoming	70,900
75-04-013	C, Rt. 10, Lebanon Road	2,296,000
75-08-010	C, Woodward Ave. Connection	63,800
75-12-007	C, Bikeways, Brandywine Hd.	7,600
73-10-011	R/W, C, Ruthby Rd. at B&O Crossing	2,002,300
75-11-003	R/W, South Wilmington Con.	3,410,700
75-09-032	P.E., Augustine Bridge	300,000
73-05-002	P.E., Penn Central at SR 72 & CR 309	8,200
75-11-007	P.E., Advance Warning Devices, Statewide	8,100
74-07-006	C, Penn Central at CR 99, N. of Dover	31,800
74-06-004	C, Penn Central at CR 273, North St.	156,200
76-06-013	C, Rail Crossing Signs, Statewide	17,800
75-09-006	Pavement Marking South of Canal	76,700
76-02-008	Pavement Marking North of Canal	86,600
75-11-004	P.E., High Hazard Locations	36,000
76-04-013	C, Inter. 896 & Old Baltimore Pike	345,800
75-12-012	C, 5 Hazard Intersections	84,900
76-06-012	C, 4 Hazard Intersections	102,100
75-11-006	P.E., Elimination of Roadside Obstacles	22,500
76-04-008	Tree Removal, U.S. 13 Boyd's Corner to St. Georges	3,400
76-05-006	C, Safety Imps., Kent Co.	109,100
76-05-008	C, Safety Imps., Sussex Co.	88,200
76-05-004	C, Safety Imps., N.C. Co.	91,200
75-11-005	P.E., Safer Roads	36,000
74-09-001	C, Br. 186A Near Marydel	41,300
76-03-010	P.E. & C, Br. 207A, Mudmill	178,500
76-03-024	Control of Outdoor Advert.	200,000
76-04-006	P.E. & Landscaping, U.S. 13, Boyd's Corner to St. Georges	10,000
76-04-005	P.E. & Landscaping, SR 1, Milford to Rehoboth	56,500
76-04-007	P.E., Vegetative Headlight Screening	1,500
76-06-010	P.E. to Landscape, U.S. 13, Bishop's Corner to Smyrna	1,000
72-02-004	C, Ruthby Road at Penn Central	1,486,900
		22,329,500

MANAGEMENT SYSTEMS

Management Systems has completed the design, and nearly all programming of the Automated Fuel Billing System which charges all State agencies for fuel and oil received from the Department of Highways and Transportation. The system will be utilized by the 18 locations throughout the State which dispense this Department's fuel. Fully implemented, the system will reduce the amount of clerical handling needed in fuel billing, thus eliminating a waste of time and manpower. Complete implementation of this system is projected for FY'77.

The Highway Maintenance Management Program has experienced a refinement in the number of function codes which categorize maintenance operations. Monthly reports produced by the program are being analyzed by this section and by the Bureau of Maintenance.

A Traffic Management System was completed and implemented in FY'76. Reports issued on a monthly basis will be utilized by the Bureau of Traffic.

Although the Equipment Management System is not fully implemented, quarterly reports of equipment citing operation and repair costs of maintenance are being fully realized.

Management System continues to maintain the Annual Work Programs with performance budgeting in mind. All systems are monitored and refinements are implemented to suit Departmental needs.

ROADSIDE CONTROL

Receipts for FY'76 were as follows:

Outdoor Advertising Permits	\$15,640.00
Junkyard Licenses	810.00
TOTAL	\$16,450.00

This section is presently in the process of developing a new billboard permit numbering system, which will be fully implemented in FY'77.

SUBDIVISION ADMINISTRATION

This year the Subdivision Administration Section has reviewed 122 land use plans covering 3,164 acres and including 10,401 living units. In addition, this section has approved for recording purposes 139 land use plans consisting of 5380 acres and 7994 living units. Thirty-one Performance Bonds, representing 10% of estimated construction costs, were received and approved. These Bonds covered 9.98 miles of roadwork totaling \$173,790.80 which represents the amount held by the Department until the streets have been completed to specifications. One Voluntary Completion Bond, in the amount of \$10,000 representing 150% of the uncompleted construction cost, was received and approved. There were 45.459 miles of subdivision streets accepted into the state maintenance system. The bulk of this mileage coming as a result of the passage of S.B. 313. Numerous meetings were attended coordinating with other governmental agencies, consultants, developers, contractors and the public.

HAULING PERMITS

COUNTY	NO. OF PERMITS	NO. OF BLOCK VALIDATIONS	VALUE	BLOCK RECEIPTS	TOTAL VALUE
New Castle	1,193	-----	\$ 5,711.38	-----	\$ 5,711.38
Sussex	1,172	-----	7,932.07	-----	7,932.07
Kent	17,719	9,432	62,697.99	\$ 47,500.00	110,197.99
TOTALS	20,084	9,432	\$ 76,341.44	\$ 47,500.00	\$ 123,841.44

SUMMARY OF RECEIPTS

Total Value-----	\$ 123,841.44
Transferred to Accounts Receivable-----	59,879.41
Daily Deposits-----	63,962.03
Received on Account-----	59,262.80
Overpayments-----	-----
TOTAL DEPOSITS-----	\$ 123,244.83

BREAKDOWN BY TYPE OF PERMIT

7,051	Heavy Hauls
6,628	Mobile Homes
342	Piling (30-day) (8 of these for 12 month period)
6	Piling (Trip)
229	Buildings
534	Boats
4,446	Construction Equipment (Private)
729	Construction Equipment (Government)
71	Construction Equipment (Highway)
48	Void
20,084	TOTAL

RIGHT OF WAY

Total Right of Way expenditures for the year were \$2,440,378. Relocation payments accounted for \$52,233 of the total expenditures.

During the year, the Relocation Section relocated and provided relocation assistance and payments to 14 families, 3 businesses and nonprofit organizations.

The Property Management Section received \$85,361 from rentals during the year. In addition, \$122,780 was received from the sale of land and improvements. This includes the proceeds from the sales of 15 depleted borrow pits.

The Bureau of Right of Way was in the second year of a four-year program for the acquisition of all nonconforming signs and billboards. The work is proceeding on schedule. The Federal Government is sharing 75% of the costs and if the funds continue to be available the program should be completed at the end of the fourth year.

Relocation services were performed for the Department of Natural Resources and Environmental Control, the Division of Historical and Cultural Affairs, and the Kent County Levy Court.

Road closure proceedings resulted in the official vacation of nine old or abandoned roads in the state during the year. Upon closure, the Department is relieved of all responsibility for further maintenance.

SUPPORT

MATERIALS & RESEARCH

The Bureau of Materials and Research maintains a laboratory with complete testing facilities in Dover at the Administration Center, in addition to a project field control office and soils testing laboratory at the Newport Yard to inspect, sample and test all engineering materials used in construction of highways and bridges throughout the state. Materials and Research personnel are primarily responsible for maintaining quality control of all construction materials through a comprehensive sampling, testing and inspection program.

While most of the activities of this section were directed towards testing and quality control, numerous research projects and special studies were also undertaken. A statewide evaluation of bridge decks for chloride contamination due to application of de-icing salts is underway. Corrosion of bridge deck steel by chlorides has developed into a costly maintenance problem in many states. Delaware's bridge deck problems are not as severe as those of surrounding states; however, several decks containing excessive amounts of chlorides have been located during this study. This office has proposed the use of a concrete mix for bridge decks to protect

reinforcing steel from corrosion. This proposal would result in a 50% savings over the protection system now used on new construction projects.

Pavement surfaces throughout the State are continually tested and evaluated with respect to slipperiness. Testing is accomplished through the use of a specially designed, highly instrumented skid test unit which enables detection and monitoring of pavement surfaces which may be deficient in skid resistance, and possibly present a safety hazard to the motoring public. One pavement type under study is the open-graded plant mix seal currently under traffic on Route 13 near Dover. This mix is designed to improve skid resistance, reduce tire splash and night glare, and retard ice formation at the roadway surface. The excellent performance of this pavement to date has initiated its use in other high volume, high speed locations.

Evaluation of new construction products is a continuing process with our research personnel. The expanding use of epoxy coating systems and bonding compounds has necessitated investigations of performance capabilities of these materials. Testing of various brands of epoxy mortars and adhesives, including plastic pipe, paints and coatings will assist construction personnel in specifying the best low cost product for the particular job. The bulk of personnel effort in FY'76 was expended in the testing of soils, aggregates, bituminous materials, cement, concrete and paints. Other necessary functions included hot mix and concrete production inspection, and quality control testing on active construction projects. The volume of work output included the processing of 7,680 soil samples, and 3,000 aggregate samples; the inspection of 78,700 cubic yards of concrete and 178,000 tons of bituminous concrete; 1,100 tests on bituminous materials; 1,365 tests on Portland cement; and 2,300 density tests on bituminous concrete and soils.

The soils engineering staff has continued to provide road and bridge design personnel with subsurface data essential to project planning and design. This included 1,000 feet of cased boring and 6,500 feet of auger boring work.

SAFETY SECTION

The Safety Section continues to be most active in the area of traffic control problems that are generated in highway maintenance, construction and utility company work areas. This has resulted in an increased awareness of personal safety on construction and utility company work sites. This awareness was generated by the non-scheduled visits of O.S.H.A. personnel to various work sites.

There were three (3) Department employees who, in their off duty time, qualified to become multimedia first aid instructors. Twenty-eight (28) individuals have completed a course in first aid. Additional classes are

planned in the near future. Ninety-four (94) personnel have completed the Defensive Driving Course which was presented at Bear, Georgetown and the Highway Administration Building in Dover.

Extensive changes have been made to the Delaware Traffic Control Manual which will be published in the very near future. A simplified personal injury report form was approved for use by the Industrial Accident Board. Members of the Department conducted a personal safety lecture for the 20 supervisors who are working in the C.E.T.A. Program.

TRAFFIC

Traffic Signal Slide Presentation

At the request of the Delaware Safety Council the Bureau of Traffic photographed a slide presentation of various traffic signal configurations and wrote an accompanying script.

The presentation was entitled "YOUR TRAFFIC SIGNALS AND WHAT THEY MEAN" and covered in detail each type of traffic signal that pedestrians and vehicle operators can expect to encounter in traveling the streets and highways of Delaware. Several copies of the entire program have been obtained by the Safety Council for school and civic group presentations.

Safety Improvement Program

The Bureau of Traffic in conjunction with the Federal Highway Administration has undertaken a program of improving the safety of nine high hazard sites. This program covers sites on a statewide basis and primarily deals with the elimination of steel poles and fixed objects from the median areas and islands.

Also included is the relocating of signal heads for better sight distance and alignment. It is anticipated that this program will be completed within the next year.

Installation of Coordination Cable on Dover Bypass

Since the implementation of the coordinated signal system along the Dover Bypass some years ago, it has been necessary to rent the telephone line connector cables used in this system. While this arrangement has worked reasonably well most of the time, there have been occasions when the full coordination aspect of the system was lost due to lightning damage, short circuits, water damage and various other problems.

In order to alleviate these problems, it was decided to install cable that would be owned and maintained by the Department. This installation was recently completed and placed into operation. A total of 10 miles of coordination cables were installed along the Dover Bypass and reaching to the Dover Air Force Base.

With lightning arrestors and other accessories included with the cable it is anticipated that the major problems previously experienced will be eliminated. In addition, savings will be realized by the Department by no longer having to rent the cable.

New Type Signal Equipment

The Bureau of Traffic recently entered into a program of using the micro-computer concept of signal equipment. This new technique uses the latest technological advances and offers several distinct advantages. The chief advantages are the expanded range of special functions which are part of the basic device. Previously, many special functions needed to solve individual intersection problems were either not universally available or they required unique equipment.

Permissive Green

During the past year the Bureau of Traffic has been utilizing the concept of permissive green on left turn signal movements. Vehicles are thus permitted to utilize gaps in traffic to make their turn. As a result the signal is required to make fewer changes and this in turn increases the traffic volume thru the intersection with reduced "time waiting" periods.

Federal Signing Program

A federal signing program designed to replace all worn and out-dated signs on secondary and tertiary roads was implemented during this fiscal year. Surveys were made on several sections to determine an estimated number of signs which would have to be replaced under the program. Many existing signs had been worn in excess of their useful life, and many did not conform to the new type of pictorial signs recommended in the "Manual on Uniform Traffic Control Devices".

It is the responsibility of the Signing Supervisor in each county to direct the program in his area. Installations are all being made by State forces. Although the program is progressing, it has not been possible to assign personnel to the program on a full time basis. Other regular duties supersede this work and the rate of progress is limited by the present shortage of manpower.

This should prove to be a highly beneficial program to the motoring public, since not only are existing signs being replaced that were performing poorly, but signs are also being installed on tertiary roads where funds were never available for their use before.

Town Signing Program

Last year an extensive municipal sign upgrading program was undertaken by the Bureau of Traffic with the assistance of Federal Funds. Under this program the signs which were changed were ones that did not conform to the guidelines set forth in the "Manual on

Uniform Traffic Control Devices" regarding mounting height, color, size, or reflectivity.

The program is still in operation and has been approximately 98% completed with only two more eligible municipalities left to finish.

Reclamation of Sign Blanks

Several years ago, the cost of sign blank stripping solution had risen to the point where it became no longer feasible for the Sign Shop to continue reclaiming previously used sign blanks. However, with the cost of new aluminum steadily increasing, it was decided to determine if an economical procedure could be developed to re-use the aluminum blanks from signs that had returned from the field as unservicable.

Through the testing of different products currently available from various manufacturers a satisfactory material was obtained that was ecologically acceptable and at a significant reduction in cost. Specifications were prepared and submitted for the material which was tested and approved by the Division of Highways and by the Department of Natural Resources and Environmental Control.

With the resumption of the reclamation of sign blanks there has been a total of 9,120 square feet of metal blanks stripped during the six month period beginning January 1st of this year.

Reflective Sheeting Changeover

During this past fiscal year, the use of encapsulated lens reflective sheeting for the background of highway signs was increased considerably. The changeover from the enclosed lens type required a lengthy test period held by the Bureau of Traffic in connection with detailed training program for the Sign Shop employees. Some changes in existing equipment and the addition of others were required for the use of the new material.

Hot Traffic Paint Changeover

At the onset of the past pavement marking season, several modifications were made to the existing paint equipment. Past experiences with applied paint dictated that the use of cold traffic paint on our highways should be eliminated wherever possible. By using cold paint, equipment of a specialized nature is not required but several other problems enter into the program.

The tracking of wet traffic paint is a very serious problem. Where wet paint is tracked, the glass spheres embedded in the wet binder are immediately removed making the reflective value of the line after dark useless. Wet line protection has been used for many years in the form of cones and other types of markers, and although beneficial to some extent, traffic continues to cross the wet line in heavily travelled areas.

ADVANCE PLANNING

Advance Planning has been involved in the following location studies in the past year.

Delaware Route 7 - I-95 to Stanton - The Location Public Hearing was held in March for this dualization of Route 7. Location Approval should be realized in August so that design may begin.

Delaware Route 273 - Christiana Bypass - The Location Public Hearing was held in late 1975 for this project to relieve a traffic congestion hub. Location Approval should be realized in August so that design may begin.

Ruthar Drive - Route 273 to Ruthby Road - Staff presently investigating alignment for new road to enable traffic going to and from Newark to take advantage of the new ConRail overpass being constructed on Ruthby Road.

US 113 - Little Heaven to DAFB - Advance Planning and Environmental Studies staff are preparing the initial investigations for this project, in that it crosses a large marsh and involves coordination with the Coast Guard with respect to two new bridges across the St. Jones.

In addition to various smaller investigative projects assigned, other location projects that are receiving new interest are:

- 1) Delaware Route 26 Corridor
- 2) Bridgeville Bypass
- 3) Middletown Bypass

Bikeways - The Advance Planning Section continues in its function of serving as the Department's liaison to the Bicycle Task Force. Several projects selected by the Task Force in 1975 were advanced through the Road Design Section and constructed. These projects were South Chapel Street, Scottfield School Connector, Christiana School Connector, Brandywine Hundred System. Of the 1975 Bikeway Funds approximately \$139,000 State Funds and \$164,000 Federal Funds remain. New projects initiated in 1976 are the Lebanon Bicycle Bridge, Lewes to Rehoboth Bikeway, Rockland Bikeway, Kentmere Bikeway and a Dover Bikeway System. The Kentmere Bikeway is eligible for the new Federal Bikeway Demonstration Program (80% Federal - 20% State) and application is being made.

In other areas the Task Force prepared legislation for Motor Vehicle Law changes pertaining to bicycles, changing the limitation on the State making bikeway grants to municipalities, and revision to the proposed legislation for "mopeds". In New Castle County the Task Force worked with the New Castle County Department of Planning in developing a Master Bikeway Plan for the County.

OFFICE OF PLANNING

During this fiscal year the Office of Planning was created which combined all the long and intermediate range planning functions into one principal area reporting to the Secretary.

This Office prepares transportation needs studies and programs in cooperation with the Division of Highways and Transportation. It serves as liaison with federal, state, county and municipal agencies where planning and department wide operations are involved. One major function is to supply statistics and reports to the federal government and to disseminate technical information to sections in this Department.

Several major federal studies were completed this year:

- (1) Realignment of Federal Aid Systems in Delaware;
- (2) 1976 National Highway Inventory and Performance Study.

The Office of Planning is comprised of Mapping and Administration Section, Systems Planning Section, Planning Survey Section and Safety Planning Section.

MAPPING AND ADMINISTRATION

The primary function of this section is to provide the clerical, financial and record keeping support for the Office of Planning. In addition, all maps for the Department are prepared by the Mapping Sub-Section.

Mapping and Drafting work included preparing and revising various maps in our county general highway series in conjunction with the Federal Highway Administration. The Delaware Official Highway Map was revised and printed as a Bicentennial Edition. The pictorial side of the map was prepared by the Department of Community Affairs and Economic Development. Various incorporated city and town maps of Delaware were revised and printed. Also, the statewide Base Map was revised and printed.

A large amount of time was spent on maps, reports, charts, and graphics. Most of these projects were for such sections as Unified Systems Planning, Project Planning, Safety Planning, and the Maintenance Section.

SYSTEMS PLANNING

Systems Planning is responsible for the long range (20 year) needs, programs and plans for both highways and public transportation. It develops a process which utilizes state and county land development plans, population forecasts, employment forecasts, travel characteristics to determine future travel in the state. Future highway and public transportation needs are then determined and translated into long range programs.

WILMAPCO Planning for New Castle County:

A major land use and transportation plan re-evaluation is being conducted for New Castle County. This time consuming procedure has been necessitated by an appreciable decrease in 20-year forecast population and thus an appreciable reallocation of development in the forecast County Comprehensive Plan.

Federal Law mandates that the Wilmington Standard Metropolitan Statistical Area maintain a continuing, comprehensive, coordinated transportation planning process if the State is to receive not only federal matching funds for planning, but also for any construction project that would normally be a product of the land use and transportation planning process in the Wilmington SMSA.

Kent and Sussex Counties:

The Kent-Sussex Study is the regional comprehensive, continuing, coordinated forecast land use and transportation study for Kent and Sussex Counties. It is being conducted in cooperation with the Delaware State Planning Office and Kent and Sussex Counties.

Because of major reduction in 20-year forecast population with resulting changes in land use allocations, a major transportation review and update is being conducted. The State Planning Office is providing the population and employment data necessary for present and forecast travel predictions. Surveillance of new development trends and of traffic volume patterns has been maintained.

Kent-Sussex Study, Volume I, "Findings" report has been printed. This is a report prepared by planning technicians for planning technicians. Upon completion of the "Level 2 Review", it is intended to release a final report containing forecast planning data and recommendations in a manner more suitable for public consumption and evaluation. This forecast work will be based on information derived from the "Findings" report.

Impact Studies:

Approximately 15 impact studies were conducted to evaluate the impact of proposed development on the existing and forecast transportation systems. Recommendations were then forwarded to the Subdivision Administration Section.

Approximately 200 entrance-exit designs were reviewed, and where appropriate, traffic comments were forwarded.

Approximately 50 support facility documents were also received and required traffic analyses defined. The reports were then returned to Subdivision Administration.

Federal Studies:

- (a) Functional Classification for Realignment of Federal Aid Systems
- (b) The National Highway Inventory and Performance Study 1976

PLANNING SURVEY

Planning Survey is responsible for most of the data gathering and dissemination functions.

One major new responsibility this past year was the monitoring of the 55 MPH Speed Limit in Delaware. Twelve stations were located where the actual speed of vehicle is recorded. Other locations will be added during the next fiscal year.

There are 18 permanent counter locations which record the number of vehicles crossing the location 24 hours per day, 365 days per year. This provides hourly and seasonal factors for utilization in design, traffic and maintenance activities.

Portable counters are placed on a fixed schedule throughout the State to determine traffic volumes on all roads and to indicate variations in traffic patterns.

All roads are inventoried periodically to verify changes in condition, safety and service. This information is also utilized in sufficiency studies which are used for determining priorities for maintenance and construction activities.

Federal Aid Systems are determined based upon federal requirements. This establishes which routes are eligible for federal aid construction funds.

Traffic origin and destination surveys are performed with assistance from Division of Highways personnel. This provides required information for project location studies.

Truck weight surveys are done to determine axle weights by class of vehicle. This is needed by design for pavement thickness analysis.

The municipal aid allocation to all municipalities is developed by this section based upon population and miles of municipal maintained streets in each municipality.

Photologging responsibilities were shifted to this Section. New photologging activities consist of filming suburban development streets which were added to the state maintenance system last year, and the updating of roads which have been improved.

SAFETY PLANNING

Safety Planning is responsible for coding accident reports, analysis of accident reports and statistics, development of a Traffic Records System, safety project identification, coordinating safety improvement projects, preparation of safety programs and evaluation of safety improvements from accident records.

Accident Reports - Coding and Analysis: During the calendar year 1975, a total of 13,373 accident reports were analyzed and 34 items of interest to Department technical personnel were coded to comprise the Highway Accident Computer File. These 34 items involved coding 64 columns of data.

Duplication of coding items already coded by the State Police has been a concern of this Department and State Police. In June, 1976, it was mutually agreed that the State Police would, starting January 1, 1977, code all items needed by this Department. A pilot program in Sussex County was established to acquaint troopers with mileposting techniques. Higher level officers in each troop attended lectures given by Safety Planning personnel, on identification of accident site by road maintenance number and milepost. The program is proving such a success that the State Police Traffic Division has planned on similar programs for Kent and New Castle. Full implementation of this operation would result in savings worth \$26,000, since coding personnel would perform other technical duties more closely identified with Safety Planning's investigative activities.

Traffic Records System (Statewide): This Section initiated the formation of a Traffic Records Committee, in compliance with federal directives. The present electronic data processing operation has proved unsatisfactory for highway safety purposes. Numerous tables, required to be printed out intermittently for efficient management of highway safety programs, cannot be provided when needed. An on-line system, using a mini-computer has been recommended. The cost of establishing this system is \$80,000, with 100% federal funds. Saving to the Department has been estimated to be at least \$12,000 per year of operation.

Manpower Training: In keeping with the national emphasis on highway safety, this section continued during the past year, funding personnel's attendance at specialized courses and workshops intended to update technical knowhow in various engineering fields. Four Road Design Engineers and one Planning Engineer attended courses at Northwestern University. Four Traffic Engineering Technicians were exposed to the latest developments in signalization at Georgia Institute of Technology, and an engineer-trainee learned modern techniques in cost/benefit analysis at Georgia Tech. Also, numerous higher-level personnel attended meetings and seminars in their respective expertise.

Categorical Grants: The Safety Planning Section coordinated improvement projects under the Categorical Grants. Funding is 90/10, except for the Pavement Marking Demonstration Program which uses 100% federal funds.

Accident experience established the criterion for ranking priorities for remedial measures.

Railroad/Highway Grade Crossings: Aside from six locations identified thru the Railroad Inventory Book as needing upgrading of protective devices and crossing surfaces, this section identified 313 crossings requiring pavement markings and 101 locations where advance warning signs are needed. Total expenditure for these was estimated at \$545,000.

High Hazard Locations: Thru accident experience, 36 statewide locations were identified as being hazardous. Corrective action for 18 has been designed for a total cost of \$553,000.

Elimination of Roadside Obstacles: Twenty locations statewide were identified thru accident experience, to require guardrail installed at bridge parapet ends. Total estimated cost = \$200,000.

A tree removal program was drawn up, costing \$153,600. This was dropped due to public opposition.

Crash barriers have proven very effective in preventing fatalities and serious injuries. Ten thousand dollars has been allocated for installing a crash barrier at the north end of the center pier of a railroad overpass on U.S. 13, north of Naaman's Road.

Fifty-one (51) locations on the tertiary system needing guardrails for the motorists' protection have been identified. However, it was found not feasible to apply this treatment at most locations due to the disproportionate cost. Replacement of wooden structures has been recommended instead.

Signs Replacement Program: Under 402 (100% federal) funding, 1,304 obsolete signs have been replaced in five municipalities. Only the three biggest towns of the State have still to replace their signs. Completion is expected this year. The program cost \$42,000 and will bring each municipality in conformance with Uniform Standards.

Under a 90/10 federal participation funding, a statewide sign replacement program has been scheduled at an estimated \$460,000. Obsolete signs on tertiary roads off the federal aid systems, will be replaced with standard signs.

Evaluation: Monitoring of the foregoing projects is an ongoing activity of Safety Planning Section. Evaluation for safety benefits are conducted upon completion of each project. Eight (8) projects were evaluated and it was determined that the improvements on each, effectively addressed the problem.

ENVIRONMENTAL STUDIES

This office has reviewed about 25 projects to determine the significance of the action, and whether the project would be a Non-major or a Major Action in terms of environmental impact. All Major Actions required either an Environmental Impact Statement or a Negative Declaration.

There were three Major Action projects for which Negative Declarations were prepared. These were Delaware Route 273, Christiana Bypass; Delaware Route 7, Stanton to I-95 and Delaware Route 10 Dualization from U.S. Route 113 to U.S. Route 13. There were no projects for which a full Environmental Impact Statement had to be prepared. In addition to these projects work was begun on the Bridgeville Bypass, the Middletown Bypass and Delaware Route 26.

There were supplemental reports prepared for the Newark Beltway between Delaware Route 896 and Delaware Route 2, an assessment of the South Wilmington Connector, an update for Delaware Route 141 Prices Corner Interchange Phase III and numerous reports to accompany Federal permits. Considerable work was done for the U.S. Route 113 project from the Dover Air Force Base to Little Heaven before it was halted. An environmental report and bridge permit was obtained through this office for a Bicycle/Pedestrian Bridge across the St. Jones River at Lebanon.

A noise design was prepared for the South Wilmington Boulevard contracts which involved the ramps and I-95. There was a report prepared for documenting the I-95 third lane widening as a non-major project which was complete enough for permit requirements. The yearly Consistency Report was prepared to determine that the highway system plan for New Castle County is compatible with the state's Implementation Plan for air quality.

DESIGN

REVIEW

The Review Section is responsible for the supervisor of consulting engineers, retained by the Division of Highways, for the purpose of preparing contract plans and special provisions for major highway and bridge projects.

During the past fiscal year, twenty five (25) projects with an estimated construction cost of 81 million dollars were under the supervision of this section. Seven of these projects, at a cost of 9 million dollars, were advertised for construction. A summary of projects is as follows:

Projects Advertised

Bridge 6-9 Widening and I-495 Westbound Widening from Bridge 6-9 to Bridge 6-10 New Castle County	\$ 555,275.30
Interstate Highway Rt. I-495 Grading & Paving, New Castle County	3,589,484.88
Structure Borings, Penn Central R/R & Christina River Bridge, N.C.C.	4,983.25
Wilmington Boulevard Borings, I-95 to Walnut Street, New Castle County	12,384.75
Borings, Relocated DuPont Rd. - Elsmere, New Castle County	6,317.50
Wilmington Boulevard, I-95 Modifications, New Castle County	2,359,000.00
Del. Rt. No. 14, Rehoboth Bypass, Phase II, Southbound Bridge Superstructure & Approaches, Sussex County	2,500,000.00
TOTAL ADVERTISED	\$ 9,027,445.68

Projects Under Design

Route 141 Projects	
69-02-003 Phase III, Prices Corner	\$ 5,500,000
71-09-005 Grading & Paving, Sta. 294 to Brandywine Creek	6,050,000
71-09-007 Grading & Paving, Reading R.R. Bridge to Kennett Pike	4,500,000
71-09-008 Grading & Paving, Lancaster Pike to Reading R.R.	3,800,000
70-08-003 Brandywine Creek Bridge Substructure	2,500,000
70-08-003 Brandywine Creek Bridge Superstructure	6,000,000
70-08-003 Grading & Paving Brandywine Creek Bridge to Rockland Rd.	3,000,000
Other Projects	
Interstate Signing & Lighting	1,300,000
70-12-003 Newark Arterial, Ogletown to Elkton Road	
Part 1 - Augusta Dr. to Ogletown	2,200,000
Part 2 - Del. Rt. 72 to Augusta Dr.	5,500,000
Part 3 - Rt. 896 to Rt. 72	3,000,000
Part 4 - Rt. 2 to Rt. 896	5,300,000
67-10-015 Rt. 14 Northbound Bridges & Approaches	4,400,000
72-12-002 Savannah Road Bridge & Approaches	3,000,000
75-05-006 Third St. Bridge Wilmington Superstructure	5,000,000
69-11-002 Wilmington Blvd., I-95 to Jefferson Street	9,000,000
72-04-005 Wilmington Blvd., Jefferson Street to 4th Street	6,000,000
68-08-002 Relocated DuPont Road	5,000,000
TOTAL UNDER DESIGN	\$81,050,000

UTILITIES

Annually hundreds of miles of utility lines - gas, water, telephone, sewer and electric are added to the thousands of miles of existing utility lines which are located within Delaware highway's rights-of-way. This year 275 additional utility franchises added 794 miles.

Coordinating the relocation and adjustments of those lines is a function of the Utility Section. This coordination is not only with the utility companies but on an inter-departmental basis as well.

The Utility Section also reviews and approves all changes, prepares costs figures, processes preliminary and final estimates and arranges for payments in cases where the Department is financially responsible. During the report year, over \$812,780 was processed for payment to utility companies for adjustments to their facilities on highway construction projects.

"Miss Utility" of Delmarva, the new one-call concept to help eliminate utility disruptions, has grown to include 13 full memberships and 9 associate memberships. During the year, legislation was introduced in the Delaware General Assembly to give the State legal powers to enforce the protection and prevention of injury to underground facilities.

The Utility Section is continuing its program for improvements to various railroad crossings. At the present time, there are 18 contracts under design for the installation of automatic flashing lights, and protection or improvements to the crossing surface. The railroad has been authorized to proceed with physical improvements at six grade crossings. In addition, it is proposed that all railroad crossings are to be up-graded with protective devices to meet the state and federal standards.

Major utility installations and relocations are being made on road construction projects currently under construction. The cost of the utility work is approximately \$2,500,000. The utility companies are responsible for a large percentage of this cost since their facilities are located on our existing highways and governed by franchise regulations.

ROAD DESIGN

Road Design is responsible for in-house roadway design in the preparation of complete plans for construction. Final details are prepared on roadway width, alignment and grade, drainage, erosion control measures, detour schemes, methods of disposing of waste materials, construction sequences, and other items necessary for contract plans.

A total of seventy-two projects were under design during the past fiscal year. These projects are distributed statewide and vary in complexity.

Safety and safety-related projects have accounted for more than forty percent (40%) of all projects under design. Safety continues to be a prominent factor in developing plans for Delaware highways.

PROJECTS UNDER DESIGN

Colonial Heights Drainage
 Cedar Street - Lewes
 Polly Drummond Hill Road
 Road 88 - Kent County
 Intersection Improvements - U.S. Rt. 40 & Glendale
 Street Improvements - High Point
 Saulsbury Road Reconstruction
 Concord Pike - Safety Improvements
 Route 9 - Road 378 to Road 411
 East Street - Harrington
 Voshells Cove - Street Improvements
 Arundel Drive and Limestone Road - Intersection
 South Chapel Street
 Denney's Road
 Delaware Rt. 8 & Rd. 104 - Intersection Imps.
 I-95 Widening - Christina Marsh Interchange to
 S. Wilm. Viaduct
 West Chestnut Hill Road - Reconstruction
 U.S. 13 and Road 331 - Intersection Imps.
 Cleveland Avenue - Newark
 Railroad Avenue, Bridgeville - Drainage
 Columbia Avenue, Rehoboth - Drainage
 Chapelcroft - Drainage
 Zebley Road - Drainage
 Faulkland Road & Newport Gap - Intersection Imps.
 Walnut Street, Wilmington - Reconstruction
 Philadelphia & Shipley Rd. - Intersection Imps.
 Haines Avenue - Beachwood Ave. to Governor Printz
 Mill Creek Road - Curve Improvements
 Liftwood Drainage - Phase II
 White Clay Creek - Class I Bikeway
 Miscellaneous Kent County Drainage
 I-95 Off Ramp (Ramp N)
 Route 10 - U.S. 13 to U.S. 113
 Road 62 - U.S. 13 to Road 309 (Kent County)
 King Street - Wilmington
 Rd. 300 & Rd. 237 - Intersection Imps.
 Del. 273 & Del. 141 - Intersection Imps.
 Bus Shelters
 Georgetown Airport

PROJECTS ADVERTISED

Safety Improvement Work Program - N.C. Co.
 Safety Improvement - Statewide
 Intersection Imps. - Sussex County
 Critical Area Treatment - New Castle Co.
 Webbs Lane Sidewalk - Kent County
 U.S. 13 Safety Imps. - Odessa to Tybouts Corner
 Upper Marsh Road Drainage - New Castle Co.
 Liftwood Drainage Improvements
 Lambsons Lane Intersection Improvements
 Drainage Improvements - Wilm. Manor Gardens
 Safety Imps. - Del. Ave. & Jackson Streets
 New Road - Elsmere (Reconstruction)
 Dirt Roads - Road 375 (New Castle Co.)
 Dirt Roads - Kent County
 Dirt Roads - Sussex County
 Old Newark Road Pedestrian Sidewalk
 Varlano Drainage & Jamalca Drive
 Swanwyck Connection
 Moores Lane
 Cleland Heights, Clayton St. Drainage Imps.
 Intersection Imps. - Rt. 72 & Rd. 295
 U.S. 13 Drainage & Misc. Imps. - Biddies Corner
 Class II Bikeway - Rt. 72 - P.C. RR to Rd. 336
 Brookside - Scottfield - Sandalwood - Sherwood Forest, Bikeway
 Conn.
 Cedar Neck Road Drainage
 Foulk Road/Windsor Hills Intersection Imps.
 6th Street Over Rossakatum Branch, Laurel
 North 2nd Street - Delmar
 Louisa Avenue (Eastburn Heights)
 Class II Bikeway - Brandywine Hundred
 Woodward Avenue Connector
 Intersection Improvements - Blades
 Ruthby Road - Ruthar Drive

BRIDGE

The Bridge Section actually prepared fifteen (15) contracts for bridges and other structures between July 1, 1975 and June 30, 1976, with a total construction cost of \$1,498,177.53.

These figures do not include structures being combined with road design, and being prepared by consultants.

The review and approval was done by this section, but the contract values are included in road design.

Several small bridge replacement projects are completed and awaiting future funding.

The following list will show the bids received for structural contracts between July 1, 1975 and June 30, 1976.

CONTRACT	DESCRIPTION	COST
New Castle County		
73-11-002	Replacement of Br. 184 on Rd. 282 with 3 cell R.C. Box Culvert	\$ 87,752.14
74-09-005	Br. 564 on Jay Drive, Br. 551 on Louise Rd. with R.C. Box Culverts	112,222.16
74-12-006	Replacement of Br. 59 on Coachman Rd.; 3 cell R.C. Box Culvert	113,966.50
75-04-006	Replacement of Br. 274 on Rd. 312 (Wedgewood Rd.) with a corrugated pipe arch	74,826.25
75-04-007	Br. 6-9 Widening at I-495	555,275.30
75-06-019	U.S. 13 Safety Improvements; Extensions of Br. 510 & Br. 511	53,269.00
75-09-022	Repairs to Third Street Bridge in Wilmington	12,056.00
New Castle County Total		\$1,009,367.35
Kent County		
74-09-001	Replacement of Br. 186A on Rd. 186 with 3 galv. corrugated steel pipe arches	\$ 53,718.00
74-03-001	Replacement of Br. 225A on Rd. 225 with 3 cell R.C. Box Culvert	98,880.73
75-01-002	Drainage Improvement of Puncheon Run in Dover	32,235.00
76-02-005	Replacement of Br. 284A on Rd. 284	86,816.25
75-08-015	Replacement of Br. 16B on Rt. 8	55,426.00
74-03-014	Replacement of Br. 503 over Mispillion River on Maple Ave., Milford	93,109.00
75-08-006	Dover High School Entrance Road Drainage	80,173.60
76-03-010	Br. 207A on Rd. 207	266,026.70
Kent County Total		\$ 766,385.28
Sussex County		
76-05-012	Tull's Crossing Bridge Rehabilitation Br. 257 on Rt. 20	\$ 33,750.20
74-01-001	Replacement of Br. 812 on Rt. 16 at Broadkill	509,976.70
73-07-003	Cedar Creek Br. Mechanization	173,600.00
Sussex County Total		\$ 717,326.90

The Bridge Section continued bridge inspections and rating programs to carry out National Bridge Inventory and Inspection Programs as required by the Federal Highway Administration, U.S. Department of Transportation.

The review and updating of inspection reports for structures over twenty (20) feet on primary and secondary roads was submitted in FY'76. In addition

a program to inspect structures on tertiary roads was started, as well as inspection of drainage structures (less than 20 feet) on all roads.

SPECIFICATIONS

The Specifications Section prepared special provisions for construction contracts involving highway and bridge construction, drainage, repairs, demolition, and materials. The functions of the section are allied to the Design Sections, and require direct contact with squad leaders of Bridge and Road Design, and with Review Section engineers, to insure that items of work on contract plans are covered with respect to description, construction methods, type of materials, and payment for required work.

Contract operations must be performed within the framework of the Standard Specifications. Where new or special construction methods may be required, or where the use of new or updated materials need clarification, the information is directed to the contractor through the contract documents relevant to each contract.

Specifications include the contractual requirements under which the contractor shall perform the work, and contain the detailed requirements for the work to be accomplished. They complement the plans which delineate the extent and nature of the work to be done.

OPERATIONS

MAINTENANCE

During FY'76, the Bureau of Maintenance continued as a staff section, reporting to the Assistant Chief Engineer of Operations, acting in an advisory capacity on all matters pertaining to maintenance.

During the year, the bureau planned, wrote and administered 25 equipment contracts, 28 materials contracts and 29 maintenance/repair contracts. Funding was available to continue a reasonably effective equipment replacement program. Major purchases of construction equipment, trucks and automobiles were made.

The bureau, by direction, expanded its monitoring of all appropriated funds and has been further directed to institute even greater control during FY'77. With these controls in effect, it is hoped that the available funds will be used in the most effective manner.

North District

In July, 1975, Maintenance personnel numbered 187; by the close of the fiscal year forces totaled 176. This loss of 11 persons equals a better than 6 percent cut

in manpower. A budget reduction of \$48,457, compared to FY'75 amounts to a 7 percent cut in funds. This reduction (in actual dollars spent) when added to inflation and escalation could easily push the reduction to over 20 percent.

These reductions in manpower and funds have seriously restricted the capability of the District to supply the services demanded by the public.

Several years ago the Department began instituting a Maintenance Management System. Such a system is to provide the methods to increase efficiency thus enabling management to provide maintenance services as regular and scheduled operations and to greatly reduce the "demand" and "emergency" type assignment. Such a system may provide the methods, however, the methods are very difficult to employ until the budget provides adequate tools of implementation, such as manpower, equipment and materials.

While a substantial amount of maintenance work was accomplished, it was performed primarily as demand maintenance assignments. This "brush fire" type of program can accomplish many of the services to the public, but it does not provide the amount of service, or the satisfying results to the public which is provided by a planned, scheduled and regular type of maintenance.

Bridge Openings:

Third Street	570
Walnut Street	349
Market Street	339
Total Openings	1,258

There were 1,175 fewer openings (48 percent) this fiscal year than last, indicating a continuing decline in Christiana River traffic.

The South Wilmington Viaduct continued to require considerable maintenance. Expansion dams on both the northbound and southbound lanes required tightening and/or rebuilding. The maintenance of traffic transforms this work into a major operation. This repair and/or replacement of bridge guards and handrails damaged thru vehicular accidents was performed routinely.

Both pedestrian overpasses on I-95 and I-495 required repair to the fencing damaged by vandalism.

The north leaf of the Third Street Bridge was struck by the Gulf Oil tanker "Yasona", and a 12 foot by 20 foot section of steel and sidewalk has been temporarily repaired.

Central District

A complete maintenance service program to the public was severely limited by inadequate funding. The

majority of the routine maintenance services were continued throughout the entire fiscal year.

Several special projects were completed that required a limited outlay of funds. Perhaps the most unique project completed was the installation of a 60' span "Bailey Bridge" at Smyrna Landing. The 10' sections were hauled to the job site and assembled to make a semi-permanent span across the Smyrna River. After the structure was completed, timber decking was placed and opened to traffic on September 19, 1975. The temporary structure is expected to "remain-in-place" approximately two years. The project was completed in approximately seven working days.

Another project completed during the fiscal year was the beautification of the general area in Dover along the St. Jones River adjacent to the State Legislative Building (E. Lookerman Street to Court Street). Float Crew personnel and equipment worked approximately 9464 manhours. Work consisted of clearing, tree removal, hauling borrow, sloping banks, grading, etc. The project was mainly oriented with the Bicentennial celebration over the 4th of July. Other related work was completed with the cooperation of several state agencies. Many favorable comments have been received as a result of these improvements surrounding the State Building Complex.

As a result of a severe rainfall on July 13, 1975, a record high of 8.5 inches, restoration of damaged sections of roadways and structures continued during the most of the fiscal year. Approximately twenty-five (25) roads in the district were closed due to high water which resulted in bridge washouts and structural failures.

The Float Crew Surface Treatment Section completed work on approximately forty (40) roads that included patching and retreatment of shoulders on U.S. 13 from the Sussex Line to Odessa. Due to restrictions of budget allocations to purchase materials, many secondary roads will require positive corrective measures in the near future. Approximately fifteen (15) secondary roads in each of the four maintenance areas need a retreatment course at the present time. Additional shoulder work is recommended along U.S. 113 north of Milford, U.S. 301 west of Middletown, U.S. 113A from Little Heaven to Dover.

Small timber bridge replacements again were below the projected program due to lack of funds to purchase materials.

Safety improvements included the construction of left and right turn lanes at the locations noted below:

- (1) U.S. 13 at Co. Rd. 239, N.B., left turn lane.
- (2) U.S. 13 at Co. Rd. 371, S.B., left turn lane.
- (3) U.S. 13 at Co. Rd. 426, S.B., left turn lane.

As reported last year, the manpower shortage is critical. The Bicentennial Improvement Project was a contributing factor in our manpower situation because it enabled our work forces to continue work without exhausting our financial resources for the remaining fiscal year. Maintenance manpower and equipment worked most of the winter and early spring months to complete the above mentioned project. Workloads continue to be assigned as much as possible to the Float Crew to enable the maintenance areas to adequately perform a minimum level of standards within the projected budget.

Several pieces of heavy equipment and new cars were purchased to replace outdated and obsolete vehicles. Replacements included one Athey Loader, one gradall, seven new cars, one steam jenny, eight snow plows, two equipment trailers, six tractor mowers, and four tractors with flail mower attachments.

South District

All resources available to the South District Maintenance Section have been carefully utilized to maintain the highway system of the district in a satisfactory manner.

All area supervisors in the district have done an outstanding job of performing routine maintenance, such as: roadside and median mowing, pothole patching, shoulder restoration, and the installation of over three hundred residential entrances.

Working in conjunction with the Sussex County Agriculture Agent, the South District has participated in a Johnson Grass control program which has been successful in controlling the growth on state right of way.

The acquisition of the following new equipment has been instrumental in helping to improve the overall efficiency of maintenance operations in the South District: one gradall, one Athey Loader, two tractor mowers, one backhoe and trailer, and one 35-ton equipment trailer.

CONSTRUCTION

CONTRACTS COMPLETED AND ACCEPTED - JULY 1975 thru JUNE 30, 1976

<u>Contract No.</u>	<u>Description</u>	<u>Final Cost</u>
<u>New Castle Co.</u>		
69-02-002	Prices Corner, Phase II	* \$ 3,682,015.89
69-11-002	Wilmington Blvd. Borings, I-95 to Walnut St.	* 11,852.65
70-07-005	Replacement of Bridge 353 on Road 8	63,747.85
70-08-009	Kirkwood Highway	*
71-02-007	Relocated Rt. 141 thru Newport, Substructure	1,391,510.65
71-11-004	Churchman's Road	4,287,842.59
72-09-018	Greenbank Road	*
72-10-007	Bridges 556 on Pierce Rd. & 522 on Bedford Rd., Deerhurst	422,556.55
73-08-002	Bridge 688, South Market Street	398,802.60
73-09-002	I-495 over Edgemoor Road	130,289.35
73-11-002	Replacement of Bridge 184 on Road 282	*
73-11-003	Upper Marsh Road Drainage	103,286.85
73-11-008	Road 432, Mt. Pleasant to Maryland Line	2,085,696.51
74-02-004	Lambson's Lane Intersection Improvements	84,357.16
74-03-005	Pedestrian Bridge over I-495 at Everett Avenue	*
74-04-007	Chapel Hill & Possum Park Road Drainage	50,648.03
74-07-001	Stockdale Avenue & Cathedral Street	258,983.51
74-11-001	Bridge 748, So. Wilmington Viaduct	13,646.96
74-11-002	Dirt Roads 450 & 466	366,339.73
75-01-001	Hot Mix Bit. Conc. Resurfacing Program 1974-75	7,245.33
75-02-002	Cleaning & Painting Bridge 138	139,645.43
75-03-001	Applied White & Yellow Traffic Paint	*
75-03-004	Applied White & Yellow Traffic Paint, Upper N.C.Co.	141,367.50
75-04-014	Suburban Development Improvements	147,294.72
75-08-007	Dead or Diseased Tree Removal Rt. 52	16,324.75
75-12-001	Structure Borings, Route 4	102,376.71
		65,454.07
		179,949.63
		4,965.00
		* 3,849.47
<u>Kent County</u>		
73-04-006	Bridge 208A on Road 208	225,284.41
73-04-007	Replacement of Bridge 95A on Road 95	125,482.79
73-08-013	Relocation of Maintenance Rd. 107	132,213.92
73-11-015	Suburban Development Improvements	*
74-04-002	Schoolview Drainage	44,518.13
75-01-002	Puncheon Run Drainage	132,893.76
75-03-009	Safety Improvement Work Program	24,701.25
75-05-002	Safety Improvement Work Program	204,343.73
75-06-021	Webbs Lane Sidewalk	173,194.33
75-08-022	Water Supply System, Smyrna Rest Area	2,351.78
75-08-023	James Clark Driveway	9,474.00
75-09-017	Concrete Patching Program 1975-76	2,400.00
76-03-016	Relocation of Delaware Liberty Bell	145,016.22
		* 8,109.19
<u>Sussex County</u>		
71-02-012	Int. Imps., U.S. 13 & Del. Rt. 404, S.E. of Bridgeville	164,641.73
71-03-003	Replacement of Bridges 215 & 216 on Road 536	*
73-12-001	Alterations to Administration Center, Georgetown	249,701.63
74-09-004	Georgetown Motor Vehicle Improvements	97,214.00
74-12-013	Hot Mix Resurfacing Program 1974-75	7,028.33
75-05-001	Safety Improvement Work Program	135,429.58
		133,054.22
<u>Statewide</u>		
75-03-003	Applied White & Yellow Traffic Paint	112,469.97
75-09-006	Applied White & Yellow Traffic Paint	60,770.88
TOTAL COST OF ALL COMPLETED & ACCEPTED CONTRACTS		\$ 16,387,691.76

*Estimated Final Cost

CONSTRUCTION
ACTIVE CONSTRUCTION CONTRACTS AS OF JUNE 30, 1976

<u>Contract No.</u>	<u>Description</u>	<u>% Completed</u>	<u>Bid Price</u>
<u>New Castle Co.</u>			
65-01-004	I-495 from Penn Central RR to N.C. Ave.	98	\$ 16,876,227.81
65-11-003	Swanwyck Connection	2	646,527.70
67-12-001	Route 896, Maryland Line to Newark	98	1,577,870.31
68-08-002	Relocated Dupont Road	0	6,317.50
70-06-003	I-495 Grading, Stabilization & Drainage	98	11,934,361.25
71-02-008	Relocated Rt. 141 thru Newport, Superstructure	65	10,768,346.25
71-02-009	Relocated Rt. 141 thru Newport	63	6,034,890.79
71-09-005	Kennett Pike Relocation	87	2,967,924.74
71-10-001	Third Street Bridge	45	2,831,670.00
71-11-006	Otts Chapel Road, Elkton Road to I-95	50	3,786,902.44
72-08-001	Llangollen Estates, New Castle	98	649,694.12
72-10-009	Moore's Lane Connection	8	749,725.00
72-11-001	Wilmington Topics Improvements	98	397,952.50
73-09-001	I-495 over Edgemoor Rd. & P.C.T. Co. RR Mainline	81	6,039,784.40
73-10-013	I-495 Structures over Sanitary Sewer	95	552,003.50
73-10-013	I-495 Structures at 12th Street	69	2,112,649.80
74-01-004	Elsmere Reconstruction	98	149,854.00
74-01-005	Liftwood Drainage Improvements	98	149,956.90
74-03-007	Holly Oak Streets	98	260,444.60
74-03-008	Bridge 645 on Marrows Road	47	1,326,231.10
74-04-008	Wilmington Manor Gardens Drainage	98	29,902.10
74-05-001	Critical Area Treatment	98	81,276.30
74-09-005	Replace Br. 564 on Jay Dr. & Br. 551 on Louise Rd.	69	112,222.16
74-10-001	I-495 Drainage, Terminal Ave. to Christina River	98	357,878.50
74-12-006	Replacement of Br. 59 on Coachman Road	5	113,966.50
74-12-010	I-495 Grading & Paving	38	3,589,484.88
75-04-006	Replacement of Br. 274 on Road 312	90	74,826.25
75-04-007	I-495 Widening from Bridge 6-9 to Bridge 6-10	86	555,275.30
75-04-011	Bridge 6-10 over P.C.T. Co.	98	448,570.50
75-05-003	Safety Improvement Work Program, New Castle	98	222,009.64
75-05-007	Stockdale Streets	98	320,641.80
75-06-018	Holiday Hills	98	36,041.58
75-06-019	U.S. 13, Odessa to Tybouts Corner	9	1,957,041.57
75-06-020	Old Newark Road Pedestrian Sidewalk	98	43,308.25
75-07-003	Delaware Avenue & Jackson Street	98	23,224.25
75-08-008	Fouk Road/Windsor Hills Intersection Imps.	0	68,326.70
75-08-010	Woodward Avenue Connector	0	59,292.50
75-08-013	Clayton Street Drainage	75	33,800.40
75-09-020	Hot Mix Bit. Conc. Rehab. Program, North Dist. #1	85	328,720.00
75-09-021	Concrete Patching Program	98	62,120.00
75-09-022	Repairs to Third Street Bridge	0	12,056.00
75-09-025	Intersection Improvements, Rt. 72 & Rd. 295	95	37,508.35
75-09-031	Louisa Avenue, Eastburn Heights	0	72,292.50
75-10-002	U.S. 13, Drainage Biddle's Corner	1	168,364.52
75-10-003	Hot Mix Program, North District FY-76	94	174,867.50
75-12-007	Bikeway, Brandywine Hundred	0	36,606.60
76-01-007	Bikeway, Route 72	1	46,167.10
76-01-011	Bike Connectors: Brookside, Scottfield, Sandalwood, Sherwood Forest	1	8,079.40
76-02-007	Dead or Diseased Tree Removal	36	7,515.00
76-02-008	Traffic Painting Upper New Castle	0	55,767.16
76-03-007	Sub. Dev. Imps., North District #2	5	513,965.50
76-03-008	Sub. Dev. Imps., North District #1	0	320,288.00
76-04-006	Landscaping U.S. 13, Boyds Corn. to St. Georges Br.	92	8,248.50
76-04-008	Tree Removal U.S. 13, Boyds Corn. to St. Georges Br.	92	3,464.80

<u>Contract No.</u>	<u>Description</u>	<u>% Completed</u>	<u>Bid Price</u>
<u>Kent County</u>			
71-05-004	U.S. 113, Frederica to Little Heaven	55	1,669,361.51
72-04-001	Intersection Improvements, Kent County	95	289,967.80
73-12-003	Port Mahon Stabilization	65	504,457.75
74-03-001	Replacement of Bridge 225A on Road 225	98	98,880.73
74-09-001	Replacement of Br. 186A on Road 186	0	53,718.00
75-08-006	Dover High School Entrance Road Drainage	60	80,173.60
75-09-014	Dirt Roads, Kent County	32	375,270.45
76-01-012	Hot Mix Bit. Conc. Rehab. Program, Central Dist. #2	5	207,855.00
76-01-013	Hot Mix Bit. Conc. Rehab. Program, Central Dist. #1	0	181,726.04
76-02-005	Replacement of Bridge 284A on Road 284	0	86,816.25
76-03-001	Hot Mix Bit. Conc. Rehab. Program, Central Dist. #3	0	118,974.50
<u>Sussex County</u>			
67-10-015	Route 14, Rehoboth Bypass	69	1,085,401.95
68-03-001	Delaware Route 14	98	4,837,509.88
72-09-006	Cedar Neck Road Drainage	95	62,222.22
73-04-005	Replacement of Bridge 924 on Road 224	98	137,415.91
73-07-003	Cedar Creek Bridge Mechanization	0	173,600.00
74-03-014	Br. 503 over Mispillion River on Maple Ave.	0	93,109.00
74-04-003	Indian River Inlet Bridge - Southbound Lane	68	2,366,032.00
75-09-004	6th Street over Rossakatum Branch	0	52,711.25
75-09-007	Intersection Improvements, Blades	0	25,967.65
75-09-015	Dirt Roads, Sussex County	53	423,619.45
75-09-018	Hot Mix Program, South District #2, FY-76	90	225,033.00
75-09-019	Hot Mix Program, South District, FY-76	0	128,206.00
75-09-023	North Second Street, Delmar	0	97,221.80
76-04-005	Landscaping SR-1, Rehoboth to Milford	0	49,569.00
76-05-012	Tull Crossing Bridge	0	33,750.20
<u>Statewide</u>			
75-05-004	Safety Improvement Work Program, Statewide	98	<u>220,028.50</u>

TOTAL BID PRICE OF ALL ACTIVE CONSTRUCTION CONTRACTS

\$ 93,481,054.26

EEO

The Division of Highways, Bureau of Construction, through its E.E.O. Administrator continuously monitors all Federal-aid construction contracts to insure equality in employment. This responsibility was transferred from the Community Liaison Office, in FY'76, in order to provide better coordinated implementation. It is hoped that in the near future our E.E.O. program can be expanded to cover all construction projects.

The functions of E.E.O. extend beyond site visitations of our construction projects. Contractors operations and records are scheduled for review on a systematic basis to insure compliance with federal requirements. Various monthly, quarterly, and yearly reports are required from

contractors, which after review and in some cases consolidated by the Bureau of Construction, are forwarded to the Federal Highway Administration.

There are currently two "Supportive Services Programs" underway which are designed to assist minority and disadvantaged individuals and minority owned construction firms in the highway construction industry. It is hoped that upon the successful completion of these programs that individuals currently being trained under our contract training programs will be upgraded, and that the construction firms will be better able to compete through better knowledge and understanding, in our construction program.

DIVISION OF TRANSPORTATION

During FY'76 the Division of Transportation was organized in two sections to properly carry out its responsibilities. The Aeronautics Section is responsible for all aviation matters, and the Surface Transit Section is responsible for all surface transit matters.

On June 30, 1976, the Governor signed H.B. 1230, as amended, reorganizing the Department and adding responsibilities and functions to the Division, which will henceforth be known as the Delaware Transportation Authority. Reorganization brought about by this legislation will be accomplished during the forthcoming fiscal year.

AERONAUTICS

Planning

Copies of the State Airports and System Plan, in finalized draft form, were made available to all concerned planning agencies throughout the state for coordination, and approval at the beginning of the fiscal year. In addition, copies of the plan were placed in a number of libraries, City Manager's offices and the Division of Transportation for the information of interested citizens of the state.

Hearings on the Airports System Plan were held by the Division of Transportation and the consultant at Dover and Wilmington on October 7, 1975.

The final plan was submitted to the Federal Aviation Administration in January 1976 and was approved in April 1976.

The Master Plan engineering layouts for Sussex County Airport, at Georgetown, were submitted to the FAA Airports District Office at Harrisburg for coordination and approval. Modernization of Sussex County Airport will better serve the citizens of lower Delaware, and especially the Rehoboth Beach area. In addition, this upgraded facility should become a prime base for the airplanes and helicopters that will be required, when the search for oil begins off the Delaware and New Jersey coasts.

Air Commuter

Termination of air commuter at Georgetown in October 1975 left both Kent and Sussex Counties without any kind of air service.

The Division of Transportation joined with Kent and Sussex Counties, Diamond Aviation and the Commuter Committee to solve the immediate need for scheduled passenger and cargo services. Cumberland Airlines initiated service from Georgetown to Baltimore-Washington Airport in February 1976.

In May 1976, Baltimore Airways began service to Philadelphia on a daily basis from Delaware Airpark at Cheswold.

These two commuters are providing the people of Kent and Sussex Counties with multiple flights per day, on a Monday through Friday schedule, to the two large hub airports.

Wilmington, Dover, and Georgetown-Rehoboth Beach are now being provided with air commuter services. In order to assure that citizens of Delaware have direct access to the Nation's Capitol, action is presently being taken to secure gate positions at Washington National Airport.

Joint Use Facility

House Bill #364 directed the Kent County Levy Court to cease any and all plans for a Kent County Airport. This legislation further directs the Kent County Levy Court to hold a special referendum, to determine if the citizenry of the County are in favor of an airport. This referendum will be held in November 1976, and will determine the future of a general aviation airport to serve the Dover area and the Capitol.

Safety and Accident Investigations

Inspections of all public use airports (13) in the State were made by the Aeronautics Section and FAA inspectors in April 1975. With the exception of two airports, these inspections revealed an immediate need to improve many safety related areas; i.e., runway lights, wind direction indicators, airfield and runway markings, trees and power lines on final approaches to runways, and houses and trailers in immediate vicinity of runways.

The Delaware Division of Highways, in June 1976 agreed to provide airport directional signs for the public use airports in the state. This action will greatly assist the citizens and visitors in locating the airports.

The Aeronautics Section investigated a total of four (4) aircraft accidents, and one (1) helicopter accident during FY'76. Three (3) were considered major with one (1) fatality (helicopter) while the other two (2) were minor. This is a great improvement over FY'75 when a total of ten (10) accidents caused two (2) fatalities. Better enforcement of state aeronautics laws would greatly reduce the accident rate in Delaware.

The Aeronautics Section participated in five (5) aviation seminars, and held two (2) public hearings on the State Airport System Plan during the reporting period. In addition, sixty-four (64) hours of flying was expended visiting airports, monitoring beach traffic and administering Safety Proficiency Flight Checks.

SURFACE TRANSIT

Planning

Because local funding of transportation has been minimal in the past, the State has always assumed responsibility for the required transportation planning effort. However, Federal Regulations have placed increasing emphasis on Metropolitan Planning Organization (MPO) for urban areas. The Federal Government requires that the MPO be given the authority for urban transportation planning. In Delaware, all of New Castle County is considered urban, and the established MPO is the Wilmington Metropolitan Area Planning Coordinating Council (WILMAPCO).

During a short period this year, Delaware's urban area lost planning certification for mass transit aid. This was largely due to the confusion in responsibility both locally and within the Federal Government. Agreement has now been reached to correct the situation, and we will look more to WILMAPCO as the primary urban planning forum for the future. Planning certification will be given annually.

Joint FHWA and UMTA Regulations were issued September 17, 1975, requiring a Transportation Improvement Program (TIP) for the urban area. WILMAPCO will be responsible for this programming document. In the future, federal aid will be limited to projects included on the T.I.P.

During the fiscal year the Division was involved with the following major planning efforts:

The Update of the Short Range Transit Improvements Program, which was designed to build upon and expand the existing Transit Improvement Program for the Greater Wilmington Area, was near completion at the end of FY'76. Harland Bartholomew & Associates were conducting the study, working for the Division under contract to WILMAPCO, and funded by an UMTA Grant.

The Kent County Transit Study was completed in January, and presented for approval and action by the Kent County Levy Court. The Levy Court voted to accept receipt of the plan, but to reserve action with regard to any implementation proceedings. The work was done by DeLeuw Cather & Company and Kent County provided 50% of the funding.

Work was initiated with regard to 16(b)(2) of the Urban Mass Transportation Act entitled "Planning and Design of Mass Transportation Facilities to Meet Special Needs of the Elderly and the Handicapped." Applications from private non-profit groups are due early next fiscal year, and will be submitted to UMTA for funding approval.

The first DAST Development Plan was completed and distributed on February 11, 1976. This Plan was prepared by Applied Resources Integration, Ltd. utilizing State and UMTA funds and was extremely well received. The plan is already being used as the basis for future development of the DAST System, and is proving invaluable in applications for UMTA Grants.

An Analysis of the Transit Impact of Plan Omega, of the Wilmington Medical Center, was completed in-house. This study was prepared to assess the impact on transit by the proposed new center at Stanton.

The long range plan for transit in the Greater Wilmington area was adopted by WILMAPCO in 1975. Simpson and Curtin, working under contract to the Division, had made the technical analysis for this planning effort. A report of their finding was formally accepted during the year.

Dart Operations

The Delaware Authority for Regional Transit had another successful year in terms of revenue and tickets sold. FY'76 set a record with 6,098,381 riders. Of that total, 732,648 were senior citizens, up over 9% from the previous year.

FY'76 saw the beginning of a special 15¢ ride for the handicapped and free rides for the blind.

Since 1969, the Authority has been planning the construction of a new Operations Center. DART is now housed in that modern facility, the first building constructed strictly for transit since 1864.

Forty-five new red, white and blue buses arrived in March, 1976, with the latest in highly visible overhead destination signs, registering fareboxes, and a communications system to be installed shortly.

Desperately needed new service vehicles were delivered last December - cars, panel truck, jeep and wrecker.

The above were accomplished through Federal-State grants.

Another first in the history of DART; the fiscal year ended without DART going to the state legislature for a supplemental appropriation.

DAST Operations

The Delaware Authority for Specialized Transportation (DAST) was created by 2 Delaware Code, Chapter 17. The enabling legislation restricts the provision of specialized transportation to those "clients deemed eligible for reasons of physical or mental infirmity or for reasons of economic need by a responsible agency". Therefore, all DAST transportation is provided under

a contract arrangement with a wide range of public and private agencies. The riders are certified as eligible by the contracting agency, and the agencies are billed for the transportation provided.

DAST operates a fleet of approximately 40 vehicles statewide with approximately 45 full-time employees. In addition, DAST also contracts with taxicab operators in the Wilmington area to transport ambulatory clients. DAST operates from three dispatch sites with one center in each county. The main administrative office is located in the Old State Armory Building, at 10th and duPont Streets in Wilmington, with satellite centers located in the Levy Court Building in Dover, and at the Gravel Hill Highway Yard near Georgetown.

In FY'76, DAST served 34 active user agencies providing 128,596 clients with 191,932 trips for a total of over 900,000 vehicle miles.

DAST expansion, and service to the physically handicapped, has been retarded by the lack of suitable wheelchair-lift vehicles. Word has just been received, that a Federal grant is forthcoming which will allow the purchase of a new wheelchair-lift fleet of vehicles with Federal/State funds.

Rail Matters

The Rail Section has continued to serve as the primary staff for the Governor's office in the State's dealings with the entire northeast railroad situation. As a result of the rail reorganization, Delaware is now served by the Consolidated Railroad Corporation. Working in conjunction with Conrail, the United States Railway Association, the Rail Services Planning Office, the Federal Railroad Administration, and the Interstate Commerce Commission, the Division completed the State Rail Plan and thereby received federal funds for rail freight operating subsidies.

The Federal Railroad Association's approval of the Delaware State Rail Plan, enabled the Division to apply for its share of the federal entitlement funds made available to the northeast states. Application was made on March 15 for \$2,111,010. These funds would pay lease, operating and rehabilitation costs of five branch lines in the State, thereby guaranteeing continued and improved rail service to those localities. The application was approved in early April, and Conrail has continued branch line operations under subsidy contracts since April 1. Rehabilitation of the branch lines is scheduled to begin early next fiscal year.

The Rail Section continued its advisory representation on the Delmarva Advisory Council Railroad Committee, in addition to serving as liaison between private corporation and Conrail, in acquiring supplemental rail subsidy agreements. The State Rail Plan Advisory Group, while not active in the latter half of FY'76, is scheduled to resume active participation early next fiscal year.

Rail commuter trains serve Delaware in the Newark-Wilmington-Philadelphia corridor. The trains are now operated by Conrail, as required by the federal legislation restructuring the northeastern railroad system. Presently, the Interstate Commerce Commission is developing subsidy standards which will be used as the basis for agreements among governmental agencies and Conrail. All subsidy requirements in Delaware would be eligible for a federal aid program, which is designed as a transition measure, until local governments could program the required funding.

Regulatory Services

The Office of Regulatory Services is responsible for the regulation of the private railroads, and bus lines operating in Delaware. Regulated companies include Conrail, Chessie System, Greyhound, and Trailways in addition to numerous local operators who provide charter bus services.

A major accomplishment during the year was the adoption of the Department's regulatory "Rules and Practices". This volume defines the duties of both the State and the companies to provide adequate transportation facilities, spells out what the bus lines and railroads can and cannot do, and enables and encourages the public to participate in the decision-making process.

A Public Carrier Investigator was added to the staff. This has allowed us to significantly expand our investigatory activities to insure compliance with the "Rules and Practices".

At the close of the year the Governor signed legislation which clarified our authority. Future reports will detail this legislation as it is implemented in coming years.

The Office of Regulatory Services completed the following items during the year:

- . Conducted semi-annual safety inspections of 225 coaches and charter school buses and made spot safety checks of interstate buses in compliance with the U.S. Department of Transportation Standards.
- . Issued Certificates of Public Convenience and Necessity to ten charter bus operators.
- . Approved a new commuter bus service between Dover and Wilmington.
- . Approved Greyhound and Trailways intrastate regular route fare increases.
- . Denied a seasonal bus service in the Fenwick Island area because applicant could not prove his ability to furnish adequate service.
- . Approved several Greyhound and Trailways schedule revisions for better service to Delaware patrons.

Directed Greyhound and Trailways to establish center city bus stops in Wilmington.

Conducted 1976 Commuter Rail Survey at Delaware train stations and other activities to retain commuter service between Newark, Wilmington, and Philadelphia.

Investigated six complaints of poor bus and train service.

Began a continuous survey of shippers to assess the adequacy of Conrail's operation.

OFFICE OF ADMINISTRATION

PERSONNEL

EMPLOYMENT

A total of 1303 employees were on the active payroll on June 30, 1976 as opposed to 1296 employees on July 1, 1975. The increased complement consisted of additional highway maintenance personnel who are involved in the day to day upkeep of the state's road system.

Accessions included 110 new hires, 10 return from leaves of absence (medical, military and educational), 2 transfers in. Separations included 50 voluntary resignations, 28 retirements, 27 leaves of absence (mostly medical), 10 dismissals, 13 deaths and 10 transfers out. Accessions averaged 10.2 per month and separations averaged 11.5. The median employee count for the year was 1301.3.

The Division of Highways experienced an average monthly vacancy total of 48.3 employees based upon a budgeted strength of 817 employees. The large vacancy total maintained throughout the year was composed mainly of needed maintenance personnel. The high vacancy level can be attributed to two factors:

- (1) The delays intrinsic to the Merit System employment procedure, and
- (2) The restriction against "averaging" employee counts in the Budget Appropriation Act.

The practical effect was that the Division of Highways did not, in fact, maintain a manning complement of 817 employees. The highest average monthly figure that could be maintained was 768.7 employees.

Summer employees increased from a total of 36 in the summer of 1975 to 56 in the summer of 1976. The majority of summer employees were assigned to mowing, trashing and other road maintenance projects. A total of 33 employees were hired under various Federally funded programs designed to combat the high unemployment rate. Twenty-seven of these employees

were hired in last fiscal year and carried through to this fiscal year. All were working in road maintenance.

The Department's Affirmative Action Program was reemphasized with the issuance of a new program policy statement accompanied by specific goals. The Department remains active in the Comprehensive Employment Training Act, and maintains close contact with the State Personnel Office and the State Human Relations Commission to further effect established Affirmative Action Goals. The internal Equal Employment Opportunity Program administration was transferred to the Personnel Office and a new program was written. The Program received the approval of the FHWA on July 20, 1976.

EMPLOYEE AND LABOR RELATIONS

Labor relations with Locals 837, 879, 1036, and 1443 of the State County and Municipal Workers Union (A.F.L.-C.I.O.) were maintained at a high level of success during FY'76. Most grievances were settled within the Department and no arbitration cases were required. A fifth local of AFSCME, A.F.L.-C.I.O. was certified by the Department of Labor to be the exclusive bargaining representative for the Delaware Turnpike, and negotiations are presently being conducted.

A total of 36 employees were individually counseled prior to their retirement dates, and assisted in all aspects of retirement such as social security, life and medical insurance, and personal budget preparation. During FY'76, a new pension program was passed which allows for monetary savings for the State on newly hired employees and greater benefits for present employees.

Double increment wage and salary increases, for outstanding employee performance, were completely restricted by the FY'76 Budget Appropriation Act. Promotions were held to a bare minimum, and were awarded only to employees filling permanent vacancies created by attrition.

RECRUITING

Ten civil engineers were engaged in the Engineer-In-Training Program. Five Engineers-In-Training completed the program and were given permanent assignments in the Department. Visits were made to the University of Delaware, Delaware State College, Virginia Polytechnical Institute, and Georgia Institute of Technology. A total of fifty-eight individuals were interviewed at their Universities, and ten of those interviewed were invited to the Administration Building for a tour of our facilities.

During FY'76, engineering turnover was high with a total of seven lost through retirement or resignation. The college recruiting program has thus become a necessity

in order to maintain our existing level of engineering employment.

FINANCE

During FY'76, a total of \$23,312,918.19 was received by the Department as revenue, of which \$357,395.93 was general fund revenue, \$546,227.64 was for various special funded programs, and \$22,409,294.62 was received from the Federal Highway Administration for the highway program.

Expenditures for the same period totalled \$79,201,459.56 of which \$32,304,462.75 were general funds, \$46,551,662.97 was for the highway program and \$345,333.84 was for other various special funded programs.

Selected summary financial statements are included in this report.

EXTERNAL AUDIT

The establishment of the External Audit Section, as a separate and distinct entity from the previous Federal Aid-Audit Section, was accomplished during the year.

With the loss of one staff auditor, three new staff auditors were hired to bring the external audit section to a full complement. An attempt is being made to reduce the inherited backlog of audit work, however, heavy demands for pre-award audit evaluations on Consultant Engineering Firms, Material Testing Consultants, and Regional Planning Agencies has limited the efforts of this section to some extent.

Audits are currently under way with Diamond State Telephone Co. and Delmarva Power and Light Co., which upon completion, will reduce the audit backlog significantly.

COMPUTER SUPPORT

During the past fiscal year, the Computer Support Section continued data processing services to all divisions of the Department. The section has engaged in designing a mini-computer system which will meet the interactive computational needs of the great majority of departmental users. Although mini-computers are economically and technically competitive with the large class state computers, there are philosophical and funding difficulties with the plan. Still the section is committed to the plan, which can be instrumental in the department's goal to provide more services with a budget-reduced staff.

Our major efforts have been in accident analysis, maintenance management, network analysis, and engineering programming and assistance.

The section has participated in training facilities with Central Data Processing, and in the national Highway Engineers Exchange Program (HEEP).

OFFICE SERVICES

Support for all divisions and sections of the Department continues to be given by the various units of the Office Services Center.

The Word Processing Center with its magnetic tape selectric typewriters provides typing and composing services at a greater speed and more efficiently than through conventional methods. The Records Center has continued with the microfilming and disposal of Department files and records. A complete file of all legislation is also kept in the Records Center and is distributed throughout the Department as it pertains to each Division.

The Office Services Section now includes an improved mail service, better equipped and maintained Xerox centers and the usual Library functions.

ADMINISTRATIVE SERVICES

Activities for the Administrative Services Section are summarized as follows:

Summary of Contracts Advertised:

<u>Construction</u>		
Federal Participating	26	\$15,494,058.16
Soil Conservation Part.	1	81,276.30
Toll Road	4	2,404,955.85
100% State	55	7,278,276.98
Rejected	2	
Withdrawn	1	
TOTAL Construction	89	\$25,258,567.29
<u>Material</u>		
Material and Supplies	44	\$ 1,486,046.44
Equipment	23	1,821,871.45
Rejected	3	
No Bids Received	1	
	71	\$ 3,307,917.89
TOTAL Construction & Material	160	\$28,566,485.18
<u>Receipts</u>		
Contract Sales		\$ 12,029.25
Map Sales		2,192.54
Book & Misc. Sales		224.75
TOTAL Receipts		\$ 14,446.54